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METEOROLOGICAL OFFICE.

BRITISH METEOROLOGICAL AND MAGNETIC YEAR BOOK, 1918,

PART III., SECTION 2.

GEOPHYSICAL JOURNAL, 1918,

COMPRISING

DAILY VALUES OF THE METEOROLOGICAL AND GEOPHYSICAL ELEMENTS

AT THREE OBSERVATORIES OF THE METEOROLOGICAL OFFICE;

DAILY VALUES OF SOLAR RADIATION AT SOUTH KENSINGTON;

WIND COMPONENTS AT FIXED HOURS AT FOUR ANEMOGRAPH STATIONS;

TABULATIONS OF OCCASIONAL SOUNDINGS OF THE UPPER AIR;

AND RESULTS OF OBSERVATIONS OF CLOUD AND AURORA;

TOGETHER WITH AN ANNUAL SUPPLEMENT.

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TABLE OF CONTENTS.

INDEX TO TABLES OF DATA.

ANNUAL SUPPLEMENT.

METEOROLOGICAL OFFICE.

BRITISH METEOROLOGICAL AND MAGNETIC YEAR-BOOK: GEOPHYSICAL JOURNAL.

INTRODUCTION TO THE TABLES FOR 1918.

THE Geophysical Journal gives daily values for the meteorological and geophysical elements observed at the three observatories of the Meteorological Office (Kew Observatory, Richmond, Surrey; Valencia Observatory, Cahirciveen, Co. Kerry; and Eskdalemuir Observatory, Dumfriesshire) and at the St Louis Observatory, Jersey. Data are given for Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology. Wind components are given for four additional anemograph stations.

The results of ascents at Upper Air Stations at Aberdeen, Eskdalemuir, Cahirciveen, South Farnborough, and Falmouth, together with nephoscope observations made at Aberdeen, and tables showing the occurrences of Aurora, are included in the Journal.

Greenwich Mean Time is used in all cases, and the hours are counted from midnight and numbered 0 to 23; the second midnight of the day is referred to as 24 h.

All the units employed are based on the C.G.S. system. Data to which the letters x and n are attached represent the maximum and minimum values in the column.

The tables are as follows:—

1. **Sunshine and Solar Radiation.** The total number of hours of bright sunshine as measured by the Campbell-Stokes Recorder is given for South Kensington,* Richmond, Eskdalemuir, and Cahirciveen; also the percentage this represents of the "possible," regarded as the number of hours from sunrise to sunset. The Campbell-Stokes instrument records only bright sunshine, no trace being obtained in thick haze or when the sun is very near the horizon. Thus the total it gives is less than the number of hours during which the position of the sun is visible to the naked eye. While the result is somewhat arbitrary, the records from different instruments of this pattern show a close agreement. The "normal" values for Richmond and Cahirciveen are from the 35 years 1881 to 1915; those for South Kensington and Eskdalemuir from the 5 years 1911 to 1915.

Solar radiation results are given for South Kensington, Richmond (Kew Observatory), and Eskdalemuir. At the two latter stations use is made of the Ångström pyrheliometer, which gives the radiation received from the sun by a unit

* The exposure of the recorder at South Kensington was interrupted by building operations at the end of September 1918, and the record made at the Wesleyan Training College, Westminster, has been tabulated for the last three months of the year. The Westminster "normals" are for the period 1881 to 1915.

Wt 37652/515—400—11/19 —N. & Co. Ltd. **Gp. XV.**

surface which is normal to the line drawn from the instrument to the sun. This is described as the intensity of radiation at Richmond and Eskdalemuir, to distinguish it from its vertical component, the two being connected by the formula

$$\text{vertical component} = \text{intensity} \times \cos Z,$$

where Z is the zenith distance of the sun. At Richmond the observations are made within half an hour of noon, and the vertical component is given as well as the intensity of radiation, to facilitate comparison with South Kensington. The hour of observation at Eskdalemuir being more variable is given explicitly, and the value is also given of $(p/p_0)\sec Z$, where p is the barometric pressure at the observatory in millibars at the time of the observation, while p_0 is 1000 millibars, so that $(p/p_0)\sec Z$ affords a measure of the mass of atmosphere through which the solar radiation has had to travel before reaching the earth. The entries in the columns headed "sky" at Richmond and Eskdalemuir are intended to show the presence or absence of any visible obstruction, such as haze, mist, or cloud, in the direct path of the solar radiation recorded. Observations are taken so far as possible in the absence of cloud; but upper cloud, when there is a great deal of it, cannot always be avoided, and, unless the cloud is very thin, the fall in the radiation recorded is conspicuous.

At South Kensington the radiation is measured by the Callendar Radiograph, which records the amount received on a horizontal surface from all sources. In bright sunshine the greater part of the radiation consists of the vertical component of the direct solar radiation, but even then an appreciable part comes from the general atmosphere and from clouds. Thus if a Callendar and an Ångström instrument were simultaneously recording side by side, one would naturally expect the radiation recorded by the former to exceed the vertical component of that recorded by the latter.

The intensity of radiation, whether at South Kensington, Richmond, or Eskdalemuir, is expressed in milliwatts per square centimetre. For conversion to the unit more ordinarily employed abroad, we may use

1 mw. per sq. cm. = 0·01435 gramme-calorie per sq. cm. per minute.

At South Kensington two measurements are given for the maximum radiation—the highest value shown on the trace of the Callendar instrument at whatever hour it occurs, and also the highest value recorded between 11 h. 30 m. and 12 h. 30 m. It is the latter that is most appropriate for comparison with Richmond. The daily total radiation at South Kensington, representing the integrated value of the radiation throughout the 24 hours, is also given, being expressed in joules (j) per sq. cm. A watt equals 1 joule per second, and therefore a uniform radiation at the rate of 1 milliwatt amounts in 24 hours to 86·4 joules. The daily total at South Kensington is also expressed as a percentage of the "planetary" radiation, *i.e.* the radiation that would be received if the earth's atmosphere were non-existent, assuming the average intensity of direct solar radiation in space at the earth's mean distance from the sun to be 135 milliwatts per sq. cm. This accepts Dr. Abbot's result, 1·93 gramme calories per sq. cm.; but it should be remembered that the scales of the Callendar and Angström* instruments undoubtedly differ from that accepted at Washington.

2. **Meteorology and Magnetism:—Cahirciveen (Valencia Observatory).** This table is in the form adopted for Part III., Section I., of the Year-Book (Daily Readings

* Angström No. 24 was in use at Richmond during the year 1918. It is hoped that a discussion of a comparison between the scale of this instrument and that of an Abbot silver disc pyrheliometer will be published shortly.

at Meteorological Stations of the First and Second Orders). Pressure, temperature wind velocity, and rainfall are taken from the self-recording instruments at the observatory. Some account of these instruments will be found in the Introduction to Hourly Values from Autographic Records, Meteorological Section, 1913. It may be noted here that the temperatures refer to a large louvred screen on the north wall of the Observatory, not to the Stevenson Screen, which contains the thermometers used for the observations printed in the Daily Weather Report.*

Pressure is given in "millibars" (1000 millibars = one megadyne per square centimetre). One millibar is approximately equivalent to the pressure of 0·75008 mm. or 0·02953 inch of mercury under standard conditions (273a, lat. 45°). Conversion Tables will be found in Hourly Values from Autographic Records, 1913, and in the Computer's Handbook. The necessary reductions of the readings of the barometer on account of temperature and latitude have been made.

Temperatures are given in units on the Kelvin Absolute Scale, *i.e.* in centigrade degrees measured from a zero 273° below the normal Freezing Point of water. Temperatures at or below 273a (0° C.) are printed in small type. The extreme temperatures refer to the calendar day. †

Vapour-Pressure, deduced from the readings of the dry and wet bulb thermometers, is given in millibars. For the computation of Vapour Pressure and of Relative Humidity, tables depending on Glaisher's hypothesis, that the depression of the wet-bulb readings below the air-temperature is proportional to the depression of the dew point below the same temperature, are utilised.

Wind-Speed is expressed in metres per second. The values are estimated for periods of 60 minutes centering at the hours named. The Robinson anemograph ‡ (9-inch cups, 24-inch arms, factor 2·2) is used for this purpose.

Wind-Direction in the present volume is given by the deviation from North, reckoned in degrees as a "veer," in the sense N, E, S, W. The general direction for the 60 minutes is estimated from the anemogram. § No direction is given when the anemogram shows a mean velocity for the hour smaller than 1·6 metres per second.

Precipitation is given in millimetres of equivalent rainfall. The rainfall is for the calendar day; previous to May 1st, 1914, the period was the 24 hours beginning at 10 h. 30 m., and from that date to the end of 1917 the 24 hours beginning at 9 h. †

The "normals" for Pressure, Temperature, and Precipitation are from the 45 years 1871 to 1915; those for Humidity from the 30 years 1886 to 1915; and those for Wind from the 35 years 1881 to 1915. Except in the case of Pressure, no allowance has been made for the removal of the observatory from Valencia Island to Cahirciveen in 1892.

The estimation of **cloud** amount and the symbols for **weather** are in accordance with the conventions of the International Meteorological Committee.

A summary of the weather for each day is given in the column headed **Remarks**, the international weather symbols and the letters of the Beaufort Notation being used as far as possible. These symbols and letters are as follows :—

* At Richmond and at Eskdalemuir the thermograph screens contain the thermometers used for the Daily Weather Service.

† Extreme temperatures and rainfall for the 24 hours to 7 h. are printed in the Daily Weather Report and utilised in the Weekly Weather Report. For the Monthly Weather Report the figures of this Journal are used.

‡ See below, p. vi.

§ Formerly it was the practice to take the direction at the exact hour. The present rule was adopted as from 1st May 1915. The Introductions to the *Geophysical Journal*, 1915, 1916, should be amended in this sense.

BEAUFORT NOTATION AND INTERNATIONAL WEATHER SYMBOLS.

b.	blue sky. (Cloud amt. 0, 1, 2, 3	x.	⌴ hoar frost.	h.	▲ hail.
bc.	some cloud. ,, 4, 5, 6		⇜ ice crystals.		△ soft hail.
c.	cloudy. ,, 7, 8		V rime.	t.	T thunder.
o.	overcast. ,, 9, 10)		~ glazed frost.	l.	≺ lightning.
g.	gloomy, dull appearance.	e.	water deposited copiously on exposed surfaces, without rain falling.		⋦ thunderstorm.
u.	ugly, threatening appearance.				⁄ gale.
v.	visibility, unusually clear atmosphere.	y.	dry air.	q.	squally.
		p.	passing showers.		⊙ solar corona.
z.	∞ haze.	d.	drizzling rain.		⊕ solar halo.
m.	≡⁰ mist, light fog.	r.	• rain.		⋓ lunar corona.
f.	≡ fog.	s.	✲ snow.		⋒ lunar halo.
fe.	≡⋮ wet fog, *i.e.* fog which deposits water copiously on exposed surfaces.		⇳ snow drift.		⌒ rainbow.
			⊠ snow lying (more than half the surrounding country covered with snow).		⩛ aurora.
w.	⊆ dew.				▥ zodiacal light.

The figure ⁰ attached to a symbol indicates very slight, whilst the figure ² indicates strong or heavy: thus •⁰ = slight rain, •² = heavy rain. When economy of space is necessary, morning, afternoon, and night are denoted by *a.*, *p.*, *n.* respectively. ⁄ is only used in the Remarks Column when the wind as recorded by the anemometer averages 17·2 m/s or more for at least an hour.

Table 2 also contains results for **Magnetic Horizontal Force, Declination,** and **Inclination** from absolute observations, usually two a month. The observations* are made at fixed hours on days not subject to abnormal magnetic disturbance, and may be regarded as referring: Horizontal Force to 11 h. 35 m., Declination to 10 h. 20 m., and Inclination to 14 h. 30 m. The unit of force employed, 1γ, represents 0·00001 C.G.S. magnetic unit. It is equal to the magnetic force due to an electrical current of 5 amperes in an infinitely long straight conductor a kilometre away. A memorandum by Dr. Chree on the probable errors in absolute observations of the magnetic elements is printed below on p. x.

Tables 3 and 4 contain corresponding observations for **Richmond (Kew Observatory)** and **Eskdalemuir, Dumfriesshire,** with the exception of the magnetic data. At Eskdalemuir the velocity of the wind is determined from the readings of a Dines Pressure-tube Anemograph. The periods from which the Richmond normal values are derived are: Pressure and Temperature 1871 to 1915, Humidity 1886 to 1915, Wind 1881 to 1915, and Rain 1871 to 1915. The "normals" for Eskdalemuir all refer to the 5 years 1911 to 1915.

5. **Geophysics, Richmond (Kew Observatory).** In addition to magnetic and electrical data, this Table contains the readings at 9 h. of thermometers placed in iron tubes in the ground with their bulbs at depths of 30 cm. and 120 cm. below the surface. The mean level of underground water is also given for each day, together with the highest and lowest levels recorded during the month. A description of the apparatus used will be found in the Annual Supplement for 1914. The variation of level through the year is shown by a graph which faces p. 102.

Magnetic Data for Richmond (Kew Observatory). The magnetic data published in the Geophysical Journal up to 1915 were maxima and minima derived from measurements of the magnetograms. The adoption by the London and South-Western Railway of electric traction for the line which passes some 1000 m. from the observatory has made the records useless for the determination of extreme values. The results of absolute observations* taken usually four times a month are now given.

The magnetic character of the day is determined by examination of the magneto-

* Notes on the observations are to be published in Hourly Values from Autographic Records, 1918.

grams, and is given on the scale approved by the International Magnetic Commission, "0" representing quiet, "1" moderately disturbed, and "2" highly disturbed conditions.

Values of the **Electrical Potential Gradient** in the open are given for 3 h., 9 h., 15 h., and 21 h., representing means for the sixty minutes centering at the hour. A factor, whose value is given, is applied to the electrograph curve readings to deduce the corresponding potential gradient in the open, *i.e.* the potential gradient as it would be if unaffected by the presence of buildings or apparatus. The gradient is measured in volts per metre. It is positive when the potential in the atmosphere exceeds that of the earth. A negative value is indicated by a short thick "-" before the number. When the fluctuations of potential are too large or rapid to permit of a satisfactory numerical estimate of the hourly mean, "*z*" is inserted with an appropriate sign to indicate whether the gradient was on the whole positive or negative, or too oscillatory to admit of the dominant sign being determined.

The factor for reduction to the open is usually determined month by month, from a comparison of the absolute values obtained from a standardised electrometer over a flat area with the corresponding readings from the electrograms.

The electric character of the day is indicated by the figures 0, 1, or 2 according to the character of the trace of the electrograph as regards negative potential gradient: thus 0 means no negative potential; 1, one or more excursions of limited duration to the negative side of the scale; 2, negative potential extending in the aggregate over at least three hours.

The charges on the ions, positive and negative, are determined by measurements with Ebert's Aspiration Apparatus, extending over fully half an hour between 14 h. and 16 h. The charge per cc. is multiplied by 10^{16} and given in coulombs * to facilitate comparison with the data in neighbouring columns.

In addition to all the ions with mobilities of the order of 1 cm. per second, the Ebert apparatus captures, it is believed, a very appreciable number of the slow-moving or Langevin ions. If all the Langevin ions were captured the figures given in the Table would probably, in most cases, be largely increased.

The Ebert apparatus is designed to determine not merely the number but also the mobility of the more mobile ions; the results of such determinations were given in the years 1911–1912 together with the deduced values of the conductivity and of the air-earth current. The figures were found, however, to present many inconsistencies, and the mobilities are no longer observed. The data now published for the air-earth current are derived from observations made with the apparatus designed by Mr. C. T. R. Wilson, combined with readings from the electrograms. Observations taken with the Wilson apparatus near 15 h. supply a value for the electrical conductivity, and this is combined with the mean value of the potential gradient in the

* In earlier volumes other units were used for the ionic charges.

In 1911 the number of ions was given. In computing the number the value $3{\cdot}4 \times 10^{-10}$ C.G.S. electrostatic unit or 11×10^{-20} coulomb was accepted as the charge upon an ion. Recent research has shown that this value was too low. Millikan's experiments (*Phil. Mag.*, Series 6, vol. xxxiv., 1917, p. 3) give $4{\cdot}77 \times 10^{-10}$ C.G.S. electrostatic unit, or $15{\cdot}9 \times 10^{-20}$ coulomb, for the ionic charge.

To reduce the 1911 entries to the form adopted in the current tables they must be multiplied by 11×10^{-4}.

For the years 1912–1915 the charge per cc. $\times 10^{20}$ is given in terms of the C.G.S. electromagnetic unit, which is equal to 10 coulombs. To reduce the entries for these four years to the present form, which was adopted for the year 1916, they must be divided by 1000.

To derive the number of ions per cc. from the entries in the present volume they must, if Millikan's results be accepted, be multiplied by 629. To derive the charge in C.G.S. electrostatic units per cubic metre multiply by 0·3.

open for the sixty minutes centering at 15 h., as derived from the electrograms. The observations are taken in a uniform way, and should be strictly comparable amongst themselves, but it is believed that multiplication by a factor exceeding unity would be required to give the true air-earth current.

6. **Geophysics:—Eskdalemuir.** This table contains magnetic and electrical data of the same general character as those for Richmond in Table 5, but with modifications. The Eskdalemuir magnetographs record the three rectangular components North, West, and Vertical. The extreme daily values, and their hours of occurrence, are given for each. In view of the uniformity of the temperature to which the magnetograph is exposed, no temperature correction has been applied.

In the electrical character statistics, 0, 1, and 2 have the same significance as at Richmond, but letters *a*, *b*, *c* are attached according to the range of oscillation of the potential gradient: *a* means that for no hour of the day was there a range as large as 1000 volts; *b* that a range of 1000 volts or more was reached in one hour at least, but in fewer than six hours; *c* that a range of 1000 volts or more was reached in at least six hours. These specifications must not be regarded as absolutely rigid criteria. After longer experience more definite specifications may be found possible.

7. **Meteorology:—Jersey (St. Louis Observatory).** Readings of pressure, temperature, humidity, wind direction and force, and amount of cloud, with type and direction, are given for 7 h., 14 h., and 21 h., together with the minimum temperature on grass, rainfall, and the duration of appreciable actinic strength of the sun's rays as registered by a Jordan recorder.* Remarks on the weather are also given. The normals for the various elements are for different periods all ending in 1918. The number of years utilised in each case is given in the footnote.†

The observations for the years 1914, 1915, and 1916 were published as a special supplement to the Geophysical Journal, 1916.

8. **Wind Components** for four principal anemograph stations of the Meteorological Office, representing different parts of the country. As in Table 2, the wind velocities are expressed in metres per second, and represent mean values for the sixty minutes centering at the specified hours 3 h., 9 h., 15 h., and 21 h. The data at these four hours are not the resultant wind velocities, but their rectangular components in the North-South and East-West directions. North and South winds are treated separately, and so are East and West. These hourly values are all derived from Robinson cup anemographs recording direction as well as speed. These anemographs at Holyhead, Deerness, and Great Yarmouth are of the same large size as at Valencia and Kew Observatories, the arms being 610 mm., the diameter of the cups 230 mm., and the factor used for deriving the run of the wind from the run of the cups 2·2. The Scilly instrument is smaller, the arms being 305 mm., the diameter of the cups 127 mm., and the factor 2·8.

Recent investigations have shown that the correct factor depends on the speed. The tabulated speed is probably correct at about 9 m/s. A correction amounting to about +0·7 is required at such low speeds as 2 m/s. A negative correction is necessary at high speeds. It is not proposed to depart from the use of the constant factor 2·2 until the corrections have been determined with greater certainty. Except at Scilly,

* Allowances based on personal observations are made for the times near sunrise and sunset when the sun is shining, but the light is not strong enough to give a trace. This is an important departure from the M.O. practice.

† Pressure, Air Temperature, and Rainfall, 25; Cloud Amount, 24; Humidity, 23; Grass Minimum, 22; Sunshine, 21; Wind, 15.

where the vane is of a special type, components are not shown when the tabulated wind-speed is less than 1·6 m/s.

At Holyhead, Scilly, and Great Yarmouth (or rather Gorleston, a neighbouring station) there are also Dines pressure-tube anemographs, and the entries given under the heading "Maximum in a Gust" represent the highest speeds recorded by these instruments in the course of the day. The time of occurrence of the highest gust is also given. At Deerness, where there is only a Robinson cup anemograph, particulars are given as to the largest of the twenty-four mean hourly velocities, and the hour or hours of its occurrence. It may be noted that for the year 1919 the wind direction record at Great Yarmouth is incomplete, and data for Shoeburyness are to be printed in this table.

A discussion of the tabulations for the eight years 1911–1918 is included in the Supplement to the present volume.

9. **Seismological Diary.** This consists in the main of results given by the **Galitzine Seismographs** * (two horizontal components and the vertical component) at **Eskdalemuir,** but includes data from a **Milne Seismograph** at **Richmond (Kew Observatory).** The Eskdalemuir data include (i.) particulars of the earthquakes recorded, and (ii.) the amplitude and period of the microseisms shown by the North component Galitzine instrument on each day at 0 h., 6 h., 12 h., and 18 h. Disturbances attributed directly to wind or other purely local circumstance are excluded. The notation employed is as follows :—

P is the time of arrival of the first phase (longitudinal waves). S is the time of arrival of the second phase (transverse waves). L is the time of arrival of the long waves (surface waves).

PR_1, PR_2 . . . are longitudinal waves reflected once, twice . . . at the earth's surface, prior to their arrival at the station. SR_1, SR_2 . . . similarly denote reflected transverse waves. Any times given for reflected waves refer to the beginning of the disturbance at the observatory.

[Y refers to a wave of the type for which the name polychord is proposed by J. J. Shaw (*B.A. Report*, 1915, p. 69). Y is identified provisionally with PR_∞.] †

M_1, M_2 . . . are the times of successive maxima of the displacement of the ground, corrected, if necessary, for the lag of the instrument. [c_1, c_2 . . . are secondary maxima following the principal phase; only the periods and approximate times are given.] †

i is the sudden commencement of a phase. *i*P means a sudden commencement of the P phase. *e* means an indistinct commencement of a phase. F is the end.

T, the period in seconds, is the duration of a double oscillation (to-and-fro movement). μ represents a micron (0·001 mm.).

Δ is the distance in kilometres of the epicentre measured along the arc of the great circle passing through the station. α the azimuth of the epicentre (0° to 360°) measured from North through East. The distance is estimated from Klotz's Seismological Tables (*Publication of the Dominion Observatory, Ottawa*, vol. iii. No. 2), which are also used for computing the time at which the disturbance originated. [In the 1919 volume the time of origination is to be denoted by the letter *o* and inserted in italics.]

A_N, A_E and A_Z are the amplitudes of the components of the true displacement of the ground from the position of rest, and are measured in microns. When the displacement shown by the North-South seismograph is to the North a + sign is shown; for a displacement to the South a − sign is used. Similarly + is used for displacements to the East and upwards, − for displacements to the West and downwards. When the oscillations are of a simple harmonic character no sign is prefixed to the amplitude.

All the microseisms recorded are believed to arise from other than local causes. Microseisms are practically always in evidence, and their period usually remains at least approximately constant during a good many minutes.

The group of waves of greatest amplitude occurring in the 30 minutes centering at the hour in question is selected, and the amplitude tabulated is the mean obtained from two or three waves in that group.

The period is derived from a measurement made on the same group.

The data given for Richmond include the times of commencement of the disturbance and the time of the largest displacement shown on the trace. Additional information is given under the heading "Remarks." The boom of the

* Vide *Geophysical Journal*, Annual Supplement, 1913; or G. W. Walker's *Modern Seismology*.

† Notation not used in the year 1918.

instrument is oriented North-South, and moves when the ground is tilted East to West. It has, however, to be remembered that in reality the boom responds to ground movements of various kinds, and that the amplitude of the movement shown on the trace depends to a considerable extent on whether the oscillatory movement in the ground has a period near to or remote from the natural period of the boom. At the same time, a really large movement on the trace invariably means a large earthquake. Amplitudes, all measured on the trace in mm., are not recorded unless at least 1·0 mm. Those less than 0·2 mm. are characterised as very small, those between 0·2 and 0·5 mm. as small. During the year 1918 the period of the boom was approximately 18 seconds, and a movement of 1 mm. on the trace was produced by a tilting of from 0″·40 to 0″·50.

10. **Soundings with Pilot Balloons.** This table gives the results of **exploration of the free atmosphere** by means of pilot balloons. The soundings available are very numerous; only those at the Meteorological Office stations—Aberdeen, Eskdalemuir, Cahirciveen, Benson, South Farnborough, and Falmouth—are included in this table.

The times refer to the beginning of the sounding; they are given to the nearest five minutes. Wind directions are given in degrees from True North (through East).

The wind velocity is derived from that of the balloon itself. This may be observed with two theodolites at the ends of a known base, or with one theodolite. As a rule, only one theodolite is employed, and the velocities are then deduced in the way explained in the Computer's Handbook, Section II.

During the earlier months of the year 1918 the vertical velocities were generally calculated as previously from the formula

$$V = 81\ L^{\frac{1}{2}}/(W+L)^{\frac{1}{3}},$$

in which

L is the free lift of the balloon, *i.e.* the weight in grammes which the balloon can carry without rising,
W is the weight of the balloon in grammes, and
V is the vertical velocity in metres per minute.

The value 84 was adopted in place of 81 as from 1st September 1918. (M.O. Circular No. 27.)

The "Geostrophic Velocity" shown for each ascent is determined from the prevailing pressure gradient by the formula $v = \gamma/2\rho\omega \sin\lambda$, in which γ is the horizontal pressure-gradient, ω the angular velocity of the earth, ρ the density of the air, λ the latitude, and v the required geostrophic velocity. The significance of geostrophic velocity is explained in the introduction to the Geophysical Journal for 1915. Reference may also be made to the Meteorological Glossary and to the Computer's Handbook, Section II. iii. The relation between actual winds and geostrophic winds has been discussed with reference to observations by J. S. Dines,* J. Fairgrieve,† and G. Dobson,‡ and from a theoretical standpoint by G. I. Taylor. §

The pressure gradient is derived from the Working Charts of the Office which refer to the hours 7, 13, and 18 respectively. If the hour of an ascent differs decidedly from a chart hour, results are usually calculated from each of the two charts which come nearest in time.

In the deduction of wind components, etc., the calculations are all carried out to 0·1 *m/s* (metre per second), but this degree of accuracy does not appear in the printed

* "Advisory Committee for Aeronautics," *Fourth Report on Wind Structure*, 1914, p. 19.
† *Geophysical Memoir*, No. 9, 1914. ‡ *Q.J. Royal Met. Soc.*, 1914, p. 123.
§ *Phil. Trans. Roy. Soc.*, A, 1915, p. 1; *Proc. Roy. Soc.*, 1916, p. 196.

results except in the case of observed wind velocities under 5 *m/s*. Observed wind velocities of 5 *m/s* and over are given only to the nearest 0·5 *m/s*. Geostrophic or gradient wind velocities are given only to the nearest 1 *m/s*. Directions are given to the nearest 5° in the case of observed wind velocities, but only to the nearest 10° in the case of geostrophic or gradient wind velocities.

No data derived from kite observations are available for 1918. Details of the few soundings by registering balloons are to be given in the Annual Supplement, together with certain aeroplane observations.

11. **Nephoscope Observations.** This table gives the results of observations of **Cloud Motion** at **Aberdeen** taken with Fineman's nephoscope.

The nomenclature used for clouds is in accordance with the specifications given in "The International Cloud Atlas" and in the "Observer's Handbook." Information as to the usual heights of the several forms is given in the following table :—

Form.	Abbreviation.	Height of base (metres).
Cirrus	Ci.	Mean 9000
Cirro-stratus	Ci. st.	,,
Cirro-cumulus	Ci.-cu.	3000 to 7000
Alto-stratus	A.-st.	,,
Alto-cumulus	A.-cu.	,,
Strato-cumulus	St.-cu.	Below 2000
Nimbus	Nb.	,,
Cumulus	Cu.	Mean 1400
Cumulo-nimbus	Cu.-nb.	,,
Stratus	St.	Below 1000

The observations give what is termed for brevity the "velocity-height-ratio," *i.e.* the true cloud velocity divided by the height of the cloud. The velocity-height-ratio is equal to the instantaneous value of the angular velocity of the cloud about a point vertically beneath it, and on the same level as the observer. It is conveniently expressed in milliradians per second. For comparison with the nomenclature used in previous volumes it may be noted that for a low cloud at the height of one kilometre the velocity in metres per second is the same as the velocity-height-ratio in milliradians per second. A short discussion of the results for the five years 1912 to 1916 will be found in the Supplement to the 1916 volume.

12. **Aurora.** This table, introduced in January 1917, gives Aurora observations at various stations, and also shows the phases of the Moon and the "magnetic character" assigned for Richmond and Eskdalemuir. As "magnetic character" refers to a period of 24 hours beginning at midnight, it is convenient to show the characters for the two calendar days which include the night of the Aurora observations.

An **Annual Supplement** gives a summary of the Observations of the Temperature of the Upper Air made at Benson, Oxon, at Martlesham, Suffolk, and at South Farnborough, as well as some electrical and magnetic data from Richmond (Kew Observatory) and Eskdalemuir. A discussion of the constants of the seismological instruments at Eskdalemuir is also included, together with a diagram showing the variation in the level of the underground water at Richmond. A special feature of the Supplement this year is a discussion of the Wind Components for Holyhead, Deerness, Scilly, and Great Yarmouth for the years 1911–1918.

NAPIER SHAW
(*Director*).

METEOROLOGICAL OFFICE, LONDON, S.W.
November 17th, 1919.

PROBABLE ERRORS IN ABSOLUTE OBSERVATIONS OF MAGNETIC ELEMENTS.

A MEMORANDUM BY DR. C. CHREE, SC.D., F.R.S., SUPERINTENDENT OF KEW OBSERVATORY, RICHMOND.

ACCURACY and probable error in the case of magnetic observations do not admit of precise numerical definition. It is emphatically a case of *quis custodiet custodes.* The standard instruments in different countries differ, and if the intercomparisons that have been made are reliable these differences alter with time. Thus we have no assurance of constancy in the standard at any Observatory.

At some places the values of the magnetic elements differ sensibly at sites only a few yards apart. Thus the value assigned to a particular station may apply to a very limited area. For this reason importance attaches rather to the consistency than to the absolute accuracy of the observational results. For many purposes it is accuracy in the secular change that is really important. For this object a magnetometer which invariably gave 2′ too much for D and 20γ too much for H would be more satisfactory than one whose errors in successive years were $+1'$ and $-1'$ in D and $+10\gamma$ and -10γ in H.

It has been found that unless magnetic material has been used in the construction, the differences in the values of D given by different magnetometers are small, of the order of 1′. Thus there is a strong presumption that the mean of a number of observations of D taken with any approved magnetometer is very nearly a true measure. Again, the base-line value of an old-established D magnetograph shows little apparent change with time; and if it be assumed constant throughout a month, the consistency of the results obtained from absolute observations shows that the probable error of a single careful observation, during a magnetically quiet time, is of the order 0′·25. The result is based usually on four readings taking from five to ten minutes. During this interval, when there is active disturbance, a change of 5′ or even 10′ may occur in D. Thus it is hardly necessary to say that the significance of absolute observations taken during a disturbed time is difficult to assign.

The D observation is that in which the greatest accuracy and definiteness is obtainable. In the case of dip, not merely is the difference between different instruments greater, but there is usually a more or less systematic difference between the two needles. If, as is not unusual, the difference between the needles as derived from several successive months' observations varies throughout the year, or from one year to the next, there is a strong presumption that the mean derived from the two needles really requires a correction for instrumental error, which is varying. Judging by the results of inter-comparisons of instruments covering several days, the result of a single observation with two needles should not, from mere observational errors, have an uncertainty exceeding $\pm 1'$. This again postulates quiet magnetic conditions.

In the case of H there is a special complication. The complete formula for the deflection involves two constants P and Q. When deflections are limited to two distances, this implies the neglect of Q, and with deflections made at 30 cms. and 40 cms. the neglect of Q means in the average magnetometer at a British station an error of the order of 5γ. If P and Q remain constant, this error may be treated as constant at a given station for a number of years, and is then of no consequence for secular

change purposes. But the neglect of Q exposes the Observatory to the charge that it has not set before itself the highest ideal. On the other hand, when observations are taken at three distances, variations appear in the values of P and Q which it is difficult to fully credit, in view of the smallness of the accompanying changes of the magnetic moment of the collimator magnet. In accepting these changes as real, it may be that our pursuit of the higher ideal has not met with the anticipated reward. So far as the mere accuracy of observation is concerned, it would appear from comparisons of absolute observations and curve measurements at Kew Observatory—where the base line changes, apart from purely temperature effects, are very small—that the probable error in a single observation by a skilled observer, during a quiet time, is only about 3γ.

In this connection we must not lose sight of the actual significance of individual observational values. They do not represent the mean value of the element for a month, or even for a day, but the value at a particular time of a particular day. This value is affected, even on the quietest day, by the regular diurnal variation; and often, if not usually, there are more or less irregular movements peculiar to the day in question. At a station provided with magnetographs, *e.g.* Eskdalemuir, the absolute observations are not intended to give directly the mean monthly or annual values of the elements. They serve simply to supply the base line values for the curves. The monthly and yearly means are derived from hourly measurements of the curves, and are free from the influence of at least the regular diurnal variations. At a station like Valencia Observatory, unprovided with magnetographs, the absolute observations are the only source from which the mean monthly and annual values are obtainable. It is possible, by reference to other stations provided with magnetographs, to ascertain whether there has been unusual disturbance during any particular observation, and any such observation can then be omitted when forming monthly means. Also, by observing at a fixed hour of the day, a considerable step is taken to secure that the mean values during successive years are similarly affected by the regular diurnal variation. It must, however, be remembered that the amplitude of the regular diurnal variation not merely varies throughout the year, being larger in summer than in winter, but it also varies from year to year, showing generally a close parallelism with sunspot frequency. For instance, the departure of D at 13 h. from the mean value for the day during the six summer months of 1870 (a year of conspicuous sunspot maximum) averaged no less than $8'{\cdot}8$ at Kew Observatory, whereas the corresponding departure for the six winter months of 1913 (a year of sunspot minimum) was only $2'{\cdot}5$.

If other things are the same, it is obviously advantageous, so far as secular change is concerned, to observe at an hour of the day when the element has its mean value. There are at least two hours, one in the forenoon the other in the afternoon, when this occurs. In the case of H, unfortunately, these hours vary much with the season of the year. The morning hour is always inconveniently early, and in winter the afternoon hour is inconveniently late. In D the morning hour when the mean value for the day is attained does not depart very much from 10 h. throughout the year, an hour at which the light is usually good. There is, however, the disadvantage that the rate of change is at this hour about its maximum, so that small irregularities in the hour of observation are more than usually important. In dip the diurnal variation is very slow between 14 h. and 15 h., and the element is at the same time not far from its mean value for the day. This hour has accordingly been selected for the absolute dip observations at Kew Observatory.

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*

Eighth Year.—No. 1. JANUARY 1918]. Units based on the C.G.S. System. [*Price* 1*s*.

1. SUNSHINE AND SOLAR RADIATION.

Day.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W.							RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W.					ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W.						CAHIRCIVEEN.	
	Bright Sunshine.*		Radiation received on Horizontal Surface by Callendar Radiograph.					Bright Sunshine.*		Radiation at Noon by Ångström Pyrheliometer.			Bright Sunshine.*		Radiation by Ångström Pyrheliometer.				Bright Sunshine.*	
					Maximum.															
					For Day.		11.30 h. to 12.30 h.													
	Total.	Per cent. of Possible.	Daily Total.	Per cent. of Planetary.	Amount.	Time.		Total.	Per cent. of Possible.	Intensity.	Vertical Component.	Sky.	Total.	Per cent. of Possible.	Time.	Sky.	$\frac{p}{p_0}$ sec Z.	Intensity.	Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	0·1	1	50	7	11	13 30	2	0·4	5	...	...	...	0·8	11	...	...	...	...	2·0	26
2	0·0	0	90	13	13	12 15	13	0·0	0	...	...	...	1·5	21	...	...	...	...	3·1	40
3	3·7	47	230	34	19	11 30	19	3·9	49	31	8	Misty	*x* 6·0	83	12 27	Ci.	5·16	60	3·3	42
4	0·8	10	170	25	19	12 54	13	0·4	5	28	8	Misty	2·0	28	...	...	...	...	*x* 6·2	78
5	0·0	0	60	9	5	13 5	5	0·0	0	..	...	...	0·0	0	...	...	...	...	0·6	8
6	0·0	0	140	21	16	10 50	11	0·0	0	...	...	...	0·0	0	...	...	...	...	0·1	1
7	3·4	43	200	28	18	11 15	18	3·8	48	53	15	Clear	4·2	58	...	...	...	...	1·4	18
8	3·9	49	260	36	19	11 56	19	4·5	56	53	15	Clear	4·7	64	...	...	...	...	1·9	24
9	0·0	0	120	16	11	13 43	9	0·0	0	...	...	...	0·0	0	...	...	...	...	0·2	3
10	3·9	48	290	40	20	11 26	19	4·1	51	23	6	Ci.	0·0	0	...	...	...	...	4·2	52
11	1·3	16	160	22	14	13 15	13	0·9	11	...	...	...	0·0	0	...	...	...	...	2·6	32
12	0·5	6	170	23	18	10 15	14	1·2	15	...	...	...	3·9	52	...	...	...	...	1·6	20
13	5·2	63	260	34	17	11 18	17	6·2	76	57	17	Clear	5·7	76	...	...	...	...	0·1	1
14	0·0	0	130	17	15	12 36	14	0·0	0	...	...	...	0·0	0	...	...	...	...	0·0	0
15	0·0	0	70	9	8	9 50	6	0·0	0	...	...	...	2·8	37	...	...	...	...	0·0	0
16	1·3	16	200	25	26	13 12	20	2·7	32	50	15	Clear	2·5	32	...	...	...	...	5·2	63
17	0·0	0	*n* 30	4	*n* 3	11 22	3	0·0	0	...	...	...	0·0	0	...	...	...	...	0·0	0
18	0·0	0	130	16	17	10 7	8	0·0	0	...	...	...	0·0	0	...	...	...	...	0·0	0
19	0·0	0	160	19	15	13 15	12	0·0	0	...	...	...	0·0	0	...	...	...	...	0·0	0
20	0·0	0	120	14	13	12 41	10	0·0	0	...	...	...	0·0	0	...	...	...	...	0·2	2
21	4·6	54	340	39	22	13 12	21	5·3	62	...	...	...	0·0	0	...	...	...	...	0·1	1
22	1·6	19	260	30	24	12 59	22	1·6	19	...	...	...	0·0	0	...	...	...	...	0·2	2
23	0·7	8	230	25	21	10 57	20	0·8	9	...	...	...	0·0	0	...	...	...	...	0·0	0
24	3·9	45	350	38	26	10 58	25	3·8	44	56	18	Ci.	0·0	0	...	...	...	...	1·8	21
25	2·2	25	310	33	27	11 25	23	2·7	31	...	...	...	0·0	0	...	...	...	...	0·0	0
26	0·0	0	110	12	9	8 53	8	0·4	5	...	..	...	0·0	0	...	...	...	...	0·0	0
27	5·1	58	350	36	22	11 37	22	*x* 6·5	74	...	...	...	0·0	0	...	...	...	...	0·0	0
28	3·8	43	*x* 360	37	*x* 30	12 2	*x* 30	3·8	43	...	...	...	0·0	0	...	...	...	...	0·0	0
29	*x* 5·5	62	*x* 360	36	25	13 30	22	5·4	61	...	...	...	0·3	4	...	...	...	...	0·0	0
30	0·0	0	130	13	11	14 10	5	0·0	0	53	19	Ci.	3·0	35	...	...	...	...	0·0	0
31	0·0	0	100	10	8	12 55	5	0·0	0	...	...	...	4·1	48	...	...	...	...	0·0	0
Means	1·68	20	192	23	17	—	14	1·87	23	—	—	—	1·35	18	—	—	—	—	1·13	14
Normal	0·65	8	156	—	—	—	—	1·39	17	—	—	—	0·94	12	—	—	—	—	1·55	19
	←— 5 years —→		3 years					←—35 years —→					←— 5 years —→						←— 35 years —→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M. S. L.:—H = 9·1 m. H_b = 13·7 m. H_a = 26·4 m. Above Ground: h_t = 1·3 m. h_r = 0·56 m. h_a = 13·9 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount (0–10) and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
							Vapour Pressure.		Percentage.											
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9h.		21 h.		9 h.	21 h.				
			a.	*a.*	*a.*	*a.*									Tenths of Sky covered.					
	mb.	mb.	200+	200+	200+	200+	millibar.		%	%	°	m/s.	°	m/s.			mm.	*a.* 200+		
1	1028·3	1030·4	77·4	78·3	79	76	6·5	6·7	78	75	35	6	50	14	10	2	—	75	Fine dry day.	
2	1031·3	1032·0	79·2	79·7	81	77	8·0	8·0	85	82	45	10	50	5	8	7	—	76	Dry day. Fine sunset.	
3	1031·5	1033·8	76·3	75·1	79	73	6·7	5·1	86	72	50	6	80	7	1	0	—	75	Fine dry day.	
4	1034·8	1030·7	70·1	74·4	76	*n* 70	4·3	6·2	88	91	70	2	—	0	2	2	—	68	Fine and bright.	
5	1025·2	1017·7	75·2	76·6	78	72	6·0	6·7	84	85	80	4	65	2	6	8	—	70	⌓⋃ *n*. ⊕ *a*. Fine *a*. and *p*.	
6	1007·6	1000·7	75·6	79·5	80	74	6·7	7·3	91	75	—	0	310	6	8	3	1·3	73	o. *n*. ∞ *a*. and *p*. p. in evening.	—
7	998·0	1007·0	74·0	73·1	78	71	5·5	5·3	84	87	360	9	360	7	10✲	5	3·8	73	c. p. ✲△. ⊠ 9th	—
8	1017·9	1024·7	71·1	71·2	*n* 74	*n* 70	5·2	5·2	100	97	—	0	—	1	10✲	3	5·5	69	c. p. ✲ all day. ⊠	68° 5·8′
9	1026·8	1025·9	78·4	78·4	79	*n* 70	5·9	7·8	*n* 66	87	285	13	270	8	7	3	1·6	*n* 65	c. p. ✲ *n*. c. p. ▲ *a*. and *p*.	19° 40·3′
10	1025·0	1022·3	79·1	79·8	80	79	8·4	8·6	89	87	265	8	255	7	4	2	1·1	77	Fine *n*. p. *a*. and *p*., with ⌒.	17878 γ
11	1018·7	1012·6	78·9	77·0	80	77	9·0	7·2	98	89	245	2	185	2	9	3	0·8	77	b. c. p. *n*. o. c. *a*. Fine evening.	—
12	1006·2	1009·1	75·8	77·3	79	75	7·3	5·6	98	68	—	1	5	6	9	7	—	73	Fine to fair.	
13	1012·1	1012·8	75·8	75·2	80	75	6·1	5·9	83	82	75	3	95	4	9	5	5·8	71	o. to ● *a*. and *p*. Fine evening.	
14	1004·5	994·5	78·5	79·4	82	75	8·2	9·2	91	96	140	7	70	4	10●	10●	24·8	74	o. *n*. Steady ● all day.	
15	996·6	996·7	76·5	74·1	77	74	6·3	6·1	86	93	—	1	55	5	10	10	3·1	75	o. to ● *n*. Cold day, with p. ✲	
16	1009·6	1011·9	74·8	76·4	77	73	6·3	6·4	91	82	—	1	85	4	4	10	0·7	72	b. c. p. ▲ *n*. Fine *a*. Fair to o. *p*.	
17	1004·0	994·1	76·9	81·3	82	76	6·9	10·5	85	97	70	8	150	9	10	10	8·0	74	p. d. *n*. o. to d. *a*. and *p*.	
18	985·5	987·0	82·8	82·8	84	82	11·2	11·0	93	91	185	7	130	5	10	7	11·5	78	● *n*. o. p. to o. *a*. and *p*. ⋃ *p*.	
19	980·7	978·2	84·1	83·2	84	82	11·9	10·9	91	88	130	11	155	11	10●	9	6·3	82	● *n*. o. ● q. to c. *a*. Fair *p*.	
20	976·8	975·7	83·1	82·9	84	82	11·1	11·1	90	92	140	10	140	5	10	10	5·4	82	● *n*. and *a*. Fine to dull day.	
21	978·4	983·3	82·4	82·2	83	82	10·8	10·1	92	88	145	9	155	7	10	10	2·8	81	o. p. *n*. and *a*. Fair day. p. evening.	19° 38·5′
22	983·9	993·5	82·6	81·2	84	81	10·8	10·3	91	96	120	3	—	1	9	10	4·7	81	o. to c. *n*. and *a*. Calm day, with d.	17865 γ
23	999·0	1001·4	81·6	84·0	84	81	10·6	12·9	96	99	155	11	170	9	10●	10	14·7	80	o. *n*. ● *a*. p. d. during day.	—
24	1007·0	1017·5	82·8	83·1	84	83	11·7	11·8	97	96	205	4	170	7	10●	8	0·5	82	o. p. *n*. ●⁰ *a*. Fair later.	—
25	1017·2	1016·2	83·5	83·6	84	83	10·8	12·3	85	97	170	9	170	10	10	10●	20·8	82	o. *n*. o g. *a*. ● later. 24th	—
26	1013·2	1013·7	83·1	82·9	84	82	11·4	11·6	93	96	170	10	190	5	10	8	9·9	83	● *n*. ●⁰ during day. ⋃	68° 6·1′
27	1015·4	1009·5	82·2	83·4	84	82	10·7	12·1	93	97	155	9	170	12	8	10	11·6	81	Fair *n*. and *a*. ● *p*.	
28	1010·0	1010·2	83·9	83·3	84	83	12·4	12·3	96	99	170	11	170	10	10	10●	9·0	83	o. to d. *n*. and *a*. Damp day.	
29	1011·6	1014·7	84·0	83·2	84	83	12·5	12·3	96	99	175	8	165	7	10	10	4·2	83	Damp *n*. and *a*. ● later.	
30	1013·4	1010·1	83·2	83·7	84	83	11·9	11·5	96	90	160	10	145	14	10	10	6·0	83	Dull *n*. and *a*. g.	
31	1009·0	1007·8	83·9	84·7	85	84	11·7	12·0	91	88	160	13	150	16	10	10	*x* 27·3	83	o. d. ● *n*. and *a*. g.	19° 39·4′
Means	1009·0	1008·9	79·6	79·7	81·2	77·7	8·8	9·0	90	89		6·6		6·8	8·5	7·2	191·2	76·8	Monthly **Totals or Means.**	17872 γ
Normal	1012·6	1012·8	79·8	79·9	82·3	77·6	8·6	8·6	87	87		6·4		6·4	—	—	148·2	—	**Normals.**	68° 6·0′
	←——— 45 years ———→						←——— 30 years ———→				←——35 years——→						45 yrs.			

* By Campbell-Stokes Sunshine Recorder.

x denotes the maximum and *n* the minimum value in the column.

Wt. 37652/515—400—1/19.—N. & Co., Ltd. **Gp. XV.**

3. METEOROLOGY :—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 5·5 m. Barometer, H_b = 10·4 m. Cups of Anemometer, H_a = 25 m.
Heights above Ground :—Thermometers, h_t = 3·0 m. Rain-gauge, h_r = 0·53 m. Cups of Anemometer, h_a = 20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	Remarks.
							Vapour Pressure.		Percentage.										
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
	mb.	mb.	*a.* 200+	*a.* 200+	*a* 200+	*a.* 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	*a.* 200+	
1	1020·2	1026·1	74·0	75·8	76	73	5·0	6·0	77	81	45	9	34	6	10	10	0·2	71	✳ 2 h.–3 h. Mostly dull.
2	1027·6	1028·3	72·1	75·7	78	72	4·9	6·4	86	87	—	1	315	2	0≡⁰⌙	0	—	66	⌙ early. Fine to dull. ≡10 h. and 18 h.
3	1030·0	1033·4	73·3	71·2	75	70	5·0	4·6	81	86	360	4	—	1	5	0≡⁰⌙	—	67	✳⁰ 6 h. 30 m. Fine to fair. ⌙ *n.*
4	1031·8	1028·8	68·9	74·3	75	68	3·9	6·0	87	89	11	2	270	2	? 2≡⁰⌙	10	—	65	≡ early. ⌙ in *a.* Mostly dull.
5	1026·9	1021·8	75·1	75·6	77	75	6·5	5·3	91	73	270	2	159	2	? 10≡⁰	10	0·1	71	Dull. ≡⁰ *a.*
6	1009·6	995·8	72·6	75·6	76	72	5·1	7·2	86	98	—	1	—	1	8≡⁰	!10≡	5·3	68	Fine to o. △⁰ 12 h. 48 m. ● 15 h.–21 h. ≡ *n.*
7	992·8	995·0	75·1	71·7	76	70	6·2	3·2	88	59	225	2	326	3	9≡⁰	0⌙	—	71	Dull to 10 h. 30 m. Fine later.
8	1005·2	1013·8	69·9	68·7	*n* 72	68	1·9	2·8	*n* 38	64	337	7	293	5	7	1	0·3	66	✳ 3 h.–4 h. ⊠ 9 h. c. to fine. ✳⁰ 20 h. 15 m.
9	1020·0	1015·5	67·5	77·2	77	*n* 66	3·4	6·1	86	74	281	3	259	6	10≡⁰	10	0·2	*n* 61	✳ 9 h. 45 m.–11 h. ⌙ early. Fine to o.
10	1018·5	1016·1	76·9	78·8	80	76	6·6	7·0	81	76	259	5	259	6	4	10	—	73	Fine to fair. ●⁰ 18 h. 30 m.
11	1015·0	1011·0	78·4	77·6	79	76	7·7	7·2	86	85	270	5	225	5	10≡⁰●	8	0·6	74	● 8 h. 50 m.–10 h. 30 m. Dull *a.* Finer *p.*
12	1005·1	1001·4	75·7	76·3	78	75	6·0	6·7	81	86	236	4	236	2	8	10	0·1	71	Fine to dull. d. 18 h.–19 h.
13	1006·8	1013·6	73·4	74·3	77	72	4·6	4·8	73	72	259	4	270	2	1⌙	10	—	67	⌙. Fine all day.
14	1017·7	1006·6	71·2	76·3	77	71	2·5	5·8	47	75	23	2	180	7	10≡⁰	10	0·4	69	✳ early. ⊠. Dull *a.* Fair *p.* ✳⁰ p. 14 h.
15	994·7	995·4	81·4	74·0	83	74	9·3	6·3	85	96	236	6	56	5	10	10●✳	*x* 20·3	73	● early. ✳ and △ most of day. [to fine.
16	1000·1	1018·0	74·3	72·9	75	72	6·1	5·6	91	92	326	5	—	1	10≡⁰✳	0≡⁰⌙	15·3	73	✳ and ● 7 h. ⊠. ✳ 8 h. 45 m.–10 h. 30 m. Dull
17	1011·8	1006·4	73·7	75·2	79	72	6·3	6·9	98	97	191	4	—	1	*10*≡✳	*10*≡	10·7	68	✳ 4 h. 40 m.–9 h. ● 10 h. 30 m.–17 h. ⊠ 9 h.
18	999·4	998·9	82·3	82·8	82	79	10·1	10·8	87	89	191	7	203	7	10	10●	6·5	73	Dull, with p. ● after 20 h. [≡ *a.* o.
19	1000·2	996·1	82·0	82·7	84	82	10·4	9·3	91	79	191	2	169	6	9≡⁰	10	7·7	78	● to 3 h. 50 m. Dull. ● 23 h.–24 h.
20	995·3	992·3	82·3	85·1	85	80	9·5	9·5	82	69	169	7	191	10	10	10	1·5	74	● at times. Dull to fair.
21	996·7	997·3	82·0	82·9	86	81	9·6	9·5	85	79	191	4	169	6	7≡⁰	10	0·1	76	Fine to fair. Shower 23 h. 55 m.
22	995·7	1000·1	82·0	82·8	85	81	10·0	11·0	88	91	180	4	180	3	6	10≡⁰	4·0	77	● early. Fine to dull, with p.
23	1009·7	1018·6	81·1	82·9	84	81	10·3	10·5	96	87	236	3	203	5	10≡⁰	10	0·3	76	≡ 9 h. 30 m. Dull to fair. ● at *n.*
24	1024·7	1028·9	83·9	83·2	*x* 86	*x* 82	10·8	10·0	84	81	214	6	191	5	9	10	0·3	80	● early. Dull to fine. ⏀ 21 h.
25	1032·3	1030·9	79·4	82·2	84	78	9·0	10·6	94	92	191	2	214	5	9≡⁰	10	—	71	Fine to o.
26	1029·8	1027·7	81·6	79·7	82	79	9·8	8·0	88	82	203	4	214	6	9	10	—	77	Fair to fine.
27	1028·4	1027·4	79·5	76·5	84	76	8·8	7·5	91	95	203	3	180	2	9≡⁰	0≡⁰	0·1	77	o. early. Fine later.
28	1027·5	1027·5	78·7	75·9	82	73	8·5	6·6	94	88	191	4	—	0	9≡⁰	0≡⁰	0·2	68	≡ early. Dull *a.* Fine *p.* ⌙ *n.*
29	1027·5	1028·4	78·0	76·8	83	74	8·3	7·3	96	92	203	2	—	0	10≡⁰	? 0≡	0·1	68	⌙ early. o. early. Fine later. ≡ *n.*
30	1029·6	1028·8	73·8	75·0	77	72	5·5	6·5	85	93	—	0	—	1	*10*≡⌙	*10*≡⌙	0·1	69	⌙. ≡² all day.
31	1029·0	1028·9	73·1	71·8	74	70	5·8	5·6	95	100	—	1	—	1	*10*≡⌙	*10*≡⌙	0·3	68	⌙. ≡² all day.
Means	1014·8	1014·8	76·5	77·1	79·6	74·6	7·0	7·1	84	84		3·7		3·7	8·1	7·4	74·7	71·2	Monthly **Totals** or **Means**.
Normal	1016·4	1016·2	76·3	76·8	79·2	74·5	6·8	7·0	86	85		3·5		3·6	—	—	46·7 (45 years)	—	**Normals.**
			45 years				30 years				35 years								

4. METEOROLOGY :—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 242 m. Barometer, H_b = 237·3 m. Vane of Anemometer, H_a = 250 m.
Heights above Ground :—Thermometers, h_t = 0·9 m. Rain-gauge, h_r = 0·38 m. Vane of Anemometer, h_a = 15 m.

																			Remarks.
1	1002·0	1000·1	75·6	72·0	76	68	6·2	4·9	85	86	34	9	—	1	10	2	0·3	73	Dull, d.⁰ early. Fair to fine *a.* and *p.* Clear *n.*
2	999·9	1002·9	75·3	73·1	79	71	6·5	5·1	90	83	337	3	11	3	2⌙	5⌙	—	65	Fine. ⌙⁰. Fair. v. *a.* ⌙ *n.*
3	1005·1	1003·7	68·1	69·1	72	66	3·4	2·3	81	52	11	3	304	3	0⌙	2⌙	—	65	⌙. Cloudless. v. y. *a.* ⌙ q. 23 h.
4	998·3	997·3	76·5	75·2	79	71	6·9	6·5	88	91	236	6	293	3	9	4	0·4	62	Fair. ⏀ 1 h. o. d. ~ 7 h. Fair *a.* and *p.* Fine
5	993·8	987·1	76·3	77·1	78	73	6·7	6·9	86	84	270	3	270	5	10●	10	0·4	68	●⁰ 7 h. o. to c. *a.* Dull *p.* q. *n.* [*n.*
6	974·9	960·2	74·0	74·3	77	72	6·5	5·3	100	80	203	6	270	11	10≡:⁰	3	3·6	73	●⁰≡⁰ *a.* Sleet, ≡●⁰ *p.* ✳ p. to fine *n.*
7	962·9	968·9	67·3	68·7	72	67	2·6	2·2	67	*n* 51	337	5	360	13	4	1	0·5	68	✳ p. early. ⊠. Fine *a.* ✳ p. *p.* ✳╋ *n.*
8	979·0	985·2	63·2	64·6	*n* 68	63	1·7	2·0	60	66	360	4	315	8	0	0	0·1	64	⊠. Very fine *a.* ✳ p. 14 h. Fine. Cold *n.*
9	979·6	980·0	70·8	76·5	77	64	4·6	6·4	89	81	225	4	270	10	10✳	4	3·6	61	Fair early. ✳⊠ *a.* o. p. *p.* Fine q. *n.*
10	980·6	977·8	77·2	76·2	78	75	7·3	6·3	89	82	247	11	270	9	10●	7	8·9	73	q. at first. ● showers all day.
11	984·6	973·4	67·5	73·4	75	66	2·5	5·6	62	89	191	2	247	5	6	5✳	4·2	64	Fair. ⌙ early. Fine to o. *a.* ✳≡⁰ *p.* ⊠ b. c. *n.*
12	969·8	969·1	71·8	69·7	75	69	4·9	3·7	89	78	281	8	304	7	5	2	3·0	69	Sleet and ✳ showers. ⊠ 8 cm. Fine later.
13	973·5	984·6	70·4	63·2	72	62	4·2	2·0	84	71	293	11	326	6	1	0	—	66	< 1 h. Cloudless. ⊠. Air dry *p.* Cold. ⏀
14	984·8	965·6	58·2	70·4	74	*n* 55	1·7	5·1	87	100	—	0	203	2	10	10✳	4·6	*n* 51	Cloudless. Very cold. ⊠✳ after 14 h. [*n.*
15	959·5	970·0	73·4	69·3	74	68	4·7	2·8	75	60	293	11	360	3	7	10	—	69	✳⁰ at first. Fine. ⊠ *a.* Fair to o. *p.* Cloudy *n.*
16	974·4	982·4	60·5	70·0	72	61	1·9	3·6	87	74	—	1	225	5	5	10	2·3	58	⏀ 1 h. Fine. ⊠ *a.* ✳ *p.* Fair to o. *n.*
17	982·3	978·0	65·0	69·4	71	64	3·2	4·4	100	93	—	0	11	3	7	10≡⋮	0·1	60	⊠ o. to c. ≡ after 11 h. ≡ *p.* ≡:⁰ *n.*
18	964·6	967·7	72·1	72·9	73	70	5·6	5·8	99	95	34	8	45	9	10✳≡⁰	10	*x* 31·4	66	Persistent ✳. ≡⁰ all day. ╋⊠
19	971·5	963·4	73·7	76·1	77	73	6·3	7·4	98	97	90	10	203	3	10≡⁰	10≡⁰	22·3	72	✳≡⁰ early. ●≡⁰⊠. ╋ *a.* ●²≡⁰ later.
20	960·8	953·8	77·3	77·4	78	76	8·3	7·9	100	95	203	8	—	0	10≡⋮⁰	10≡⁰	19·1	73	●≡⁰ at first. ≡⊠. Rapid thaw *a.* ●≡⁰ *p.* and
21	961·7	965·5	77·8	78·2	80	76	8·4	8·5	98	97	214	8	157	2	10≡⁰	10●≡⁰	27·5	75	[*n.*
22	966·8	970·8	76·8	77·3	79	76	7·4	7·9	93	95	45	2	360	3	10●	10●≡⁰	8·3	75	●≡⁰ *a.* ●⁰ *p.* Dull. Damp, with ≡⁰ and ●⁰.
23	976·3	980·7	78·4	79·5	81	76	8·6	9·4	97	97	—	1	169	6	10≡⁰	10●≡⁰	13·6	75	Damp, ≡⁰ *a.* d.⁰ ≡: *p.* ●²≡⁰ *n.*
24	984·2	990·5	80·6	79·9	81	*x* 79	10·4	9·7	100	98	214	15	203	6	10●≡⁰	10≡⋮	15·2	79	[≡⋮ *n.*
25	993·7	991·7	78·7	79·1	80	78	8·9	9·1	98	97	203	12	203	13	10≡⁰	10●	4·5	78	●²≡⁰ early. ≡:⁰●⁰ *a.* 🌂 12 h.–15 h. ●² *p.*
26	991·3	988·3	79·6	80·0	81	*x* 79	9·5	8·6	98	86	191	14	203	13	10≡⋮⁰	10	15·2	78	≡. d.⁰ at first. Dull, ≡⁰ *p.* ● *n.* [🌂 *n.*
27	991·0	990·0	78·8	80·0	81	*x* 79	9·2	9·9	100	99	203	10	203	12	10≡⋮	10≡⁰	5·0	78	●:⁰ early. Damp *a.* and *p.* ●² after 22 h.
28	988·7	991·7	78·9	80·0	81	*x* 79	9·2	8·6	100	86	214	15	203	11	10●≡⁰	10	2·4	79	🌂●² 1 h. ≡:² 8 h. d.⁰. ≡:⁰ rest of day.
29	990·9	992·5	79·9	79·2	80	77	7·4	8·5	74	90	191	8	203	10	9	10●	7·5	74	≡:⁰● or d. *a.* and *p* Dull *n.*
30	995·8	996·7	77·5	73·3	81	72	7·2	6·2	85	100	225	5	—	1	8≡⁰	0	—	77	Sunny 8 h. ●²≡⁰ *a.* Damp *p.* o. *n.*
31	996·7	996·9	75·3	75·1	*x* 83	71	6·3	6·2	87	87	—	1	—	1	6≡⁰⌙	0≡⁰	—	68	o. early. Fair. ∞ *a.* Fair to fine. ∞ *n.*
																			Fine. ≡⁰⌙² at first. o. to c. ∞ *a.* and *p.* Fine *n.*
Means	981·9	981·5	73·4	74·2	76·8	70·8	6·1	6·1	89	85		6·6		6·0	7·7	6·6	204·0	69·5	Monthly **Totals** or **Means**.
Normal 1911-15	983·6	983·2	74·6	75·0	77·3	72·6	6·3	6·4	89	88		5·3		5·8	—	—	111·0	—	**Normals.**

Temperatures at or below the normal freezing point of water are printed in small type.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Magnetic Force. Horizontal Comp't. Mean Time.	Horizontal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination. North.	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 2·47. 3 h.	9 h.	15 h.	21 h.	Charge per cc. $\times 10^{16}$. +	Charge per cc. $\times 10^{16}$. −	Air-Earth Current $\times 10^{16}$.
																	About 15 h.		About 15 h.
	a. 200 +	*a.* 200 +	cm.	cm.	h m	γ	h m	° ′	h m	° ′			v/m.	v/m.	v/m.	v/m.	Coulomb.		Amp/cm².
1	74·5	78·5	235	…	…	…	…	…	…	…	0	0	175	520	550	690	·52	·07	0·40
2	74·5	78·5	235	…	…	…	…	…	…	…	0	1	395	620	535	810	·17	·56	0·25
3	74·4	78·4	236	…	11 24	18441	14 24	14 59·8	14 27	66 59·5	1	0	485	570	725	810	…	…	…
4	74·2	78·4	236	…	…	…	…	…	…	…	1	0	775	…	705	690	·45	·11	…
5	74·2	78·3	235	…	…	…	…	…	…	…	1	0	415	520	465	430	…	…	…
6	74·2	78·2	234	…	…	…	…	…	…	…	1	2	485	605	85	35	…	…	…
7	74·1	78·0	232	…	…	…	…	…	…	…	1	0	155	…	360	930	·19	·19	0·95
8	74·1	78·0	230	…	…	…	…	…	…	…	0	1	120	…	…	…	…	…	…
9	74·0	77·9	228	…	…	…	…	…	…	…	0	0?	…	…	550	465	·17	·24	0·95
10	73·9	77·9	227	…	11 13	18442	14 23	14 59·7	14 20	66 58·4	1	0	345	330	500	415	·34	·04	0·75
11	74·0	77·9	226	…	…	…	…	…	…	…	0	1	295	−85	500	535	·22	·30	0·35
12	73·9	77·8	225	…	…	…	…	…	…	…	2	1	175	395	395	205	…	…	…
13	74·0	77·8	225	…	…	…	…	…	…	…	1	0	205	360	275	585	…	…	…
14	73·9	77·8	225	224	…	…	…	…	…	…	1	0	395	570	430	295	·39	·15	0·45
15	74·1	77·7	226	…	…	…	…	…	…	…	1	2	−85	105	−205	*z* ±	…	…	…
16	74·3	77·6	289	…	…	…	…	…	…	…	0	1	485	0	…	985	…	…	…
17	74·3	77·6	357	…	11 11	18433	…	…	14 37	66 57·8	0	1	845	550	140	585	…	…	…
18	74·4	77·5	367	…	…	…	14 23	14 59·2	…	…	0	1	175	190	190	15	…	…	…
19	76·7	77·3	378	…	…	…	…	…	…	…	0	1	…	120	360	240	…	…	…
20	77·5	77·4	383	384	…	…	…	…	…	…	0	1	−15	120	140	175	…	…	…
21	78·0	77·6	380	…	…	…	…	…	…	…	1	1	120	295	345	465	·60	·11	1·05
22	78·3	77·8	378	…	…	…	…	…	…	…	0	1	*z* −	655	620	520	·19	·13	1·65
23	78·7	78·0	375	…	…	…	…	…	…	…	0	0	535	760	520	550	·30	·09	0·85
24	79·4	78·1	372	…	11 11	18445	14 24	14 59·7	14 20	66 57·9	0	0	120	520	450	535	·30	·32	1·35
25	79·5	78·4	371	…	…	…	…	…	…	…	0	0	310	640	520	345	·37	·00	1·40
26	79·6	78·5	371	…	…	…	…	…	…	…	1	0	190	485	450	415	·11	·19	…
27	79·3	78·7	369	…	…	…	…	…	…	…	1	0	205	395	415	260	…	…	…
28	78·3	78·9	365	…	…	…	…	…	…	…	0	0	225	…	275	120	…	…	0·80
29	77·7	78·9	360	…	…	…	…	…	…	…	2	0?	…	…	465	605	·17	·22	2·10
30	77·0	79·0	355	…	…	…	…	…	…	…	2	1	500	895	1105	1535	…	…	…
31	76·4	79·0	350	…	11 35	18396	…	…	14 21	67 1·4	2	0	1175	1395	1310	2190	…	…	…
M.	75·9	78·1	299	—	—	—	—	—	—	—	—	—	359*	507*	478*	566*	—	—	—
	76·8	79·7	←12 years→																

* Mean of 21 days.

6. GEOPHYSICS :—ESKDALEMUIR.

Day.	Magnetic Force. North Component. Maximum. 15000 γ+. h m	γ	Minimum. 15000 γ+. γ	h m	West Component. Maximum. 4000 γ+. h m	γ	Minimum. 4000 γ+. γ	h m	Vertical Component. Maximum. 44000 γ+. h m	γ	Minimum. 44000 γ+. γ	h m	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 6·04. 3 h.	9 h.	15 h.	21 h.	Charge per cc. $\times 10^{16}$. +	Charge per cc. $\times 10^{16}$. −	Air-Earth Current. $\times 10^{16}$.
															About 15 h.				About 15 h.		About 15 h.
																			Coulomb.		Amp/cm².
1	4 14	992	961	11 56	13 55	969	927	21 54	16 45	1096	1081	11 10	0	1 *b*	135	135	285	750	…	…	…
2	1 50	999	968	12 20	18 22	977	930	2 20	19 20	1091	1077	13 22	0	0 *a*	330	280	275	670	…	…	…
3	23 4	1001	944	17 46	17 32	999	892	24 0	18 30	1109	1072	10 27	1	0 *a*	200	395	545	535	…	…	…
4	2 43	1030	958	14 10	13 41	976	881	2 11	23 8	1096	1073	3 14	0	1 *a*	150	150	220	275	…	…	…
5	23 36	1003	913	11 36	14 42	975	896	17 50	18 0	1104	1075	11 5	1	1 *b*	200	150	230	135	…	…	…
6	23 51	1043	926	13 51	15 32	978	906	1 25	16 12	1101	1067	3 35	1	2 *c*	−695	100	60	170	…	…	…
7	0 0	1032	958	0 26	{13 18 / 14 15}	966	909	0 40	15 42	1084	1070	0 12	0	1 *c*	130	255	405	770	…	…	…
8	7 28	988	959	12 23	13 46	966	943	0 12	16 0	1083	1076	8 27	0	1 *b*	260	575	265	*			
9	24 0	1008	962	12 27	14 9	969	929	24 0	22 50	1083	1070	10 25	0	?	*	*	*	*	…	…	…
10	{0 8 / 10 10}	1023	954	13 16	14 45	981	917	18 36	18 31	1092	1069	9 10	0	? 2 *c*	*	*	−350	285	…	…	…
11	5 51	993	953	12 14	13 45	962	939	10 25	16 14	1081	1072	5 50	0	1 *b*	275	360	2225	405	…	…	…
12	23 27	1032	912	13 16	14 56	994	838	23 23	15 14	1121	1068	10 53	1	0 *b*	370	460	430	480	…	…	…
13	21 20	1006	911	14 6	13 38	984	871	0 7	14 36	1095	1073	10 47	1	0 *b*	265	275	500	450	…	…	…
14	0 39	1002	949	{12 0 / 13 22}	14 2	977	898	{2 36 / 2 48}	20 44	1091	1050	3 45	0	1 *b*	590	560	−590	165	…	…	…
15	21 59	991	938	{15 40 / 16 0}	14 31	971	895	22 23	19 35	1093	1064	10 25	1	1 *b*	220	615	505	490	…	…	…
16	23 12	997	955	9 26	14 15	971	919	2 41	0 18	1078	1064	12 10	0	1 *b*	210	620	630	580	…	…	…
17	22 54	1012	942	14 0	12 43	967	926	23 13	16 15	1077	1060	11 0	0	0 *a*	245	505	820	730	…	…	…
18	0 0	992	953	11 37	13 36	971	922	0 8	15 50	1072	1062	13 27	0	2 *c*	710	785	*z* ±	−145	…	…	…
19	7 6	993	960	{11 55 / 12 45}	{13 48 / 14 17}	970	935	{10 6 / 10 10}	16 10	1067	1062	13 30	0	2 *c*	150	210	−1065	−175	…	…	…
20	7 28	1003	949	13 55	13 28	985	940	9 58	16 55	1069	1054	11 30	0	2 *c*	−480	95	−280	−1595	…	…	…
21	1 5	1025	930	17 17	{14 23 / 14 42}	983	912	23 32	17 36	1088	1044	1 25	1	2 *c*	−80	60	515	*z* −	…	…	…
22	0 25	1014	949	13 32	3 35	979	926	1 54	16 40	1066	1039	3 50	0	2 *c*	275	−1695	0	−170	…	…	…
23	1 8	998	960	12 32	13 50	960	920	1 31	16 10	1065	1051	3 10	0	1 *b*	465	145	350	25	…	…	…
24	8 24	1004	920	17 5	16 57	985	939	10 3	17 16	1083	1049	10 20	0	2 *c*	355	210	155	285	…	…	…
25	2 12	1006	949	11 15	2 0	967	908	20 32	20 29	1066	1046	2 18	0	? 1 *b*	†	†	230	45	…	…	…
26	21 19	1008	964	12 29	3 45	971	903	21 15	21 9	1065	1051	4 15	0	2 *b*	−1095	145	330	335	…	…	…
27	1 0	1019	930	13 5	14 8	980	911	1 19	16 0	1071	1046	1 5	0	1 *b*	25	285	360	170	…	…	…
28	23 40	1013	959	17 30	14 49	970	931	9 27	17 10	1067	1054	1 16	0	1 *b*	110	20	230	170	…	…	…
29	7 50	1008	900	20 18	17 46	*x*1025	865	22 24	21 40	1142	1044	10 6	1	1 *a*	225	170	70	135	…	…	…
30	20 50	*x* 1097	*n* 860	23 40	1 37	1006	*n* 728	23 58	17 39	1118	*n* 903	23 41	2	0 *a*	200	350	415	695	…	…	…
31	22 13	1019	895	0 41	14 34	1011	735	0 3	20 14	*x* 1147	922	0 7	2	0 *a*	515	480	615	720	…	…	…
M.	—	1011	940	—	—	979	900	—	—	1089	1052	—	—	—	135‡	211‡	309‡	288‡	—	—	—

* 8th–10th, jet frozen. † 25th, insulation bad. ‡ Mean of 25 days. *x* denotes the maximum and *n* the minimum value in the column. *z* Indeterminate.

7. JERSEY (ST LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M. S. L.:—H = 54 m. H_b = 55 m. Above Ground:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level.				Air Temperature in Degrees Absolute.						Min. Temp. on Grass.	Percentage of Humidity.				Rain 0 h. to 24 h.	REMARKS.
	7 h.	14 h.	21 h.	Mean of 3 Readings.	7 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.		7 h.	14 h.	21 h.	Mean.		
	mb.	mb.	mb.	mb.	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	%	%	%	%	mm.	
1	1006·9	1010·6	1016·6	1011·3	71·0	73·5	76·2	77·0	*n* 69·4	73·4	71·3	79	80	84	81	3·0	✳ 4 h. 30 m. to 10 h.
2	1019·8	1022·0	1022·2	1020·0	74·2	74·7	74·0	78·0	73·2	74·8	73·9	94	89	94	92	0·5	≡⁰ 7 h. *g.*
3	1020·5	1021·9	1025·4	1022·6	75·9	76·9	75·0	77·6	74·8	76·0	66·0	79	57	71	69	—	✳⁰ showers.
4	1026·3	1026·0	1025·0	1025·8	72·0	76·6	73·0	77·2	71·9	74·1	65·2	81	51	76	69	—	
5	1022·6	1019·5	1015·9	1019·4	72·7	75·2	73·7	76·4	72·3	74·1	*n* 63·9	94	61	82	79	—	⌣. Fair.
6	1005·7	999·9	993·9	1000·2	73·2	77·2	81·3	82·0	72·5	77·2	65·2	96	94	100	97	1·2	⌣≡⁰ 10 h. ≡² 14 h. 30 m. to 17 h. ●
7	989·1	987·3	990·1	988·8	78·2	77·5	73·3	81·0	73·0	76·6	73·3	100	82	98	93	5·8	≡² 6 h. to 10 h. ▲⁰✳² 18 h.
8	998·6	1006·9	1012·1	1005·8	72·7	73·2	72·9	*n* 74·0	71·1	72·8	66·4	92	*n* 35	64	64	0·2	✳ 5 h. [and 21 h.
9	1018·9	1018·6	1019·4	1019·0	73·3	77·7	78·8	79·5	70·8	76·0	67·0	58	70	74	67	1·0	✳ *n*. ●⁰ 14 h. 30 m. ● 15 h. 30 m.
10	1020·6	1019·9	1018·7	1019·8	79·3	81·5	79·4	81·6	78·5	80·0	74·5	77	76	85	79	4·3	Moderate squalls *a*.
11	1016·1	1013·7	1011·3	1013·7	78·5	79·9	78·0	80·6	77·0	78·8	74·4	91	84	83	86	1·5	u. 11 h. ● showers.
12	1003·4	998·6	997·3	999·8	75·5	75·2	75·6	77·0	75·1	75·7	71·5	77	94	97	89	3·0	●⁰ 9h. 30 m. ● 19 h.
13	1003·1	1008·3	1011·3	1007·5	76·5	78·9	76·8	79·0	75·2	77·3	70·1	48	57	71	59	—	
14	1011·1	1009·5	1003·4	1008·1	77·0	77·0	76·9	77·2	75·8	76·8	68·0	80	66	84	77	—	
15	997·1	995·9	993·9	995·7	81·9	83·0	83·2	83·8	77·0	81·8	72·3	100	98	93	97	*x* 10·5	● 4 h. ≡²●² 9 h. ●² 20 h.
16	994·4	1010·1	1013·9	1006·2	80·3	80·0	77·8	83·6	77·0	79·7	75·9	97	60	77	78	1·8	⁄ from W.S.W. *n*. ● 8 h.
17	1004·7	1005·1	1004·5	1004·7	81·7	82·2	81·0	83·6	77·6	81·2	68·2	97	89	94	93	1·3	● 4 h. and 16 h. 15 m.
18	996·6	996·1	996·6	997·0	81·1	82·1	82·0	82·9	80·6	81·7	77·5	90	87	87	88	0·2	●⁰ 6 h. 30 m.
19	994·2	991·1	991·0	992·1	81·6	82·6	82·6	83·4	81·0	82·2	78·9	85	73	79	79	—	
20	987·4	984·6	988·6	986·9	82·6	85·9	81·5	*x* 86·0	*x* 81·6	83·5	77·7	72	55	85	71	—	
21	990·6	989·3	987·5	989·1	81·1	83·4	82·6	84·2	80·8	82·4	77·4	92	76	83	84	0·7	● 21 h.
22	988·5	990·0	993·7	990·7	81·9	81·9	82·3	83·2	81·4	82·1	78·7	91	89	88	89	0·6	● 4 h. ●⁰ 13 h.
23	1004·7	1011·5	1015·9	1010·6	81·3	82·4	81·9	82·7	80·2	81·7	73·8	98	82	92	91	—	≡² 9 h. to 11 h.
24	1020·5	1022·2	1024·5	1022·4	80·6	84·1	81·1	84·2	80·4	82·1	77·5	94	79	93	89	—	
25	1025·9	1026·2	1027·0	1026·3	79·4	82·0	80·0	82·9	78·9	80·6	74·8	97	84	98	93	—	Fair to cloudy.
26	1025·0	1022·7	1022·7	1023·5	78·1	78·3	79·0	79·2	77·5	78·4	74·9	100	97	97	98	—	≡² 4 h. to 10 h. 30 m.
27	1022·5	1021·9	1022·1	1022·1	77·5	81·6	79·5	82·2	77·2	79·6	74·4	100	79	95	91	—	≡² 4 h. to 8 h. 30 m.; afterwards fair.
28	1021·4	1021·0	1021·7	1021·3	78·1	81·9	80·9	82·8	77·8	80·3	72·2	94	82	75	84	—	≡² 4 h. 30 m. to 5 h. 30 m.; afterwards
29	1020·7	1021·1	1022·1	1021·3	77·9	81·8	80·2	82·4	77·5	80·0	71·2	94	78	89	87	—	Fine. [fine.
30	1021·7	1021·1	1021·3	1021·4	78·0	82·8	80·9	83·2	77·4	80·5	71·3	74	68	79	74	—	Fine.
31	1021·3	1020·6	1021·4	1021·1	78·0	82·5	80·8	83·2	77·6	80·4	72·7	92	67	76	78	—	Fine.
Means	1009·8	1010·1	1010·7	1010·2	77·8	79·8	78·8	81·0	76·7	78·8	72·3	87	75	85	83	35·6	
Normal	1011·8	1011·7	1012·3	1011·9	78·5	79·7	78·9	80·6	77·2	79·0	73·9	84	77	82	81	64·6	

JERSEY (ST LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0–12 on the Beaufort Scale).			Mean.	Sunshine.*		Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming.														Mean Amount.
							Upper.		Lower.			Upper.		Lower.			Upper.		Lower.		
	7 h.	14 h.	21 h.		Total.	Per cent. of Possible.	Tenths.	Type.	Direction.	Type.	Direction.	Tenths.	Type.	Direction.	Type.	Direction.	Tenths.	Type.	Direction.	Type.	Direction.	
							7 h.	7 h.	7 h.	7 h.	7 h.	14 h.	14 h.	14 h.	14 h.	14 h.	21 h.	21 h.	21 h.	21 h.	21 h.	
	Dir. (0–12)	Dir. (0–12)	Dir. (0–12)		hr.	%																
1	ENE 4	ENE 4	NE 4	4·0	0·6	7	10	…	…	Nb.	…	9	…	…	Cu., Cu.-Nb.	ENE	10	…	…	…	…	9·7
2	E 3	— 0	NE 1	1·3	0·0	0	10	…	…	…	…	10	…	…	Cu.-Nb.	NE	0	…	…	…	…	6·7
3	NE 3	ENE 3	ENE 3	3·0	2·1	25	4	A.-Cu.	NE	Cu.	NE	7	…	…	Fr.-Cu., Nb.	NE	10	…	…	…	…	7·0
4	ENE 1	S 1	— 0	0·7	6·8	82	4	A.-Cu.	NE	…	…	0	…	…	…	…	1	…	…	…	…	1·7
5	E 1	ESE 1	SE 2	1·3	7·9	95	2	…	…	…	…	2	Ci.	N	…	…	1	…	…	…	…	1·7
6	S 3	S 3	WSW 4	3·3	0·6	7	3	Ci.	…	…	…	10	…	…	…	…	10	…	…	Nb.	…	7·7
7	— 0	NNE 3	NNE 2	1·7	0·1	1	10	…	…	≡ Nb.	…	10	…	…	St.-Cu., Nb.	WNW	10	…	…	Nb.	…	10·0
8	NNE 3	N 3	WNW 3	3·0	6·3	76	8	…	…	…	…	2	…	…	…	…	7	…	…	…	…	5·7
9	NW 2	W 3	WNW 3	2·7	0·9	11	5	…	…	Cu.	NW	10	…	…	Cu.-Nb.	NW	8	…	…	Nb.	…	7·7
10	W 4	W 4	WSW 4	4·0	4·3	52	5	…	…	Cu.-Nb.	W	8	…	…	Cu.-Nb.	WNW	4	…	…	Cu.-Nb.	…	5·7
11	WSW 3	WSW 3	SW 2	2·7	3·5	42	4	A.-Cu.	W	Fr.-Nb.	WNW	3	…	…	Nb.	SW	8	…	…	…	…	4·7
12	S 3	ESE 2	— 0	1·7	0·0	0	9	…	…	…	…	10	…	…	Nb.	…	10	…	…	…	…	9·7
13	NNW 3	WNW 3	WNW 1	2·3	7·7	91	6	…	…	Cu.-Nb.	NW	4	…	…	Cu.	NW	5	…	…	…	…	5·0
14	SW 4	SSW 3	S 5	4·0	7·9	93	2	A.-Cu.	WNW	…	…	5	A.-Cu.	WNW	…	…	10	…	…	…	…	5·7
15	SW 5	SW 6	SW 6	5·7	0·0	0	10	…	…	Nb.	…	10	…	…	Nb.	WSW	10	…	…	Nb.	…	10·0
16	W 5	WNW 3	SW 2	3·3	6·0	71	10	…	…	Nb.	…	4	…	…	Cu.	WNW	8	…	…	…	…	7·3
17	SSW 5	SSW 4	S 2	3·7	0·0	0	10	…	…	Nb.	…	10	…	…	…	…	8	A.-Cu.	SW	…	…	9·3
18	SSW 4	SSW 4	SSW 5	4·3	0·8	10	10	…	…	Nb.	S	10	…	…	St.-Cu.	WSW	10	…	…	…	…	10·0
19	SSW 3	S 4	SW 5	4·0	0·4	5	10	…	…	…	…	10	A.-Cu.	SW	…	…	10	…	…	…	…	10·0
20	SSE 5	SW 6	S 5	5·3	2·3	26	10	A.-Cu.	SE	…	…	6	Ci.	SW	…	…	5	Ci.	SSW	…	…	7·0
21	S 4	SSE 3	SE 4	3·7	7·3	83	3	A.-Cu.	SW	…	…	2	Ci.-Cu.	…	…	…	10	…	…	Nb.	…	5·0
22	SSE 4	SSE 3	SE 2	3·0	1·0	11	6	A.-Cu.	SW	…	…	7	A.-Cu.	SSW	…	…	7	A.-Cu.	SW	…	…	6·7
23	WSW 3	SSW 4	S 4	3·7	2·1	24	10	…	…	…	…	10	A.-Cu.	WSW	…	…	10	…	…	…	…	10·0
24	S 3	SSE 2	S 3	2·7	3·3	37	3	A.-Cu.	SW	…	…	6	A.-Cu.	SW	…	…	2	…	…	…	…	3·7
25	S 3	SSE 3	SSE 2	2·7	8·2	92	4	A.-Cu.	…	St.	…	2	…	…	St.	…	8	…	…	Cu.-Nb.	SW	4·7
26	S 3	S 3	S 3	3·0	1·1	12	10	…	…	≡	…	10	…	…	…	…	10	…	…	…	…	10·0
27	S 2	S 2	S 2	2·0	8·3	91	10	…	…	≡	…	0	…	…	…	…	0	…	…	…	…	3·3
28	S 2	SSE 2	SE 2	2·0	9·1	100	2	.	…	…	…	0	…	…	…	…	0	…	…	…	…	0·7
29	SE 2	S 2	SE 3	2·3	8·8	96	2	…	…	St.	…	0	…	…	…	…	0	…	…	…	…	0·7
30	ESE 2	ESE 3	SE 2	2·3	9·2	100	0	…	…	…	…	0	…	…	…	…	0	…	…	…	…	0·0
31	ESE 2	SSE 3	SE 3	2·7	9·3	100	0	…	…	…	…	0	…	…	…	…	0	…	…	…	…	0·0
Means	3·0	3·0	2·9	3·0	126·1	47	6·2	—	—	—	—	5·7	—	—	—	—	6·2	—	—	—	—	6·0
Normal	3·7	3·9	3·8	3·8	77·5	29	7·5	—	—	—	—	7·1	—	—	—	—	6·7	—	—	—	—	7·1

* Actinic rays by Jordan Recorder.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	7·4	...	7·4	...	7·8	...	7·8	...	3·0	...	7·3	...	1·4	...	3·3	17·0	6	55
2	...	7·1	1·4	...	...	3·8	...	0·8	...	Ca	lm	...	...	3·3	...	1·4	13·8	23	40
3	...	1·2	...	6·1	...	2·0	...	4·8	...	0·6	...	3·2	...	4·3	...	...	12·4	6	40
4	...	3·8	2·6	...	...	4·7	7·1	...	...	4·0	9·7	...	...	2·6	6·4	...	14·0	11	35
5	...	1·3	3·0	...	...	0·9	2·1	...	1·2	...	5·8	...	1·1	...	5·5	...	9·9	15	20
6	1·0	...	4·8	...	1·2	...	5·8	...	...	1·1	5·5	...	...	2·2	10·9	...	19·3	24	0
7	...	10·9	7·3	...	...	10·0	4·1	...	...	11·5	7·7	...	...	13·3	...	5·5	20·1	16	50
8	...	13·5	...	2·7	...	7·7	1·5	...	...	12·5	8·4	...	...	10·2	...	...	21·6	14	35
9	...	6·7	6·7	...	...	5·5	13·3	...	...	3·5	17·4	...	...	2·8	14·1	...	26·0	14	50
10	...	2·8	14·1	...	...	2·6	13·1	...	...	2·7	13·8	...	...	2·6	13·1	...	20·6	6	15
11	...	2·7	13·8	...	...	Ca	lm	...	1·9	...	9·3	...	...	...	11·5	...	19·9	0	40
12	...	...	11·5	...	...	7·2	7·2	...	...	7·1	10·6	...	...	10·2	10·2	...	18·9	21	5
13	...	10·0	10·0	...	...	8·1	8·1	...	...	8·1	8·1	...	...	7·9	...	3·3	18·6	0	50
14	...	3·4	...	5·2	5·7	...	...	3·8	10·3	...	2·0	...	5·4	...	8·1	...	18·5	15	55
15	...	8·1	5·4	...	...	7·2	7·2	...	...	5·5	1·1	...	...	1·8	...	2·7	15·5	7	0
16	...	1·9	...	4·5	...	4·2	...	0·8	...	2·0	10·0	...	...	...	6·6	...	15·8	6	35
17	0·4	...	2·3	...	2·0	...	0·4	...	1·0	...	...	5·1	0·6	...	...	2·9	8·0	14	15
18	5·5	...	3·7	...	6·9	...	2·9	...	4·7	...	7·1	...	3·5	...	3·5	...	17·0	13	15
19	...	Ca	lm	...	4·6	...	...	...	7·7	...	...	1·5	9·8	...	...	...	16·1	21	20
20	6·8	...	1·3	...	6·2	...	...	...	5·7	...	...	2·4	9·1	...	3·8	...	18·3	23	15
21	6·2	...	4·2	...	6·5	...	1·3	...	10·8	...	...	...	6·6	...	...	...	19·6	0	25
22	2·3	...	...	1·9	4·3	...	...	2·9	5·2	...	...	...	3·8	...	...	0·8	11·8	11	50
23	6·6	...	...	...	2·9	...	4·3	...	6·8	...	1·3	...	6·6	...	4·4	...	15·2	18	0
24	8·1	...	5·4	...	10·9	...	4·5	...	9·4	...	3·9	...	5·6	...	5·6	...	20·9	6	10
25	6·4	...	2·6	...	8·3	...	1·7	...	7·3	...	3·0	...	10·0	...	4·1	...	19·2	19	45
26	8·8	...	3·6	...	8·2	...	3·4	...	9·3	...	1·9	...	10·8	...	...	...	20·1	21	55
27	6·6	...	4·4	...	7·1	...	1·4	...	7·7	...	1·5	...	9·6	...	1·9	...	18·4	23	30
28	9·1	...	3·8	...	8·7	...	1·7	...	7·3	...	3·0	...	8·0	...	1·6	...	17·7	10	0
29	8·0	...	1·6	...	8·3	...	1·7	...	6·9	...	2·9	...	8·3	...	1·7	...	16·4	5	0
30	6·9	...	2·9	...	7·7	...	1·5	...	7·9	...	...	...	6·8	...	...	1·3	14·3	23	25
31	7·4	...	...	1·5	9·2	...	...	...	8·2	...	...	...	7·5	...	...	...	15·7	9	40
S+N & W+E	170·9		145·7		180·4		115·2		180·9		153·5		175·7		134·2				
S−N & W−E	9·3		87·1		37·0		73·4		57·7		114·5		50·5		91·8				

SCOTLAND N.:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	...	5·1	...	1·0	...	0·6	2·9	...	...	...	12·5	...	...	8·2	12·3	...	14·8	21
2	...	11·6	4·8	...	...	10·3	4·3	...	...	9·6	6·4	...	...	11·6	2·3	...	14·1	20
3	...	9·3	1·9	...	...	6·0	4·0	...	...	1·0	5·1	...	...	1·7	8·7	...	11·8	18
4	...	5·4	8·1	...	...	4·0	6·0	...	...	2·7	4·1	...	...	3·1	4·7	...	11·1	1
5	...	1·6	8·0	...	...	2·6	13·1	...	...	2·1	10·6	...	...	1·9	9·3	...	15·7	10
6	...	3·0	...	1·3	...	6·8	...	4·6	...	6·2	...	9·2	...	10·6	...	7·1	15·4	24
7	...	11·8	4·9	...	...	17·0	7·0	...	...	20·6	4·1	...	...	17·3	7·2	...	24·3	13
8	...	15·3	10·2	...	...	13·0	8·7	...	...	10·7	10·7	...	...	5·8	8·7	...	18·4	3
9	...	Ca	lm	...	11·9	...	...	2·4	...	4·4	10·6	...	...	2·4	5·7	...	13·4	10
10	...	3·4	5·2	...	...	8·2	12·3	...	...	9·8	6·6	...	...	11·8	11·8	...	17·0	22
11	...	7·1	10·6	...	...	2·8	6·7	...	...	2·1	5·2	...	2·2	...	1·4	...	13·8	4
12	3·5	...	...	3·5	0·5	...	...	2·6	...	0·8	...	1·8	...	5·7	...	2·4	12·1	24
13	1·6	...	1·6	...	...	14·4	14·4	...	...	7·3	10·9	...	...	2·4	11·9	...	20·3	9
14	...	4·7	7·1	...	...	Ca	lm	...	5·8	...	...	8·7	12·3	...	...	8·2	16·4	20
15	...	1·2	5·8	...	...	15·8	...	3·1	...	9·2	6·2	...	...	8·3	8·3	...	19·7	6
16	...	5·3	7·9	...	...	8·7	13·0	...	...	2·0	10·0	...	...	6·2	9·2	...	17·0	18
17	...	3·1	7·6	...	...	4·0	...	1·6	5·4	...	...	8·1	5·5	...	2·3	...	9·8	1
18	6·2	...	4·2	...	1·1	...	2·8	...	...	6·7	...	2·8	...	Ca	lm	...	9·2	12
19	2·4	...	1·0	...	3·9	...	...	...	6·7	...	...	6·7	10·7	...	...	10·7	18·0	23
20	9·4	...	...	3·9	3·8	...	0·8	...	3·2	...	0·6	...	1·9	...	...	1·3	15·4	1
21	...	1·1	...	2·8	...	15·0	...	10·0	...	10·7	...	10·7	...	8·3	...	8·3	18·0	9
22	...	7·0	...	10·4	...	7·5	...	11·1	...	8·6	...	12·8	...	8·2	...	12·3	16·1	17
23	...	5·3	...	12·8	...	4·1	...	10·0	...	...	...	6·6	5·4	...	...	8·1	13·8	1
24	7·9	...	...	5·3	7·7	...	...	1·5	9·2	...	...	...	7·1	...	1·4	...	12·1	13
25	6·5	...	1·3	...	12·3	...	2·4	...	10·2	...	...	...	11·3	...	2·2	...	12·5	10
26	8·7	...	1·7	...	5·8	...	1·2	...	6·6	...	...	4·4	9·0	...	1·3	...	10·8	18
27	7·6	...	5·1	...	6·9	...	2·9	...	8·0	...	1·6	...	8·5	...	...	...	12·8	24
28	12·3	...	...	2·4	1·8	...	9·0	...	2·6	...	...	0·5	5·2	...	...	...	13·1	1
29	4·5	...	0·9	...	5·6	...	...	...	6·6	...	...	...	6·1	...	1·2	...	9·8	16
30	5·5	...	1·1	...	6·6	...	...	...	4·8	...	1·0	...	4·5	...	0·9	...	8·5	24
31	6·6	...	...	...	8·3	...	...	1·7	9·1	...	...	3·8	9·6	...	1·9	...	11·1	18
S+N & W+E	184·0		142·4		227·0		158·4		192·7		182·3		212·8		171·6			
S−N & W−E	−18·6		55·6		−64·6		64·6		−36·3		30·1		−14·2		54·8			

ENGLAND S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	2·8	...	6·7	...	5·9	...	5·9	...	4·1	...	9·8	...	...	...	6·1	24·3	10	35
2	...	...	...	5·7	2·1	...	...	5·0	...	Ca	lm	...	1·1	...	...	2·6	10·4	1	0
3	1·6	...	...	3·8	2·0	...	...	4·9	...	...	...	3·7	...	...	...	6·0	12·8	11	50
4	...	...	...	4·2	...	...	...	3·1	...	...	...	3·6	1·4	...	...	3·4	8·5	19	25
5	1·8	...	...	1·8	4·2	...	...	4·2	4·3	...	...	4·3	4·7	...	...	4·7	10·8	12	30
6	4·1	...	...	...	...	3·3	...	3·3	...	1·4	3·3	...	...	5·1	2·1	...	11·3	16	45
7	...	4·2	4·2	...	...	7·9	3·3	...	...	10·3	4·3	...	...	11·6	...	...	23·7	16	0
8	...	10·0	...	...	...	10·4	...	...	...	10 4	4·3	...	...	11·5	4·7	...	21·0	7	40
9	...	8·7	...	...	...	3·4	8·3	...	...	9·3	9·3	...	...	4·3	10·3	...	20·4	15	20
10	...	3·7	8·9	...	...	1·8	4·3	...	...	3·6	8·6	...	...	3·4	3·3	...	16·3	0	35
11	...	3·7	8·9	...	...	2·0	4·9	...	...	0·8	1·9	...	...	Ca	lm	...	15·0	1	5
12	3·1	...	...	...	2·3	...	...	1·0	...	...	...	2·6	4·7	...	4·7	...	11·5	22	15
13	...	7·2	...	...	...	3·1	...	...	...	1·4	3·3	...	2·1	...	5·0	...	12·1	3	55
14	...	...	5·1	...	5·9	...	...	...	6·7	...	2·8	...	7·5	...	...	...	15·6	23	30
15	...	...	12·2	...	...	...	5·8	...	4·9	...	11·7	...	...	...	...	...	20·8	20	0
16	...	10·0	...	...	...	9·7	4·0	...	...	Ca	lm	...	3·9	...	...	...	18·3	0	45
17	6·8	...	2·8	...	2·9	...	7·0	...	4·9	...	4·9	...	5·5	...	2·3	...	15·7	4	40
18	7·3	...	3·0	...	5·9	...	5·9	...	6·3	...	2·6	...	7·4	...	7·4	...	17·2	20	55
19	7·4	...	...	...	10·4	...	...	...	6·6	...	...	...	6·1	...	2·5	...	15·0	9	10
20	7·4	...	...	3·1	7·4	...	...	7·4	9·1	...	9·1	...	9·0	...	3·7	...	26·0	12	40
21	7·8	...	...	...	11·1	...	...	...	6·1	...	...	...	5·7	...	...	5·7	18·7	6	25
22	6·9	...	...	...	5·9	...	...	2·5	3·7	...	...	...	1·6	...	4·0	...	10·5	6	20
23	...	...	5·0	...	2·0	...	4·7	...	7·6	...	3·4	...	7·1	...	2·9	...	13·8	16	20
24	8·6	...	...	...	8·1	...	3·4	...	9·8	...	2·0	...	0·3	...	0·3	...	15·5	13	15
25	1·9	...	0·8	...	8·3	...	3·4	...	4·2	...	2·8	...	5·2	...	3·5	...	11·2	21	0
26	4·8	...	3·2	...	8·3	...	...	...	10·0	...	...	...	7·3	...	3·0	...	13·9	14	20
27	5·8	...	2·4	...	1·8	...	1·8	...	6·3	..	...	...	10·0	...	...	...	12·7	20	50
28	9·6	...	...	...	6·7	...	...	...	5·8	...	...	...	7·1	...	...	...	13·5	0	5
29	8·8	...	...	...	5·8	...	...	...	7·5	...	...	...	5·4	...	...	...	14·4	1	55
30	5·0	...	...	...	4·2	...	...	...	8·9	...	...	3·7	9·2	...	...	3·8	13·2	23	50
31	9·2	...	...	3·8	9·2	...	...	3·8	10·8	...	...	4·5	10·8	...	...	4·5	14·7	22	10
S+N & W+E	158·2		85·6		162·0		97·9		164·8		106·5		159·0		101·5				
S−N & W−E	57·6		27·4		67·0		15·7		−82·2		42·1		87·2		27·9				

ENGLAND E.:—GREAT YARMOUTH.

Height of Head above—Roof 10·7 m., Ground 12·8 m., M.S.L. 15·9 m.
Height of Cups above—Roof 3·7 m., Ground 18·3 m., M.S.L. 22·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust. (Gorleston.)	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	4·9	...	10·8	...	4·3	...	10·3	...	6·9	...	6·9	...	3·8	...	2·6	15·5	0	30
2	...	2·4	1·0	...	...	1·6	4·0	...	...	4·0	1·6	...	...	3·2	0·6	...	14·1	20	10
3	...	5·9	...	...	...	5·6	...	...	...	2·6	...	...	...	2·3	2·3	...	16·5	3	40
4	...	2·2	3·2	...	...	...	4·6	...	...	1·8	4·3	...	...	0·7	3·5	...	8·0	14	25
5	...	0·4	2·3	...	...	...	3·3	...	0·7	...	3·5	...	1·6	...	4·0	...	6·9	23	35
6	1·8	...	4·3	...	2·2	...	3·2	...	1·4	...	2·2	...	1·4	...	3·3	...	8·6	12	50
7	1·6	...	4·0	...	No	rec	ord	...	...	3·7	5·5	...	...	1·0	5·1	...	12·8	10	25
8	...	6·7	6·7	...	...	5·2	3·4	...	...	4·4	6·6	...	...	4·7	7·1	...	24·5	3	30
9	...	4·6	6·8	...	...	0·8	4·2	...	1·3	...	6·5	...	...	1·7	8·3	...	...	...	...
10	...	1·7	8·3	...	...	...	8·2	...	...	...	8·5	...	...	...	8·5	...	15·0	12	30
11	...	...	9·5	...	...	3·3	1·4	...	...	1·1	2·8	...	3·7	...	5·5	...	17·9	5	10
12	1·3	...	6·8	...	1·2	...	5·8	...	No	rec	ord	...	No	rec	ord	...	12·1	1	45
13	No	rec	ord	...	No	rec	ord	...	...	3·1	7·6	...	...	2·6	6·4	...	15·2	13	30
14	...	1·8	4·3	...	...	1·0	2·4	...	4·2	...	...	0·8	6·5	...	...	1·3	19·8	22	5
15	6·8	...	1·3	...	...	...	6·2	...	...	1·0	4·8	...	...	Ca	lm	...	16·0	0	5
16	...	1·4	3·3	...	...	4·8	...	1·0	...	0·9	4·5	...	4·8	...	1·0	...	16·2	9	15
17	3·5	...	0·7	...	2·0	...	0·4	...	5·5	...	...	3·7	4·2	...	...	6·2	19·0	10	0
18	4·2	...	0·8	...	5·8	...	1·2	...	4·7	...	3·1	...	5·2	...	3·4	...	11·3	11	35
19	2·5	...	1·7	...	3·3	...	3·3	...	3·5	...	0·7	...	4·6	...	...	...	8·8	9	0
20	7·4	...	1·5	...	5·9	...	...	...	7·7	...	...	1·5	7·9	...	...	...	18·0	20	35
21	5·8	...	1·2	...	3·9	...	...	...	4·8	...	...	1·0	4·6	...	...	...	13·4	2	30
22	4·9	...	...	...	4·6	...	...	...	2·6	...	...	...	3·3	...	...	...	10·0	10	5
23	2·3	...	...	...	2·2	...	1·4	...	0·9	...	2·1	...	3·8	...	2·6	...	9·3	22	15
24	4·3	...	2·9	...	3·2	...	0·6	...	2·6	...	3·8	...	3·8	...	...	0·8	10·3	0	30
25	3·0	...	...	...	3·2	...	2·2	...	3·6	...	...	...	2·3	...	0·4	...	9·2	1	35
26	2·9	...	4·3	...	2·2	...	3·2	...	3·3	...	1·4	...	4·3	...	1·8	...	...	...	...
27	2·5	...	2·5	...	2·1	...	2·1	...	2·6	...	...	...	2·3	...	...	...	8·5	3	0
28	1·6	...	...	...	2·6	...	0·5	...	2·2	...	1·4	...	2·6	...	...	...	...	...	...
29	1·8	...	0·8	...	1·8	...	0·8	..	2·3	...	...	0·4	3·5	...	0·7	...	6·5	19	0
30	1·5	...	0·6	...	1·5	...	0·6	...	2·9	...	0·6	...	1·6	...	0·3	...	5·1	15	0
31	2·6	...	...	...	2·8	...	...	1·1	2·7	...	...	1·8	3·6	...	...	1·5	7·7	21	55
S+N & W+E	94·3		90·6		77·1		75·4		89·0		87·6		95·6		77·2				
S−N & W−E	30·3		67·0		23·9		50·6		30·0		55·4		55·6		52·4				

9. Seismological Diary.

Earthquakes:—Eskdalemuir.

Day.	Phase.	Time, G.M.T.	Period.	Amplitudes. $A_{N.}$	$A_{E.}$	$A_{Z.}$	Δ.	Remarks.
		h m s	s	μ	μ	μ	km.	
1		0 0 to	...	...	...	...	...	During this interval there was recorded an almost continuous movement of an irregular kind, of low amplitude, and without definite period. More pronounced in E.-W. direction than in N.-S.
		15 0	...	...	...	...	...	
3		0 19 to	...	...	...	...	...	Faint disturbance.
		0 42	...	...	...	...	...	
3		14 0 to	...	...	...	...	...	Slight disturbance, including two groups of long waves; period of first group 26 s., of second group 20 s.
		14 21	...	...	...	...	...	
4	P	4 44 37	...	...	...	...	...	
	S	4 54 38	...	...	...	...	...	
	L	5 9	...	..	...	...	...	
	M	5 19	20	...	4	...	...	
	F	5 51	...	...	...	...	...	
4		16 30 to	...	...	...	...	...	Slight disturbance. Preliminary phases indistinctly marked.
		17 30	...	...	...	...	...	
15	L	16 14 to	...	...	...	...	...	
		16 28	...	...	...	...	...	
16	S ?	7 23 54	...	...	...	...	...	
	L	7 29	...	...	...	...	...	
	M	7 30 37	19	...	25	...	...	
	F	8 0	..	...	...	...	...	
16	i	13 47 10	...	...	...	...	...	Slight disturbance.
	L	14 5	...	...	...	...	...	
25		1 50 to	...	...	...	...	...	Slight disturbance, with long wave on E.-W. trace at 2 h. 6 m.
		2 30	...	...	...	...	...	
27	L	2 59	...	...	...	...	...	
30	P	21 29 37	...	...	...	...	7700	
	PR_1	21 32 44	...	...	...	...	...	
	PR_2	21 34 18	...	...	...	...	...	
	S	21 38 44	...	...	...	...	...	
	i	21 40 12	...	...	...	...	...	
	i	21 48 31	23	82	...	...	...	
	L ?	21 53	...	...	...	...	...	
	F	23 30	...	...	...	...	...	

Microseisms of N. Component:—Eskdalemuir.

Day.	0 h. $A_{N.}$	0 h. T.	6 h. $A_{N.}$	6 h. T.	12 h. $A_{N.}$	12 h. T.	18 h. $A_{N.}$	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	1·0	6·5	1·6	6	1·4	6	1·2	6
2	1·8	5	2·3	5·5	1·7	5·5	1·8	5
3	1·3	5·5	1·7	5·5	0·9	5·5	0·9	6
4	1·0	5	1·5	5	1·7	5	1·3	5·5
5	1·1	5	1·3	5	1·7	5	1·5	5·5
6	1·8	5	1·8	5	1·7	5·5	2·0	5
7	2·3	5·5	2·7	6	2·5	6	2·7	6
8	2·3	6	3·0	6	2·2	6	2·2	5·5
9	1·7	6	2·3	6	2·7	6	2·7	6
10	2·6	6	2·3	6	2·0	6	2·5	5
11	2·0	6	2·4	5·5	1·8	5	1·9	6
12	1·7	6	2·9	6	3·1	6	4·1	6
13	1·7	5	6·3	5·5	5·6	5	4·4	5
14	3·2	5	2·8	5	3·2	5·5	3·9	5·5
15	2·8	6	3·3	5	3·5	5	3·5	5
16	3·7	6	3·7	5·5	3·2	6	...	...
17	...	...	...	...	2·8	6	2·7	5·5
18	1·9	6	1·4	6·5	1·8	4·5	2·6	4·5
19	2·3	5	2·0	6	3·1	5	2·8	5·5
20	2·9	6	2·5	6	3·1	6	3·2	6
21	1·9	6	2·9	6	2·7	5·5	4·1	5·5
22	3·8	5	3·4	6	4·3	6	4·4	6
23	3·6	6	4·4	6·5	3·7	7·5	2·6	7
24	2·8	6	3·5	6	2·6	5·5	2·5	6
25	2·5	5·5	2·7	7	2·4	6·5	2·2	7
26	2·1	7	2·0	8	2·5	7	2·2	6·5
27	3·0	6·5	2·6	8	2·4	7	2·0	7
28	2·1	7	2·2	6·5	2·1	7	1·7	5
29	1·5	6	1·6	6	1·0	6	1·2	6
30	1·9	6	1·6	6	1·5	6	1·5	6
31	2·3	6	1·9	5·5	1·9	6	2·1	6

Means for Month $\begin{cases} A_N = 2·4. \\ T = 5·8. \end{cases}$ Normals, 1911–16 $\begin{cases} A_N = 2·6. \\ T = 6·2. \end{cases}$

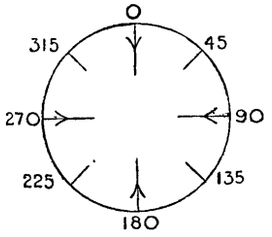
Earthquakes:—Richmond (Kew Observatory).

Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h m	h m	
4	...	5 20	Very small. Time approximate as time break failed.
14	...	20 28	Very small.
15	...	16 27	Very small.
16	...	14 9	Very small.
21	...	20 59	Small.
25	2 0	2 9	
30	21 39	21 53	Amplitude on trace 1·2 mm.

10. Soundings with Pilot Balloons.

Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	m/s.	By Anemometer. From N.	m/s.	At Heights above M.S.L. 500 m. From N.	m/s.	1000 m. From N.	m/s.	2000 m. From N.	m/s.	3000 m. From N.	m/s.	4000 m. From N.	m/s.	5000 m. From N.	m/s.	Cloud Observations. Type.	From N.	m/s.
		h. m.	°		°		°		°		°		°		°		°			°	
3	Eskdalemuir .	9 10	20	9	15	2·6	10	9·5	25	11·0	10	20·0	...	...	...	...	...	...	Cu.	...	...
3	,,	12 45	360	5	350	5·5	355	6·5	25	6·5	355	11·5	360	21·0	...	...	...	...	Cu.	...	...
3	S. Farnboro' .	15 15	20	9	?	5·0	30	7·0	50	8·0	25	11·0	20	17·5	15	20·5	...	...	St.-Cu.	...	...
4	,,	8 0	320	5	—	0·0	315	7·5	325	10·5	355	13·0	...	...	...	...	...	...	Ci.	45	...
4	Cahirciveen .	8 45	50	5	—	0·0	260	1·4	15	2·4	65	13·0	50	18·0	...	...	...	...	Ci., Cu.	115	...
5	,,	8 35	140	3	90	3·8	125	6·0	165	3·8	145	5·5	160	8·0	175	11·5	180	12·0	Ci., Ci.-Cu., A.-Cu., A.-St., Cu.	...	...
7	S. Farnboro' .	8 0	270	7	280	4·0	315	12·0	310	12·5	280	18·5	...	...	...	...	...	...	St.-Cu.	...	...
7	,,	12 30	340	9	300	3·5	335	7·5	340	8·5	335	8·0	270	16·5	...	...	...	...	...	...	...
7	Eskdalemuir .	12 45	340	7	315	9·0	315	9·0	330	12·0	325	7·5	330	10·5	...	...	...	...	A.-Cu., Cu.	...	...
8	,,	9 25	360	16	360	5·0	330	8·0	330	12 0	335	16·5	330	19·5	...	...	...	...	Cu.	...	...
9	S. Farnboro' .	8 0	290	13	275	6·5	280	13·5	300	16·5	340	15·5	...	...	...	...	...	...	St., St.-Cu.	...	...
10	,,	8 0	290	20	275	6·5	290	16·0	300	21·0	300	21·0	305	16·0	...	...	...	...	Ci.-St., Ci.-Cu. Ci.-St., Cu.	...	...
10	,,	12 10	290	18	295	10·0	290	15·5	295	20·5	295	16·0	300	17·0	300	20·0	...	...	...	...	...
10	,,	12 20	290	18	295	11·5	285	16·0	295	19·0	305	15·0	295	16·0	...	...	...	...	Ci., Ci.-St., Ci.-Cu., St.-Cu., Fr.-Cu.	...	...
11	,,	8 10	290	18	270	8·0	285	16·0	305	18·5	310	19·0	...	...	...	...	...	...	A.-Cu., St.-Cu., Fr.-St.	...	...
11	Eskdalemuir .	10 0	290	10	100	2·2	270	3·8	295	9·5	295	12·0	305	29·5	...	...	...	...	Ci.-St., A.-St.	...	...
12	,,	12 5	320	11	275	7·0	295	6·5	295	15·0	290	28·5	...	...	..	..	...	...	A.-Cu.	...	...
12	S. Farnboro' .	8 0	270	16	265	6·5	270	15·0	280	14·0	280	13·0	265	16·0	265	22·5	265	21·0	Ci.-St., St.-Cu.	...	...
14	Eskdalemuir .	9 20	?	?	—	0·0	170	7·0	125	13·5	165	10·5	220	19·5	...	...	...	...	A.-St.	...	...
15	,,	11 5	340	13	300	10·0	310	13·0	335	14·0	305	16·0	...	...	...	...	...	...	Ci., Cu.	265	10·3
16	Cahirciveen .	11 45	?	?	—	0·0	?	?	360	3·1	280	6·0	280	12·0	...	...	...	...	Ci., Cu.	...	...
16	S. Farnboro' .	15 40	270	9	280	2·0	255	5·0	260	6·5	305	7·5	290	17·5	...	...	...	...	St.-Cu.	...	...
21	,,	8 40	200	18	200	6·5	210	15·5	210	17·0	215	17·0	210	19·5	205	20·0	...	...	Ci., Ci.-Cu., Ci.-St.	...	...
23	,,	9 5	250	9	240	5·0	270	10·5	245	14·0	250	10·5	265	13·0	265	15·0	270	19·0	St.	...	...
25	,,	7 45	230	13	220	4·5	220	12·0	215	13·0	230	11·5	225	16·0	240	18·0	...	...	St., Ci.-St.	...	...
28	,,	16 5	200	11	200	5·5	215	12·0	215	17·0	220	8·5	...	...	...	...	...	...	St.	...	...
29	,,	15 55	200	9	215	3·5	195	7·5	215	10·0	220	14·0	200	10·5	205	10·0	...	...	Ci., St.	...	...
30	,,	14 55	160	11	160	4·0	185	8·0	200	7·0	180	8·5	170	8·5	175	10·0	...	...	...	...	...
30	Eskdalemuir .	9 0	230	13	225	4·5	210	10·5	220	17·0	205	13·5	190	10·5	...	...	...	...	Ci.-Str. Ci.-Cu. Str.	180 180 225	1·7 ... ...
31	,,	8 0	200	22	230	0·9	170	10·0	195	17·5	195	16·5	...	...	...	...	...	...	Ci. A.-Cu.	315 270	1·6 1·9
31	S. Farnboro' .	14 45	180	11	160	2·5	205	6·5	190	8·0	175	7·5	180	10·5	185	9·5	...	...	...	...	...

No soundings were made at Aberdeen.



Wind Protractor.

Height of Station above M.S.L. = H.
Height of Anemometer above ground = h.

	H.	h.
Eskdalemuir . .	242 m.	15 m.
S. Farnborough . .	70 m.	31 m.
Cahirciveen . .	30 m.	13 m.

Notes on Pressure Distribution.

January 1918.

3 7 h., 13 h., 18 h. High over the British Isles.
4 7 h. High over Ireland ; low over Scandinavia.
5 7 h. Low over Scandinavia and N. of the Azores.
7 7 h. 13 h. Depression over British Isles centered near Christiania.
8 7 h. High over Ireland ; low over the Baltic ; straight isobars.
9 7 h. High over the Bay of Biscay ; low over Scandinavia.
10 7 h., 13 h. High over the Bay of Biscay ; low over Scandinavia.
11 7 h. Low over the Baltic and N. of Azores.
12 7 h., 13 h. Shallow low over the North Sea.
14 7 h. Wedge over the British Isles.
15 13 h. Secondary off N. of the Channel.
16 13 h., 18 h. Secondary filling up near Holland.
21 7 h. High over the Continent and Iceland ; low over the British Isles.
23 7 h. Extensive low over the Atlantic.
25 7 h. High over the Continent ; low over Iceland ; straight isobars.
28 18 h.
29 18 h.
30 7 h., 13 h.
31 7 h., 13 h. } Low over Iceland and the Azores regions ; high over the Continent.

Notes on Ascents.

3rd, 15 h. 15 m. No cloud at start. St.-Cu. on N. horizon at the end of ascent.
11th, 10 h. Overcast.
14th, 9 h. 20 m. Overcast ; barometer falling unsteadily.
15th, 11 h. 5 m. Barometer rising fast.
16th, 11 h. 45 m. Ci. moving quickly.

11. Nephoscope Observations.

Aberdeen. Taken at 13 h. G.M.T.

Day.	Type of Cloud.	Velocity–height–ratio.				Remarks.
		Degrees from N.	Milliradians per Second.	Components.		
				W.-E.	S.-N.	
		°	mr/s.	mr/s.	mr/s.	
1	Ci.	12	3·2	− 0·7	− 3·1	Indefinite hazy cirrus in bands; radiant point E. by N.
2	St.-Cuf.	341	14·0	+ 4·6	− 13·2	Stratus in cumuliform masses.
4	Ci.	353	1·9	+ 0·2	− 1·9	Ci. changing into high Ci.-Cu., "speckle-cloud" of Ley.
5	St.-Cuf.	310	12·5	+ 9·6	− 8·0	
9	Ci.	345	6·0	− 1·5	− 5·8	Ci. to Ci.-Cu., faintly waved.
15	Cu.-Nb.	352	7·4	+ 1·0	− 7·3	Central part of cloud measured.
16	A.-St.	279	6·0	+ 5·9	− 0·2	A.-St., really formed from apical parts of Cu.-Nb.
26	Ci.-Cu.	234	3·3	+ 2·7	+ 1·9	Ci.-Cu., changing to thin A.-Cu. *Observation at 12 h.*
28	St.-Cu.	240	8·0	+ 6·9	+ 4·0	
29	St.-Cu.	233	4·0	+ 3·2	+ 2·4	St.-Cu. fused into lenticular sheets; edges ill-defined.
30	Fr.-St.	240	25·0	+ 22·0	+ 12·0	

12. Aurora.

Day.	a.m. or p.m.	Moon.	Magnetic Character.		Aurora Observations.	
			Eskdalemuir.	Richmond.	Station.	Remarks.
1	p.	...	0, 0	0, 0	Paisley	
5	...	☾	...	...	...	
12	...	●	...	...	...	
13	p.	...	1, 0	1, 1	Eskdalemuir	
14	p.	...	0, 1	1, 1	Fort Augustus	
19	...	☽	...	...	...	
27	...	○	...	...	...	
30	p.	...	2, 2	2, 2	Deerness	
					Aberdeen	Faint glow late at night.
					Edinburgh	
					Rothesay	
					Eskdalemuir	Slight glow to N. by W. at 20 h. 20 m. for a few minutes.
					Colmonell	
31	a.	...	2, 2	2, 2	Aberdeen	Bright; white streamer type, 0 h. 30 m.–0 h. 45 m.

Note.—The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at the midnight of the night in question.

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*

Eighth Year.—No. 2. FEBRUARY 1918.] Units based on the C.G.S. System. [*Price* 1*s.*

1. SUNSHINE AND SOLAR RADIATION.

Day.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W.							RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W.					ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W.						CAHIRCIVEEN.	
	Bright Sunshine.*		Radiation received on Horizontal Surface by Callendar Radiograph.					Bright Sunshine.		Radiation at Noon by Angström Pyrheliometer.			Bright Sunshine.*		Radiation by Angström Pyrheliometer.				Bright Sunshine.	
	Total.	Per cent. of Possible.	Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Maximum. For Day. Time.	11.30 h. to 12.30 h.	Total.	Per cent. of Possible.	Intensity.	Vertical Component.	Sky.	Total.	Per cent. of Possible.	Time.	Sky.	$\frac{p}{p_0}$ sec Z.	Intensity.	Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	0·0	0	240	23	14	11 15	14	0·0	0	...	...	...	2·7	31	...	...	...	...	0·0	0
2	0·0	0	150	14	12	11 16	11	0·0	0	...	...	...	0·0	0	...	...	...	...	0·0	0
3	0·0	0	160	15	12	10 46	9	0·0	0	...	...	...	0·1	1	...	...	...	...	2·2	24
4	0·0	0	*n* 50	5	*n* 6	10 53	4	0·0	0	...	...	...	0·0	0	...	...	...	...	0·9	10
5	0·0	0	170	15	22	11 35	22	0·2	2	...	...	...	0·4	4	...	...	...	...	2·7	29
6	3·3	35	370	32	31	11 12	28	2·6	28	44	17	Ci.	0·7	8	...	...	...	...	0·0	0
7	0·0	0	150	13	20	12 5	20	0·2	2	...	...	...	0·0	0	...	...	...	...	0·2	2
8	4·2	44	? 360	31	? 29	11 25	27	4·3	45	49	19	Clear	0·1	1	...	...	...	...	5·0	53
9	5·2	55	? 490	40	? 36	12 16	? 36	4·0	42	...	...	...	0·3	3	...	...	...	...	1·6	17
10	0·8	8	290	23	25	13 40	6	1·4	15	...	...	...	0·0	0	...	...	...	...	0·8	8
11	0·0	0	160	13	12	8 45	8	0·0	0	...	...	...	3·7	40	...	...	...	...	0·0	0
12	0·0	0	250	19	21	10 45	12	0·0	0	...	...	...	0·0	0	...	...	...	...	0·1	1
13	0·0	0	206	15	18	13 57	15	0·0	0	...	...	...	0·0	0	...	...	...	...	0·0	0
14	0·0	0	70	5	12	12 43	8	0·0	0	...	...	...	0·0	0	...	...	...	...	0·0	0
15	0·0	0	240	18	22	14 25	15	0·0	0	...	...	...	0·0	0	...	...	...	...	1·7	17
16	7·8	80	*x* 750	54	41	12 15	41	*x* 8·6	90	72	31	Clear	0·0	0	...	...	...	...	1·5	15
17	4·3	40	536	38	31	12 52	29	7·4	70	...	...	...	0·0	0	...	...	...	...	0·9	9
18	4·4	44	560	39	33	11 53	33	5·7	56	36	16	Misty	0·0	0	...	...	...	...	0·0	0
19	0·0	0	220	15	21	10 15	5	3·1	30	...	...	...	0·0	0	...	...	...	...	2·5	25
20	0·0	0	240	16	17	11 55	17	0·0	0	...	...	...	0·1	1	...	...	...	...	0·5	5
21	5·5	53	620	41	39	13 38	38	5·9	57	57	26	Clear	0·1	1	...	...	...	...	0·2	2
22	0·0	0	120	8	15	13 42	8	0·1	1	...	...	...	0·3	3	...	...	...	...	0·0	0
23	2·0	19	450	29	49	12 59	43	0·9	9	...	...	...	3·7	36	...	...	...	...	0·6	6
24	1·9	18	490	31	46	12 36	42	1·7	16	...	...	...	1·1	11	...	...	...	...	1·1	10
25	*x* 8·3	78	690	42	44	12 54	43	8·3	78	68	33	Clear	*x* 7·2	70	12 26	Clear	2·36	79	*x* 7·3	70
26	1·3	12	310	19	28	8 48	13	1·9	18	...	...	...	1·8	17	...	...	...	...	0·1	1
27	0·8	8	400	24	37	11 15	36	1·9	18	63	31	Clear	0·0	0	...	...	...	...	0·4	4
28	4·3	40	570	23	*x* 51	13 47	*x* 44	5·3	50	64	32	Clear	0·6	6	...	...	...	...	5·3	50
Means	1·93	20	333	24	27	—	22	2·29	23	—	—	—	0·82	9	—	—	—	—	1·29	13
Normal	1·63	17	372	—	—	—	—	2·13	22	—	—	—	1·56	17	—	—	—	—	2·48	25
	←5 years→		3 years					←35 years→					←5 years→						←35 years→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M. S. L.:—H = 9·1 m. H_b = 13·7 m. H_a = 26·4 m. Above Ground: h_t = 1·3 m. h_r = 0·56 m. h_a = 13·9 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity. Vapour Pressure.		Humidity. Percentage.		Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount (0–10) and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.				
	mb.	mb.	*a.* 200+	*a.* 200+	*a.* 200+	*a.* 200+	millibar.		%	%	m/s.		m/s.		Tenths of Sky covered.		mm.	*a.* 200+		
1	1003·8	1007·1	84·1	83·7	84	*x* 83	12·3	11·9	94	93	150	17	170	7	10●	7	11·3	83	o. ● *n.* r. q. ⸝ *a.* g. ● day.	
2	1010·9	1010·1	83·3	83·2	*x* 85	*x* 83	11·5	11·5	93	93	165	8	165	8	9	6	3·4	82	Fair *n.* c. to o. *a.* Fair *p.*	
3	1005·7	1002·3	82·4	82·8	84	82	11·2	10·4	96	86	170	6	155	13	8	9	15·3	82	Fair to o. *n.* c. o. p. *a.* Fine *p.*	
4	1003·4	1001·5	80·8	79·6	83	79	9·2	8·5	87	87	170	5	180	6	6	4	3·7	78	●² to fine *n.* c. p. *a.* and *p.* T *p.*	
5	1006·1	1005·5	79·7	79·9	82	78	8·3	9·4	85	95	185	6	195	5	7	10	8·2	77	Showery day. ⟀ and ▲ *a.* ⌒ *p.*	
6	1005·5	1004·5	82·4	84·0	84	80	11·2	13·0	96	100	220	8	225	7	10●	10	16·8	78	Fine *n.* o. ● day. o. p. *p.*	—
7	1003·9	1003·8	84·3	81·5	*x* 85	81	11·8	8·6	89	78	175	8	210	9	10	1	2·0	83	Dull *n.* o. p. d. day. Fine *p.*	—
8	1001·0	1000·5	79·9	81·1	83	79	8·0	9·0	81	84	215	8	230	12	3	10	8·3	78	Showery. ▲ *a.* Much < *p.* and *n.*	68° 7′·4
9	997·7	1006·7	83·7	81·9	*x* 85	81	11·8	10·1	92	89	205	14	200	5	10	10	9·1	78	Showery day. ● *a.* < *n.*	19° 39′·4
																		9th—		—
10	1012·8	1015·2	83·6	84·3	*x* 85	81	11·8	12·1	93	91	210	10	200	10	10	10	1·2	80	o. and ● *a.* Dull day. o. and p. *p.*	—
11	1021·0	1021·1	84·2	83·4	*x* 85	*x* 83	12·8	12·0	97	96	220	7	170	5	10	10	5·9	83	o. and d. *a.* c. later.	19° 37′·4
12	1013·1	1018·6	83·6	82·4	84	82	12·3	10·2	97	87	180	7	270	10	10●	10	0·8	83	o. and ● *a.* Dull, damp day. 11th—	17861 γ
13	1022·5	1023·5	82·7	81·4	84	80	11·6	10·4	97	95	265	3	165	3	10	1	—	81	o. *n.* and *a.* Dull day. Fine *p.*	
14	1023·3	1021·4	82·4	82·3	84	81	9·8	10·0	84	86	150	6	165	8	10	3	2·6	77	Fine *n.* Dull day. Fine *p.*	
15	1019·1	1013·0	81·4	82·1	83	81	10·9	9·9	99	86	185	4	170	9	8	10	11·2	81	o. *n.* p. d. to fair *a.* Dull later.	
16	1006·8	1016·4	79·9	79·2	82	77	9·4	7·3	95	78	160	4	30	4	10●	5	1·2	79	● to p. *a.* Fine *p.* ⋃	
17	1018·7	1013·4	75·3	81·7	82	*n* 73	6·3	10·4	88	93	105	3	170	8	7	10	*x* 21·9	*n* 70	Fine *n.* —. o. *a.* o. d. p. *p.*	
18	1004·5	1015·4	82·2	80·4	83	80	11·6	8·2	100	80	225	4	355	9	10●	9	11·2	80	●² *a.* ●² all day. Fine *p.*	
19	1018·8	1014·2	74·2	81·3	82	74	6·3	10·3	95	95	45	2	220	3	2	10	3·6	72	Fine *n.* and *a.*, with —. o. and ●⁰ *p.*	
20	1014·0	1016·6	79·2	79·6	82	77	9·3	7·2	99	74	—	0	255	12	10	6	9·8	78	Calm *n.* ●⁰ to ●² *a.* c. p. ▲ *p.*	19° 44′·6
21	1020·0	1017·6	80·1	82·5	83	78	8·0	11·3	79	96	225	9	230	12	7	10	1·4	75	c. p. *n.* and *a.* Dull day. o. and d. *p.*	17853 γ
22	1022·3	1028·9	83·8	84·0	*x* 85	*x* 83	11·8	12·0	92	92	230	12	235	10	10	10	—	82	o. *n.* Dull	68° 6′·4
23	1033·3	1031·1	83·4	83·2	*x* 85	*x* 83	9·9	11·4	79	92	230	5	180	4	10	10	0·7	83	o. and dull *n.* c. *a.* o. and dull *p.*	19° 37′·7
24	1026·1	1033·4	81·9	80·0	84	78	10·2	6·8	90	68	220	6	340	10	8	5	4·6	80	Fair *n.* o. *p.* ● *a.* Fine *p.* 22nd—	
25	1043·9	1042·2	77·3	81·1	82	77	7·4	8·8	89	82	—	0	225	6	1	10	—	76	Fine *n.* and day. o. and dull *p.*	
26	1036·5	1033·5	83·3	82·9	84	82	10·6	11·6	85	96	225	11	245	8	10	10	5·7	80	o. *n.* and day. o. and d. *p.*	
27	1026·4	1021·0	82·4	81·1	83	78	11·7	7·1	100	*n* 66	—	1	320	12	10●	2	2·2	83	● *n.* Fair *p.* o p. to fine later. [later.	
28	1013·7	1020·4	77·1	77·5	*n* 80	74	6·4	6·0	78	71	345	16	10	14	7	3	0·8	74	● p. q. *n.* ⸝ q. *p.* ▲✳ *a.* and *p.* Fine	19° 39′·8
Means	1015·5	1016·4	81·4	81·7	83·4	79·6	10·1	9·8	91	87		6·8		8·2	8·3	7·5	162·9	79·1	Monthly **Totals** or **Means.**	17857 γ
Normal	1011·4	1011·5	79·6	79·8	82·5	77·5	8·4	8·5	87	86		6·0		6·1	—	—	130·6	—	**Normals.**	68° 6′·9
	←45 years→						←30 years→				←35 years→						45 yrs.			

* By Campbell-Stokes Sunshine Recorder.

x denotes the maximum and *n* the minimum value in the column

Wt. 37652/515—400—1/19.—N. & Co., Ltd. **Gp. XV.**

3. METEOROLOGY :—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 5·5 m. Barometer, H_b = 10·4 m. Cups of Anemometer, H_a = 25 m.
Heights above Ground :—Thermometers, h_t = 3·0 m. Rain-gauge, h_r = 0·53 m. Cups of Anemometer, h_a = 20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	Remarks.
							Vapour Pressure.		Percentage.										
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
											m/s.		m/s.		Tenths of Sky covered.				
	mb.	mb.	*a.* 200+	*a.* 200+	*a.* 200+	*a.* 200+	millibar.		%	%							mm.	*a.* 200+	
1	1029·2	1027·3	72·5	74·0	*n* 76	71	5·9	6·2	100	95	146	3	—	1	*10*⌴	?0⌴	—	70	⌴ early. ≡ all day.
2	1026·6	1026·0	75·5	80·0	81	73	7·1	8·9	96	89	113	2	180	2	10●≡	10≡^{0}	1·3	67	⌴ early. ≡ 9 h. Dull day.
3	1022·6	1018·6	79·3	80·0	83	79	8·3	8·6	87	86	180	2	180	3	10●≡^{0}	10≡^{0}	0·1	76	Dull *a.* Dull to fair *p.* ≡^{0}.
4	1017·8	1017·1	81·0	82·0	82	79	9·5	10·0	89	88	191	5	180	5	10≡^{0}	10≡^{0}	1·2	73	● *a.* and *p.* Dull.
5	1016·7	1016·3	81·0	81·7	84	81	9·2	10·1	86	90	191	2	180	4	8≡^{0}	10●≡^{0}	0·6	78	Fair *a.* Dull *p.* Shower 21 h.
6	1015·5	1011·5	80·7	82·5	84	79	9·3	9·7	89	82	203	5	214	11	2	10	2·7	76	Fine to dull. ● *n.* and ↗ (gust).
7	1010·4	1012·0	83·4	83·7	86	*x* 82	11·5	11·0	92	86	214	6	214	7	10	10	2·3	81	● early. Mostly dull.
8	1009·2	1011·8	82·4	82·0	85	81	10·0	9·2	93	81	259	3	214	8	10	4	0·8	81	Dull to fine. p. *p.* and *n.*
9	1011·5	1012·9	82·3	83·9	85	81	9·6	10·2	82	79	225	7	214	9	2	10	0·7	78	● early. Fine to dull.
10	1019·3	1024·0	84·1	83·0	86	*x* 82	10·4	9·9	79	81	225	9	225	9	9	2	—	81	Fair to c. *a.* c. to fine *p.*
11	1024·9	1027·9	83·3	84·0	85	*x* 82	10·0	11·6	80	89	225	7	225	4	10	10	—	80	Fine early. Dull after 8 h.
12	1027·9	1021·3	81·7	81·2	84	81	9·2	9·8	82	91	214	6	191	6	10	10	0·7	81	Dull. ●^{0} at *n.*
13	1017·5	1021·2	82·0	82·3	84	81	10·0	9·8	88	84	236	3	249	4	9	10	—	80	● early. Dull. ●^{0} 20 h. 30 m.
14	1026·7	1030·2	79·3	79·6	81	79	8·8	8·1	92	87	11	2	101	3	10≡^{0}	10	—	78	Dull. g. at times.
15	1030·7	1028·2	78·5	75·8	80	75	7·8	6·3	86	85	101	3	146	3	10≡^{0}	10≡^{0}	—	71	Dull to fair. o. *n.*
16	1023·9	1022·0	74·0	73·3	78	72	4·4	3·9	68	*n* 63	157	5	146	2	3	0≡^{0}	—	70	Fine. ≡^{0} *n.*
17	1025·4	1025·0	71·5	72·4	77	70	4·0	4·4	73	76	—	1	—	1	1≡^{0}⌴	?0≡	—	*n* 63	⌴. Fine. ≡^{0} *n.*
18	1020·6	1017·9	70·4	73·0	78	69	4·7	4·9	92	81	—	0	—	1	?0≡⌴	0≡^{0}⌴	—	64	⌴. ≡ to 10 h. 15 m., then fine.
19	1019·6	1019·7	70·1	73·2	79	*n* 68	4·5	5·5	92	89	—	1	—	1	*10*≡⌴	?0≡⌴	0·1	64	⌴. ≡ to 11 h. Fine. ⌴≡ *n.*
20	1019·5	1011·4	78·0	81·9	82	75	8·1	10·2	93	90	169	2	214	8	10≡^{0}	10●	3·0	66	●^{0} 9 h. and 12 h. 45 m. Dull. ● *p.* and *n.* ⓤ
21	1021·5	1022·7	77·0	78·7	82	75	6·3	7·5	78	82	259	4	236	5	1≡^{0}	10	0·1	71	Fine to 13 h. 30 m. Dull to fair *p.* ⓤ
22	1020·1	1026·0	82·3	83·9	80	80	10·7	10·3	92	80	225	6	247	5	10	10	—	75	● 6 h. 45 m. Mostly dull.
23	1032·8	1034·2	84·4	83·6	*x* 87	*x* 82	10·3	8·9	77	70	270	5	247	3	7	10	—	78	Fair to fine.
24	1031·2	1025·6	82·6	80·6	85	80	8·2	9·6	69	92	236	4	236	4	9	0≡^{0}	*x* 6·8	80	Fair to fine.
25	1034·0	1042·3	77·5	76·0	81	74	5·9	6·3	70	84	360	8	—	1	4	?0≡^{0}⌴	—	75	● 1 h.–6 h. Fine. ⌴ *n.*
26	1037·6	1029·4	77·2	82·2	83	73	6·7	9·7	82	84	236	5	236	5	10	10	—	67	⌴. Fine to dull.
27	1026·0	1011·5	79·6	80·6	82	78	7·6	9·3	78	89	259	3	247	4	9	10≡^{0}	0·4	72	Fine to dull. ● 18 h. 5 m.–18 h. 25 m.
28	1001·0	1002·4	76·3	75·1	80	74	5·8	5·5	75	78	270	5	360	2	2	5≡^{0}	0·5	71	Fine *a.* Showers. ✲● *p.*
Means	1022·1	1021·3	78·9	79·6	82·1	77·0	8·0	8·4	84	84		4·1		4·3	7·4	6·8	21·3	73·8	Monthly **Totals** or **Means.**
Normal	1014·7	1014·6	76·9	77·3	80·3	74·9	6·7	6·9	84	83		3·8		3·7	—	—	39·6	—	**Normals.**
	45 years						30 years				35 years						45 years		

4. METEOROLOGY :—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 242 m. Barometer, H_b = 237·3 m. Vane of Anemometer, H_a = 250 m.
Heights above Ground :—Thermometers, h_t = 0·9 m. Rain-gauge, h_r = 0·38 m. Vane of Anemometer, h_a = 15 m.

																			Remarks.
1	996·2	992·1	77·1	78·4	82	72	6·2	7·1	76	79	—	1	180	6	6	1∞	0·1	70	Fine. ⌴^{2} early. Fine *a.* Fair *p.* ∞ *n.*
2	991·8	991·5	78·0	80·1	80	78	8·3	9·8	96	97	—	1	180	3	10●≡^{0}	10≡^{0}	14·2	74	Continuous ●^{0} 0 h.–1 h. ≡^{0} after 3 h. Warm.
3	989·1	984·9	80·8	80·6	82	*x* 80	10·3	9·7	98	93	157	4	180	7	10≡^{0}	10●	13·1	79	≡^{0}●^{0} at first. ≡ 7 h. ≡^{0} *a* and *p.* ●^{2} *n.*
4	979·4	982·0	78·4	77·5	80	77	8·4	7·7	94	92	157	6	191	2	10●	9	3·4	77	o. to c. early. ● *a.* ≡^{0} *p.* Fair *n.*
5	982·3	981·6	77·8	76·0	80	75	7·8	6·2	91	83	203	9	180	6	10	0	5·1	[24 h. 74	q. ●^{2} 3 h. o. to c. *a.* and *p.* Fine. ⩊^{0} *n.* q. ●^{2}
6	973·5	971·0	78·3	76·5	80	76	8·4	7·5	94	95	214	12	203	2	10	10	9·2	73	● showers *a.* Dull *p.* ●^{0} *n.* ≡^{0} 22 h.
7	973·9	973·1	77·8	80·5	82	77	8·4	10·0	98	97	—	0	214	12	10≡^{0}	10●≡^{0}	9·4	75	≡^{0} early. ●≡ 11 h.–12 h. *a.* ●^{0}≡^{0} *p.* ≡● *n.*
8	972·4	971·3	78·2	77·9	79	77	8·3	7·3	94	84	203	10	214	10	9	6	3·3	76	Fair then ●≡^{0}. *n. a.* and *p.* ▲ 17 h. 30 m. b. c. to o. *n.*
9	969·3	972·4	77·0	76·6	78	76	6·8	7·1	84	90	225	11	214	8	6	9	11·9	75	▲ 3 h. 30 m. q. ● till 7 h. 30 m. Fair *a.* ●^{2} *p.* [c. v. to o. *n.*
10	980·2	979·6	77·1	80·6	81	74	6·9	10·0	84	96	214	7	225	16	10	10●	24·7	75	● q. early. ⊕ *a.* ●^{2}△ 15 h. *p.* ●^{2} q.
11	988·8	995·1	77·0	77·0	81	76	6·9	7·4	85	91	259	5	—	0	5	10●	1·2	74	Fine to fair *a.* c. v. y. to o. *p.* ●^{0} *n.*
12	992·6	984·7	77·4	80·0	80	77	8·2	9·9	99	99	—	1	169	5	10≡^{0}	10●≡^{0}	*x* 27·4	76	● at first. ≡ *a.* ●^{2}≡^{0} *p.* and *n.*
13	989·2	997·1	80·3	77·9	81	78	9·4	8·4	92	98	34	5	45	5	9≡^{0}	10	1·9	78	●^{0} early. Dull. ≡^{0}.
14	999·3	998·6	77·0	77·7	79	77	7·8	7·6	97	89	—	1	—	1	10≡^{0}	10≡^{0}	—	76	Dull. Slight ≡^{0}.
15	996·4	991·4	77·9	77·8	79	77	7·5	7·3	87	85	203	9	169	8	10≡^{0}	10	0·1	76	Dull. ≡^{0} *a* and *p.* Damp, with d.^{0} *n.*
16	985·1	988·3	76·4	74·6	78	74	6·8	6·2	87	91	157	9	180	5	10≡^{0}	10●	10·1	75	d.^{0}≡^{0} early. ≡^{0} *a.* ● after 16 h.
17	992·7	990·3	73·0	74·6	75	73	5·5	5·8	91	86	180	2	191	6	10≡^{0}	10≡^{0}	3·5	72	✲ at first. ⊠ 2 cm. ≡^{0} after 7 h.
18	985·9	987·4	74·3	74·3	77	74	6·4	6·0	95	89	180	6	—	1	10●✲	10●✲	6·1	73	≡^{0}. ✲● 6 h.–11 h. Damp *a.* and *p.* ✲● *n.*
19	989·1	984·9	74·1	77·0	77	73	6·1	8·0	93	99	—	0	214	10	10●✲	10≡^{0}	1·5	72	≡^{0}. ✲● early. o. ≡^{0} *a.* and *p.* ●≡^{0} *n.*
20	985·4	977·0	74·8	74·0	78	74	6·7	6·3	96	96	—	0	203	6	9	10✲	5·8	72	●≡^{0} 1 h. Dull *a.* and *p.* ●^{0}✲ *n.* [18 h.–21 h.
21	983·7	976·1	73·7	78·6	80	72	5·5	8·6	86	95	225	8	225	17	9	10●	19·4	71	✲ p. q. at first. ⊠ 1 cm. o. *a.* ●^{2} after 14 h. ↗
22	979·0	986·8	82·9	83·2	*x* 84	*x* 80	10·4	10·3	86	84	259	15	259	17	10●	10	8·0	77	●^{0} all day. ↗ at times *p.* and *n.*
23	995·7	997·1	82·6	80·5	*x* 84	*x* 80	10·2	8·7	86	84	247	14	236	13	10	7	1·0	80	●^{0}≡^{0} early. o. to c. *a.* Fair *p.* and *n.*
24	993·3	993·7	80·0	76·0	82	73	9·3	6·2	93	83	225	9	360	6	10●	10	2·3	78	p. *a.* and *p.* q. 16 h. 30 m. o. to b. *n.*
25	1008·1	1006·5	75·2	76·9	80	72	4·8	6·6	*n* 67	82	315	7	314	11	1	9	—	*n* 69	Cloudless v. *a.* c. v. y. *p.* c. to o. *n.* [ⓤ ↗ *n.*
26	993·9	991·3	78·9	77·0	81	77	8·9	5·9	97	73	214	14	281	16	10●≡^{0}	3	9·9	74	↗ 3 h. ●^{2}≡^{0} 7 h.–11 h. q. 11 h. Fair. ↗ *p.* Fine
27	992·6	974·1	76·7	74·9	77	74	6·3	5·8	79	82	259	4	293	14	10	7	10·7	73	Fair 1 h. o. *a.* ●^{2}≡^{0} after 14 h. ✲ p. 20 h.
28	966·5	984·1	72·0	72·6	*n* 74	*n* 71	5·5	5·3	98	90	349	15	23	20	10✲≡^{0}	3	9·5	70	Fine 1 h. ✲≡^{0} after 6 h. 30 m. ⊠ ↔ ↗ 11 h.–23 h. Fine. ✲ p. *n.*
Means	986·6	985·9	77·3	77·5	79·7	75·4	7·6	7·6	90	89		6·6		8·3	9·1	8·4	212·8	74·4	Monthly **Totals** or **Means.**
Normal 1911–15	978·7	978·4	75·3	75·7	78·6	72·8	6·6	6·8	88	88		6·1		6·0	—	—	184·4	—	**Normals.**

Temperatures at or below the normal freezing point of water are printed in small type.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Magnetic Force. Horizontal Comp't. Mean Time.	Horizontal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination. North.	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 2·15. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +	−	Air-Earth Current. ×10¹⁶.
																	About 11 h.		About 11 h.
	a. 200+	*a*. 200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′			v/m.	v/m.	v/m.	v/m.	coulomb.		amp/cm².
1	75·9	78·9	346	348	...	...	...	...	...	..	2	0	2165	1015	580	885	...	...	0·50
2	75·6	78·9	341	...	...	...	...	...	...	...	1	0	500	870	435	475	...	...	...
3	76·5	78·9	336	...	...	...	...	...	...	...	0	1	345	−65	475	490	...	...	...
4	77·2	78·8	331	...	...	...	...	...	...	...	0	1	275	275	200	225	...	...	..
5	78·2	78·8	326	...	...	...	14 19	14 59·3	...	...	1	1	90	315	370	65	...	...	0·65
6	78·6	78·8	322	...	...	...	...	...	...	...	2	1	315	530	355	200	...	...	1·65
7	79·1	78·8	317	...	11 8	18430	14 23	14 58·7	14 24	66 58·9	1	1	80	275	290	395	...	...	...
8	80·0	78·9	312	...	...	...	...	...	...	...	0	1	90	185	160	345	...	...	0·65
9	80·1	79·1	309	...	...	...	...	...	...	...	1	1	130	265	210	130	...	...	...
10	80·3	79·1	305	...	...	...	...	...	...	...	1	0	120	185	200	240	...	...	...
11	80·5	79·3	303	...	...	...	...	...	...	...	2	0	145	315	185	370	...	...	1·95
12	80·9	79·6	302	...	...	...	...	...	...	...	2	0	275	385	315	240	...	...	0·70
13	80·7	79·6	302	...	...	...	...	...	...	...	2	0	105	145	...	570	...	...	...
14	80·8	79·8	301	...	...	...	...	...	...	...	2	0	210	395	420	410	...	...	0·75
15	80·0	79·8	300	...	11 9	18409	14 26	14 59·4	14 31	67 0·1	2	0	355	555	370	595	...	...	...
16	79·0	79·9	299	...	...	...	...	...	...	...	1	0	170	385	370	965	...	...	...
17	77·4	79·9	297	...	...	...	...	...	...	...	0	0	605	660	450	725	...	...	...
18	76·3	79·9	295	...	...	...	...	...	...	...	0	0	355	420	345	685	...	...	1·45
19	75·8	79·8	292	...	...	...	...	...	...	...	0	0	435	460	490	765	...	...	1·40
20	75·4	79·6	289	...	...	...	...	...	...	...	1	1	515	−15	345	105	...	...	...
21	76·7	79·6	285	...	11 10	18410	14 22	14 57·6	14 30	66 59·4	1	0	275	540	225	540	...	...	...
22	77·1	79·3	281	...	...	...	...	...	...	...	0	0	90	210	355	345	...	...	0·60
23	78·8	79·1	277	...	...	...	...	...	..	...	2	0	210	420	275	385	...	...	...
24	79·5	79·2	275	...	...	...	...	...	...	...	1	1	170	395	355	450	...	...	...
25	79·5	79·3	273	...	...	...	...	...	...	...	0	2	−475	450	370	580	...	...	1·15
26	78·1	79·3	272	...	...	...	...	...	...	..	0	0	490	395	290	265	...	...	1·80
27	78·5	79·3	272	270	...	...	...	...	...	..	1	0	185	450	160	315	...	...	...
28	78·9	79·6	272	...	11 16	18439	14 24	15 2·1	14 30	67 0·2	1	2	130	305	z±	410	...	...	...
M.	78·4	79·3	—	—	—	—	—	—	—	—	—	—	312*	395*	331*	430*	—	—	—
	77·1	79·1																	
	←—12 years—→																		

* Mean of 26 days.

6. GEOPHYSICS :—ESKDALEMUIR.

Day.	Magnetic Force. North Component. Maximum. 15000 γ+. h m	γ	Minimum. 15000 γ+. γ	h m	West Component. Maximum. 4000 γ+. h m	γ	Minimum. 4000 γ+. γ	h m	Vertical Component. Maximum. 44000 γ+. h m	γ	Minimum. 44000 γ+. γ	h m	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre.* Factor 6·01. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +	−	Air-Earth Current. ×10¹⁶.
																			About 15 h.		About 15 h.
															v/m.	v/m.	v/m.	v/m.	coulomb.		amp/cm².
1	20 48	*x* 1116	927	3 17	21 0	999	881	17 24	17 13	1090	1039	21 10	2	0 *a*	590	390	470	585	...	...	...
2	19 4	1007	951	17 28	23 0	986	891	18 55	18 17	1075	1034	23 20	1	1 *a*	160	15	130	160	...	...	...
3	22 6	1000	943	13 26	14 18	966	925	22 2	16 50	1064	1047	24 0	0	1 *c*	25	−145	115	−405	...	...	...
4	23 45	987	952	15 31	13 3	964	935	{9 7 / 0 12}	16 55	1070	1048	12 40	0	1 *b*	345	−1350	310	560	...	...	...
5	7 14	1025	933	{12 23 / 12 26}	15 27	984	938	23 3	{17 10 / 17 28}	1070	1046	{10 29 / 10 54}	1	1 *b*	−670	470	425	440	...	...	...
6	4 16	1015	916	13 32	1 28	993	833	3 39	18 2	1081	*n* 966	3 52	2	2 *c*	260	z±	190	125	...	...	...
7	23 15	1011	948	11 37	13 36	980	919	4 0	14 56	1067	1042	3 22	0	1 *b*	310	55	240	−725	...	...	...
8	24 0	996	949	13 33	13 45	963	932	8 54	14 50	1065	1059	5 20	0	1 *b*	180	135	170	215	...	...	...
9	0 7	1009	945	22 10	13 29	976	899	22 25	21 45	1092	1044	23 6	1	2 *c*	z+	80	−615	235	...	...	...
10	21 27	1057	947	11 21	13 17	997	870	2 0	17 47	1091	1041	22 25	1	2 *c*	z±	75	−950	−700	...	...	...
11	19 3	1001	913	23 16	1 19	1004	881	{0 28 / 0 44}	21 6	1088	993	1 35	1	1 *a*	75	150	110	95	...	...	...
12	15 46	954	878	20 23	19 6	1015	814	1 56	19 16	*x* 1231	999	24 0	2	2 *c*	60	70	−580	−330	...	...	...
13	4 16	1005	*n* 857	0 21	14 5	987	*n* 806	1 15	20 43	1133	988	0 14	2	1 *a*	25	350	435	550	...	...	...
14	4 12	1013	888	2 46	13 27	974	861	0 40	21 18	1104	1017	3 4	1	0 *a*	295	290	385	425	...	...	...
15	21 2	1049	920	21 11	18 22	*x* 1041	882	1 40	19 20	1140	1066	1 12	1	1 *a*	205	205	305	325	...	...	...
16	21 14	1016	886	12 3	11 34	978	905	21 9	12 55	1087	1071	7 12	1	2 *b*	170	280	280	−405	...	...	...
17	6 44	991	936	14 14	13 45	973	917	20 50	20 55	1084	1064	10 13	0	1 *a*	135	200	105	725	...	...	...
18	18 45	992	955	13 4	14 48	965	926	9 38	15 5	1083	1066	{2 17 / 4 15}	0	2 *c*	335	−2495	−110	−490	...	...	...
19	4 7	998	952	12 30	14 9	959	934	3 38	15 25	1079	1068	5 30	0	2 *b*	220	405	−190	315	...	...	...
20	22 14	1040	955	19 6	13 50	965	891	22 10	20 20	1088	1069	11 33	1	2 *c*	5	425	290	415	...	...	...
21	5 17	1025	938	10 27	13 30	970	906	5 35	15 50	1084	1047	5 24	0	2 *c*	200	135	−970	−1145	...	...	...
22	22 34	988	960	11 9	{13 15 / 13 33}	959	927	8 53	15 50	1078	1067	11 16	0	2 *b*	−490	−170	25	55	...	...	...
23	22 27	1021	950	15 29	{14 28 / 14 53}	981	850	22 43	19 30	1098	1067	24 0	1	0 *a*	70	80	130	255	...	...	...
24	4 13	1002	? 914	? 10 54	12 44	970	899	3 34	20 40	1090	1040	1 43	0	1 *b*	135	35	200	80	...	...	...
25	21 14	990	952	11 31	12 38	960	932	{8 53 / 9 59}	16 10	1083	1075	0 10	0	0 *a*	385	160	150	135	...	...	...
26	5 57	991	953	11 28	14 30	972	923	9 40	15 45	1083	1070	12 25	0	2 *b*	60	−415	115	115	...	...	...
27	22 30	1005	956	19 57	14 10	973	896	22 42	20 46	1100	1060	22 38	0	2 *c*	90	135	−220	190	...	...	...
28	0 0	1002	926	13 7	16 13	1008	879	20 37	20 37	1119	1053	1 56	1	1 *c*	115	2110	580	250	...	...	...
M.	—	1011	932	—	—	981	895	—	—	1093	1045	--	—	—	121†	611†	116†	96†	—	—	—

* The potential gradient is reckoned as positive if the potential increases upwards.
x denotes the maximum and *n* the minimum value in the column.

† Mean of 25 days.

: Indeterminate.

7. JERSEY (ST LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M.S.L.:—H = 54 m. H_b = 55 m. Above Ground:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level. 7 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in Degrees Absolute. 7 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 7 h.	14 h.	21 h.	Mean.	Rain 0 h. to 24 h.	REMARKS.
	mb.	mb.	mb.	mb.	a. 200+	a. 200+	a. 200−	a. 200+	a. 200+	a. 200+	a. 200+	%	%	%	%	mm.	
1	1027·6	1019·7	1019·7	1020·1	78·4	82·3	80·4	83·0	78·1	80·4	72·5	86	73	83	81	—	
2	1019·7	1019·9	1019·4	1019·7	80·0	80·7	80·5	80·8	79·7	80·3	75·6	94	87	87	89	0·5	● 4 h. 45 m. ≡0 11 h. ●0 17 h.
3	1015·4	1013·3	1014·6	1014·5	80·9	81·2	80·8	82·0	80·0	81·0	77·8	98	87	94	93	—	●0 13 h. Clear after 17 h.
4	1012·6	1012·2	1012·2	1012·3	80·6	81·8	81·5	82·0	80·2	81·2	76·1	98	89	92	93	1·5	● 6 h. to 9 h
5	1011·7	1011·3	1012·3	1011·7	79·9	81·1	81·1	81·6	79·8	80·7	75·3	100	98	98	99	3·9	●9 h. 30 m. ≡ after 10 h.
6	1013·4	1014·0	1013·1	1013·5	79·4	82·0	80·9	83·0	79·3	80·9	74·2	98	84	89	90	—	
7	1009·4	1011·8	1010·8	1011·1	81·0	82·9	81·8	83·1	80·8	81·9	78·8	99	100	100	100	0·9	● 4 h. ●≡ 8 h. ≡2 15 h.–16 h.
8	1007·3	1009·8	1010·9	1009·4	82·0	82·1	80·9	83·0	80·5	81·7	80·3	98	85	88	90	2·7	●0 4 h. and 7 h. ● 8 h. 10 m.
9	1011·4	1013·1	1015·3	1013·3	81·1	83·7	81·6	84·2	80·0	82·1	77·3	93	79	90	87	—	⊕ 14 h.
10	1019·9	1023·3	1024·3	1022·5	82·0	83·8	81·5	x 84·6	80·7	82·5	78·9	93	79	92	88	—	
11	1025·1	1025·9	1026·3	1025·8	81·3	83·9	81·1	84·2	80·7	82·2	77·6	89	79	97	88	—	
12	1024·5	1021·8	1019·0	1021·8	77·7	82·0	81·1	82·1	77·2	80·0	72·3	100	87	99	95	0·7	▲0 1 h. 15 m. ≡ 4 h.–8 h. ● 20 h.
13	1016·3	1016·6	1016·9	1016·7	81·8	82·0	81·2	82·7	x 81·2	81·8	80·4	92	92	98	94	0·7	● 20 h.
14	1018·3	1019·9	1022·1	1020·1	80·0	82·8	79·4	83·2	79·4	81·2	77·9	98	78	94	90	—	
15	1022·9	1022·4	1020·9	1022·1	78·4	78·1	77·6	78·9	77·3	78·1	75·8	100	98	92	97	—	≡ 5 h. 30 m. and 7 h. 30 m.
16	1017·3	1012·7	1013·1	1014·3	73·9	76·9	76·6	77·3	73·5	75·6	70·0	83	53	n 51	62	—	⌊
17	1015·9	1017·4	1017·9	1017·1	71·2	76·3	73·2	n 76·8	n 70·5	73·6	n 63·3	85	56	75	72	—	⌊⌊. Ψ 21 h.
18	1014·6	1010·6	1010·6	1011·9	73·7	77·4	75·5	77·7	72·3	75·3	63·5	69	54	68	64	—	⌊⌊
19	1013·0	1013·9	1015·7	1014·2	74·8	80·4	77·1	81·3	73·9	77·5	65·3	82	69	82	78	—	⌊
20	1014·7	1015·0	1013·1	1014·7	79·7	81·6	81·0	82·0	78·1	80·5	69·5	97	77	94	89	1·5	● 14 h. 20 m.
21	1018·1	1021·7	1023·1	1021·0	79·3	82·6	80·3	82·4	79·1	80·7	73·5	85	68	88	80	—	
22	1025·5	1024·7	1027·8	1026·1	81·6	82·1	82·3	82·6	79·8	81·7	76·4	89	93	95	92	0·1	●0 13 h. 30 m.
23	1030·5	1032·5	1031·9	1031·7	82·0	82·3	81·2	82·9	81·0	81·9	81·4	87	95	96	93	—	≡ 8 h.–15 h. ≡0 afterwards.
24	1028·6	1026·9	1024·9	1026·8	80·9	82·6	81·5	84·0	80·3	81·9	79·0	83	79	93	85	—	●0 14 h. Fair at 19 h.
25	1023·4	1033·5	1037·4	1031·4	77·7	80·3	79·0	80·6	77·1	78·9	77·0	100	57	70	71	3·9	● 1 h. 40 m. Shift of wind to N., with
26	1036·6	1034·2	1030·2	1033·7	77·0	80·5	81·1	82·4	75·7	79·3	68·4	91	70	83	81	—	⌊ [● 4 h. 40 m.
27	1024·9	1020·3	1012·7	1019·3	81·3	81·2	80·7	81·6	80·4	81·0	75·2	100	97	98	98	3·2	≡ a. Continuous ●. [14 h. 20 m. ✲● 18 h.
28	1001·9	993·8	995·0	998·2	78·4	74·9	76·5	80·0	73·3	76·6	75·0	81	95	81	86	7·7	●4 h. ▲7 h. 45 m. ✲▲10 h. 45 m. ✲13 h. 45 m.–
Means	1018·5	1018·3	1018·2	1018·3	79·2	81·1	79·9	81·8	78·2	80·8	74·6	91·7	80·6	88·1	86·8	27·3	
Normal	1009·7	1009·4	1010·0	1009·7	77·9	80·0	78·7	80·9	77·0	78·9	73·6	84	75	82	80	57·5	

JERSEY (ST LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0–12 on the Beaufort Scale). 7 h. Dir.	(0–12)	14 h. Dir.	(0–12)	21 h. Dir.	(0–12)	Mean.	Sunshine. Total. hr.	Per cent. of Possible. %	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. 7 h. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	14 h. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	21 h. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Mean Amount.
1	SE	3	SE	3	SSE	4	3·3	9·0	96	2	A.-Cu.	...	...	...	2	Ci.-Cu.	...	...	...	4	A.-Cu.	...	...	...	2·7
2	S	4	SE	3	SSE	2	3·0	0·0	0	10	...	...	Nb.	SW	10	A.-Cu.	SW	...	...	10	...	...	...	...	10·0
3	ESE	3	S	3	SW	4	3·3	1·3	27	8	A.-Cu.	S	...	...	9	A.-Cu.	SSW	...	...	0	...	...	...	...	5·7
4	SSW	4	SSW	4	SSW	5	4·3	0·0	0	10	...	...	Nb.	...	10	...	...	...	...	5	...	...	...	...	8·3
5	SSE	2	SSE	3	WSW	1	2·0	0·0	0	6	A.-Cu.	SW	...	...	10	...	...	...	...	10	...	...	...	...	8·7
6	SW	3	SW	4	SW	5	4·0	7·5	79	2	A.-Cu.	...	Cu.-Nb.	SW	6	A.-Cu.	NW	...	...	8	...	...	...	...	5·3
7	SW	5	SW	4	SSW	4	4·3	0·0	0	10	...	...	Nb.	...	10	...	...	Nb.	...	10	...	...	...	...	10·0
8	SSW	5	WSW	3	SW	4	4·0	5·2	53	10	...	...	Nb.	...	8	...	...	...	...	3	...	...	...	...	7·0
9	SW	5	SW	5	SW	5	5·0	2·7	27	3	...	...	Cu.-Nb.	WSW	3	Ci.-St., A.-Cu.	...	...	...	10	...	...	...	...	5·3
10	WSW	3	SW	5	SW	5	4·3	5·9	61	10	...	...	Cu.-Nb.	SW	4	Ci.	WSW	...	...	10	...	...	...	...	8·0
11	WSW	4	WSW	3	WSW	2	3·0	4·4	44	10	...	...	...	...	5	Ci.-Cu.	NW	...	...	10	...	...	...	...	8·3
12	S	2	S	3	SSW	5	3·3	3·6	37	10	...	...	Fog	...	6	...	...	Cu.-Nb.	SSW	10	...	...	...	...	8·7
13	W	4	W	3	SW	2	3·0	0·2	2	9	...	...	St.-Cu.	WSW	10	...	...	...	...	10	...	...	Nb.	...	9·7
14	ENE	4	ENE	3	ENE	3	3·3	1·2	12	10	...	...	...	...	7	...	...	St.-Cu.	ENE	8	...	...	...	...	8·3
15	E	3	SE	2	E	3	2·7	0·1	1	8	A.-Cu.	SSW	...	...	10	...	...	Fog	...	6	...	...	...	...	8·0
16	S	3	SE	3	SE	3	3·0	10·1	100	5	Ci.	SW	Cu.-Nb.	SW	2	...	...	...	...	0	...	...	...	...	2·3
17	E	2	E	3	ENE	2	2·3	10·1	99	0	..	...	...	...	0	...	...	...	...	3	Ci.	...	...	...	1·0
18	SSE	1	S	3	ESE	2	2·0	9·7	95	0	...	...	...	...	3	Ci.	NNE	...	...	0	...	...	...	...	1·0
19	SE	2	SW	3	WSW	1	2·0	8·8	86	2	A.-Cu.	...	St.	...	2	...	...	Fr.-Cu.	SW	5	A.-Cu.	WNW	...	...	3·0
20	WSW	3	SW	4	SW	5	4·0	8·2	80	10	...	...	...	...	10	...	...	...	...	10	...	...	...	...	10·0
21	WNW	2	W	3	WSW	4	3·0	3·6	34	10	Ci.-Cu A.-Cu.	NW SW	Fr.-Cu.	WNW	4	Ci.	NW	Cu.	W	2	Ci.	...	...	...	5·3
22	WSW	5	WSW	5	W	4	4·7	0·0	0	10	...	...	...	...	10	...	...	Nb.	WNW	10	...	...	...	...	10·0
23	W	3	WSW	3	WNW	1	2·3	0·0	0	10	...	...	...	...	10	...	...	Fog	...	9	...	...	St.-Cu.	...	9·7
24	—	0	WSW	3	WSW	4	2·3	7·9	75	10	...	...	Cu.-Nb., Fr.-Nb.	NW	8	A.-Cu.	WSW	St.-Cu.	WSW	7	A.-Cu.	W	Cu.	W	8·3
25	N	6	N	6	NNE	2	4·7	6·3	59	10	...	...	Nb.	...	2	Ci.	...	...	...	0	...	...	...	...	4·0
26	—	0	W	4	W	3	2·3	3·1	30	4	Ci.-Cu.	NNE	...	...	10	...	...	St.-Cu.	W	10	...	...	...	...	8·0
27	WNW	3	WSW	4	W	6	4·3	0·0	0	10	...	...	Fog	...	10	...	...	Nb.	WSW	10	...	...	Nb.	...	10·0
28	NW	4	WSW	4	N	4	4·0	3·5	32	6	A.-Cu.	NW	Cu.-Nb.	NW	10	...	...	Nb.	...	3	...	...	Cu.	...	6·3
Means		3·1		3·5		3·4	3·3	113·2	40	7·3	—	—	—	—	6·8	—	—	—	—	6·5	—	—	—	—	6·9
Normal		3·7		4·1		3·8	3·9	103·8	36	6·8	—	—	—	—	6·7	—	—	—	—	6·3	—	—	—	—	6·6

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	8·0	...	...	1·6	9·3	...	...	1·9	10·2	...	...	...	11·8	...	...	...	19·6	21	20
2	8·7	...	1·7	...	7·1	...	1·4	...	6·5	...	1·3	...	6·9	...	...	...	16·5	0	15
3	5·1	...	1·0	...	3·6	..	...	...	8·2	...	...	...	7·1	...	1·4	...	15·0	14	30
4	9·5	...	...	...	6·9	...	2·9	...	4·9	...	3·3	...	9·6	...	1·9	...	19·0	6	45
5	2·6	...	6·4	...	4·9	...	4·9	...	6·7	...	2·8	...	6·1	...	2·5	...	14·7	0	15
6	7·4	...	4·9	...	4·9	...	7·4	...	4·7	...	7·1	...	5·1	...	7·6	...	19·1	17	50
7	2·5	...	6·1	...	4·2	...	6·2	...	7·6	...	5·1	...	5·3	...	5·3	...	16·4	18	20
8	3·7	...	3·7	...	6·0	...	6·0	...	5·3	...	7·9	...	5·8	...	5·8	...	17·1	11	45
9	5·4	...	8·1	...	3·8	...	5·7	...	6·4	...	9·6	...	1·6	...	8·0	...	25·5	12	40
10	6·7	...	6·7	...	2·4	...	5·7	...	7·8	...	7·8	...	8·8	..	8·8	...	20·5	20	55
11	5·8	...	8·7	...	...	...	3·0	...	1·1	...	2·8	...	4·2	...	6·2	...	17·7	1	15
12	3·1	...	4·7	...	7·6	...	3·1	...	8·3	...	1·7	...	5·3	...	5·3	.	16·0	14	20
13	..	..	9·2	...	...	1·5	7·4	...	...	3·2	2·2	...	...	Ca	lm	...	14·3	4	35
14	...	1·1	...	1·7	...	0·9	...	1·3	3·6	...	...	...	4·6	..	...	..	9·1	21	30
15	5·8	..	1·2	...	7·1	...	1·4	...	8·7	...	1·7	...	7·7	...	1·5	...	14·7	15	15
16	10·0	...	2·0	...	12·8	..	...	...	11·5	...	...	...	8·2	..	..	...	22·7	10	25
17	6·4	...	2·6	...	4·5	...	1·9	...	7·4	...	1·5	...	8·2	..	3·4	...	17·5	22	20
18	8·5	...	3·5	...	10·0	...	2·0	...	9·0	...	1·8	...	5·9	..	...	...	17·8	9	45
19	5·6	...	..	...	7·9	...	...	...	2·6	...	3·8	...	4·7	...	4·7	...	14·9	23	0
20	4·0	...	6·0	...	.	Ca	lm	...	...	Ca	lm	...	..	2·6	13·1	.	20·7	22	30
21	...	2·2	11·3	..	1·8	...	9·0	...	4·9	...	7·4	...	6·4	..	9·6	...	22·3	22	35
22	3·9	...	9·4	...	3·3	...	7·9	...	3·5	...	8·5	...	2·9	...	6·9	...	19·3	0	40
23	1·5	...	7·4	...	2·5	...	6·1	...	1·9	...	4·5	..	3·1	...	4·7	...	17·1	4	15
24	3·1	...	4·7	..	4·4	...	6·6	...	4·9	...	7·4	...	..	11·2	4·6	...	19·8	23	5
25	...	11·2	4·6	...	...	7·7	1·5	...	...	2·6	3·8	..	3·3	...	4·9	...	17·5	0	15
26	4·4	...	6·6	...	5·6	...	5·6	...	1·8	...	9·0	..	..	4·4	10·6	...	17·7	15	20
27	...	4·7	7·1	...	...	1·2	5·8	.	2·9	...	6·9	...	..	8·0	12·0	...	23·5	23	20
28	..	8·0	12·0	...	...	11·6	4·8	...	...	18·3	...	12·2	...	15·7	...	6·5	31·1	14	35
S+N & W+E	148·9		142·9		143·5		109·5		164·5		120·1		174·5		135·3				
S−N & W−E	94·5		136·3		97·7		103·1		116·3		95·7		90·7		122·3				

SCOTLAND N.:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	8·7	...	...	1·7	10·3	...	...	2·0	9·0	...	...	6·0	0·0	...	...	6·0	12·8	18
2	13·0	...	...	5·4	10·3	...	...	2·0	6·8	...	...	1·3	3·9	...	...	...	14·4	2
3	5·9	...	...	...	4·8	...	...	2·0	4·3	...	...	1·8	7·9	...	...	3·3	10·2	24
4	8·3	...	...	1·7	9·4	...	...	3·9	7·9	...	...	...	4·5	...	...	0·9	11·5	11
5	8·7	...	...	5·7	9·3	...	1·9	...	7·2	...	...	...	8·7	...	...	1·7	13·4	5
6	9·7	...	...	4·0	10·9	...	...	2·2	5·1	...	...	1·0	...	..	4·3	...	11·5	8
7	2·5	..	2·5	...	1·3	...	0·9	...	5·8	...	...	5·8	0·6	...	...	1·9	12·1	18
8	4·3	...	2·9	...	8·3	...	1·7	...	7·1	...	1·4	...	6·4	...	2·6	...	10·5	22
9	9·4	...	...	3·9	7·6	...	3·1	...	7·9	...	...	...	6·9	...	2·9	...	10·2	9
10	6·8	...	4·6	...	4·2	...	6·2	...	4·9	...	7·4	...	4·9	...	4·9	...	10·5	14
11	5·8	...	5·8	...	2·7	...	13·5	...	...	...	10·2	...	...	0·8	3·8	...	13·8	9
12	...	Ca	lm	...	1·3	...	...	6·5	5·3	...	...	7·9	4·3	...	...	10·3	11·1	21
13	1·7	...	...	8·3	2·6	...	...	6·4	3·3	...	..	4·9	6·8	...	...	4·6	10·2	1
14	9·6	...	...	1·9	7·9	...	...	...	6·5	...	...	1·3	8·2	...	...	...	10·5	23
15	9·8	...	...	...	11·9	...	...	2·4	10·3	...	...	2·0	12·1	..	...	5·0	14·8	19
16	14·9	..	...	6·2	14·2	...	...	5·9	14·1	...	...	2·8	0·5	...	2·6	...	16·7	12
17	2·7	...	1·8	..	8·3	...	...	1·7	13·0	...	...	5·4	14·2	...	...	5·9	16·1	19
18	13·0	...	...	5·4	11·8	..	...	4·9	12·1	...	...	5·0	6·8	...	...	1·3	15·4	2
19	...	5·2	..	...	1·2	...	...	5·8	9·3	...	...	1·9	11·5	...	...	...	12·8	22
20	5·2	...	3·4	...	4·9	...	3·3	...	6·1	...	2·5	...	8·2	...	...	3·4	10·2	1
21	...	...	8·2	...	...	...	7·5	...	6·9	...	2·9	...	11·5	...	...	...	13·1	19
22	3·0	...	15·1	...	3·9	...	9·4	...	7·3	...	17·6	...	2·9	...	14·8	...	19·7	16
23	...	2·1	10·6	..	3·8	...	2·6	...	6·9	...	16·6	...	2·6	...	12·9	...	18·0	15
24	...	0·9	4·5	..	...	Ca	lm	...	...	4·0	4·0	...	...	2·1	5·2	...	10·8	1
25	...	4·6	6·8	...	2·0	...	10·0	...	7·4	...	7·4	...	8·5	...	5·7	...	12·8	22
26	9·8	...	9·8	...	3·9	...	19·6	...	...	...	21·0	...	...	3·5	17·7	...	22·0	14
27	...	5·0	12·1	...	...	2·9	6·9	...	10·3	...	...	2·0	...	0·4	2·3	...	15·1	1
28	...	20·3	...	4·0	...	15·4	...	6·4	...	15·1	...	3·0	...	8·3	...	1·7	21·3	4
S+N & W+E	190·9		136·3		75·1		138·7		103·9		143·1		75·0		125·7			
S−N & W−E	114·7		39·9		38·5		34·5		65·7		38·9		44·8		33·7			

ENGLAND S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	11·9	...	...	4·9	11·6	...	...	4·8	12·3	...	...	5·1	14·2	...	...	...	17·0	16	40
2	5·8	...	2·4	...	7·1	...	...	...	9·6	...	...	...	9·6	...	...	...	10·8	13	55
3	7·9	...	...	...	10·4	...	...	...	5·8	...	2·4	...	7·0	...	1·4	...	15·2	23	25
4	15·9	...	...	...	1·6	...	3·9	...	6·6	...	2·7	...	9·2	...	3·8	...	19·0	3	5
5	1·8	...	4·3	...	1·1	...	2·7	...	4·5	...	4·5	...	4·5	...	4·5	...	10·0	24	0
6	3·5	...	8·5	...	3·8	...	9·2	...	6·7	...	10·1	...	7·6	...	11·4	...	16·4	21	30
7	...	..	8·8	...	3·4	...	8·1	...	7·1	...	7·1	...	7·1	...	7·1	...	12·5	0	15
8	1·4	...	7·0	...	4·5	...	10·8	...	2·0	...	9·8	...	6·3	...	9·4	...	21·0	8	45
9	2·5	...	12·7	...	5·6	...	8·3	...	5·4	...	13·1	...	4·8	...	11·6	...	17·5	12	55
10	4·1	...	10·0	...	3·5	...	8·0	...	7·1	...	7·1	...	5·6	...	8·3	...	13·4	7	20
11	2·0	...	9·8	...	2·7	...	6·6	...	2·4	...	5·8	...	5·0	...	5·0	...	14·0	3	40
12	6·9	...	2·9	...	7·0	...	3·0	...	3·5	...	8·0	...	...	...	9·6	...	12·6	13	5
13	...	3·8	9·2	...	...	3·2	7·7	...	..	5·0	5·0	...	...	4·1	4·1	...	12·6	3	45
14	...	1·9	0·8	...	...	0·7	0·3	...	4·8	...	...	3·2	6·7	...	...	...	7·3	20	45
15	7·9	...	...	...	7·9	...	...	...	5·0	...	...	...	6·7	...	...	...	10·7	22	45
16	11·3	...	...	...	12·9	...	...	...	15·0	...	...	...	8·3	...	...	...	16·8	10	30
17	3·8	...	...	...	2·3	...	1·0	...	5·4	...	...	...	7·9	...	..	...	8·9	19	50
18	5·7	...	1·1	...	8·1	.	1·6	...	9·2	...	...	...	5·4	...	...	...	12·4	11	0
19	0·4	...	0·1	...	...	4·6	1·9	...	...	3·1	1·3	...	...	1·6	3·9	...	8·2	11	25
20	3·2	...	7·7	...	4·2	..	6·2	...	3·8	...	9·2	...	...	5·3	8·0	...	20·0	16	30
21	...	5·6	5·6	...	...	3·0	7·3	...	...	...	11·3	...	...	...	11·3	...	15·1	4	25
22	...	...	13·8	...	...	5·1	12·3	...	..	5·1	12·3	...	...	3·8	9·2	...	16·5	0	10
23	...	2·7	6·6	...	...	2·1	2·1	...	1·1	...	5·7	...	...	...	2·9	...	10·0	0	15
24	...	...	3·3	...	2·4	.	5·8	...	...	...	8·8	...	...	8·3	5·6	...	23·5	23	30
25	...	15·0	...	...	...	10·0	...	...	...	5·7	...	1·1	...	3·8	...	...	23·8	0	40
26	...	1·2	6·2	...	...	3·8	9·2	...	...	3·8	9·2	...	...	4·5	10·8	...	14·4	23	45
27	...	3·8	9·2	...	..	4·6	11·2	...	...	...	13·8	...	...	8·1	12·1	...	19·0	20	15
28	...	10·1	6·7	...	...	9·7	14·6	...	...	21·7	...	...	...	15·3	...	10·2	29·5	17	40
S+N & W+E	140·1		141·6		146·9		146·6		161·7		156·6		170·7		150·2				
S−N & W−E	51·9		131·8		53·3		137·0		72·9		137·8		51·1		129·8				

ENGLAND E.:—GREAT YARMOUTH.

Height of Head above—Roof 10·7 m., Ground 12·8 m., M.S.L. 15·9 m.
Height of Cups above—Roof 3·7 m., Ground 18·3 m., M.S.L. 22·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust (Gorleston).	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s	m/s.	m/s	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	3·3	...	...	1·4	4·0	...	...	1·6	4·3	...	...	1·8	6·7	...	...	2·8	10·1	17	10
2	4·8	...	...	2·0	4·3	...	...	..	4·5	...	...	0·9	2·3	...	...	...	10·6	2	5
3	3·0	...	...	...	4·3	...	...	...	3·6	...	...	2·4	4·3	...	...	1·8	8·5	20	15
4	2·9	...	...	0·6	3·8	...	0·8	...	5·7	...	2·4	...	5·9	...	...	...	12·2	12	5
5	4·3	...	...	...	3·0	...	...	...	4·6	...	...	...	2·6	...	...	...	12·2	0	20
6	2·4	...	1·0	...	3·5	...	3·5	...	5·7	...	3·8	...	6·2	...	4·2	...	15·9	23	25
7	2·8	...	6·7	...	1·4	...	3·3	...	1·2	...	6·1	...	3·0	...	3·0	...	17·0	0	25
8	3·3	...	3·3	...	0·9	...	4·5	...	2·8	...	6·7	...	4·0	...	4·0	...	11·4	21	45
9	5·2	...	3·4	...	4·9	...	4·9	...	6·3	...	6·3	...	6·0	...	6·0	...	19·1	17	30
10	2·9	...	6·9	...	1·3	...	6·8	...	3·3	...	7·9	...	4·4	...	4·4	...	15·5	23	35
11	4·0	...	6·0	...	2·9	...	6·9	...	1·2	...	6·3	...	1·4	...	3·4	...	13·8	1	15
12	1·3	...	3·1	...	2·0	...	4·8	...	3·7	...	3·7	...	3·2	...	2·2	...	8·9	23	10
13	2·7	...	1·8	...	1·3	...	0·9	...	...	2·9	0·6	...	...	5·6	...	...	8·1	0	50
14	...	4·4	...	6·6	...	3·3	...	4·9	...	2·6	...	3·8	...	..	...	4·9	8·0	10	45
15	1·4	...	...	2·2	2·9	...	...	4·3	4·0	...	...	4·0	6·3	...	...	6·3	12·4	22	20
16	4·5	...	...	0·9	8·0	...	...	1·6	9·4	...	...	3·9	8·7	...	...	5·8	16·2	10	25
17	1·7	...	...	1·1	2·1	...	...	2·1	3·0	...	...	3·0	2·8	...	...	2·8	9·4	0	20
18	3·3	...	...	3·3	4·9	...	...	4·9	3·7	...	...	3·7	2·5	...	...	2·5	9·0	11	25
19	2·5	...	...	2·5	1·1	...	...	1·1	1·1	...	...	1·1	...	Ca	lm	...	5·0	1	15
20	3·3	...	1·4	...	2·3	...	2·3	...	3·0	...	2·0	...	6·4	...	2·6	...	15·9	23	50
21	...	1·3	6·8	...	...	...	7·2	...	...	...	7·5	...	3·7	...	5·5	...	12·9	13	20
22	3·1	...	7·6	...	1·6	...	8·0	...	1·4	...	7·1	...	1·2	...	6·1	...	14·0	12	20
23	...	...	6·6	...	...	1·0	5·1	...	...	...	5·2	...	1·0	...	2·4	...	12·7	12	45
24	0·6	...	3·2	...	2·2	...	3·2	...	1·2	...	5·8	...	1·8	...	4·3	...	11·4	13	35
25	...	...	5·2	...	...	5·7	2·4	...	...	5·2	2·1	...	...	1·6	1·6	...	18·3	4	0
26	1·3	...	3·0	...	2·3	...	5·5	...	2·9	...	6·9	...	...	...	4·9	...	13·6	14	15
27	...	1·1	5·5	...	...	...	4·9	...	...	0·8	3·8	...	2·5	...	2·5	...	9·2	10	25
28	...	1·1	5·5	...	...	1·2	6·1	...	...	3·3	...	...	...	1·7	...	1·1	11·5	0	25
S+N & W+E	72·5		97·6		76·2		101·6		91·4		108·8		95·8		82·1				
S−N & W−E	56·7		56·4		53·8		60·6		51·8		59·6		78·0		26·1				

9. Seismological Diary.

Earthquakes:—Eskdalemuir.

Day.	Phase.	Time, G.M.T.	Period.	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	Δ.	Remarks.
		h m s	s	μ	μ	μ	km.	
3	L	15 18	19	3	2	...	...	
	F	16 23	...	...	...	...	...	
4	P	18 14 12	...	...	...	...	...	Preliminary phases very faint.
	S	18 21 37	...	...	...	...	...	P doubtful.
	L	18 26 41	...	...	...	...	...	
	M	18 32 1	19	8	...	...	...	
	F	18 55	...	...	...	...	...	
6		15 55 to	...	...	...	...	...	Long waves.
		16 5	...	...	...	...	...	
7	P	5 38 32	...	...	...	...	4700	
	S	5 44 59	...	...	...	...	...	
	L	5 51 13	...	...	...	...	...	
	F	7 30	...	...	...	...	...	
12		3 46 to	...	...	...	...	...	Faint disturbance.
		4 5	...	...	...	...	...	
12		20 41 to	...	...	...	...	...	Faint disturbance.
		20 54	...	...	...	...	...	
12	P	23 4 26	...	...	...	...	...	
	L	23 14 7	...	...	...	...	...	
	F	23 35	...	...	...	...	...	
13	Pe	2 56 24	...	...	...	...	7000	
	S	3 4 54	...	...	...	...	...	
	L(?)	3 16 20	...	...	...	...	...	
	M	3 40 59	20	11	...	...	...	
	M	3 41 49	20	...	7	...	...	
	F	4 15	...	...	...	...	...	
13	P	6 19 56	...	...	...	...	9700	Swatow (China), according to press reports.
	S	6 30 41	...	...	...	...	...	
	SR_1	6 36 52	...	...	...	...	...	
	SR_2	6 39 35	...	...	...	...	...	
	L	6 44	...	...	...	...	...	
	M	6 51	...	...	...	...	...	
	F	8 45	...	...	...	...	...	
13		9 13 to	...	...	...	...	...	Long waves.
		9 23	...	...	...	...	...	
13		21 8 to	...	...	...	...	...	Moderate disturbance; no preliminary phases observed. Prominent L at 21 h. 17 m.
		21 36	...	...	...	...	...	
13		22 55 to	...	...	...	...	...	Faint disturbance.
		23 22	...	...	...	...	...	
19		17 38 to	...	...	...	...	...	Slight disturbance. Record confused with large microseisms.
		18 0	...	...	...	...	...	
23		19 10 to	...	...	...	...	...	Long waves. Records confused with large microseisms.
		19 40	...	...	...	...	...	
24		23 20 to	...	...	...	...	...	Long waves. Records confused with large microseisms.
		23 35	...	...	...	...	...	

Microseisms of N. Component:—Eskdalemuir.

Day.	0 h. A_N.	0 h. T.	6 h. A_N.	6 h. T.	12 h. A_N.	12 h. T.	18 h. A_N.	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	3·0	6	2·1	6	2·3	6	2·4	6·5
2	3·8	6·5	3·0	6·5	2·4	6	2·3	6
3	1·5	5·5	1·2	6	1·3	5·5	1·0	6
4	1·0	6	0·9	6	1·3	6·5	1·5	6
5	1·6	6	1·7	7	1·8	7	2·5	7
6	4·0	7	3·2	8	4·5	6	3·1	6
7	2·7	6	2·3	6	3·4	7	4·1	7
8	5·3	7	3·9	7	5·4	7·5	5·7	9
9	5·3	9	4·9	9	4·0	9	4·9	8
10	4·4	7·5	3·3	7·5	2·6	6·5	2·5	7
11	2·3	6·5	2·1	6	2·0	5·5	1·7	5·5
12	1·6	6	1·2	6	1·4	5	1·4	5
13	1·4	5	1·5	6	1·4	5·5	1·4	5
14	1·3	5	1·1	5·5	0·9	6	0·9	6
15	1·2	6	1·3	5	1·6	6	1·1	5·5
16	2·4	6	2·8	6·5	3·0	6·5	...	...
17	3·1	6	3·2	6	3·5	6	3·7	6
18	4·1	6	5·0	6·5	4·5	8	4·4	7
19	4·1	6	3·6	7	3·9	6·5	4·4	6
20	3·6	7	4·1	8	5·4	9	5·9	8
21	5·3	8	5·1	8	5·8	6	4·7	7
22	...	...	...	...	4·7	8	4·6	9
23	5·0	7·5	5·2	8	5·2	7·5	4·3	8
24	3·6	8	3·4	7·5	3·1	7	3·1	7
25	3·6	7	3·8	7	2·1	7	3·1	7
26	3·6	7	3·8	6·5	4·8	7	5·0	8
27	6·1	7·5	5·3	6·5	3·3	7	3·7	6
28	4·0	5	4·0	6	4·1	6	3·7	6

Means for Month $\begin{cases} A_N = 4·3. \\ T = 8·9. \end{cases}$ Normals, 1911–17 $\begin{cases} A_N = 2·3. \\ T = 6·0. \end{cases}$

Earthquakes:—Richmond (Kew Observatory).

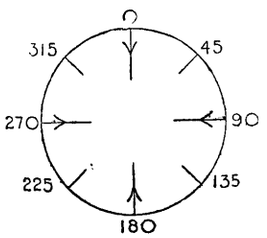
Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h m	h m	
3	...	15 35	Small.
4	...	18 36	Small.
6	...	16 1	Very small; doubtful.
7	5 39	6 22·5	Amplitude on trace 1·3 mm.
12	...	23 16	Very small.
13	...	3 45	Small.
13	6 30	7 4·5	Amplitude on trace 5·5 mm.
13	...	21 23	Small.
19	...	17 58	Very small.
24	...	23 39	Very small; doubtful.

Note.—The month was characterised by microseismic motions of exceptionally large amplitude. This, together with wind effects, renders it probable that some of the smaller earthquakes have not been noticed.

10. Soundings with Pilot Balloons.

Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind.																Cloud Observations.		
			Geostrophic.		By Anemometer.		At Heights above M.S.L.														
							500 m.		1000 m.		2000 m.		3000 m.		4000 m.		5000 m.				
			From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	Type.	From N.	mr/s.
		h. m.	°		°		°		°		°		°		°		°			°	
1	Eskdalemuir .	8 5	180	26·8	315	1·4	165	7·0	195	14·0	185	13·5	...	...	...	...	...	...	Ci., Ci.-St.	...	...
1	S. Farnboro' .	15 20	180	15·6	?	?	170	11·5	190	13·0	175	14·5	...	...	...	...	...	...	...	...	...
5	Cahirciveen .	9 10	230	20·1	190	6·0	190	11·0	195	18·0	235	12·5	...	...	...	...	...	...	Ci., Cu.	225	...
6	S. Farnboro' .	7 55	250	17·9	200	9·5	235	14·5	240	18·0	235	19·5	...	...	...	...	...	...	Fr.-St., St.-Cu.	...	...
7	Cahirciveen .	16 55	230	17·9	235	10·0	240	10·0	250	15·5	240	18·0	...	...	...	...	...	...	St.-Cu., St.	180	...
8	S. Farnboro' .	9 55	270	13·4	240	8·5	255	13·5	265	14·0	240	21·0	...	...	...	...	...	...	Fr.-Nb., St.-Cu., Ci.-St.	...	...
16	,,	8 35	180	17·9	205	7·5	165	12·0	170	15·0	170	9·0	190	12·0	180	13·0	...	...	Ci., Fr.-St.	...	...
18	,,	7 55	200	6·7	170	0·5	175	7·0	135	6·5	180	6·0	145	8·5	...	...	...	...	St., St.-Cu.	155	...
19	Cahirciveen .	8 35	320	4·5	75	2·1	180	3·4	240	4·6	290	8·5	295	11·0	...	...	...	...	Ci., St.	315	...
19	S. Farnboro' .	8 15	140	4·5	145	3·0	120	3·5	315	0·5	225	0·1	205	3·5	85	1·0	305	2·5	Ci.	...	...
19	,,	15 10	?	?	265	4·0	270	2·5	305	4·0	225	3·0	260	2·5	300	4·5	360	7·0	Ci.	...	...
21	,,	7 45	270	17·9	?	9·5	285	15·0	300	19·0	290	21·0	...	...	...	...	...	...	Ci.-St.	...	...
23	,,	8 0	290	11·2	?	8·0	305	11·0	310	10·5	285	8·0	320	13·5	...	...	...	...	St.-Cu., Ci.	...	...
23	,,	8 30	290	11·2	?	8·0	310	14·5	315	8·5	295	9·5	...	...	...	...	...	...	St.-Cu., Ci.	...	...
25	Eskdalemuir .	7 25	320	11·2	—	0·0	330	7·0	355	15·0	355	11·5	...	...	...	...	...	...	Ci.-St., Fr.-Cu.	...	...
25	Cahirciveen .	8 35	360	8·9	45	1·0	330	3·8	315	6·0	335	15·0	...	...	...	...	...	...	Cu.	...	...
27	S. Farnboro' .	7 40	290	11·2	250	6·5	305	12·0	315	9·5	300	13·0	295	14·5	290	13·0	290	19·0	Ci., Ci.-St.	...	...
28	,,	7 45	290	17·9	265	4·0	310	9·5	315	11·5	320	10·5	325	12·0	...	...	...	...	A.-St., A.-Cu., Ci.	...	...
													6000 m.		7000 m.		8000 m.				
19	S. Farnboro' .	8 15	(For observations at lower levels, see above.)										340	6·0	350	12·0	340	14·0			
19	,,	15 10											335	11·0	340	15·0	...	...			
27	,,	7 40											300	24·0	..	...	...	...			

No soundings were made at Aberdeen.



Wind Protractor.

Height of Station above M.S.L. = H.
Height of Anemometer above ground = h.

	H.	h.
Eskdalemuir . .	242 m.	15 m.
S. Farnborough . .	70 m.	31 m.
Cahirciveen . .	30 m.	13 m.

Notes on Pressure Distribution.

February 1918.
1 7 h. Anticyclone over the Continent and British Isles.
1 18 h. Low over Ireland ; high over the Continent.
5 7 h., 6 7 h., 7 18 h., 8 7 h. Low centred near Iceland region ; high over the Continent.
16 7 h., 18 7 h. High over Baltic ; low over Iceland region ; straight isobars.
19 7 h. High over the Continent and the Azores. V. over British Isles.
19 13 h. High over the Azores and Baltic : low N. of Ireland.
21 7 h. V. over the North Sea.
23 7 h. V. over Scandinavia.
25 7 h. Anticyclone over the British Isles.
27 7 h. High over Bay of Biscay ; low over the Baltic.
28 7 h. Low centred over North Sea.

Notes on Ascents.

1st, 8 h. 5 m. Clouds stationary.
5th, 9 h. 10 m. Shower just before ascent.
19th, 8 h. 15 m. Thick surface mist.
21st, 7 h. 45 m. Cloud on the horizon.

11. Nephoscope Observations.

Aberdeen. Taken at 13 h. G.M.T.

Day.	Type of Cloud.	Velocity-height-ratio.				Remarks.
		Degrees from N.	Milliradians per Second.	Components.		
				W.–E.	S.–N.	
		°	mr/s.	mr/s.	mr/s.	
5	Fr.-Cu.	217	20·0	+ 12·0	+ 16·0	Velocity approximate.
6	A.-St.	255	1·4	+ 1·4	+ 0·4	Rather floccular A.-St., becoming flat A.-Cu. later.
8	Ci.-Cu.	239	3·0	+ 2·6	+ 1·5	Ci.-Cu. fused into lenticular sheets.
11	Ci.	275	8·9	+ 8·9	− 0·8	Ci., massing into dense band of Ci.-Cu. waves. Note
	Fr.-Cu.	278	13·0	+ 12·9	− 1·8	[very high velocity.
14	Fr.-St.	189	10·0	+ 1·7	+ 9·8	Fracto-St. becoming cumuliform.
21	Ci.-St.	282	5·5	+ 5·4	− 1·2	Coarse floccular "false" Ci., massing into a sheet of Ci.-St. and A.-St., almost approaching the form of thin flat A.-Cu. in places. Bright parhelia with a faint halo of 22° and a strongly-coloured arc of contact to the 46° halo were seen. Possibly more than one level of Ci.-St. was present; measurement was made of the lowest layer.
22	Ci.-Cu.	288	8·0	+ 7·6	− 2·5	Heavy sheets of coarse Ci. to Ci.-Cu., undulated in places, "speckle-cloud" form in others.
23	Ci.-Cu.	280	6·3	+ 6·2	− 1·1	Coarse Ci. plumes to Ci.-Cu. patches, banded in places.
25	A.-Cu.	325	5·2	+ 3·0	− 4·3	Fine typical A.-Cu.
26	Fr.-Cu.	272	20·0	+ 20·0	− 0·7	Average velocity given.

12. Aurora.

Day.	a.m. or p.m.	Moon.	Magnetic Character.		Aurora Observations.	
			Eskdalemuir	Richmond.	Station.	Remarks.
4	...	☾	...	...	...	
5	p.	...	1, 2	1, 2	Eskdalemuir	Slight.
					Deerness	
					Wick	Brilliant.
					Gordon Castle	
9	p.	...	1, 1	1, 1	Aberdeen	Glow type, arch and streamers faintly shown, moderately bright, 21 h.–24 h.
					Edinburgh	
					Glasgow	
					Deerness	
					Wick	
10	p.	...	1, 1	1, 2	Gordon Castle	
					Inverness	
					Aberdeen	Faint glow type, 21 h.–24 h.
					Deerness	
					Wick	
11	p.	●	1, 2	2, 2	Gordon Castle	
					Inverness.	
					Aberdeen	Glow type, moderately faint, 21 h.–23 h.
18	...	☽	...	...	...	
25	...	○	...	...	...	
					Lerwick	19 h. 30 m.–21 h. 30 m.
					Deerness	
28	p.	...	1, 1	1, 1	Wick	
					Aberdeen	Moderately bright glow type seen occasionally 20 h.–22 h.

Note.—The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at the midnight of the night in question.

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*

Eighth Year.—No. 3. MARCH 1918]. Units based on the C.G.S. System. [*Price* 1*s.*

1. SUNSHINE AND SOLAR RADIATION.

Day.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W.							RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W.					ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W.						CAHIRCIVEEN.	
	Bright Sunshine.*		Radiation received on Horizontal Surface by Callendar Radiograph.					Bright Sunshine.*		Radiation at Noon by Ångström Pyrheliometer.			Bright Sunshine.*		Radiation by Ångström Pyrheliometer.				Bright Sunshine.*	
	Total.	Per cent. of Possible.	Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Time.	11.30 h. to 12.30 h.	Total.	Per cent. of Possible.	Intensity.	Vertical Component.	Sky.	Total.	Per cent. of Possible.	Time.	Sky.	p sec Z. p_0	Intensity.	Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	6·3	58	690	40	48	12 38	46	6·7	62	...	...	...	6·1	58	...	...	...	...	3·8	35
2	4·7	43	590	33	45	12 3	45	5·7	52	64	33	Clear	0·7	7	...	...	...	...	7·3	68
3	0·0	0	60	3	6	14 45	5	0·0	0	...	...	...	0·6	6	...	...	...	...	9·0	83
4	0·0	0	120	7	9	12 22	9	0·0	0	...	...	...	0·0	0	...	...	...	...	4·5	41
5	0·0	0	*n* 30	2	*n* 4	14 5	3	0·0	0	...	...	...	0·0	0	...	...	...	...	3·6	33
6	7·2	65	780	41	37	13 5	36	7·0	63	31	17	Hazy	3·2	29	...	...	...	...	0·5	5
7	0·0	0	190	10	30	12 53	15	0·0	0	...	...	...	1·1	10	...	...	...	...	3·9	35
8	0·6	5	290	15	34	13 40	12	1·2	11	...	...	...	0·0	0	...	...	...	...	1·6	14
9	2·3	20	460	23	27	12 58	24	4·2	37	13	7	Hazy	3·4	30	...	...	...	...	0·9	8
10	2·2	19	410	21	29	14 38	14	5·0	44	...	...	...	0·7	6	...	...	...	...	2·7	24
11	6·0	52	860	42	46	12 35	45	6·8	59	54	31	Ci.	0·0	0	...	...	...	...	0·0	0
12	5·2	45	800	39	47	13 5	45	5·4	47	56	32	Ci.	2·0	17	...	...	...	...	9·0	78
13	1·7	15	530	25	44	12 2	44	2·9	25	27	15	Ci.	*x* 9·7	84	12 24	Ci.	1·91	82	9·4	81
14	5·5	47	810	38	47	11 15	46	4·5	38	43	25	Ci.	4·0	34	...	...	...	...	4·7	40
15	6·5	55	1000	47	52	13 10	51	6·4	54	47	28	Hazy	3·4	29	...	...	...	...	4·8	41
16	0·1	1	360	17	24	10 2	11	1·6	14	...	...	...	0·0	0	...	...	...	...	3·3	28
17	1·3	11	580	26	52	11 3	48	0·3	3	...	...	...	7·0	59	...	...	...	...	8·2	69
18	4·3	36	980	44	61	11 30	61	4·0	33	54	33	Ci.	0·0	0	...	...	...	...	6·1	51
19	1·0	8	330	15	18	13 33	17	0·0	0	...	...	...	0·0	0	...	...	...	...	7·4	62
20	9·2	76	1230	53	55	11 38	55	9·1	75	63	39	Clear	0·3	2	...	...	...	...	3·9	32
21	6·6	55	1060	45	52	11 52	52	6·2	51	54	34	Hazy	0·0	0	...	...	...	...	4·2	35
22	8·1	66	1210	51	54	13 37	50	9·0	74	64	40	Ci.	6·0	49	...	...	...	...	8·6	70
23	*x* 9·4	76	1100	46	47	11 40	47	*x* 9·9	80	61	39	Clear	6·8	55	12 19	Clear	1·72	82	9·9	80
24	4·7	38	760	31	33	10 30	29	9·7	79	...	...	...	9·5	77	12 18	Clear	1·70	85	10·5	85
25	3·5	28	750·	31	59	13 25	58	4·2	34	56	36	Clear	8·4	68	...	...	...	...	*x* 10·7	86
26	3·9	31	820	33	51	10 12	45	5·3	42	75	48	Clear	1·6	13	...	...	...	...	9·6	77
27	0·2	2	430	17	35	13 5	23	0·1	1	...	...	...	0·1	1	...	...	...	..	1·1	9
28	1·0	8	310	12	32	16 0	17	1·2	10	...	...	...	0·5	4	...	...	...	...	7·0	56
29	3·6	28	650	25	62	11 8	60	3·7	29	...	...	...	3·8	30	...	...	..	...	1·6	13
30	0·0	0	270	10	20	9 5	14	0·0	0	...	...	...	0·0	0	...	...	...	...	5·3	42
31	8·7	68	*x* 1260	48	*x* 70	11 53	*x* 70	6·2	48	...	...	...	0·2	2	...	...	...	...	0·0	0
Means	3·68	31	636	29	40	—	35	4·06	35	—	—	—	2·55	22	—	—	—	—	5·26	45
Normal	2·35	20	—	—	—	—	—	3·39	29	—	—	—	3·06	26	—	—	—	—	3·97	34
	←— 5 years —→		3 years					←— 35 years —→					←— 5 years —→						←— 35 years —→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M. S. L.:—H = 9·1 m. H_b = 13·7 m. H_a = 26·4 m. Above Ground: h_t = 1·3 m. h_r = 0·56 m. h_a = 13·9 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity. Vapour Pressure.		Humidity. Percentage.		Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount (0–10) and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9h.		21 h.		9 h.	21 h.				
			a.	*a.*	*a.*	*a.*									Tenths of Sky covered.			*a.*		
	mb.	mb.	200+	200+	200+	200+	millibar.		%	%	°	m/s.	°	m/s.			mm.	200+		
1	1024·3	1023·0	76·5	75·2	79	73	5·6	5·6	72	78	40	10	—	1	3	1	—	74	Fine *a.* Fair *p.* Fine *n.*, with frost.	
2	1022·2	1020·4	71·6	76·2	79	*n* 71	5·0	5·6	91	73	—	1	115	3	0	3	—	*n* 68	⌣ *n.* Fine bright day. y.	
3	1019·1	1018·2	74·3	73·6	*n* 78	73	4·2	5·4	62	85	95	4	95	2	0	0∞	—	69	⌣ *n.* Fine dry day.	
4	1017·7	1018·0	76·0	78·7	80	73	5·5	7·2	73	79	125	4	145	3	1∞	3	—	69	⌣ *n.* o. ∞ *a.* Fine ∞ *p.*	
5	1019·1	1016·9	77·7	77·5	80	73	7·0	7·7	82	91	50	5	70	5	8∞	9∞	—	71	⌣ *n.* Fair. ∞ *a.* and *p.*	
6	1012·5	1009·0	77·1	78·1	80	77	6·6	7·7	81	88	70	7	135	9	8∞	4	6·1	75	Fair. ∞ *n.* b day. o. ● *p.*	—
7	1009·9	1012·2	79·2	80·9	82	78	8·2	8·3	87	78	120	6	110	8	8	5	2·9	76	o. c. p. *n.* and *a.* ⌢ *a.* and *p.* Fair.	19° 40′·8
8	1013·7	1012·7	80·2	78·3	82	78	8·0	7·8	79	88	110	5	60	2	7∞	3∞	—	78	Fair. ∞ *n.* and *a.* Fine day.	—
9	1012·6	1011·0	81·6	81·6	83	78	9·8	10·4	88	94	165	7	170	8	9∞	10	3·2	74	Fine *n.* c. to o. ∞ *a.* and *p.* ●⁰ *p.*	
10	1015·2	1013·5	80·9	81·6	83	80	9·5	9·1	90	82	—	1	160	8	10	7	2·1	78	● *n.* o. to c. *a.* and *p.* ⊕ *a.* and *p.*	—
11	1006·9	1008·4	83·5	79·3	84	78	11·7	8·8	93	92	175	8	200	3	10	3	9·4	81	o. *n.* o. to d. *a.* ● to b. *p.*	—
12	1017·1	1026·2	78·8	78·5	82	76	8·5	7·8	93	86	—	0	—	1	2	2	0·1	74	Very fine day.	68° 5′·5
13	1028·0	1024·1	76·2	79·6	84	73	6·7	8·7	87	89	80	2	50	2	3	10	—	71	⌣ *n.* Very fine dry day.	
14	1020·8	1018·4	80·7	81·8	84	80	9·3	9·6	89	85	155	4	50	2	10∞	8∞	—	78	o. *n.* ∞. Fine sunset.	
15	1013·7	1010·9	79·3	78·4	83	78	7·7	7·2	81	81	95	3	135	3	8∞	0	2·5	78	o. *n.* ●⁰ *a.* Fine day with ∞.	
16	1009·6	1007·3	80·4	78·1	81	78	7·6	6·8	74	78	125	6	100	12	7∞	1∞	—	74	Fine *n.* and *a.* ∞. c. to o. *a.* Fine *p.*	
17	1007·1	1008·1	81·3	81·6	84	79	8·2	9·2	75	83	95	5	160	7	1∞	7	0·4	77	Fine *a.*, with ∞. Fair later.	
18	1012·3	1008·1	82·5	82·6	85	81	11·3	11·5	96	97	205	2	170	8	3	10	7·1	79	c. p. *n.* Fine *a.* Fair to dull *p.*	
19	1009·8	1020·7	82·1	81·6	85	80	10·5	10·2	91	92	235	3	240	3	6	3	7·3	78	● *n.* Fine day. ● *p.* ⋃ *n.*	
20	1023·7	1024·3	83·1	82·2	86	81	11·4	10·6	93	92	175	5	175	6	10	2	—	80	c. to o. *n.* Fair *a.* and *p.* Fine *n.* ⋃ *n.*	—
21	1024·8	1024·8	83·2	82·4	86	*x* 82	11·9	10·3	96	88	175	9	170	9	10	2	0·5	81	Fine to o. d. *n.* Fine *a.* and *p.*	19° 36′·8 68° 8′·0
22	1025·1	1024·8	83·5	82·6	86	81	10·8	10·4	85	88	170	8	170	6	7	2	—	81	c *n.* Fine *a. p.* and *n.*	17836 γ
23	1024·0	1024·4	85·3	82·2	87	80	8·0	10·1	*n* 56	88	150	10	—	1	1	0	—	77	Fine, with ∞ *a.* 23rd—	19° 39′·4
24	1023·7	1022·6	82·3	81·6	*x* 88	78	9·4	9·5	81	85	—	0	—	0	1	0ϕ	—	75	ϕ *n.* Fine dry day.	—
25	1022·0	1023·4	81·5	80·9	87	78	9·7	9·7	88	92	—	0	—	0	1∞	0∞	—	75	ϕ *n.* Fine day, with ∞.	17838 γ
26	1021·3	1017·1	80·1	82·2	83	75	9·3	10·0	92	87	155	3	180	3	2∞	10	0·1	73	Fine *n.* and *a.* ϕ∞ c. to o. *p.* 26th—	—
27	1009·5	999·7	82·7	80·3	85	80	11·5	9·6	96	94	185	6	250	8	10	10●	18·2	81	o. *n.* ●⁰ d. and p. *a.* Dull day. ●⁰ *p.*	—
28	995·9	999·9	82·1	81·9	84	80	8·8	9·1	76	81	185	11	300	7	7	9	1·2	78	p. *n.* and *a.* Fair. c. to o. and p. *p.*	
29	1003·3	995·0	82·2	83·2	84	80	9·6	12·0	83	97	240	2	170	6	9	10●	6·8	77	c. and p. *n.* b. to c. *a.* o. day. d. to ● *p.*	
30	990·2	983·2	82·5	82·0	85	81	11·1	9·2	94	81	245	5	100	5	7	10●	*x* 21·5	80	ϟ and ●² *n.* Fair day. ⊕ *p.* ● *p.*	
31	982·2	992·2	80·2	81·9	82	79	9·3	9·6	92	85	—	0	345	7	10●	9	10·4	79	●⁰ *n.* and *a.* o. and ● day. Dull *p.*	17837 γ 19° 39′·0 68° 6′·8
Means	1014·1	1013·5	80·3	80·2	83·2	77·8	8·8	8·9	84	86		4·6		4·8	5·8	4·9	99·8	--	Monthly Totals or Means.	
Normal	1011·4	1011·7	80·0	80·1	83·2	77·5	8·5	8·5	85	85		5·6		5·7	—	—	111·7	—	Normals.	
	←— 45 years —→						←— 30 years —→				←— 35 years —→						45 yrs.			

* By Campbell-Stokes Sunshine Recorder.

x denotes the maximum and *n* the minimum value in the column.

Wt. 37652/515—400—2/19.—N. & Co., Ltd. Gp. XV.

3. METEOROLOGY :—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 5·5 m. Barometer, H_b = 10·4 m. Cups of Anemometer, H_a = 25 m.
Heights above Ground :—Thermometers, h_t = 3·0 m. Rain-gauge, h_r = 0·53 m. Cups of Anemometer, h_a = 20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity. Vapour Pressure.		Humidity. Percentage.		Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	Remarks.
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
	mb.	mb.	*a.* 200+	*a.* 200+	*a* 200+	*a.* 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	*a.* 200+	
1	1010·7	1016·2	76·6	74·4	79	73	5·2	4·6	66	68	360	9	23	5	5	0	0·1	69	Mostly fine. ●^{0} ✳^{0} shower 12 h. 50 m.
2	1017·8	1015·5	74·1	74·1	77	*n* 72	4·7	4·3	71	66	34	8	34	8	1 ⌙	10	—	68	⌙. Fine *a*. Fine to dull *p*.
3	1013·2	1016·2	74·6	75·6	*n* 76	74	5·4	7·0	80	95	34	8	34	2	10	10≡^{0}	0·7	73	Dull and wet.
4	1019·0	1013·8	76·1	77·0	77	75	6·1	7·4	80	91	34	2	11	5	10	10	—	74	Dull.
5	1012·0	1017·2	76·6	77·3	78	76	5·9	6·8	75	82	45	6	90	6	10≡^{0}	? 0≡^{0}	3·6	75	● early. Dull. Fine *n*.
6	1019·1	1018·5	78·7	77·5	83	76	7·4	7·2	81	85	79	6	56	6	3≡^{0}	10	—	72	Fine, with ∞.
7	1018·3	1017·9	78·0	78·2	81	77	7·6	6·6	87	75	67	5	67	7	10≡^{0}	0≡^{0}	—	76	Dull, with ≡^{0}.
8	1017·3	1018·0	75·8	74·2	79	74	5·4	5·3	73	80	56	5	101	2	10≡^{0}	0≡^{0}	—	73	Dull to 15 h. Fine later.
9	1022·3	1021·2	74·3	77·2	83	*n* 72	6·7	6·7	100	81	—	1	101	2	*10*≡ ⌙	0≡^{0}	—	*n* 66	≡ to 13 h. 30 m. Fine later. ≡^{0} 20 h.
10	1021·8	1022·0	73·6	79·5	87	*n* 72	6·2	7·5	98	77	—	1	—	1	*10*≡ ⌒	? 1≡^{0}	0·1	67	≡ to 10 h. Mostly fine later.
11	1021·0	1017·7	80·1	80·8	88	74	8·3	9·1	82	86	203	2	191	3	7≡^{0}	0	—	70	⌙ and ≡^{0} early. Fine after 9 h.
12	1016·0	1021·4	82·2	82·1	88	78	9·2	8·7	80	75	191	2	293	2	8	0≡^{0}	—	74	c. to 11 h. Fine later. ≡^{0} *n*.
13	1026·3	1026·2	81·1	81·1	84	*x* 80	8·4	8·9	78	83	23	3	34	3	9≡^{0}	10≡^{0}	—	71	Dull to fine. ∞ *p*.
14	1021·7	1018·1	79·1	77·7	83	77	7·0	7·2	74	84	45	5	56	7	7≡^{0}	10	0·5	76	Fine to dull. ● 18 h. 30 m.–19 h. 10 m.
15	1016·0	1014·9	78·5	76·4	81	74	6·8	5·2	75	67	79	7	56	5	? 0≡^{0}	10	—	74	Fine to dull.
16	1014·0	1014·8	75·0	76·0	80	*n* 72	6·2	6·2	88	82	—	1	—	1	? 0≡^{0}	0≡^{0}	—	*n* 66	⌙. Dull to fine. ∞
17	1015·3	1017·2	78·4	81·1	86	75	7·5	9·0	84	84	67	3	146	2	10≡^{0}	1≡^{0}	0·1	67	≡^{0} early. Dull to fair. ●^{0} 17 h. 45 m.
18	1020·4	1020·2	79·8	80·9	87	73	8·9	8·4	90	79	—	1	203	2	? 7≡^{0}	6≡^{0}	0·1	68	≡ and ⌙ early. Fine to fair. ⊔
19	1015·1	1014·5	78·2	81·0	84	75	7·9	9·5	90	89	—	1	270	3	10≡^{0}	10●	0·6	68	⌙. Dull. ●^{0} at times.
20	1025·1	1028·7	81·9	81·5	88	78	8·5	8·6	75	78	304	4	304	2	5	1≡^{0}	0·1	72	Fine. v. *p*. Mock sun 16 h. 45 m.
21	1032·6	1032·4	78·1	81·8	88	77	8·2	8·2	93	73	259	3	281	2	*10*≡	2≡^{0}	0·1	71	≡ to 9 h. Fine. v. *p*.
22	1032·4	1030·3	80·0	83·9	91	76	8·6	7·9	86	*n* 61	281	2	—	1	4≡^{0}	0≡^{0}	—	68	⌙. Fine and warm. v. *p*.
23	1030·2	1027·2	81·2	82·2	92	75	7·2	8·5	67	74	—	1	—	1	? 0∞	0≡^{0}	—	67	⌙ and ≡^{0}. Very fine and warm. ∞
24	1025·9	1020·3	79·9	82·3	*x* 93	75	7·7	8·4	78	72	—	1	—	1	? 0≡^{0}	0≡^{0}	—	68	⌙ and ≡^{0} early. Very fine and warm. ∞
25	1019·8	1021·0	81·0	77·7	83	76	7·9	6·4	74	75	360	6	23	5	9	1	—	69	o. to 8 h. Fine to fair later.
26	1022·0	1021·5	77·3	75·7	81	74	6·1	6·1	74	83	11	5	—	1	4	? 2≡^{0}	—	68	⌙. Fair to fine. ∞ *p*.
27	1017·8	1010·8	79·6	78·4	83	75	8·0	7·2	82	81	236	5	214	4	10	1	—	68	Dull to fair. Fine *n*.
28	1000·2	993·7	81·3	81·0	83	*x* 80	9·0	8·1	83	76	191	9	214	5	10●	9	3·1	74	Dull to fine.
29	997·2	1003·4	80·8	80·5	83	78	6·9	7·6	66	73	304	8	281	3	2	10	1·1	77	● early. Fine 8 h.–12 h. Showers *p*.
30	998·1	993·7	81·3	79·9	83	74	8·4	8·8	77	89	180	5	169	2	10	2≡^{0}	*x* 9·1	68	⌙. Dull and wet. Fine *n*.
31	988·5	991·1	83·3	82·0	85	*x* 80	9·6	8·6	77	75	203	7	203	8	7	8	3·5	72	● early. Fine to fair.
Means	1017·0	1016·6	78·6	79·0	83·7	75·5	7·3	7·4	80	79		4·3		3·5	6·7	4·0	22·8	70·6	**Monthly Totals or Means.**
Normal	1012·8	1012·8	78·2	78·5	82·4	75·4	7·3	7·4	8·1	8·1		4·3		3·6	—	—	40·9 (45 years)	—	**Normals.**
	45 years						30 years				35 years								

4. METEOROLOGY :—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3 12′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 242 m. Barometer, H_b = 237·3 m. Vane of Anemometer, H_a = 250 m.
Heights above Ground :—Thermometers, h_t = 0·9 m. Rain-gauge, h_r = 0·38 m. Vane of Anemometer, h_a = 15 m.

																			Remarks.
1	992·6	994·7	71·9	72·2	*n* 74	70	5·0	5·1	89	89	360	7	23	4	1	4	0·1	69	✳ p. early. Fine. ⊠ *a*. and *p*. v. Fair. ✳^{0} p. *n*.
2	996·3	996·9	72·0	70·1	75	69	4·6	3·8	81	77	45	2	67	2	9	8	—	67	Fair at first. o. ⊠ *a*. Fair to fine. v. *p*. and *n*.
3	994·8	993·2	72·1	71·7	*n* 74	69	4·6	4·5	81	81	56	6	23	3	10	10	—	67	v. Dull. ⊠ *a*. o. to fine *p*. b. c. v. to o. *n*.
4	992·9	992·8	74·0	74·4	75	72	5·7	6·4	87	95	—	0	67	3	10	10≡^{0}	—	67	Dull. ⊠. Damp and ≡^{0} after 11 h. ≡: *n*.
5	993·2	994·9	74·9	76·0	76	75	6·4	7·5	91	99	34	7	56	8	10≡^{0}	10≡^{0}	0·6	74	Dull. ≡^{0}, with e. or d. [d^0 *n*.
6	998·7	996·4	75·0	75·2	79	74	6·1	6·9	87	97	56	11	56	9	9	10≡^{0}	0·1	73	≡:^{0} early. b. c. q. to o. q. *a*. o. *p*. ≡^{0} or
7	995·1	996·2	74·9	74·6	77	73	6·9	5·2	98	77	67	9	23	6	10≡^{0}	7	0·1	72	c. q. 1 h. ≡^{0} d^0 7 h. g. *a*. Fair. ≡^{0} *p*. Fine. q. Ш *n*.
8	994·5	988·2	73·6	72·6	*n* 74	72	5·1	5·3	81	90	90	5	79	2	10	10	0·9	71	c. q. Ш at first. Dull *a*. ✳≡^{0} *p*. ⊠. ✳≡^{0} *n*.
9	992·0	988·4	72·9	77·5	79	72	5·0	6·8	82	81	—	0	169	5	10≡^{0}	10≡^{0}	—	72	o. ≡^{0} ⊠ 1 cm. Rapid thaw 11 h. Fine. ∞ *p*. o. ≡^{0} *n*
10	986·0	989·5	77·8	75·0	81	74	8·1	6·8	94	97	191	11	—	1	10●≡^{0}	10	4·5	76	o. early. ●≡^{0} 7–11 h. o. v. *a*. Fine *p*. o. *n*.
11	985·5	981·0	79·3	80·4	81	76	9·5	9·6	100	94	214	9	191	11	10●≡^{0}	10≡^{0}	6·7	73	●≡^{0}. ≡: 9 h. 30 m. ≡:^{0} or d^0 *p*. o. ≡^{0} *n*.
12	986·5	995·7	78·8	76·3	82	73	7·4	6·1	81	79	281	3	326	4	10	0	0·9	76	●≡^{0} 1 h. o. v. to o. ⊕ *a*. o. y. to b. ⊕ *p*. Fine. ⊠⊠ *n*.
13	1001·1	1000·3	74·0	73·0	83	69	5·2	4·4	80	73	—	0	—	1	5	0	—	66	⌙^{2}. Fine. ⊕ 11 h. Very fine. v. y. *p*. ⊠. Clear *n*.
14	997·7	994·8	76·4	74·9	83	69	4·9	6·0	*n* 63	85	—	0	360	2	2∞	3∞	—	66	⌙. b. z. to o. y. *a*. and *p*. Fine. ∞ *n*.
15	993·9	991·6	75·3	73·1	77	71	6·6	5·2	91	85	56	5	90	6	9	10	—	69	Fine early. Dull to fair. Cold.
16	989·3	987·2	74·8	74·8	77	73	5·9	6·2	86	89	67	6	—	1	10	10≡^{0}	—	73	Dull all day. ≡^{0} *n*.
17	989·3	989·2	76·0	76·5	82	73	6·2	6·4	83	82	67	2	—	1	1∞	10	—	72	o. 1 h. Very fine. ∞. y. *a*. and *p*. Dull *n*.
18	986·5	985·6	77·3	78·1	80	73	7·6	8·7	92	99	—	1	203	3	10≡^{0}	10≡^{0}	5·7	72	o. ≡^{0}. g. 10 h. ● 12 h. ●≡^{0} *p*. ≡: *n*.
19	981·8	986·5	79·0	78·4	79	77	8·1	7·8	87	87	180	5	293	4	10	3	3·5	74	≡: 1 h. ●≡^{0} till 16 h., then ≡:^{0}. Fine *n*.
20	993·7	996·4	78·0	78·5	83	77	8·3	8·4	96	93	203	4	225	3	10	3	0·1	74	Dull. ≡:^{0} *a*. o. to c. *p*. Fine *n*.
21	999·5	1000·4	78·2	78·2	79	*x* 78	8·7	8·7	99	99	203	8	214	5	10≡:	10≡:	0·2	75	≡: *a*. ≡: or d^0 *p*. ≡:^{0} *n*.
22	1000·7	999·0	77·6	76·7	82	75	7·5	7·2	89	90	225	7	—	1	10≡^{0}	2	—	77	≡:^{0} at first. Dull to fair *a*. and *p*. Fine *n*.
23	998·8	999·0	78·5	75·5	85	72	8·4	6·7	93	91	225	6	—	0	10≡^{0}	0≡^{0}	—	73	Fine. ≡^{0} in valley. o. to b. *a*. Fine. ∞^{0} *p*. ⋃ 22 h.
24	996·4	993·2	76·8	79·7	*x* 87	68	7·6	8·3	96	85	—	1	337	4	0≡^{0} ⌒	8	0·1	67	≡:^{0}. V^0 ⌙^{2} early. b. y. ∞ *a*. and *p*. c. ∞ to o.
25	994·8	995·6	78·9	72·5	82	70	6·0	5·2	65	88	11	6	337	2	3	1	—	71	o. 1 h. Very fine. v. y. *a*. ⊕ 14 h. ∞ *p*. and *n*.
26	994·2	989·3	72·1	74·2	79	*n* 66	4·8	5·6	84	84	—	0	—	1	9	10	—	*n* 64	Fine. ⌙ at first. o. y. *a*. o. y. ∞ *p*. o. ∞ *n*.
27	981·1	971·3	78·1	79·1	81	76	8·2	9·1	93	97	214	8	203	11	10●≡^{0}	10≡	4·8	72	Dull. ≡^{0} and ● at times *a*. and *p*. ≡:^{0} or ≡●^{0} *n*.
28	961·8	960·2	76·8	76·2	80	74	7·3	7·1	92	92	180	8	23	6	10	10≡^{0}	*x* 15·8	75	●^{2} till 5 h. p. △ *a*. ● *p*. o to d., then c. *n*.
29	969·1	973·2	77·0	76·1	79	75	6·6	6·8	82	89	360	9	—	1	5	10	—	72	b. to c. v. ⊠ on hills. b. c. q. to o. *a*. and *p*. o. *n*.
30	965·8	959·7	77·6	79·2	80	74	6·5	9·1	77	97	157	5	180	5	10	10≡^{0}	4·3	74	o. at first. p. 12 h.–21 h. o. ≡^{0} *n*.
31	957·6	957·4	79·8	78·0	81	77	8·5	8·2	86	94	45	5	45	6	9	10≡^{0}	1·5	77	o. to c. ≡^{0} ⊕ 8 h. ●^{0} ≡^{0} to o. ≡^{0} after 11 h.
Means	989·1	988·3	76·1	75·8	79·4	72·8	6·7	6·7	87	89		5·0		3·9	8·1	7·4	49·9	71·6	**Monthly Totals or Means.**
Normal 1911-15	978·4	978·7	76·1	75·8	79·5	73·0	6·6	6·6	86	87		6·6		5·6	—	—	137·5	—	**Normals.**

Temperatures at or below the normal freezing point of water are printed in small type.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Magnetic Force. Horizontal Comp't. Mean Time.	Horizontal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination. North.	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 2·28. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +	Charge per cc. ×10¹⁶. −	Air-Earth Current ×10¹⁶.
	a.	*a.*	cm.	cm.	h m	γ	h m	° ′	h m	° ′			v/m.	v/m.	v/m.	v/m.	About 15 h. Coulomb.		About 15 h. Amp/cm².
	200+	200+																	
1	77·9	79·5	270	271	...	...	...	...	...	...	1	1	140	405	660	670	...	...	...
2	77·0	79·5	269	...	...	...	...	...	...	...	1	0	460	530	615	505	...	...	...
3	76·3	79·3	270	...	...	...	...	...	...	...	1	2	180	310	−310	310	...	...	...
4	76·5	79·4	269	...	...	...	...	...	...	...	1	0	435	475	310	295	·32	·11	0·80
5	76·9	79·2	267	...	...	...	...	...	...	...	0	1	*z*+	700	645	685	...	·39	...
6	76·7	79·1	265	...	...	...	...	...	...	...	0	1	460	685	715	520	·13	·43	0·85
7	77·5	79·0	263	...	11 10	18440	14 23	14 57·2	14 26	66 58·1	2	0	280	560	600	715	·50	·41	0·70
8	77·2	79·0	260	...	...	...	..	...	...	...	2	0	460	630	730	980	·30	·02	0·60
9	76·6	79·0	257	...	...	...	...	...	...	...	0	0	560	810	590	870	...	...	...
10	76·1	79·0	254	...	...	...	...	...	...	...	1	1	855	505	320	660	...	...	...
11	76·8	79·0	252	...	...	...	...	...	...	...	1	0	225	365	280	520	·41	·45	1·85
12	78·0	78·9	250	...	...	...	...	...	...	...	1	0	380	505	225	350	·84	·24	1·50
13	78·9	79·0	249	...	...	...	...	...	...	...	0	0	295	460	490	420	...	...	...
14	79·2	79·1	249	...	11 32	18428	14 22	15 0·4	14 24	66 57·6	0	1	280	560	825	435	...	...	...
15	79·0	79·0	249	...	...	...	...	...	...	...	2	0	390	575	660	730	·19	·32	...
16	78·3	79·1	249	...	...	...	...	...	...	...	2	0	435	380	670	660	...	...	...
17	77·5	79·3	249	...	...	...	...	...	...	...	0	0	365	310	630	575	...	...	...
18	77·8	79·3	248	...	...	...	...	...	...	...	0	0	195	125	350	770	·37	·11	1·20
19	78·2	79·2	247	...	...	...	...	...	...	...	0	1	390	390	−225	265	...	...	...
20	78·0	79·4	246	...	...	...	...	...	...	...	1	1	490	460	280	295	·34	·34	1·10
21	79·1	79·3	244	...	11 7	18404	14 26	15 3·3	14 30	66 59·2	1	0	575	530	380	560	·86	·30	1·15
22	79·5	79·4	242	...	...	...	...	...	...	...	1	0	310	560	335	450	...	...	...
23	79·7	79·5	240	...	...	...	...	...	...	...	1	1	390	895	265	295	...	...	...
24	80·0	79·6	238	...	...	...	...	...	...	...	0	1	...	590	225	280	...	...	...
25	80·2	79·7	236	...	...	...	...	...	...	...	0	0	390	420	365	490	·37	·50	2·30
26	79·6	79·8	235	...	...	...	...	...	...	...	0	1	280	475	295	225	·64	·17	1·70
27	78·9	79·9	234	...	...	...	...	...	...	...	1	0	155	155	195	405	·15	·24	0·95
28	79·2	79·9	234	...	11 11	18403	14 24	15 3·4	14 41	66 58·4	0	2	100	−70	−85	840	...	...	...
29	79·7	79·9	233	...	...	...	...	...	...	...	1	1	*z*+	310	*z*±	420	...	...	...
30	79·2	79·9	232	232	...	...	...	...	...	...	1	1	390	460	−310	1120	...	...	...
31	79·6	79·9	232	...	...	...	...	...	...	...	0	1	−140	280	280	350	...	...	...
M.	78·2	79·4	249	—	—	—	—	—	—	—	—	—	347*	455*	362*	546*	—	—	—
	78·4	79·5																	
	←12 years→																		

* Mean of 28 days.

6. GEOPHYSICS :—ESKDALEMUIR.

Day.	Magnetic Force. North Component. Maximum. 15000 γ+.		Minimum. 15000 γ+.		West Component. Maximum. 4000 γ+.		Minimum. 4000 γ+.		Vertical Component. Maximum. 44000 γ+.		Minimum. 44000 γ+.		Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre.* Factor 5·98. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +	Charge per cc. ×10¹⁶. −	Air-Earth Current. ×10¹⁶.
	h m	γ	γ	h m	h m	γ	γ	h m	h m	γ	γ	h m			v/m.	v/m.	v/m.	v/m.	About 15 h. Coulomb.		About 15 h. Amp/cm².
1	21 6	1044	948	11 24	21 9	960	909	20 26	16 25	1082	1066	3 18	0	1 *b*	420	370	300	280	...	...	...
2	20 33	1021	948	17 17	12 39	968	891	20 14	17 17	1090	1065	22 55	1	0 *a*	180	455	285	235	...	...	...
3	14 44	999	908	14 23	14 0	1007	863	22 57	14 58	1127	1051	24 0	1	1 *a*	95	125	125	95	...	...	...
4	23 27	995	948	12 34	{13 30 / 13 53}	963	871	0 19	17 5	1074	1049	0 37	0	1 *a*	60	90	195	210	...	...	...
5	22 17	1017	942	11 29	14 47	970	917	20 45	20 14	1070	1058	12 0	0	1 *a*	250	270	200	95	...	...	...
6	23 18	994	944	12 8	13 2	981	927	22 0	21 15	1069	1052	11 0	0	1 *a*	225	160	210	155	...	...	...
7	21 14	1064	958	23 4	22 16	983	888	23 9	23 20	1080	1051	12 15	2	0 *a*	145	105	250	420	...	...	...
8	18 32	<728	{2 12 / 3 10}	10 44	4 31	1004	<698	{2 10 / 3 10}	18 19	*x* 1150	< 862	{1 7 / 3 9}	2	1 *a*	110	70	520	340	...	...	...
9	16 19	975	926	10 44	1 24	976	901	7 52	7 52	1075	1044	1 42	1	0 *a*	210	350	405	390	...	...	...
10	22 5	1011	895	17 55	15 5	1000	886	22 4	17 35	1131	1052	12 25	1	2 *b*	315	−935	280	190	...	...	...
11	19 12	1055	869	19 31	14 36	999	850	19 35	17 49	1130	1044	3 45	1	1 *a*	290	430	410	60	...	...	...
12	15 47	1035	900	10 17	13 15	992	901	5 1	15 53	1123	1013	6 47	1	1 *a*	−85	120	175	245	...	...	...
13	0 4	995	934	12 0	{12 51 / 12 55}	976	901	0 26	17 0	1081	1050	0 38	0	0 *a*	125	280	245	300	...	...	...
14	21 15	993	949	11 30	13 6	986	908	8 24	17 35	1096	1052	11 55	0	0 *a*	405	420	140	460	...	...	...
15	17 53	1086	907	14 41	13 44	*x* 1029	923	4 11	14 40	1090	1055	9 49	1	1 *a*	190	120	210	200	...	...	...
16	17 52	1099	916	12 50	14 19	1012	877	1 25	17 50	1144	1029	4 5	2	0 *a*	155	140	195	270	...	...	...
17	22 17	1025	930	{10 30 / 10 53}	13 31	965	915	22 32	21 45	1081	1064	12 15	0	0 *a*	165	225	255	775	...	...	...
18	7 41	994	908	11 43	12 56	973	912	{8 25 / 8 40}	17 5	1078	1069	11 27	0	2 *c*	360	245	−1235	925	...	...	...
19	22 30	995	930	12 22	13 32	963	912	{8 25 / 9 0}	8 38	1083	1066	11 50	0	1 *a*	335	145	335	485	...	...	...
20	5 42	1000	917	10 50	13 14	985	922	9 32	{7 / 22 / 0 / 20}	1079	1057	9 57	0	0 *a*	145	245	265	625	...	...	...
21	22 7	1011	922	13 17	15 50	1018	887	19 59	16 27	1134	1063	11 40	1	0 *a*	445	425	210	235	...	...	...
22	17 11	1021	912	12 33	13 50	993	885	17 1	17 0	1125	1067	12 0	1	0 *a*	315	215	265	785	...	...	...
23	19 44	*x* 1138	912	20 21	19 59	981	880	20 35	19 31	1120	1020	3 0	2	0 *a*	715	500	375	590	...	...	...
24	6 27	992	927	12 23	13 24	970	908	8 43	0 0	1085	1068	11 45	0	0 *a*	925	555	370	420	...	...	...
25	18 39	997	925	11 24	13 57	968	906	9 6	21 3	1092	1066	12 55	0	0 *a*	145	215	285	590	...	...	...
26	21 20	1039	930	{11 18 / 11 26}	15 57	989	903	7 58	16 30	1087	1061	12 12	0	0 *a*	230	255	245	385	...	...	...
27	20 45	1058	924	11 24	15 35	1013	971	20 36	18 35	1120	1060	1 15	1	1 *b*	265	0	140	655	...	...	...
28	21 44	1015	942	11 31	13 26	994	908	9 2	21 6	1101	1064	12 22	0	2 *c*	−1470	140	195	−160	...	...	...
29	4 36	1024	932	10 43	13 24	980	910	7 35	17 45	1095	1053	4 35	0	0 *a*	230	285	245	215	...	...	...
30	20 6	1008	932	{11 9 / 11 42}	{13 12 / 14 37}	972	887	19 42	19 41	1099	1063	12 27	0	2 *c*	430	305	−350	110	...	...	...
31	19 28	1012	924	12 44	13 38	986	901	19 5	19 5	1104	1061	11 50	0	1 *b*	375	455	210	50	...	...	...
M.	—	1024†	925†	—	—	985†	901†	—	—	1098†	1054†	—	—	—	216	219	192	343	—	—	—

† Mean of 30 days; 8th omitted.

* The potential gradient is reckoned as positive if the potential increases upwards.
x denotes the maximum and *n* the minimum value in the column.

z Indeterminate.

7. JERSEY (ST LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M. S. L. :—H = 54 m. H_b = 55 m. Above Ground :— h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level.				Air Temperature in Degrees Absolute.						Min. Temp. on Grass.	Percentage of Humidity.				Rain 0 h. to 24 h.	REMARKS.
	7 h.	14 h.	21 h.	Mean of 3 Readings.	7 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.		7 h.	14 h.	21 h.	Mean.		
	mb.	mb.	mb.	mb.	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	%	%	%	%	mm.	
1	1002·2	1004·6	1006·5	1004·3	76·6	77·2	76·8	78·6	75·9	77·0	73·3	70	62	48	60	1·1	● 8 h.
2	1007·1	1006·2	1005·0	1006·2	75·0	76·0	74·4	76·4	73·6	75·0	72·3	65	55	85	68	4·2	✲ 8 h., 9 h. 55 m., 13 h., 18 h. 30 m., 20 h.
3	1003·1	1004·5	1007·9	1005·1	75·3	75·7	74·9	*n* 76·0	73·6	75·1	73·0	96	93	89	93	11·2	● the whole night. ✲⁰ 11 h. ● 14 h.
4	1012·3	1010·5	1007·9	1010·3	73·2	77·7	77·0	78·4	*n* 73·0	75·9	*n* 67·3	94	71	82	82	—	⌙ [✲● 14 h. 45 m.
5	1002·9	1000·8	1003·5	1002·3	76·6	77·0	75·7	78·0	75·6	76·6	75·8	93	93	93	93	*x* 14·1	●² 4 h. ●▲ 13 h. 30 m.
6	1006·5	1007·9	1009·0	1007·8	77·6	83·2	80·0	83·6	76·0	80·1	75·2	78	68	77	74	0·3	●⁰ 4 h. 10 m. ⊕ 11 h. 45 m.
7	1009·4	1008·2	1007·7	1008·5	76·9	80·8	78·5	82·0	76·0	78·8	75·6	100	86	95	94	—	≡ 4 h.–7 h. Fair.
8	1007·0	1007·0	1009·3	1007·8	76·9	82·8	77·9	83·5	76·6	79·5	73·0	98	68	91	86	—	Blue sky.
9	1013·1	1013·5	1014·1	1013·6	77·2	85·0	79·1	85·6	76·8	80·7	72·4	95	63	76	78	—	Fine.
10	1015·3	1016·2	1017·0	1016·2	77·9	85·9	83·0	87·6	77·2	82·3	72·2	88	55	68	70	—	
11	1016·5	1014·5	1012·1	1014·3	79·7	83·6	81·8	85·0	79·5	81·9	71·4	91	71	77	80	—	
12	1009·7	1010·5	1014·3	1011·5	79·6	87·5	81·6	88·4	79·2	83·3	73·4	94	58	76	76	—	
13	1017·8	1017·7	1012·8	1017·8	79·6	85·9	79·3	86·6	79·0	82·1	74·6	82	66	92	80	—	Sky cloudless, but ≡⁰ persistent.
14	1014·6	1010·7	1009·1	1011·4	78·4	79·5	79·0	81·0	78·1	79·2	76·7	98	92	89	93	—	≡² 4 h.–12 h.
15	1005·9	1005·0	1004·6	1005·1	78·3	80·5	78·4	82·1	77·8	79·4	75·4	95	53	78	75	—	≡² 4 h.–9 h.
16	1005·8	1005·5	1006·3	1005·8	77·0	83·9	80·3	85·0	76·4	80·5	72·9	78	47	76	67	—	
17	1005·7	1007·1	1011·0	1007·9	80·3	83·1	81·4	84·8	79·1	81·7	75·2	88	90	90	89	1·2	●⁰ 7 h. ●² 10 h.
18	1014·8	1015·8	1015·7	1015·4	79·2	84·0	81·0	85·6	78·7	81·7	71·5	99	74	83	85	—	
19	1010·1	1021·5	1014·2	1010·9	80·1	83·0	81·2	84·4	79·8	81·7	74·1	91	93	95	93	7·6	●⁰ 7 h. 40 m. ≡● 9 h. 30 m.–12 h.
20	1021·3	1023·8	1012·2	1023·5	80·6	84·6	80·0	85·8	79·7	82·1	75·5	91	76	100	89	—	
21	1027·8	1028·3	1028·1	1028·1	78·3	80·0	78·2	81·3	76·0	78·8	78·9	100	98	99	99	—	≡ all day. 15 h. 20 m. the sun above the [fog.
22	1027·7	1026·7	1025·1	1026·6	73·6	82·9	82·4	87·8	73·3	80·0	69·8	98	82	60	80	—	≡ 5 h.–7 h. 30 m. ⌙
23	1023·6	1022·5	1021·0	1022·3	79·9	89·7	81·4	90·2	77·6	83·8	71·0	81	46	68	65	—	Fair.
24	1019·0	1016·5	1014·9	1016·7	79·9	90·5	83·7	*x* 90·6	77·4	84·4	74·7	81	41	*n* 38	53	—	Fine.
25	1011·9	1011·5	1014·2	1012·5	81·2	84·0	78·8	86·0	77·8	81·5	71·2	57	71	85	71	—	Cu. from N. 13 h.–14 h. 30 m.
26	1015·5	1015·9	1016·9	1016·1	77·4	81·5	76·5	81·2	74·6	78·0	71·6	75	52	70	66	—	Cu. from N.E. 6 h.
27	1015·8	1012·9	1009·0	1012·6	77·0	82·6	81·0	83·3	75·4	79·9	67·5	71	57	73	67	—	A.-Cu. and St.-Cu. from W. 15 h. 15 m.
28	1000·5	992·8	995·3	996·2	80·9	81·2	80·8	81·4	80·3	80·9	78·1	80	97	89	89	7·8	●⁰ 7 h. 40 m. ●² 9 h. 15 m.–15 h. 30 m. Short squall
29	996·9	1001·0	1001·5	999·8	81·2	83·0	80·8	84·0	80·8	82·0	78·9	89	87	76	84	2·0	● 5 h. 15 m., 11 h. 15 m. [from N.W. 15 h. 30 m.
30	992·7	991·7	990·3	991·7	81·1	82·3	81·1	84·4	80·8	81·9	76·3	100	98	98	99	8·5	●≡⁰ morning. ≡ 9 h.–12 h. ≡⁰ after-
31	986·9	987·4	989·5	987·9	81·2	84·9	81·7	85·3	*x* 81·0	82·8	75·7	79	65	85	76	—	Fair. [noon.
Means	1010·3	1009·8	1010·5	1010·2	78·3	82·5	79·6	83·7	77·3	80·3	73·7	87	72	81	80	58·0	
Normal	1006·6	1006·6	1007·0	1006·7	78·8	81·6	79·5	82·5	77·7	80·0	74·0	84	73	82	79	61·7	

JERSEY (ST LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0–12 on the Beaufort Scale).			Mean.	Sunshine.*		Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming.														Mean Amount.
							Tenths.	Upper.		Lower.		Tenths.	Upper.		Lower.		Tenths.	Upper.		Lower.		
								Type.	Direction.	Type.	Direction.		Type.	Direction.	Type.	Direction.		Type.	Direction.	Type.	Direction.	
	7 h.	14 h.	21 h.		Total.	Per cent. of Possible.	7 h.	7 h.	7 h.	7 h.	7 h.	14 h.	14 h.	14 h.	14 h.	14 h.	21 h.	21 h.	21 h.	21 h.	21 h.	
	Dir. (0–12)	Dir. (0–12)	Dir. (0–12)		hr.	%																
1	NNE 3	NNE 5	NE 6	4·7	1·6	15	8	…	…	Cu.-Nb.	NNE	10	…	…	Cu.-Nb.	NE	3	…	…	…	…	7·0
2	NE 6	NE 5	NNE 6	5·7	2·5	23	3	…	…	Cu.	NE	7	A.-Cu.	NE	Cu.	NE	10	…	…	Nb.	…	6·7
3	NE 4	ENE 3	ESE 2	3·0	0·0	0	10	…	…	Nb.	NE	10	…	…	Nb.	NE	10	…	…	…	…	10·0
4	E 1	NNW 2	N 2	1·7	3·6	32	3	Ci.-Cu.	E	…	…	10	…	…	St.-Cu.	ESE	10	…	…	…	…	7·7
5	NNE 4	NNE 2	ESE 4	3·3	0·0	0	10	…	…	Nb.	NNE	10	…	…	Nb.	NNE	10	…	…	…	…	10·0
6	ESE 4	SE 3	ENE 3	3·3	5·4	48	10	…	…	Nb.	…	3	Ci., Ci.-Cu.	SSE	…	…	5	…	…	…	…	6·0
7	ENE 3	ENE 4	ENE 3	3·3	7·4	66	10	…	…	≡	…	0	…	…	…	…	0	…	…	…	…	3·3
8	ENE 3	ENE 3	ENE 3	3·0	11·0	97	3	A.-Cu.	ENE	…	…	0	…	…	…	…	0	…	…	…	…	1·0
9	E 3	NE 2	ENE 3	2·7	11·4	100	1	A.-Cu.	…	…	…	0	…	…	…	…	0	…	…	…	…	0·3
10	ESE 1	WSW 2	ENE 1	1·3	9·6	81	4	Ci.	N	…	…	2	Ci.-Cu.	…	…	…	4	…	…	…	…	3·3
11	SSW 2	S 2	SSW 3	2·3	6·7	58	4	Ci.-Cu.	NNE	…	…	7	A.-Cu.	NNE	…	…	4	…	…	…	…	5·0
12	SE 2	SSW 1	NE 3	2·0	8·9	77	6	A.-Cu.	WSW	…	…	3	A.-Cu.	E	…	…	0	…	…	…	…	3·0
13	ENE 2	ENE 3	ENE 4	3·0	11·6	100	0	…	…	…	…	0	…	…	…	…	0	…	…	…	…	0·0
14	NE 4	NE 3	NE 2	3·0	0·0	0	10	…	…	≡	…	10	…	…	St.-Cu.	NE	10	…	…	…	…	10·0
15	NE 2	ENE 5	ENE 4	3·7	4·2	36	10	A.-Cu.	ESE	≡	…	4	Ci.-Cu.	ENE	…	…	9	…	…	…	…	7·7
16	ENE 3	E 3	E 4	3·3	9·8	83	6	A.-Cu.	…	St.-Cu.	SW	0	…	…	…	…	7	…	…	…	…	4·3
17	E 2	S 2	S 1	1·7	2·8	24	10	…	…	…	…	6	…	…	St.-Cu.	SW	1	…	…	St.-Cu.	SW	5·7
18	— 0	SW 2	— 0	0·7	5·4	45	8	…	…	St.-Cu.	SW	1	A.-Cu.	W	…	…	8	…	…	Fr.-Cu.	WNW	5·7
19	S 2	W 4	WNW 4	2·7	4·6	40	10	…	…	…	…	10	…	…	Nb.	W	2	…	…	≡	…	7·3
20	NW 3	NW 3	W 2	2·7	10·3	86	2	A.-Cu.	…	…	…	4	Ci.	…	Cu.	NW	10	…	…	≡	…	5·3
21	SW 2	SSW 2	NE 1	1·7	0·0	0	10	…	…	≡	…	10	…	…	≡	…	0	…	…	…	…	6·7
22	— 0	WSW 1	ENE 2	1·0	12·2	100	3	Ci.	…	…	…	3	Ci.	…	…	…	3	Ci.	…	…	…	3·0
23	ENE 3	NE 2	ENE 3	2·7	12·2	100	3	A.-Cu.	…	…	…	0	…	…	…	…	0	…	…	…	…	1·0
24	NE 2	ENE 3	ENE 4	3·0	12·3	100	0	…	…	…	…	0	…	…	…	…	0	…	…	…	…	0·0
25	NE 3	ENE 5	ENE 3	3·7	12·4	100	0	…	…	…	…	2	…	…	Cu.	N	0	…	…	…	…	0·7
26	NE 3	NNE 4	NE 1	2·7	10·6	85	3	…	…	Cu.	NE	4	…	…	Cu.	NE	0	…	…	…	…	2·3
27	SSW 2	SW 3	SW 4	3·0	9·3	75	0	…	…	…	…	3	Ci.-Cu.	W	…	…	10	…	…	…	…	4·3
28	SW 5	SW 5	W 4	4·7	1·8	15	10	…	…	Nb.	WSW	10	…	…	Nb.	SW	3	…	…	…	…	7·7
29	W 4	W 4	W 3	3·7	3·5	28	8	…	…	Cu.	NW	7	…	…	Cu.-Nb.	WNW	5	…	…	…	…	6·7
30	S 3	W 4	SW 4	3·7	2·1	16	10	…	…	Nb.	…	10	…	…	Nb.	W	2	…	…	…	…	7·3
31	SW 4	SW 4	SW 4	4·0	10·2	80	0	…	…	…	…	3	Ci.	WSW	…	…	1	…	…	…	…	1·3
Means	2·7	3·1	3·1	3·0	203·4	55·9	5·7	—	—	—	—	5·0	—	—	—	—	4·1	—	—	—	—	4·9
Normal	3·7	4·1	3·8	3·9	152·4	41·6	6·9	—	—	—	—	6·2	—	—	—	—	5·6	—	—	—	—	6·2

* Actinic rays by Jordan Recorder.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	12·5	...	8·4	...	10·6	...	7·1	...	6·9	...	6·9	...	5·8	...	5·8	21·2	2	30
2	...	3·3	...	4·9	...	1·5	...	3·6	...	3·1	...	7·6	...	1·5	...	7·4	11·8	14	35
3	...	1·6	...	8·0	...	1·9	...	9·3	...	1·9	...	9·6	...	...	...	5·9	13·3	10	0
4	1·3	...	...	3·0	...	Calm		...	0·9	...	...	1·3	...	3·1	...	4·7	9·0	22	20
5	...	4·9	...	4·9	...	2·8	...	6·7	...	3·8	...	9·1	...	...	...	8·2	15·9	12	0
6	1·8	...	...	9·0	...	3·2	...	16·1	...	2·7	...	13·5	...	2·6	...	13·1	22·2	9	15
7	2·4	...	...	11·9	2·0	...	...	10·0	...	3·6	...	...	0·9	...	...	4·5	17·0	2	45
8	2·1	...	...	10·6	2·2	...	...	11·3	1·1	...	...	5·5	4·0	...	...	1·6	15·8	1	35
9	3·8	...	...	0·8	3·2	...	...	0·6	5·7	...	2·4	...	6·1	...	2·5	...	12·2	23	45
10	6·9	...	2·9	...	6·7	...	2·8	...	2·2	...	3·2	...	6·4	...	2·6	...	14·2	5	35
11	6·1	...	2·5	...	6·9	...	2·9	...	9·0	...	1·8	...	9·0	...	1·8	...	16·5	19	10
12	...	3·2	2·2	...	...	2·2	1·4	...	...	2·4	1·0	...	...	3·0	1·3	...	9·4	0	10
13	...	Calm		...	...	1·8	0·8	...	...	2·1	...	5·2	...	0·4	...	2·0	8·7	19	0
14	...	Calm		...	...	...	...	1·6	...	1·6	1·6	...	...	1·6	...	4·0	8·0	17	10
15	...	...	...	11·1	...	...	...	12·8	...	...	...	13·8	...	...	...	10·2	19·0	15	20
16	...	...	...	4·6	2·0	...	...	4·8	1·2	...	...	6·1	0·6	...	...	3·2	11·0	0	30
17	0·7	...	...	3·5	0·8	...	...	4·2	4·2	...	...	0·8	2·9	...	...	0·6	11·6	12	55
18	4·8	...	...	1·0	6·9	...	2·9	...	6·0	...	6·0	...	3·4	...	5·2	...	15·4	13	55
19	8·3	...	1·7	...	7·4	...	1·5	...	...	1·2	5·8	...	...	1·3	6·8	...	16·8	6	15
20	...	1·4	7·1	...	1·6	...	4·0	...	4·7	...	4·7	...	4·4	...	4·4	...	13·1	24	0
21	6·6	...	4·4	...	7·6	...	5·1	...	7·1	...	4·7	...	7·1	...	4·7	...	15·8	13	5
22	8·1	...	5·4	...	7·9	...	5·3	...	7·1	...	4·7	...	7·1	...	4·7	...	15·8	2	40
23	5·8	...	2·6	...	4·9	...	3·3	...	4·7	...	3·1	...	1·3	...	0·9	...	11·4	12	20
24	1·3	...	0·9	...	3·2	...	2·2	...	...	0·4	2·3	...	...	2·3	2·3	..	7·7	10	50
25	...	3·8	0·8	...	...	3·9	...	...	...	6·2	...	...	...	6·2	...	...	8·5	19	5
26	...	Calm		...	...	2·0	...	...	2·8	...	2·8	...	4·9	...	3·3	...	10·4	20	0
27	4·2	...	4·2	...	6·5	...	6·5	...	5·6	...	5·6	...	9·6	...	6·4	...	17·4	20	15
28	...	0·6	2·9	...	5·1	...	5·1	...	4·0	...	9·7	...	...	7·7	11·5	...	20·7	22	15
29	...	10·9	4·5	...	...	7·4	7·4	...	...	3·3	3·3	...	3·0	...	2·0	...	17·2	1	35
30	7·4	...	1·5	...	9·5	...	...	...	...	...	8·5	...	3·0	...	2·0	...	14·9	8	15
31	1·9	...	...	4·5	2·3	...	...	11·6	...	4·1	...	2·7	...	7·1	4·7	...	15·5	7	10
S+N & W+E	113·7		129·8		124·0		150·9		109·6		153·3		116·3		138·3				
S−N & W−E	29·3		−42·6		49·4		−48·5		23·0		−10·9		31·1		−4·1				

SCOTLAND N.:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	...	5·7	...	2·4	...	3·3	1·4	...	1·6	...	4·0	...	1·3	...	3·0	...	8·9	1
2	1·0	...	2·4	...	1·4	...	1·4	...	4·9	...	...	...	4·9	...	...	...	6·6	24
3	5·8	...	...	1·2	6·6	...	...	4·4	4·7	...	...	7·1	4·9	...	...	4·9	9·2	12
4	5·5	...	...	1·1	6·8	...	...	1·3	5·6	...	...	...	7·1	...	...	1·4	8·2	12
5	1·6	...	...	0·3	...	Calm		...	2·1	...	...	5·2	1·3	...	...	6·8	7·9	24
6	1·9	...	...	9·6	2·3	...	...	5·5	1·0	...	...	5·1	1·0	...	...	5·1	9·8	4
7	3·3	...	...	7·9	7·1	...	...	10·6	6·7	...	...	10·0	6·2	...	...	9·2	13·4	19
8	9·3	...	...	9·3	8·6	...	...	8·6	6·4	...	...	9·6	7·6	...	...	7·6	13·1	3
9	8·5	...	...	3·5	10·0	...	...	2·0	10·6	...	...	4·4	11·6	...	...	4·8	15·4	24
10	12·4	...	...	5·1	4·9	...	3·3	...	3·3	...	7·9	...	3·2	...	2·2	...	14·4	4
11	4·3	...	...	...	9·1	...	...	3·8	7·4	...	...	1·5	7·5	...	...	...	9·8	9
12	3·6	...	2·4	...	4·4	...	4·4	...	3·3	...	7·9	...	3·5	...	3·5	...	8·5	15
13	3·2	...	2·2	...	4·8	...	2·0	...	3·2	...	0·6	...	...	Calm		...	6·2	8
14	2·3	...	0·4	...	5·2	...	...	2·1	3·2	...	...	2·2	2·2	...	...	1·4	5·9	24
15	4·7	...	...	4·7	5·6	...	...	5·6	6·7	...	...	6·7	7·4	...	...	7·4	11·1	19
16	7·4	...	...	7·4	4·2	...	...	6·2	2·4	...	...	5·7	1·0	...	...	5·1	10·5	3
17	...	...	...	6·9	1·4	...	...	1·4	5·6	...	...	...	8·2	...	...	3·4	10·8	24
18	7·3	...	...	3·0	8·7	...	...	5·8	7·1	...	...	1·4	0·4	...	2·3	...	11·5	7
19	...	0·9	1·3	...	...	...	...	3·9	2·9	...	...	4·3	0·4	...	2·0	...	6·2	14
20	1·1	...	2·8	...	2·4	...	1·0	...	3·8	...	9·1	...	4·0	...	1·6	...	9·8	15
21	2·0	...	4·8	...	4·9	...	...	...	4·2	...	0·8	...	4·5	...	0·9	...	7·5	24
22	7·6	...	5·1	...	4·3	...	2·9	...	2·6	...	3·8	...	4·2	...	0·8	...	9·5	2
23	4·2	...	4·2	...	2·0	...	10·3	..	2·1	...	10·6	...	1·4	...	3·3	...	11·5	12
24	1·8	...	4·3	...	...	...	5·9	...	...	2·8	6·7	...	...	4·4	6·6	...	8·9	16
25	...	7·3	3·0	...	...	7·4	4·9	...	...	7·9	5·3	...	...	3·8	2·6	...	10·2	14
26	...	1·7	2·5	...	...	...	1·6	...	4·5	...	1·9	...	1·9	...	1·3	...	4·9	15
27	2·2	...	1·4	...	5·8	...	1·2	...	2·6	...	...	...	6·1	...	1·2	...	6·6	8
28	...	Calm		...	...	...	...	10·0	...	12·0	...	8·0	...	14·5	...	2·9	19·7	11
29	...	9·7	...	4·0	...	6·7	...	2·8	...	2·3	...	2·3	4·0	...	...	4·0	13·1	1
30	9·1	...	...	3·8	7·1	...	...	1·4	8·5	...	...	3·5	6·9	...	...	6·9	11·5	22
31	8·3	...	...	8·3	6·7	...	...	6·7	5·3	...	...	7·9	2·5	...	...	6·1	12·1	1
S+N & W+E	143·7		115·3		151·7		122·4		147·3		143·5		137·9		108·3			
S−N & W−E	93·1		−41·7		96·9		−41·8		97·3		−26·3		92·5		−45·7			

ENGLAND S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	12·4	...	12·4	...	8·0	...	8·0	...	7·6	...	7·6	...	5·9	...	5·9	23·1	0	5
2	...	2·4	...	5·8	...	1·6	...	8·1	...	2·9	...	6·9	...	...	...	8·3	12·5	11	45
3	...	3·9	...	5·9	...	4·5	...	4·5	...	5·9	...	3·9	...	4·7	...	4·7	10·9	4	15
4	1·8	...	...	4·3	4·7	...	...	4·7	1·5	...	...	1·5	...	2·7	...	2·7	8·9	8	5
5	...	7·8	...	1·5	...	10·4	...	4·3	...	5·0	...	5·0	...	1·4	...	7·0	14·7	9	30
6	...	1·5	...	7·4	8·8	...	...	8·8	7·4	...	...	7·4	10·7	...	...	7·2	16·5	7	10
7	7·1	...	...	7·1	7·4	...	...	7·4	8·3	...	...	8·3	5·4	...	...	13·1	16·1	19	20
8	9·0	...	...	7·1	8·3	...	...	5·6	8·5	...	...	5·9	3·2	...	...	7·7	15·6	0	5
9	2·3	...	...	2·3	3·5	...	...	3·5	4·5	...	...	3·0	5·7	...	...	1·1	6·0	0	30
10	3·0	...	3·0	...	3·5	...	1·5	...	3·5	...	3·5	...	3·8	...	2·6	...	7·0	12	10
11	4·8	...	3·2	...	7·5	...	...	...	7·8	...	1·5	...	7·7	...	3·2	...	11·5	21	30
12	...	2·3	2·3	...	...	0·9	0·9	...	...	4·6	...	1·9	...	5·0	...	5·0	9·5	23	50
13	...	5·3	...	5·3	...	...	...	4·6	1·1	..	...	2·7	2·4	...	...	5·8	8·6	16	30
14	2·7	...	...	6·6	2·6	...	...	6·2	...	3·3	...	3·3	...	...	...	3·8	10·7	4	10
15	...	...	...	2·5	...	...	...	3·3	...	...	...	2·9	3·5	...	...	8·5	13·0	22	50
16	3·4	...	...	8·1	3·0	...	...	7·3	2·8	...	...	4·2	3·8	...	...	3·8	10·2	10	50
17	3·8	...	...	3·8	4·7	...	...	4·7	4·1	...	...	4·1	6·2	...	...	2·6	9·3	11	40
18	3·8	...	...	...	3·8	...	...	...	5·4	...	2·2	...	7·1	...	...	...	9·7	23	35
19	7·5	...	...	...	...	5·6	8·3	...	...	3·8	9·2	...	...	6·8	6·8	...	13·5	18	10
20	...	3·5	5·2	...	...	1·4	2·1	...	...	1·3	3·1	...	...	1·3	3·1	...	9·0	0	15
21	...	...	2·9	...	4·3	...	1·8	...	6·7	...	...	...	4·2	...	...	...	8·7	12	35
22	6·6	...	...	2·7	5·4	...	...	2·2	4·3	...	...	1·8	4·7	...	...	4·7	9·5	3	5
23	3·8	...	...	3·8	4·1	...	...	4·1	3·8	...	...	3·8	3·0	...	...	3·0	7·5	11	35
24	1·8	...	...	1·8	2·7	...	...	6·6	2·2	...	...	5·4	0·7	...	...	1·6	9·3	11	10
25	0·7	...	...	1·6	...	2·9	...	6·9	...	1·6	...	3·9	...	1·3	...	3·1	10·5	9	35
26	...	0·8	...	1·9	2·7	...	...	1·8	4·9	...	...	1·0	3·9	...	1·6	...	5·7	13	20
27	4·2	...	2·8	...	3·8	...	2·6	...	3·8	...	9·2	...	3·8	...	9·2	...	13·1	19	0
28	4·5	...	10·8	...	...	7·3	4·9	...	...	5·6	13·5	...	...	6·2	15·1	...	20·0	17	15
29	...	6·1	14·7	...	...	5·6	8·3	...	...	2·1	5·0	...	6·7	...	...	...	19·5	0	45
30	6·2	...	2·6	...	...	...	10·0	...	2·7	...	6·6	...	13·2	...	...	8·8	17·2	21	20
31	...	...	17·9	...	...	...	12·9	...	...	...	10·4	...	...	...	8·3	...	27·0	1	25
S+N & W+E	123·0		157·3		129·0		155·9		127·0		148·7		135·0		158·3				
S−N & W−E	31·0		−26·5		32·8		−49·3		39·6		−20·3		64·4		−58·5				

ENGLAND E.:—GREAT YARMOUTH.

Height of Head above—Roof 10·7 m., Ground 12·8 m., M.S.L. 15·9 m.
Height of Cups above—Roof 3·7 m., Ground 18·3 m., M.S.L. 22·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust. (Gorleston.)	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	10·9	...	7·3	...	12·3	...	8·2	...	11·1	...	7·5	...	9·8	...	6·6	20·0	6	55
2	...	8·4	...	12·5	...	10·5	...	10·5	...	9·7	...	14·5	...	10·0	...	15·0	19·8	23	45
3	...	9·8	...	14·7	...	8·0	...	12·0	...	4·6	...	11·2	...	0·8	...	4·2	19·7	4	15
4	...	Calm		...	...	1·8	...	2·7	...	9·5	...	...	...	7·1	...	4·7	14·9	16	35
5	...	1·5	...	7·7	...	...	...	9·8	...	...	...	6·9	...	...	...	10·2	14·4	22	15
6	...	...	...	10·2	...	...	...	10·5	...	4·3	...	10·3	...	4·3	...	10·3	13·0	11	25
7	...	1·9	...	9·3	...	2·2	...	10·9	...	2·1	...	10·6	...	2·7	...	13·8	16·0	17	10
8	...	2·6	...	12·9	...	3·8	...	9·1	1·1	...	...	2·8	...	Calm		...	14·3	3	30
9	2·0	...	...	4·8	...	...	...	3·0	0·8	...	...	3·8	0·4	...	...	2·3	5·4	3	10
10	1·1	...	...	2·8	2·3	...	...	2·3	5·5	...	...	1·1	2·6	...	...	0·5	8·3	14	15
11	2·6	...	...	0·5	3·0	...	...	...	5·6	...	..	...	3·0	...	...	...	9·3	15	25
12	3·3	...	...	...	1·6	...	...	...	3·6	...	...	...	0·9	...	1·3	...	8·0	13	40
13	...	1·4	1·4	...	...	3·3	1·4	...	...	3·3	...	1·4	...	3·3	...	3·3	8·4	19	5
14	...	4·9	...	4·9	...	4·2	...	4·2	...	5·3	...	7·9	...	2·9	...	4·3	10·3	14	40
15	...	2·1	...	10·6	...	...	...	10·5	...	...	...	11·5	...	3·5	...	8·5	13·4	14	50
16	...	1·8	...	2·7	...	...	2·6	...	1·0	...	2·4	...	...	Calm		...	8·5	1	45
17	1·9	...	...	4·5	...	1·3	...	6·5	...	2·1	...	5·2	...	Calm		...	7·6	12	10
18	...	Calm		...	2·9	...	0·6	...	4·9	...	...	...	2·5	...	2·5	...	9·5	12	55
19	2·1	...	2·1	...	1·8	...	0·8	...	2·3	...	...	0·4	...	0·9	2·1	...	6·6	9	55
20	...	1·7	2·5	...	...	3·3	3·3	...	...	2·8	1·1	...	...	...	2·0	...	10·4	10	20
21	1·3	...	3·0	...	0·8	...	3·8	...	0·8	...	1·8	...	1·8	...	0·8	...	6·1	5	30
22	1·4	...	2·2	...	0·6	...	3·2	...	...	Calm		...	1·4	...	2·2	...	6·3	8	30
23	1·4	...	3·3	...	...	...	2·3	...	...	2·6	...	...	1·1	...	1·7	...	6·1	11	0
24	...	Calm		...	0·3	...	1·6	...	...	2·0	...	...	1·4	...	2·2	...	6·1	19	45
25	...	3·8	2·6	...	...	4·2	0·8	...	...	5·7	2·4	...	...	4·2	0·8	...	14·4	16	35
26	..	2·6	...	...	...	1·6	...	1·6	...	0·9	...	2·1	1·4	...	...	1·4	10·7	0	55
27	2·9	...	0·6	...	2·7	...	1·8	...	2·6	...	6·4	...	3·7	...	3·7	...	10·9	21	55
28	2·8	...	2·8	...	6·7	...	2·8	...	8·9	...	..	...	3·3	...	1·4	...	18·8	15	20
29	3·0	...	1·3	...	...	0·9	4·5	...	...	3·5	3·5	...	...	2·2	3·2	...	11·7	10	35
30	...	Calm		...	5·1	...	...	1·0	6·8	...	...	4·6	3·2	...	...	2·2	...	...	...
31	2·3	...	...	...	4·6	...	...	...	7·1	...	...	1·4	5·1	...	1·0	...	15·0	16	25
S+N & W+E	81·5		127·2		89·8		132·3		120·5		120·8		83·5		112·2				
S−N & W−E	−25·3		−83·6		−25·0		−73·3		−18·5		−85·6		−19·9		−62·4				

9. Seismological Diary.

Earthquakes:—Eskdalemuir.

Day.	Phase.	Time, G.M.T. h	m	s	Period.	Amplitudes. A_N.	A_E.	A_Z.	Δ.	Remarks.
					s	μ	μ	μ	km.	
16	P (?)	13	51	4	...	...	...	...	...	Preliminary phases very faint. P doubtful.
	S_N	13	59	55	...	...	...	...	...	
	L	14	13		...	..	...	...	...	
	F	15	0		...	...	...	...	...	
17	L	13	59	to	...	...	...	...	...	Earlier phases too faint for detection.
		14	26		...	...	...	...	...	
19	L	7	17	to	...	...	...	...	...	Earlier phases obscured by wind effects.
		7	22		...	...	...	...	...	
20		2	33	to	...	...	...	...	...	Faint disturbance.
		2	42		...	...	...	...	...	
22		6	26	to	...	...	...	...	...	Faint disturbance.
		6	45		...	...	...	...	...	
24	P_E	23	23	32	...	...	...	...	5200	
	PR_1	23	25	25	...	...	...	...	...	
	S	23	30	19	...	...	...	...	...	
	SR	23	33	40	...	...	...	...	...	
	L	23	37	44	...	...	...	...	...	
	M	23	45	24	18	12	...	...	...	
27	L_E	4	33		...	...	...	...	...	Earlier phases faint. P apparently at 4 h. 15 m. 20 s.
	M	4	40	21	...	...	..	...	...	
	F	5	10		...	...	...	...	...	

Earthquakes:—Richmond (Kew Observatory).

Day.	Times, G.M.T. of Commencement. h	m	Max. Phase. h	m	Remarks.
16	...		14	39	Very small.
17	...		14	5	Very small.
19	...		7	36	Small.

Microseisms of N. Component:—Eskdalemuir.

Day.	0 h. A_N.	T.	6 h. A_N.	T.	12 h. A_N.	T.	18 h. A_N.	T.
	μ	s	μ	s	μ	s	μ	s
1	2·7	5	1·4	6·5	1·7	5	1·8	5
2	0·9	5	0·9	5	1·0	5·5	0·9	5·5
3	0·9	6	1·0	5·5	1·3	5	1·2	5·5
4	1·2	5·5	1·6	5·5	1·6	6	1·7	5·5
5	1·7	5·5	1·7	6	1·6	6	1·6	6
6	1·1	6	1·2	5	1·0	4·5	1·0	5
7	0·9	5·5	1·4	5·5	1·7	5·5	1·8	5
8	1·9	5	1·8	5	...	...	...	...
9	...	...	...	...	1·1	4·5	1·4	4·5
10	1·8	5	2·4	6	1·9	6	2·7	7
11	3·1	8	3·4	7·5	3·1	7	2·6	8
12	2·4	7	3·1	7	3·8	7	2·6	7
13	2·4	7	2·2	6·5	1·6	6	1·8	7
14	1·6	6	1·6	5·5	1·6	6	1·6	6
15	2·0	7	1·6	7·5	1·5	6·5	1·4	7
16	1·5	7	1·4	6	1·3	7	1·4	7
17	1·1	7	1·2	6	1·3	7	1·0	7
18	1·0	7	1·0	7	0·9	6	1·1	6·5
19	0·9	6	1·6	8	1·8	8	2·7	8
20	2·5	8	2·7	8	2·1	8	2·2	7·5
21	2·0	7	2·1	7	2·0	7·5	1·9	7
22	2·0	7	1·8	6·5	2·1	6	2·0	6·5
23	1·7	6·5	1·6	6·5	1·4	6	1·2	6
24	0·9	5	0·9	5	0·8	6	0·8	5
25	0·7	5	0·6	6	0·9	5·5	0·9	5
26	1·3	5	1·0	5	0·5	5	0·5	4
27	0·6	5	0·5	5	0·4	5	0·7	5
28	1·5	5	1·8	5	2·3	6	2·5	6
29	3·2	5	4·2	4	2·5	4·5	2·2	4·5
30	1·4	5	1·0	5	1·2	5	1·2	5·5
31	0·8	5·5	1·4	5	1·4	5	1·4	5

Means for Month $\begin{cases} A_N = 1·6. \\ T = 6·0. \end{cases}$ Normals, 1911–17 $\begin{cases} A_N = 1·7. \\ T = 5·6. \end{cases}$

11. Nephoscope Observations.

Aberdeen. Taken at 13 h. G.M.T.

Day.	Type of Cloud.	Velocity–height–ratio. Degrees from N.	Milliradians per Second.	Components. W.–E.	S.–N.	Remarks.
		°	mr/s.	mr/s.	mr/s.	
1	Cu.-Nb.	330	17·0	− 8·5	− 14·8	Base of cloud measured. [in cumuliform masses.
7	St.-Cuf.	135	25·0	− 18·0	+ 18·0	Direction and velocity varying slightly. Broken St.
9	St.-Cu.	198	9·0	+ 2·8	+ 8·6	St.-Cu. in a fused sheet.
12	A.-Cu.	202	6·0	+ 2·2	+ 5·6	A.-Cu. only partially formed.
13	Ci.	357	4·0	+ 0·2	− 4·0	Indefinite hazy Ci. to Ci.-St.
14	St.-Cu.	128	2·0	− 1·7	+ 1·1	Thin, flat St.-Cu.; a later development of A.-Cu.
19	Fr.-St.	197	16·0	+ 5·0	+ 15·0	Average velocity. [fused into a sheet of A.-St. in NW.
22	Ci.-Cu.	264	2·8	+ 2·8	+ 0·3	Ci.-Cu. formed in large, flat flakes from "false" Ci.—
23	Cu.	288	5·7	+ 5·4	− 1·8	Cu., changing to Cu.-Nb. [altitude.
25	Cu.-Nb.	338	16·0	+ 5·9	− 14·9	Small Cu.-Nb., or perhaps Nb.-Cuf. Obviously low
26	St.-Cu.	268	5·0	+ 5·0	+ 0·2	St.-Cu. layer, with small Cu. below it.
28	Cu.	296	1·8	+ 1·6	− 0·8	Cu. to small Cu.-Nb.

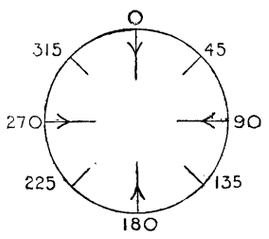
12. Aurora.

Day.	a.m. or p.m.	Moon.	Magnetic Character. Eskdalemuir.	Richmond.	Aurora Observations. Station.	Remarks.
1	p.	...	0, 1	1, 1	Wick, Fort William, Ford	
2	p.	...	1, 1	1, 1	Deerness, Stornoway, Aberdeen	Faint glow 20 h.–22 h.
5	...	☾	...	...	...	
6	p.	...	0, 2	0, 2	Edinburgh	An auroral display during the night of the 7th–8th attracted much attention, partly because it coincided with an air raid on London. It was seen in many parts of Scotland and Northern and Southern England, and in some cases was described as "brilliant." A magnetic storm of no great duration, but very considerable amplitude, was recorded at this time at the Observatories. It began with a "sudden commencement" at about 21 h. 10 m. on the 7th. The largest movements occurred during the early morning of the 8th, between 0 h. and 5 h. See *Nature*, March 14, 1918, p. 32, and also Meteorological Office Circular, No. 22.
7–8	p. a.	...	2, 2	2, 2	...	
9	p.	...	1, 1	0, 1	Fort William	
10	p.	...	1, 1	1, 1	Lerwick, Deerness	20 h. 45 m.–22 h.
11	p.	...	1, 1	1, 1	Wick, Banff, Baltasound	
12	p.	●	1, 0	1, 0	Wick, Banff, Aberdeen, Paisley, Eskdalemuir	Faint glow 23 h. Glow. 20 h.
19	...	☽	...	...	...	
27	...	○	...	...	...	

Note.—The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at the midnight of the night in question.

10. Soundings with Pilot Balloons.

Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	Geostrophic. m/s.	By Anemometer. From N.	By Anemometer. m/s.	At Heights above M.S.L. 500 m. From N.	500 m. m/s.	1000 m. From N.	1000 m. m/s.	2000 m. From N.	2000 m. m/s.	3000 m. From N.	3000 m. m/s.	4000 m. From N.	4000 m. m/s.	5000 m. From N.	5000 m. m/s.	Cloud Observations. Type.	From N.	mm/s.
		h. m.	°		°		°		°		°		°		°		°				
1	Cahirciveen	8 45	50	16	40	10·0	30	10·0	20	14·5	30	16·5	...	...	...	...	...	...	Ci.-St., Cu.	25	...
1	Eskdalemuir	7 30	50	12	10	6·0	10	13·5	30	18·0	40	9·0	25	22·5	...	...	...	...	A.-Cu., St.-Cu.	...	...
2	,,	7 30	40	10	25	0·8	55	5·5	70	7·5	55	16·0	50	21·5	...	...	...	...	Ci.-St., St.	45, 25	...
2	Cahirciveen	8 40	—	—	95	1·9	100	4·8	110	3·5	75	8·5	65	14·0	...	...	...	...	...	...	...
2	,,	12 15	70	6	100	2·0	130	2·8	110	3·1	70	11·5	70	14·5	45	14·0	45	17·0	Cu.	90	...
2	S. Farnboro'	7 35	70	20	40	8·5	50	17·5	55	16·5	55	18·0	65	19·0	...	...	...	...	St.-Cu.	...	...
3	Cahirciveen	7 45	70	6	100	5·5	150	0·9	235	2·3	65	5·5	30	12·0	...	...	...	...	...	...	...
6	S. Farnboro'	7 55	140	20	110	8·5	120	10·5	115	18·5	120	22·5	...	...	...	...	...	...	A.-St., A.-Cu., St.-Cu., St.	...	...
6	,,	17 0	110	12	80	7·0	65	12·0	90	11·5	75	7·5	125	13·5	...	...	...	...	Ci.	...	...
7	Cahirciveen	7 45	140	14	110	6·5	130	8·5	140	16·0	140	15·5	...	...	...	...	...	...	Cu.	155	...
8	S. Farnboro'	15 55	140	8	90	5·0	100	6·0	105	1·8	240	4·6	250	4·4	...	...	...	...	St.-Cu.	...	...
8	,,	19 5	140	6	75	4·0	115	6·5	?	?	205	8·0	...	...	...	...	...	...	...	...	...
9	,,	11 45	90	4	90	2·0	95	3·7	95	1·9	180	1·8	250	3·3	220	5·5	200	2·7	...	...	...
10	Cahirciveen	7 40	250	8	30	1·3	340	3·5	305	6·5	250	12·0	270	10·5	...	...	...	...	St.-Cu.	270	...
11	,,	17 25	230	12	170	3·4	230	8·0	260	12·0	240	18·0	...	...	...	...	...	...	St.	225	...
																			A.-Cu.	155	...
11	S. Farnboro'	7 50	230	8	145	5·5	210	13·5	215	12·0	220	9·5	235	5·5	255	3·4	...	...	A.-Cu., Ci.-St.	...	...
11	,,	15 30	230	10	200	8·0	200	7·5	205	12·5	215	9·5	225	5·5	315	1·8	70	1·3	...	...	...
12	,,	7 55	180	8	215	3·0	225	9·5	205	12·0	220	8·0	210	6·0	165	6·0	230	2·3	...	...	...
12	,,	15 30	180	5	180	5·5	195	4·6	220	7·5	220	7·5	210	3·8	175	2·7	175	3·1	Ci., Ci.-Cu.	...	...
12	Cahirciveen	7 40	—	—	—	0·0	350	6·5	310	5·5	315	7·0	275	3·8	275	6·0	235	4·9	A.-Cu., Cu.	...	0·0
12	,,	16 45	320	7	345	6·0	350	6·0	5	4·8	340	3·9	340	13·5	...	...	...	...	Ci.	25	...
																			Cu.	335	...
13	,,	7 40	70	6	50	1·6	110	2·3	95	1·0	50	4·0	60	8·0	45	12·0	...	...	Ci.	45	...
13	Eskdalemuir	7 20	—	—	?	0·0 ?	?	0·0?	290	2·0	305	2·8	25	12·0	30	15·5	25	19·5	Ci.	360	3·1
14	,,	7 20	180	4	?	0·0	150	1·9	115	3·4	280	0·5	115	5·5	110	6·0	115	10·5	Ci.	90	2·3
15	S. Farnboro'	10 5	110	12	120	7·5	95	8·5	80	11·0	100	12·5	80	6·5	..	...	...	...	Fr.-St.	...	...
15	,,	15 45	110	12	115	7·0	75	7·5	85	9·0	85	8·0	90	9·5	75	8·0	...	...	St.-Cu.	...	...
15	Cahirciveen	8 10	—	—	90	2·8	140	3·5	105	6·0	25	8·0	...	...	...	...	...	...	A.-Cu. St.-Cu.	25	..
															6000 m.		7000 m.				
2	Cahirciveen	12 15													40	15·0	...	...			
9	S. Farnboro'	11 45													170	6·0	...	...			
11	,,	15 30					(For observations at lower levels, see above.)								100	1·8	...	...			
12	,,	7 55													180	6·5	...	...			
12	,,	15 30													170	2·8	160	5·5			
12	Cahirciveen	7 40													255	14·0	...	...			



Wind Protractor.

Height of Station above M.S.L. = H.
Height of Anemometer above ground = h.

	H.	h.
Eskdalemuir	242 m.	15 m.
S. Farnborough	70 m.	31 m.
Cahirciveen	30 m.	13 m.

Notes on Pressure Distribution.

March 1918.

1 7 h. High over the British Isles; low over the Continent.
2 7 h., 13 h. Anticyclonic ridge over the British Isles.
3 7 h. High over the Baltic, extending to the British Isles.
6 7 h., 18 h.; 7 7 h.; 8 18 h. Extensive high over Scandinavia; low over the Bay of Biscay.
9 13 h. Low over Iceland region and Spain. Anticyclone over the Continent and the Azores.
10 7 h. Low centred near Iceland; high over the Baltic.
11 7 h., 13 h., 18 h. Anticyclone over the Channel; low over Ireland and Scotland.
12 7 h., 18 h. Low over Iceland region; high over the Continent and the Azores. Anticyclone over the British Isles.
13 7 h. Anticyclone over the British Isles; low centred off Iceland.
14 7 h. Anticyclonic ridge over the British Isles; low over Gibraltar.
15 7 h., 18 h. Anticyclone over the British Isles, centred over the Baltic; low over Spain.

Notes on Ascents.

1st, 7 h. 30 m. Barometer rising unsteadily.
9th, 11 h. 45 m. Fog clearing.
11th, 17 h. 25 m. Overcast.
12th, 7 h. 40 m. Sky clearing rapidly from 7 h.

10. Soundings with Pilot Balloons—*continued.*

Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	m/s.	By Anemometer. From N.	m/s.	At Heights above M.S.L. 500 m. From N.	m/s.	1000 m. From N.	m/s.	2000 m. From N.	m/s.	3000 m. From N.	m/s.	4000 m. From N.	m/s.	5000 m. From N.	m/s.	Cloud Observations. Type.	From N.	m/s.
		h. m.	°		°		°		°		°		°		°		°			°	
16	S. Farnboro'	12 30	140	6	80	light	75	2·4	205	2·8	235	2·5	250	5·0	240	8·5	255	10·0	Ci., St.-Cu.	...	...
17	Cahirciveen	7 40	140	10	95	5·5	130	8·0	145	11·0	125	4·5	...	...	...	...	...	...	Cu.	135	...
18	S. Farnboro'	15 20	230	12	160	7·0	220	7·0	235	12·5	230	12·5	250	17·5	305	13·5	300	15·5	Ci., Ci.-St., St.-Cu.	...	...
20	,,	7 55	320	10	295	8·0	325	13·5	330	15·5	330	10·5	335	19·5	...	...	...	...	...	...	...
20	,,	16 5	290	8	320	6·0	315	9·5	305	8·0	340	13·0	345	11·0	345	12·0	335	15·0	Ci.-St., Ci.	...	...
21	,,	11 15	270	6	290	4·0	270	8·0	285	7·0	315	5·5	345	3·8	335	6·5	5	10·5	Ci.	...	...
21	,,	15 35	270	6	275	5·5	270	3·8	270	5·5	290	6·0	305	4·7	335	7·5	5	7·5	Ci., Ci.-St.	...	...
22	,,	8 5	270	6	270	2·0	295	9·5	295	6·5	290	4·2	320	3·7	?	0·5	...	...	Ci.	...	...
22	,,	15 10	270	4	295	3·0	325	3·3	310	4·5	310	5·0	310	5·5	270	5·5	280	3·4	Ci.	...	...
22	Cahirciveen	17 15	230	14	175	10·0	180	21·0	195	17·0	210	16·0	...	...	...	...	...	...	Ci., A.-St., Cu.	180	...
23	Aberdeen	8 15	290	14	225	1·0	275	11·0	280	29·0	270	26·0	...	...	...	...	...	...	...	...	...
23	S. Farnboro'	7 35	—	—	290	2·0	295	3·9	305	4·2	10	3·9	300	4·2	280	3·6	155	2·0	Ci.	...	...
23	Cahirciveen	7 35	180	12	140	5·0	170	12·0	185	21·5	200	13·0	..	...	...	...	...	...	Ci.-St.	205	...
24	,,	7 40	160	6	170	2·5	175	6·0	190	7·5	180	5·5	225	8·0	215	10·5	220	9·0	Ci.-St.	...	0·0
24	,,	16 10	90	7	300	1·2	135	1·0	?	?	195	3·6	200	4·2	215	4·3	225	6·0	...	...	...
24	Eskdalemuir	11 5	320	8	200	5·5	250	4·8	265	6·0	280	10·5	285	13·5	...	...	...	...	...	...	...
25	,,	7 10	360	10	360	3·0	5	12·5	315	1·6	335	15·0	330	20·5	...	...	...	...	Ci.-St.	360	...
25	Aberdeen	7 30	360	10	315	5·0	345	11·0	345	18·0	350	12·0	...	...	...	...	...	...	...	...	...
25	Cahirciveen	7 15	50	6	190	0·7	90	1·2	20	1·3	30	4·8	...	...	...	...	...	...	Ci.	...	0·0
25	,,	10 55	68	8	240	1·2	?	?	20	3·1	20	3·6	5	7·5	355	6·0	25	6·5	Ci., Cu.	...	0·0
26	,,	7 30	—	—	100	2·0	175	4·0	250	1·6	245	1·7	280	4·3	305	6·0	305	4·8	Cu.	180	...
26	S. Farnboro'	6 40	45	6	310	3·5	25	11·5	20	10·5	10	19·0	5	28·0	...	...	...	...	...	...	...
27	Cahirciveen	12 25	230	14	220	7·5	245	9·5	245	16·0	245	15·5	...	...	...	...	...	...	St.-Cu.	225	...
28	Aberdeen	7 30	230	16	200	4·0	240	8·0	245	11·0	215	7·0	...	...	...	...	...	...	Cu., St.	245	...
29	Eskdalemuir	9 15	360	16	10	11·0	5	16·0	20	15·0	355	12·5	355	12·5	...	...	...	...	A.-Cu., St.	...	...
29	Cahirciveen	7 20	320	10	300	0·8	280	6·0	300	9·0	290	14·5	...	...	...	...	...	...	Cu., Fr.-Cu.	360	32·4
30	,,	12 25	270	14	255	5·5	245	8·0	255	9·0	240	10·0	...	...	...	...	...	...	Ci.	270	...
31	Eskdalemuir	7 35	180	8	340	0·3	120	2·7	160	6·5	140	6·0	105	7·0	...	...	...	...	A.-Cu.	315	...
																			Cu.	270	...
																			Cu.	225	...
																			Ci.	135	1·6
																			Ci.-St.	135	...
																			St.-Cu.	155	...

Day.	Station.	Time of Start, G.M.T.	6000 m. From N.	m/s.	7000 m. From N.	m/s.	8000 m. From N.	m/s.	9000 m. From N.	m/s.
		h. m.	°		°		°		°	
18	S. Farnboro'	15 20	280	18·5	280	19·5	...	...	...	...
21	,,	11 15	350	13·0	...	...	...	...	...	...
21	,,	15 35	10	12·5	10	14·0	5	18·0	5	23·5
22	,,	15 10	310	5·0	340	5·0	...	...	...	...
23	,,	7 35	350	3·1	55	6·5	...	...	...	...
24	Cahirciveen	7 40	220	9·5	205	10·5	215	11·0	...	...
25	,,	10 55	335	5·0	20	8·0	360	7·5	335	7·0
26	,,	7 30	270	9·0	285	5·3	290	10·0	...	...

(For observations at lower levels, see above.)

Notes on Pressure Distribution.

March 1918.

16 13 h. Anticyclonic ridge over Central Europe and Scandinavia; low over the Bay of Biscay.

17 7 h. Extensive low over the Atlantic; high over the Continent, centred over the Baltic.

18 13 h. High over the Continent; low off Ireland and Scotland.

20 7 h., 18 h. High over the British Isles, centred over the Bay of Biscay.

21 13 h., 18 h.; 22 7 h., 13 h., 18 h.; 23 7 h.; 24 7 h., 13 h. Anticyclone covering the British Isles, centred over the Channel.

24 18 h. Anticyclone centred over Ireland.

25 7 h., 26 7 h. Extensive Atlantic anticyclone covering the British Isles.

27 13 h. Low over Scotland and Ireland; high over the Channel.

28 7 h. Low over the British Isles, centred off N. of Ireland.

29 7 h. Low over the British Isles, centred on the North Sea.

30 13 h.; 31 7 h. Low over the British Isles; high over Russia.

Notes on Ascents.

27th, 12 h. 25 m. Overcast.

31st, 7 h. 35 m. Barometer very low, falling unsteadily.

For Tables 11 and 12, see p. 22.

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

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Eighth Year.—No. 4. APRIL 1918]. Units based on the C.G.S. System. [*Price* 1*s*.

1. SUNSHINE AND SOLAR RADIATION.

Day.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W.							RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W.					ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W.						CAHIRCIVEEN.	
	Bright Sunshine.*		Radiation received on Horizontal Surface by Callendar Radiograph.					Bright Sunshine.*		Radiation at Noon by Ångström Pyrheliometer.			Bright Sunshine.*		Radiation by Ångström Pyrheliometer.				Bright Sunshine.*	
	Total.	Per cent. of Possible.	Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Maximum. For Day. Time.	Maximum. 11.30 h. to 12.30 h.	Total.	Per cent. of Possible.	Intensity.	Vertical Component.	Sky.	Total.	Per cent. of Possible.	Time.	Sky.	$\frac{p}{p_0}$ sec Z.	Intensity.	Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	3·6	28	760	29	66	13 39	52	3·0	23	...	...	...	0·6	5	...	...	...	...	5·4	42
2	5·3	41	1060	39	72	11 39	72	4·5	35	...	...	...	3·9	30	...	...	...	...	9·4	73
3	3·4	26	950	35	65	11 49	65	4·4	34	...	...	...	7·0	53	...	...	...	...	0·3	2
4	0·0	0	370	13	27	12 8	27	0·0	0	...	...	...	0·5	4	...	...	...	...	3·1	24
5	6·0	46	1100	39	58	13 15	57	6·8	52	...	...	...	4·2	32	...	...	...	...	0·0	0
6	0·0	0	380	13	29	17 25	18	1·0	8	...	...	...	1·9	14	...	...	...	...	6·1	46
7	5·0	38	890	31	70	12 45	64	5·2	39	...	...	...	6·5	49	...	...	...	...	6·3	47
8	5·0	38	1020	35	68	11 48	68	5·4	41	58	41	Clear	1·9	14	...	...	...	...	0·0	0
9	0·0	0	170	6	21	10 0	18	0·0	0	...	...	...	3·7	27	...	...	...	...	8·4	63
10	0·0	0	50	2	9	13 35	4	0·0	0	...	...	...	0·0	0	...	...	...	...	0·0	0
11	0·0	0	*n* 40	1	*n* 6	9 23	3	0·0	0	...	...	...	0·7	5	...	...	...	...	0·3	2
12	7·3	54	1230	41	68	11 43	68	7·9	58	...	...	...	1·6	12	...	...	...	...	0·0	0
13	0·0	0	340	11	27	10 28	14	0·0	0	...	...	...	0·0	0	...	...	...	...	5·9	43
14	0·6	4	520	17	48	15 43	24	1·0	7	...	...	...	4·6	33	...	...	...	...	11·2	81
15	0·6	4	380	12	66	10 30	11	0·7	5	...	...	...	3·6	26	...	...	...	...	9·6	70
16	0·0	0	170	5	13	11 8	10	0·0	0	...	...	...	6·5	46	...	...	...	...	5·6	40
17	0·0	0	130	4	9	13 3	8	0·0	0	...	...	...	7·7	55	...	...	...	...	11·6	83
18	0·2	1	630	20	64	11 38	64	0·2	1	...	...	...	4·1	29	...	...	...	...	7·0	50
19	4·2	30	1060	33	*x* 82	12 38	*x* 78	5·5	39	...	...	...	6·4	45	...	...	...	...	0·1	1
20	1·0	7	650	20	60	11 0	58	1·5	11	...	...	...	3·3	23	...	...	...	...	5·7	40
21	0·0	0	300	9	28	11 18	23	0·0	0	...	...	...	5·4	37	...	...	...	...	0·1	1
22	*x* 8·2	58	*x* 1510	46	74	12 15	74	*x* 8·1	57	52	40	Clear	12·1	83	12 11	Clear	1·36	85	3·4	24
23	0·0	0	170	5	15	10 48	11	0·0	0	...	...	...	0·0	0	...	...	...	...	0·7	5
24	4·0	28	1070	32	57	15 15	23	6·0	42	...	...	...	8·8	60	12 11	Haze	1·35	64	12·5	87
25	5·8	40	1310	39	65	13 23	61	6·7	47	57	44	Hazy	12·8	86	...	...	...	...	12·5	87
26	6·1	42	1050	31	73	12 43	72	5·5	38	...	...	...	8·7	59	14 16	Clear	1·50	78	12·1	83
27	7·3	50	1390	41	72	11 39	72	6·9	48	57	45	Hazy	*x* 13·6	91	12 10	Clear	1·33	68	12·0	82
28	0·0	0	330	10	27	11 8	26	0·0	0	...	...	...	9·7	65	...	...	...	...	*x* 12·8	88
29	1·6	11	1050	31	54	10 19	54	4·0	27	...	...	...	6·8	45	...	...	...	...	11·1	76
30	0·5	3	770	22	54	10 19	49	1·0	7	...	...	...	10·7	71	12 10	Ci.	1·31	87	10·0	68
Means	2·53	18	695	23	48	—	42	2·83	21	—	—	—	5·23	37	—	—	—	—	6·10	44
Normal	5·53	40	1111	—	—	—	—	5·23	38	—	—	—	4·70	34	—	—	—	—	5·33	39
	← 5 years →		3 years					← 35 years →					← 5 years →						← 35 years →	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M. S. L.:—H = 9·1 m. H_b = 13·7 m. H_a = 26·4 m. Above Ground: h_t = 1·3 m. h_r = 0·56 m. h_a = 13·9 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity. Vapour Pressure.		Humidity. Percentage.		Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount (0–10) and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9h.		21 h.		9 h.	21 h.				
	mb.	mb.	*a.* 200+	*a.* 200+	*a.* 200+	*a.* 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	*a.* 200+		
1	1001·1	1003·5	81·2	79·2	83	79	8·0	8·5	74	90	305	7	—	0	8	8	4·0	79	c. p. *n.* Fair to fine *p.*	
2	1007·7	1007·7	79·4	77·9	82	78	7·4	7·3	77	84	360	2	60	2	2	4	—	74	Fine y. ⊕ *p.*	
3	1001·8	996·5	80·4	82·1	82	79	7·4	9·0	72	78	85	6	105	16	10	8	—	75	c. *n.* Dull day. c. *p.*	
4	1003·6	1013·1	84·9	82·0	86	80	11·2	10·8	81	95	95	2	—	0	6	7	—	77	Fine, with ☽ *n.* o. to c.	
5	1014·7	1013·6	83·0	82·5	85	79	11·6	10·6	95	89	180	4	245	5	10	5	1·1	75	o. to c. ☽ *n.* Dull day.	
6	1011·4	1017·7	80·8	80·5	83	79	8·7	7·3	83	70	310	8	330	9	5	7	*x* 12·8	79	● *n.* ●▲ p. during day.	
7	1021·2	1023·0	81·5	80·7	82	79	7·4	7·9	67	75	320	10	360	5	8	10	0·9	77	q. *p.* T *n.* c. q. during day.	17840γ
8	1017·7	1007·4	81·6	79·5	82	79	9·7	8·7	87	90	150	4	330	11	10	10	11·7	79	Dull *n.* ● all day.	19° 35′·7
9	1002·6	1002·6	79·6	78·0	*n* 80	*n* 76	6·2	7·3	*n* 64	84	350	8	20	8	3	10	8·2	*n* 72	Fine *n.* and day. △² p. about 17 h.	—
10	1003·7	1008·5	78·7	81·3	82	78	7·9	9·1	86	84	45	6	70	5	10	10	0·2	76	Fair *n.* and *a.*, then dull, with ∞.	—
11	1010·3	1010·6	80·6	82·2	83	80	9·3	9·9	89	86	45	8	90	2	10	8	—	80	Dull, with ∞. Finer *p.* 10th—	—
12	1011·0	1014·3	82·7	82·3	85	*x* 82	10·4	10·6	87	91	—	1	—	1	10	9	—	80	Dull *a.* ∞	68° 7′·3
13	1017·1	1019·1	80·9	80·1	83	80	8·1	6·6	76	66	40	9	30	8	9	7	—	79	o. *a.* Fine day.	
14	1021·1	1023·0	80·7	79·8	82	79	7·7	7·2	73	73	55	7	10	5	1	1	—	79	c. and o. *n.* Fine day.	
15	1024·4	1024·7	79·8	81·3	83	77	7·2	8·4	73	77	15	4	10	4	6	7	—	*n* 72	Fine *n.* and *a.* ☽. c. later.	
16	1024·9	1023·9	82·2	83·2	84	78	8·3	8·9	72	72	45	3	10	8	7	6	—	76	Fine day.	
17	1024·8	1024·0	81·1	83·0	85	80	8·0	9·6	74	79	20	8	20	7	3	1	—	79	Fine, with ∞.	
18	1024·0	1023·2	82·6	81·5	85	78	9·4	7·7	79	69	35	5	20	8	5	5	—	76	Fine day, with ∞. ⊕ *p.*	
19	1023·3	1018·5	78·7	80·2	81	77	6·5	9·0	71	89	25	3	360	9	10	8	1·5	75	c. *n.* o. *a.* and *p.*	
20	1016·2	1013·1	81·4	81·6	84	80	9·6	9·7	88	87	350	8	340	8	10	9	0·7	79	Fair *n.* o. p. *a.* Fair day.	
21	1011·1	1009·7	82·1	79·7	83	79	9·2	8·7	80	89	350	5	130	3	7	10	2·8	80	o. to c. p. *n.* and *a.* o. to ●⁰ *p.*	17850γ
22	1012·4	1014·0	83·3	81·1	85	79	10·9	10·0	88	93	155	2	170	2	8	5	0·2	78	Fair day. ∞ *p.*	19° 37′·2
23	1011·6	1014·2	83·1	83·2	85	81	8·8	9·5	71	77	130	7	145	7	9	10	—	77	o. to c.	—
24	1016·9	1018·0	85·4	81·4	87	78	9·9	9·4	69	86	150	5	—	1	7	2	—	81	Fine. y. ∞.	—
25	1017·2	1017·2	83·9	82·4	*x* 90	*n* 76	9·3	10·7	72	91	—	1	—	0	0	0	—	73	Fine. y. ∞. 23rd—	—
26	1017·6	1020·2	85·3	83·8	89	79	11·5	11·6	81	90	—	1	245	3	1	5	—	77	☽ *n.* Fine. y. ∞.	68° 6′·4
27	1023·7	1026·0	86·1	84·5	*x* 90	80	12·0	12·1	80	90	—	1	—	1	7	6	—	77	☽ *n.* Fine. y. ∞.	
28	1025·3	1022·8	86·1	85·3	89	79	12·3	11·0	82	78	—	1	—	1	0	2	—	76	☽ *n.* Fine. y. ∞.	
29	1019·5	1016·4	85·7	82·8	89	78	11·8	9·5	81	79	—	0	—	1	4	3	—	76	☽ *n.* Fine. ∞. ⊕ *p.*	
30	1014·6	1015·9	84·1	82·6	87	78	10·4	9·1	79	76	—	0	—	1	5	7	—	76	☽ *n.* Fine. ∞. ⊕ *p.*	
Means	1015·1	1014·8	82·2	81·5	84·5	78·7	9·2	9·2	78	83		4·5		4·7	6·4	6·3	44·1	77·0	Monthly Totals or Means.	17845γ
Normal	1011·6	1011·8	82·1	81·6	85·0	79·1	9·5	9·4	82	84		5·4		4·9	—	—	96·9	—	Normals.	19° 36′·4
	← 45 years →						← 30 years →				← 35 years →						45 yrs.			68° 6′·8

* By Campbell-Stokes Sunshine Recorder.

x denotes the maximum and *n* the minimum value in the column.

Wt. 37652/515—400—3/19.—N. & Co., Ltd. **Gp. XV.**

3. METEOROLOGY :—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 5·5 m. Barometer, H_b = 10·4 m. Cups of Anemometer, H_a = 25 m.
Heights above Ground :—Thermometers, h_t = 3·0 m. Rain-gauge, h_r = 0·53 m. Cups of Anemometer, h_a = 20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity. Vapour Pressure.		Humidity. Percentage.		Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	Remarks.
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
	mb.	mb.	a. 200+	a. 200+	a. 200+	a. 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	a. 200+	
1	995·1	1002·7	82·9	81·0	86	79	8·6	8·1	71	76	214	6	259	2	9	1	1·9	77	Fine to fair. p. ☾●² 17 h. 15 m.
2	1008·4	1010·4	78·7	78·9	85	76	8·5	7·6	93	82	270	2	214	2	1 ≡⁰	0	1·4	70	⌙. c. to fine. p. p. ▲ 15 h. 5 m.
3	1011·0	1007·6	77·2	81·1	86	*n* 72	7·8	9·2	95	85	—	1	90	6	8 ≡⁰ ⌙	10	0·2	*n* 69	⌙≡ *a*. Fine to dull. p. 20 h. 15 m.
4	1006·3	1011·1	81·2	81·0	84	78	9·3	7·0	86	66	67	5	45	5	10 ≡⁰	10	0·2	79	●⁰ 8 h. Dull and o.
5	1015·6	1016·9	77·8	79·2	85	76	7·2	7·8	84	83	11	4	—	1	10	0 ≡⁰	—	74	Fine after 10 h. 15 m. ∞ *p*.
6	1012·6	1009·3	83·3	79·5	84	77	10·7	8·3	86	86	203	6	281	3	10	0	7·3	70	o. *a*. and *p*. ● 10 h. 45 m.–15 h. Fine later.
7	1011·7	1013·8	80·1	79·0	83	75	7·8	8·3	77	89	281	4	326	3	7	10●	2·7	*n* 69	⌙. Fine to dull. p. ▲ 15 h. 10 m.
8	1015·8	1009·1	80·3	79·4	85	78	7·7	8·5	75	89	34	3	56	3	? 2○○	? 0 ≡⁰	—	77	≡ *a*. Fine to c. Fine *n*.
9	1002·5	1000·3	79·8	80·4	84	79	8·9	9·4	90	92	101	2	79	5	10 ≡⁰	10 ≡⁰	0·8	77	Dull at times. p. *p*.
10	1001·7	1005·3	81·0	79·1	82	79	10·3	8·8	97	94	79	3	11	5	? 10 ≡⁰	10	5·7	79	≡ early. Dull. p. *p*.
11	1007·6	1011·0	80·2	81·2	82	79	10·0	10·5	99	97	23	3	—	0	? 10 ≡⁰	? 10 ≡	0·9	78	Dull and gloomy. p.
12	1013·2	1012·4	81·9	82·2	88	79	9·9	8·8	88	76	281	2	270	2	5 ≡⁰	0 ≡⁰	—	76	≡ early. Fine. v. *p*.
13	1011·7	1012·5	82·4	78·8	83	76	9·6	7·9	82	86	360	2	23	7	10 ≡⁰	10	—	72	Dull and o. d. 18 h. and 21 h.
14	1014·8	1016·1	78·0	77·0	80	76	6·1	5·3	70	66	34	8	360	5	10	10	—	76	Dull *a*., finer *p*.
15	1013·9	1014·5	79·2	76·4	81	74	7·6	7·0	81	90	360	5	349	6	9	10●	9·5	74	Dull to fine. p. ✳● *n*.
16	1014·3	1014·9	75·1	78·0	*n* 78	74	6·6	8·3	93	96	360	3	360	3	10●✳	10	12·3	73	✳● to 9 h. 30 m. ● to 13 h. ● *p*. and *n*.
17	1016·6	1017·9	79·4	79·4	80	78	8·8	8·3	92	87	11	5	23	6	10 ≡⁰	10●	5·4	77	Dull and p. all day.
18	1017·7	1017·4	79·0	75·0	80	74	8·0	5·1	86	72	11	8	11	3	10	0 ≡⁰	0·1	76	Dull to fair. ●⁰ and ✳⁰ 14 h. 58 m.
19	1013·1	1010·0	76·4	75·1	79	73	5·1	6·9	*n* 65	97	349	6	—	1	6	? 6 ≡⁰	0·4	70	Dull to fine. p. ✳ all day.
20	1009·6	1008·7	76·5	76·9	81	74	6·4	7·1	82	88	349	3	214	2	8	10● ≡⁰	4·3	70	⌙. Fine to dull. p. ● *n*.
21	1004·8	1008·5	75·7	76·9	79	74	6·5	7·4	88	92	101	8	—	1	10● ≡⁰	10● ≡⁰	*x* 25·5	73	✳● 7 h. 50 m. and 8h. 20 m.
22	1011·9	1013·4	79·9	81·9	85	76	8·1	8·4	82	74	67	3	—	1	? 1 ≡⁰	! 6 ≡⁰	—	72	Dull to fine.
23	1015·1	1017·9	79·5	81·6	82	78	7·4	9·1	76	82	—	1	11	2	10 ≡⁰	10 ≡⁰	0·2	72	Dull. ●⁰ at times.
24	1017·9	1016·1	82·9	80·7	86	75	8·1	9·4	67	90	11	5	23	4	8	9 ≡⁰	—	70	☾. Fair to fine.
25	1015·3	1015·8	82·0	83·5	*x* 91	*x* 80	9·9	10·4	87	82	360	3	360	3	10 ≡⁰	3 ≡⁰	—	79	Dull to fine. ┳ *p*.
26	1017·1	1018·8	80·9	84·8	90	79	9·4	10·3	89	75	360	2	11	2	10	0 ≡⁰	—	78	Dull to fine. ∞ *p*.
27	1022·0	1021·7	81·0	82·4	90	*x* 80	9·2	8·4	86	72	11	4	23	4	10	1 ≡⁰	—	73	Dull till 11 h. Fine afterwards.
28	1021·2	1021·0	79·8	79·7	82	79	8·8	8·0	89	82	11	7	23	6	10	10	1·4	78	● early. Dull.
29	1018·3	1015·4	79·8	80·0	85	78	7·6	7·9	77	79	360	7	23	5	7	3	—	77	Dull to fine.
30	1015·0	1020·1	82·0	80·5	86	78	8·6	7·2	75	69	34	7	56	8	9	10	—	76	Dull to fair
Means	1012·4	1013·0	79·8	79·7	83·7	76·8	8·3	8·2	84	83		4·3		3·5	8·3	6·3	80·2	74·4	Monthly **Totals** or **Means**.
Normal	1013·1	1013·0	81·4	80·9	85·8	77·3	8·2	8·2	75	77		4·3		3·3	—	—	40·8	—	**Normals**.
			45 years				30 years				35 years						45 years		

4. METEOROLOGY :—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 242 m. Barometer, H_b = 237·3 m. Vane of Anemometer, H_a = 250 m.
Heights above Ground :—Thermometers, h_t = 0·9 m. Rain-gauge, h_r = 0·38 m. Vane of Anemometer, h_a = 15 m.

																			Remarks.
1	962·7	969·6	79·0	77·5	82	77	8·0	6·9	86	82	360	3	281	8	10	1	1·3	77	●≡⁰ early. o. *a*. p. ⌒ *p*. o. q. v. to b. *n*.
2	975·4	979·0	77·6	74·0	81	72	6·7	6·1	80	93	180	3	—	0	6	3	0·1	69	≡☾ *a*. △ q. ⌒ ┳ *p*. clear *n*.
3	982·4	983·4	76·6	75·8	81	*n* 68	6·2	6·5	79	87	23	3	56	4	8	7	0·1	*n* 66	⌙² early. Fair to fine. v. *p*.
4	984·9	988·3	77·2	75·9	79	73	7·0	6·1	85	81	67	6	67	2	10	10	—	70	Fine to dull. y. *p*.
5	988·3	982·4	76·8	79·7	81	69	5·9	9·5	74	97	157	3	191	9	1∞	10●	*x* 9·3	*n* 66	⌙². b. to c. ∞ *a*. o. ≡⁰ *p*. ●² *n*.
6	976·7	975·7	79·1	77·2	82	77	8·4	6·7	89	82	214	6	281	8	9	5	2·5	77	≡ 1 h. p. *a*. and *p*. q. v. ╫ *n*.
7	979·3	987·5	79·9	77·0	84	74	7·7	6·8	78	84	315	7	360	3	9	4	—	75	╫ 1 h. Fair. p. at times. y. *p*.
8	989·6	978·4	78·2	77·5	82	72	7·0	7·5	79	89	—	1	191	6	9	10	—	70	╫ 1 h. Fine. o. v. *a*. o. to c. *p*. and *n*.
9	973·3	977·6	78·2	77·4	84	76	7·1	7·2	81	87	169	9	45	5	10 ≡⁰	10∞	—	74	Dull, ≡⁰ *a*. Fair. ∞ y. *p*. o. *n*.
10	982·0	987·1	77·5	77·1	79	76	7·7	7·2	92	88	45	9	34	11	10 ≡⁰	10	—	76	≡⁰, with slight d.
11	989·5	987·6	77·3	76·8	81	76	7·4	7·6	89	96	34	10	45	11	10	10	—	76	o., with low St. e. o. ∞ *p*.
12	985·2	985·0	77·3	78·6	83	75	7·8	8·5	94	94	34	3	—	1	10	7∞	—	75	≡⁰ at first. Dull *a*. Fine. ∞² *n*.
13	988·0	993·3	76·3	74·0	*n* 78	72	6·9	5·2	89	80	23	8	23	8	10 ≡⁰	10	1·7	76	≡⁰●⁰ after 3 h. Sleet *p*. Dull *n*.
14	994·7	994·1	73·4	73·4	*n* 78	71	3·6	4·2	57	68	23	8	34	5	10	8	—	70	Dull to fair. y. v.
15	994·6	995·5	76·8	72·7	79	71	5·8	4·9	73	82	23	6	11	4	9	0	—	68	Clear 1 h. c. to o. ∞ *a*. Fine *n*.
16	995·8	996·5	75·2	76·8	81	72	5·9	6·1	82	77	23	9	34	10	10	10	—	69	Fine early. o. till 12 h. b. y. *p*. Fine to o. *n*.
17	997·8	997·0	78·3	75·9	83	75	6·7	6·1	75	81	23	11	11	2	10	1∞	—	75	Dull till 11 h., then b. y. *p*. ∞⁰ *n*.
18	996·7	992·9	74·1	73·5	79	73	4·0	3·7	61	58	23	11	360	7	10	10	—	72	Dull, y. ⊕ *a*. c. to o. *p*. Sun pillar 19 h.
19	987·4	983·4	75·4	72·9	81	72	4·4	3·9	61	64	326	8	360	4	8	1	—	71	y. 9 h. ✳⁰ or sleet *a*. ✳ q. *p*. Fine *n*.
20	980·8	983·5	73·7	71·1	*n* 78	70	6·1	4·7	94	90	—	1	45	3	10✳ ≡⁰	1	4·7	70	≡⁰✳ after 5 h. ⊠ 5½ cms. *a*. △ p. *p*.
21	986·0	986·4	75·8	74·3	79	69	5·7	5·7	77	85	67	7	23	2	8	1	0·1	*n* 66	⌙. ✳ p. or ● p. *a*. and *p*. Fine *n*.
22	986·1	987·5	79·9	76·2	86	69	6·2	5·3	62	69	—	1	—	0	2	0	—	67	⌙². b. y. *a*. and *p*.
23	988·5	991·5	79·6	78·9	82	75	8·4	8·1	86	87	34	6	45	4	10	10	—	70	Fine 1 h. ≡⁰ d. 7 h. Dull *a*. o. ≡⁰ *p*.
24	994·1	993·4	81·3	79·1	89	*x* 78	8·2	9·1	75	97	67	3	23	3	10	5	—	76	o. till 10 h. Fine later. y. ∞ *p*.
25	993·5	993·7	82·9	79·5	90	76	9·5	6·5	79	67	34	4	56	6	2	0	—	74	Very fine. y. *p*. v. *n*.
26	993·9	995·6	85·2	78·0	*x* 91	76	8·6	6·4	61	74	67	5	—	1	8	0	—	74	Fair till 12 h., then b. y. *p*.
27	997·7	999·7	87·6	79·2	*x* 91	76	6·8	6·8	*n* 42	72	56	6	—	1	0	0	—	72	b. y. 13·6 hours sunshine.
28	1000·4	999·7	79·3	74·0	84	74	7·3	5·5	76	84	34	9	23	5	10	2	—	73	Fair to o. *a*. b. after 11 h. y. v. *p*.
29	996·8	994·9	77·3	75·9	82	74	6·0	5·4	73	72	34	9	45	6	10	10	—	71	o. to b. c. y. *a*. Fine *p*. b. c. to o. *n*.
30	995·4	998·0	81·4	75·8	83	73	6·1	5·4	55	73	67	9	79	8	3	7	—	73	o. ≡⁰ 1 h. b. c. y. *a*. and *p*. p. q. *n*.
Means	987·9	988·6	78·3	76·2	82·4	73·4	6·8	6·3	76	81		6·1		4·9	8·1	5·4	19·8	71·9	Monthly **Totals** or **Means**.
Normal 1911-15	988·5	988·7	79·9	77·8	83·3	74·2	7·8	7·4	78	84		6·4		5·1	—	—	107·2	—	**Normals**.

Temperatures at or below the normal freezing point of water are printed in small type.

5. GEOPHYSICS:—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Magnetic Force. Horizontal Comp't. Mean Time.	Horizontal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination. North.	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 2·17. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +.	Charge per cc. ×10¹⁶. −.	Air-Earth Current. ×10¹⁶.
	a. 200+	*a.* 200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′			v/m.	v/m.	v/m.	v/m.	coulomb.		amp/cm².
1	80·0	79·9	231	...	...	...	...	...	...	...	0	1	145	225	*z*±	480	...	...	...
2	80·0	80·0	231	...	...	...	...	...	...	...	1	1	360	530	200	480	0·22	0·71	0·65
3	79·6	80·0	231	...	...	...	...	...	...	...	0	1	490	655	240	335	0·82	0·41	1·30
4	80·6	80·0	230	...	11 18	18400	14 27	15 3·4	14 38	66 57·2	1	0	215	440	...	690	...	...	...
5	80·1	80·0	230	...	...	...	...	...	...	...	2	0	360	410	360	520	0·28	0·19	2·65
6	80·6	80·1	230	...	...	...	...	...	...	...	2	1	480	360	370	720	...	...	...
7	79·9	80·1	228	...	...	...	...	...	...	...	2	1	370	450	265	*z*+	...	...	...
8	80·5	80·2	227	227	...	...	...	...	...	...	1	1	265	760	335	410	0·47	0·11	1·20
9	80·9	80·3	227	227	...	...	...	...	...	...	1	1	15	335	490	345	0·17	0·07	...
10	81·0	80·4	227	...	...	...	...	...	...	...	1	1	265	240	−40	305	...	...	...
11	80·7	80·5	228	...	11 8	18393	...	...	...	...	2	1	400	450	265	490	0·65	0·28	...
12	80·8	80·5	229	...	...	...	14 22	14 54·8	14 34	66 59·4	1	0	410	450	185	530	...	...	0·65
13	81·6	80·6	230	...	...	...	14 26	14 57·5	...	...	0	0	305	215	...	320	...	...	...
14	81·0	80·7	232	...	...	...	...	...	...	...	0	1	255	345	265	320	...	...	...
15	80·1	80·7	239	...	...	...	...	...	...	...	0	2	55	295	40	200	...	...	...
16	79·3	80·8	249	...	...	...	...	...	...	...	0	2	665	*z*±	450	305	...	...	...
17	79·2	80·7	255	...	...	...	...	...	...	...	0	1	280	680	425	400	...	...	...
18	79·5	80·6	261	...	11 3	18421	14 22	15 1·6	14 30	66 57·7	2	1	145	440	400	570	0·47	0·24	2·35
19	78·9	80·6	266	...	...	...	...	...	...	...	2	1	480	370	*z*±	450	...	...	...
20	78·6	80·4	271	...	...	...	...	...	...	...	0	2	145	385	*z*±	−760	...	...	...
21	78·9	80·5	274	...	...	...	...	...	...	...	1	2	*z*±	*z*−	*z*−	−680	...	...	...
22	78·8	80·3	282	...	...	...	...	...	...	...	1	0	360	810	280	320	0·39	0·07	1·05
23	79·9	80·1	292	...	...	...	...	...	...	...	1	1	320	40	400	720	...	...	...
24	79·6	80·2	300	...	...	...	...	...	...	...	0	0	505	560	465	490	0·26	0·24	2·30
25	80·7	80·2	305	...	...	...	...	...	...	...	2	1	265	450	335	505	0·34	0·02	1·45
26	81·8	80·3	308	308	...	...	14 22	15 1·4	14 29	67 0·1	2	0	280	335	280	520	0·34	0·28	0·85
27	82·1	80·4	308	308	...	...	...	...	...	..	0	0	335	345	240	450	...	...	...
28	82·6	80·5	308	...	...	...	...	...	...	...	1	1	80	...	...	...	...	...	...
29	81·8	80·8	307	...	...	...	...	...	...	...	0	0	...	...	385	480	0·41	0·11	1·60
30	81·9	80·9	304	...	11 0	18385	...	...	...	...	1	0	265	665	560	585	0·17	0·24	2·40
M.	80·4	80·4	—	—	—	—	—	—	—	—	—	—	306*	458*	305*	461*	—	—	—
	81·1	80·8																	
	←—12 years—→																		

* Mean of 20 days.

6. GEOPHYSICS:—ESKDALEMUIR.

Day.	Magnetic Force. North Component. Maximum. 15000 γ+. h m	γ	Minimum. 15000 γ+. γ	h m	West Component. Maximum. 4000 γ+. h m	γ	Minimum. 4000 γ+. γ	h m	Vertical Component. Maximum. 44000 γ+. h m	γ	Minimum. 44000 γ+. γ	h m	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre.* Factor 6·06. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +.	Charge per cc. ×10¹⁶. −.	Air-Earth Current. ×10¹⁶.
															v/m.	v/m.	v/m.	v/m.	coulomb.		amp/cm².
1	{19 29 / 19 51}	1014	917	11 47	13 9	1003	903	9 13	17 47	1086	1051	12 30	0	1 *b*	275	355	*z*±	235	...	...	...
2	0 56	1021	924	11 57	14 1	997	898	2 20	18 2	1085	1047	1 12	0	1 *b*	150	275	*z*±	555	...	...	...
3	20 7	1017	923	11 48	13 42	989	895	{23 27 / 23 33}	{7 0 / 22 30}	1083	1057	13 15	0	0 *a*	265	455	190	315	...	...	...
4	21 35	1028	915	11 42	13 39	991	866	23 12	18 5	1099	1000	24 0	1	1 *a*	370	115	180	275	...	...	...
5	18 42	1071	839	22 42	15 19	986	815	22 55	17 41	1138	986	0 6	2	2 *b*	225	240	305	*z*−	...	...	...
6	14 1	1054	840	2 6	13 39	*x*1061	*n*747	1 57	14 14	1157	934	1 57	2	2 *c*	460	220	205	305	...	...	...
7	2 5	1006	806	0 49	13 6	981	839	0 7	17 35	1096	901	1 17	1	1 *a*	100	80	220	500	...	...	...
8	18 51	1036	931	12 41	13 46	978	880	19 29	19 26	1135	1037	1 5	1	0 *a*	535	140	285	290	...	...	...
9	22 34	1016	917	11 7	14 5	1000	883	8 32	0 24	1094	1060	12 12	1	0 *a*	290	255	250	340	...	...	...
10	21 1	1052	932	10 52	23 19	987	892	9 5	17 5	1093	1027	24 0	1	0 *a*	190	70	150	90	...	...	...
11	21 18	1086	813	21 40	17 58	1030	773	20 38	18 13?	*x* 1230 ?	951	20 59	2	0 *a*	180	150	140	390	...	...	...
12	0 50	1008	*n*769	0 38	14 43	970	791	0 43	18 37	1118	<902	‡	2	1 *a*	350	150	15	300	...	...	...
13	20 46	994	917	10 57	12 55	968	896	8 42	22 10	1090	1062	12 38	0	2 *b*	−250	5	−520	85	...	...	...
14	18 24	1000	936	12 26	13 46	954	909	9 10	4 0	1089	1073	12 0	0	0 *a*	70	100	140	155	...	...	...
15	17 57	1012	938	{11 45 / 11 50}	13 54	978	904	8 20	18 35	1089	1058	12 40	0	0 *a*	130	165	190	315	...	...	...
16	18 40	1007	944	13 21	12 57	970	904	9 18	17 30	1092	1060	12 43	0	0 *a*	180	205	410	215	...	...	...
17	17 11	1025	943	11 14	13 53	970	894	22 56	{7 30 / 8 5}	1087	1066	12 35	0	0 *a*	115	140	285	645	...	...	...
18	21 17	1052	938	15 47	14 2	1012	851	23 52	21 3	1105	1017	24 0	1	1 *a*	65	140	240	305	...	...	...
19	1 0	1053	880	12 16	5 1	1006	824	0 52	18 32	1099	998	0 17	1	1 *b*	215	320	290	370	...	...	...
20	21 57	1025	941	10 44	13 19	955	904	8 46	20 30	1083	1071	0 0	0	1 *b*	435	785	205	240	...	...	...
21	20 45	1058	948	12 23	14 52	970	896	21 48	20 36	1090	1065	12 40	1	1 *b*	405	205	140	130	...	...	...
22	22 27	1035	938	{11 46 / 12 25}	14 39	980	894	23 30	18 45	1099	1055	{12 14 / 12 35}	1	0 *a*	80	150	190	425	...	...	...
23	19 8	1033	924	8 44	13 44	982	889	1 57	18 55	1101	1031	{3 26 / 3 34}	1	0 *a*	435	265	165	185	...	...	...
24	16 57	1019	939	{11 1 / 11 11}	13 8	985	907	7 11	18 40	1083	1064	12 15	0	1 *a*	255	225	180	705	...	...	...
25	23 34	1040	838	23 11	1 45	981	774	23 28	21 53	1107	982	23 2	2	0 *a*	§	§	215	685	...	...	...
26	19 57	1074	917	11 50	13 12	988	827	0 30	19 42	1124	926	3 21	2	0 *a*	305	350	215	695	...	...	...
27	{19 46 / 20 53}	1006	941	11 58	14 43	981	902	4 55	17 50	1080	1053	4 22	0	0 *a*	485	340	165	670	...	...	...
28	20 13	1022	941	14 16	15 5	972	905	9 12	20 5	1087	1059	12 10	0	0 *a*	570	140	225	190	...	...	...
29	21 22	1045	944	12 28	16 57	956	910	8 29	20 15	1078	1066	13 15	1	0 *a*	105	140	225	225	...	...	...
30	17 33	*x* 1096	902	12 3	20 22	986	846	23 51	19 15	1112	1018	7 9	2	1 *a*	105	200	180	180	...	...	...
M.	—	1034	907	—	—	986	867	—	—	1104	1027†	—	—	—	248‖	212	175‖	328‖	—	—	—

* The potential gradient is reckoned as positive if the potential increases upwards.
† Mean of 29 days; 12th omitted.
‡ Between 0 h. 37 m. and 0 h. 57 m.
§ Instrument earthed.
‖ Mean of 26 days.
x denotes the maximum and *n* the minimum value in the column.
z Indeterminate.

7. Jersey (St Louis Observatory).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M. S. L. :—H = 54 m. H_b = 55 m. Above Ground :—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level. 7 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in Degrees Absolute. 7 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 7 h.	14 h.	21 h.	Mean.	Rain 0 h. to 24 h.	REMARKS.
	mb.	mb.	mb.	mb.	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	%	%	%	%	mm.	
1	992·5	996·1	1000·7	996·3	80·6	83·6	80·6	84·9	80·0	81·9	75·3	90	78	92	87	—	Threatening sky at 12 h. [●² 14 h. 5 m.
2	1005·3	1006·5	1006·7	1006·2	80·3	82·7	80·4	84·0	79·1	81·3	73·3	94	90	94	93	2·3	● 12 h. 15 m.–13 h. 10 m. ┳ 13 h. 15 m.
3	1003·6	1000·2	997·4	1000·4	80·6	82·3	83·1	83·4	79·8	81·8	75·0	98	91	92	94	1·8	● shortly before 4 h. and from 6 h.–14 h.
4	997·4	999·0	1003·0	999·8	82·6	85·8	81·7	86·7	*x* 81·5	83·7	75·8	98	86	97	94	—	[10 m.
5	1008·1	1011·4	1014·1	1011·1	80·5	82·4	79·6	83·7	79·5	81·1	80·0	89	79	91	86	0·2	●⁰ 6 h. Fine *p.* ▥ 21 h.
6	1012·6	1008·2	1007·5	1009·4	80·9	83·2	80·6	84·3	79·3	81·7	71·0	94	83	90	89	2·9	≡⁰ 7 h. ●² 13 h. 30 m.
7	1007·8	1009·9	1010·7	1009·5	80·0	82·0	80·0	83·0	78·5	80·7	74·0	85	64	71	73	0·9	● 7 h. 20 m. ▲ 7 h. 40 m.
8	1009·1	1007·0	1003·9	1006·6	79·9	82·4	80·4	83·8	79·2	81·1	75·6	79	77	77	77	—	∞ *p.*
9	996·9	993·9	992·6	994·4	79·6	82·7	81·0	84·0	79·0	81·3	78·1	78	65	89	77	—	
10	994·2	995·8	998·2	996·1	80·4	85·0	81·0	85·6	79·1	82·2	73·7	83	61	83	76	—	⊕ 14 h.
11	1000·0	1004·2	1003·8	1002·7	80·6	84·0	81·7	86·2	79·2	82·3	74·9	92	84	79	85	2·3	● and sunshine alternately *p.* ▥ 21 h.
12	1006·2	1006·2	1006·3	1006·2	81·2	87·1	81·3	88·2	79·6	83·5	73·9	82	46	78	69	—	Fine. ▥ 21 h.
13	1004·4	1002·8	1002·9	1003·4	81·8	86·4	82·2	87·2	79·2	83·4	75·6	63	54	84	67	—	≡⁰ 18 h.
14	1003·9	1005·5	1007·8	1005·5	79·4	79·3	79·6	80·7	78·9	80·2	78·3	85	77	67	76	0·1	●⁰ 6 h. 45 m.
15	1008·9	1008·7	1010·1	1009·2	77·4	79·9	79·9	81·5	76·8	79·1	74·9	65	72	79	72	—	
16	1009·1	1008·3	1008·7	1008·7	77·9	78·6	78·6	*n* 78·8	77·5	78·3	76·6	84	86	88	86	0·8	● 4 h.
17	1009·3	1009·7	1010·1	1009·7	79·9	81·3	80·6	82·3	78·6	80·5	77·3	91	82	95	89	—	
18	1009·5	1009·3	1010·2	1009·7	79·4	82·0	77·5	82·6	76·8	79·7	77·6	95	73	59	76	1·6	●² 6 h. 15 m. ≡⁰ 9 h. ≡² 14 h. 45 m.
19	1009·3	1007·8	1007·0	1008·1	76·2	79·2	77·2	80·0	76·0	77·4	73·6	56	*n* 43	58	52	—	✲⁰ 5 h. 30 m. and 10 h.
20	1004·6	1005·4	1004·7	1004·9	74·9	80·0	78·9	81·6	*n* 74·2	77·9	*n* 68·8	92	58	65	72	6·8	●² 4 h. 40 m. ✲ 6 h. 50 m. ●² 8 h.
21	999·9	1000·6	1002·2	1000·9	78·9	80·0	78·3	81·6	77·5	79·3	76·8	94	60	73	76	12·7	●⁰ 4 h. ●² 6 h. 15 m.–8 h.
22	1003·9	1007·1	1009·8	1007·0	77·5	82·9	79·1	83·6	75·3	79·7	72·5	88	57	91	79	5·2	●² 0 h. 40 m.–2 h.
23	1009·9	1010·0	1010·7	1010·2	81·2	85·6	80·4	86·6	78·3	82·4	71·4	86	63	76	75	—	Fair.
24	1010·9	1009·7	1009·3	1009·9	80·6	86·0	83·0	86·7	78·6	83·0	71·8	91	67	79	79	—	Fair till 18 h.
25	1008·7	1009·3	1010·6	1009·5	81·5	84·3	81·7	87·5	80·8	83·2	73·5	94	86	93	91	—	∞ *a.*
26	1011·1	1012·2	1013·4	1012·3	82·1	87·5	81·0	*x* 89·0	80·4	84·0	75·1	96	71	98	88	—	≡⁰ early. ≡² 7 h. 15 m.–8 h.
27	1014·7	1016·1	1016·1	1015·7	79·2	85·0	80·8	86·9	78·7	82·1	73·9	100	86	95	94	—	≡² 4 h.–9 h. ∞ afterwards.
28	1014·6	1013·7	1012·5	1013·5	82·1	81·1	81·3	83·0	80·1	81·5	72·9	88	94	98	93	3·3	● 11 h. 45 m., also in afternoon.
29	1009·9	1008·1	1007·4	1008·5	79·8	81·8	81·6	82·2	79·6	81·0	79·5	98	88	97	94	*x* 17·2	●² all day.
30	1006·7	1008·2	1010·5	1008·6	80·6	82·0	81·3	81·2	80·5	81·1	80·1	91	96	95	94	—	∞ *a.*
Means	1006·1	1006·3	1006·9	1006·5	79·9	82·9	80·5	84·0	78·7	81·2	75·0	87	74	84	82	58·1.	
Normal	1008·6	1008·7	1009·0	1008·8	81·1	84·1	81·3	85·1	79·5	82·2	75·7	82	67	81	77	45·7	

Jersey (St Louis Observatory).

Day.	Wind Direction and Force (0–12 on the Beaufort Scale). 7 h.	14 h.	21 h.	Mean.	Sunshine.* Total.	Per cent. of Possible.	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. Tenths. 7 h.	Upper. Type. 7 h.	Upper. Direction. 7 h.	Lower. Type. 7 h.	Lower. Direction. 7 h.	Tenths. 14 h.	Upper. Type. 14 h.	Upper. Direction. 14 h.	Lower. Type. 14 h.	Lower. Direction. 14 h.	Tenths. 21 h.	Upper. Type. 21 h.	Upper. Direction. 21 h.	Lower. Type. 21 h.	Lower. Direction. 21 h.	Mean Amount.
	Dir. (0–12)	Dir. (0–12)	Dir. (0–12)		hr.	%																
1	WSW 3	WNW 3	WNW 2	2·7	9·4	73	0	…	…	…	…	7	…	…	Cu.-Nb.	WNW	2	…	…	…	…	3·0
2	WSW 3	WSW 3	SW 1	2·3	7·7	60	1	…	…	Cu.	WSW	10	…	…	Nb.	…	5	…	…	…	…	5·3
3	SSE 3	SE 3	SE 3	3·0	0·1	1	10	…	…	Nb.	…	10	…	…	…	…	10	…	…	Nb.	…	10·0
4	— 0	NNE 3	NNE 3	3·0	7·4	57	2	…	…	St.	…	6	Ci.	…	Cu.	NNE	10	…	…	…	…	6·0
5	NNE 4	N 3	WNW 2	3·0	9·0	69	10	…	…	St.-Cu., Nb.	NE	0	…	…	…	…	0	…	…	…	…	3·3
6	WSW 3	SW 5	WNW 3	3·7	0·8	6	10	…	…	…	…	10	…	…	Nb.	…	2	…	…	…	…	7·3
7	NW 3	NNW 4	NNW 3	3·3	8·3	62	8	…	…	Cu.-Nb.	NNW	2	Ci.	…	Cu.	NNW	2	…	…	…	…	4·0
8	N 3	NNE 3	E 1	2·3	7·2	54	7	A.-Cu.	NE	Cu.-Nb.	N	4	A.-Cu.	NE	…	…	10	…	…	…	…	7·0
9	ESE 1	S 2	ENE 3	2·0	6·4	48	8	…	…	St.-Cu.	NE	4	Ci.	SSE	Cu.	SSE	10	…	…	…	…	7·3
10	ESE 2	NNE 3	NE 3	2·7	8·7	66	7	A.-Cu.	S	Cu.	S	5	Ci.-St.	…	…	…	10	…	…	…	…	7·3
11	ENE 3	SE 3	SE 3	3·0	4·8	35	8	A.-Cu.	ENE	St.-Cu.	ENE	8	…	…	Nb.	SE	2	…	…	…	…	6·0
12	SE 2	NE 2	ENE 4	2·7	13·5	100	0	…	…	…	…	1	Ci.	…	…	…	0	…	…	…	…	0·3
13	NE 3	NE 4	ENE 4	3·7	11·0	81	0	…	…	…	…	3	…	…	Cu.	…	10	…	…	…	…	4·3
14	NE 5	NE 5	NE 4	4·7	0·7	6	10	…	…	Nb.	NE	10	…	…	St.-Cu.	NE	10	…	…	…	…	10·0
15	NNE 4	NNE 5	NNE 4	4·3	0·0	0	9	…	…	St.-Cu.	NNE	10	…	…	St.-Cu.	NNE	10	…	…	…	…	9·7
16	NE 4	N 3	NNE 2	3·0	0·0	0	10	…	…	Nb.	NE	10	…	…	Nb.	NNE	10	…	…	…	…	10·0
17	NE 2	NE 3	NE 2	2·3	0·3	3	9	…	…	St.-Cu.	E	10	…	…	St.-Cu.	NE	10	…	…	…	…	9·7
18	NE 4	NE 4	NE 4	4·0	0·6	4	10	…	…	Nb.	NE	7	A.-Cu.	NNE	Nb.	NE	6	A.-Cu.	NNE	…	…	7·7
19	NNE 4	N 4	N 2	3·3	11·0	80	7	…	…	Cu., Cu.-Nb.	NNE	4	…	…	Cu.	N	2	…	…	Cu.	NE	4·3
20	ESE 1	W 2	WSW 3	2·0	2·7	19	10	…	…	Nb.	…	6	Ci., A.-Cu.	W	Cu.-Nb.	W	10	…	…	Nb.	…	8·7
21	NW 1	NW 3	NW 2	2·0	3·0	21	10	…	…	Nb.	…	9	…	…	St.-Cu., Cu.-Nb.	WNW	5	A.-Cu.	W	Cu.-Nb.	…	8·0
22	— 0	N 3	N 2	2·5	8·8	62	10	…	…	St.-Cu.	NW	1	…	…	Cu.	…	6	A.-Cu.	NE	…	…	5·7
23	NNW 1	NNW 3	NE 2	2·0	11·7	83	0	…	…	…	…	0	…	…	…	…	0	…	…	…	…	0·0
24	NE 4	NNE 4	NE 3	3·7	10·9	77	3	…	…	Cu.	ENE	0	…	…	…	…	8	A.-Cu.	NE	…	…	3·7
25	NE 2	N 2	NNE 2	2·0	9·5	60	7	A.-Cu.	NE	…	…	6	…	…	Cu.	NE	1	…	…	…	…	4·7
26	SW 2	NNW 2	NE 2	2·0	13·6	95	2	A.-Cu.	…	…	…	1	…	…	Cu.	…	10	…	…	…	…	4·3
27	N 1	N 2	NNE 2	1·7	7·1	49	10	…	…	≡	…	8	A.-Cu.	…	Cu.-Nb.	NE	0	…	…	…	…	6·0
28	NE 3	NNE 3	ENE 3	3·0	2·3	16	4	…	…	Cu.	NE	10	…	…	Nb.	NE	10	…	…	Nb.	…	8·0
29	NE 3	ENE 3	NE 2	2·7	0·0	0	10	…	…	Nb.	NE	10	…	…	Nb.	NE	10	…	…	Nb.	…	10·0
30	NE 2	ENE 3	NE 3	2·7	0·0	0	10	…	…	…	…	10	…	…	…	…	10	…	…	…	…	10·0
Means	2·5	3·2	2·6	2·8	176·3	43	6·7	—	—	—	—	6·1	—	—	—	—	6·4	—	—	—	—	6·4
Normal	3·5	4·0	3·6	3·7	217·1	53	5·9	—	—	—	—	5·0	—	—	—	—	5·2	—	—	—	—	5·4

* Actinic rays by Jordan Recorder.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	8·7	5·8	...	...	7·0	10·4	...	...	4·4	6·6	...	...	0·9	4·5	...	16·2	8	45
2	...	0·5	2·6	...	1·0	...	...	2·4	0·8	...	4·2	...	2·0	...	3·0	...	9·2	5	55
3	...	Calm		...	...	Calm		...	...	1·9	...	9·3	...	1·3	...	6·5	13·4	23	0
4	...	...	...	11·5	...	...	...	11·8	...	...	...	7·9	...	Calm		...	17·5	7	15
5	...	Calm		...	3·0	...	...	...	6·0	...	4·0	...	6·6	...	4·4	...	13·0	16	30
6	2·1	...	5·2	...	1·5	...	7·4	...	...	1·9	9·3	...	...	3·8	5·7	...	16·5	24	0
7	...	6·6	9·8	...	...	9·8	9·8	...	...	7·6	5·1	...	...	10·0	2·0	...	18·2	6	5
8	...	8·2	...	...	...	Calm		...	0·9	...	4·5	...	4·2	...	4·2	...	13·0	1	15
9	5·3	...	5·3	...	...	1·7	2·5	...	...	3·8	...	2·6	...	4·4	...	6·6	14·3	23	15
10	...	1·7	...	8·3	...	...	...	9·8	...	2·2	...	11·3	...	1·6	...	8·0	17·0	17	10
11	...	4·1	...	10·0	...	5·8	...	8·7	...	6·7	...	10·1	...	2·6	...	6·4	19·1	12	25
12	...	...	...	2·0	2·7	...	1·8	...	3·0	...	3·0	...	...	1·0	2·4	...	9·7	0	25
13	...	5·5	2·3	...	...	4·5	0·9	...	...	5·3	...	5·3	...	6·6	...	9·8	17·1	22	20
14	...	4·4	...	6·6	...	5·7	...	8·5	...	7·4	...	4·9	...	6·2	...	4·2	16·0	0	35
15	...	7·1	...	4·7	...	8·5	...	3·5	...	7·3	...	3·0	...	8·8	...	3·6	13·4	4	45
16	...	8·8	...	3·6	...	9·7	...	4·0	...	6·7	...	10·0	...	8·6	...	8·6	16·8	18	50
17	...	9·5	...	9·5	...	7·8	...	7·8	...	7·4	...	4·9	...	3·6	...	2·4	17·1	3	10
18	...	3·0	...	2·0	...	8·3	...	8·3	...	7·6	...	7·6	...	4·9	...	4·9	16·0	9	5
19	...	10·9	...	4·5	...	10·0	...	2·0	...	6·3	6·3	...	...	6·1	...	1·2	17·2	17	30
20	...	6·0	...	4·0	...	1·9	1·3	...	...	6·8	1·3	...	...	4·2	...	4·2	11·4	14	30
21	...	2·9	...	4·3	...	4·9	...	7·4	...	7·4	...	7·4	...	2·4	...	5·7	15·5	15	40
22	...	...	...	5·6	2·2	...	...	3·2	...	0·6	3·2	...	...	Calm		...	8·3	1	20
23	...	Calm		...	...	Calm		...	...	1·8	2·7	...	...	Calm		...	4·4	13	0
24	...	Calm		...	...	2·3	...	...	...	4·2	...	4·2	...	Calm		...	9·2	11	20
25	...	1·8	...	1·8	...	4·3	...	1·8	...	4·3	1·8	...	...	1·0	...	5·1	9·0	10	45
26	...	1·4	...	2·2	...	3·7	...	3·7	...	4·6	...	...	...	1·1	...	1·7	9·6	5	10
27	...	2·3	...	2·3	...	2·8	...	1·1	...	5·6	...	...	...	1·3	0·9	...	8·9	14	5
28	...	2·0	0·4	...	...	3·8	...	2·6	...	5·5	...	3·7	...	4·7	...	4·7	11·3	23	0
29	...	4·7	...	4·7	...	5·7	...	8·5	...	5·3	...	7·9	...	5·4	...	8·1	16·4	23	35
30	...	4·9	...	7·4	...	2·3	...	11·6	...	2·6	...	12·9	...	2·2	...	10·9	19·0	10	15
S+N & W+E	112·4		126·4		120·9		140·8		135·9		165·0		105·5		129·7				
S−N & W−E	−97·6		−63·6		−100·1		−72·6		−114·5		−61·0		−79·9		−75·5				

SCOTLAND N.:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	3·1	...	...	4·7	3·7	...	...	5·5	2·8	...	...	2·8	2·5	...	...	2·5	6·9	1
2	...	Calm		...	1·4	...	7·1	...	1·5	...	3·6	...	0·4	...	2·3	...	8·5	11
3	...	Calm		...	...	1·4	1·4	...	...	1·7	...	2·5	...	1·1	...	1·7	3·6	11
4	...	0·9	...	1·3	0·8	...	...	4·2	2·9	...	...	4·3	3·4	...	...	5·2	8·2	24
5	9·4	...	...	3·9	10·9	...	...	4·5	10·6	...	...	7·1	11·3	...	...	2·2	13·1	11
6	5·6	...	...	...	7·5	...	...	...	4·8	...	...	1·0	1·6	...	0·3	...	7·9	11
7	0·9	...	1·3	...	1·1	...	1·7	...	...	4·3	2·9	...	...	2·8	6·7	...	7·5	19
8	0·6	...	3·2	...	8·5	...	...	...	7·7	...	...	1·5	8·5	...	...	...	10·5	23
9	7·9	...	...	...	5·7	...	2·4	...	3·6	...	...	1·5	1·9	...	...	1·3	9·5	1
10	...	0·4	...	2·3	...	2·1	...	5·2	...	4·0	...	6·0	...	3·1	...	4·7	10·5	12
11	...	2·4	...	3·6	...	1·6	...	4·0	1·4	...	...	3·3	3·1	...	...	4·7	6·9	24
12	5·2	...	...	3·4	4·6	...	...	...	1·4	...	2·2	...	...	8·0	2·6	...	11·5	18
13	...	7·7	...	1·5	...	10·3	...	4·3	...	9·5	...	...	...	7·7	...	1·8	11·8	11
14	...	5·2	...	...	...	6·6	...	...	...	4·6	...	...	...	Calm		...	7·2	11
15	...	1·1	1·7	...	3·3	...	1·4	...	3·6	...	...	...	...	Calm		...	3·9	10
16	...	Calm		...	...	Calm		...	1·3	...	...	0·9	1·3	...	...	0·9	2·6	11
17	...	Calm		...	1·1	...	1·1	...	...	2·6	6·4	...	...	12·3	...	2·4	12·8	22
18	...	11·9	2·4	...	...	11·1	...	...	...	10·6	4·4	...	...	11·2	4·6	...	13·4	14
19	...	10·0	4·1	...	...	7·9	...	...	...	9·2	...	...	...	3·9	...	...	11·8	1
20	1·3	...	...	1·9	...	...	...	3·9	...	...	...	6·2	...	...	...	6·6	7·9	24
21	3·7	...	...	5·5	...	...	...	5·2	...	2·6	...	3·8	...	1·6	...	1·6	6·9	1
22	...	Calm		...	2·3	...	...	...	1·1	...	...	1·1	...	1·7	...	2·5	3·3	17
23	...	2·2	...	3·2	...	...	...	4·9	5·1	...	...	5·1	4·0	...	...	4·0	8·5	19
24	6·6	...	...	4·4	6·9	...	...	2·9	4·0	...	...	4·0	2·0	...	...	4·8	8·9	2
25	2·6	...	...	3·8	3·5	...	...	3·5	4·0	...	...	4·0	2·1	...	...	2·1	5·6	15
26	1·8	...	...	1·8	2·8	...	...	2·8	0·8	...	...	4·2	...	...	...	2·3	4·6	11
27	...	...	...	2·0	...	...	...	3·6	...	1·6	...	4·0	...	1·0	...	2·4	5·2	17
28	...	1·8	...	2·7	...	2·4	...	3·6	...	1·9	...	4·3	...	1·8	...	4·3	5·6	22
29	...	3·4	...	5·2	...	6·3	...	6·3	...	6·7	...	6·7	...	3·0	...	7·3	10·8	16
30	...	...	...	3·3	0·6	...	...	3·2	1·3	...	...	3·0	1·1	...	...	1·1	5·2	1
S+N & W+E	95·7		67·2		114·4		82·7		117·2		97·0		102·4		82·9			
S−N & W−E	1·7		−41·8		15·0		−52·5		−1·4		−58·0		−16·0		−49·9			

ENGLAND S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	5·0	5·0	...	...	9·0	6·0	...	...	5·9	5·9	...	...	3·4	8·1	...	13·6	8	55
2	...	...	9·6	...	...	2·1	5·0	..	...	1·8	4·3	...	...	0·5	1·2	...	14·4	3	35
3	8·0	...	...	8·0	10·0	...	...	10·0	8·0	...	..	8·0	3·5	...	...	1·5	17·1	11	20
4	2·7	...	...	1·1	2·3	...	...	2·3	1·5	...	...	3·5	...	Calm		...	5·3	6	35
5	...	2·3	...	2·3	...	3·8	...	...	...	3·3	3·3	...	...	3·8	3·8	...	7·6	23	55
6	...	...	7·9	...	...	...	14·6	...	...	8·8	8·8	...	...	8·8	8·8	...	19·5	9	10
7	...	13·9	5·7	...	No	rec	ord	...	...	9·4	6·3	...	...	6·6	2·7	...	19·1	3	10
8	...	7·1	...	...	...	4·3	...	1·8	...	2·3	...	1·0	...	1·1	2·7	...	11·1	1	15
9	...	...	5·4	...	...	8·3	...	...	...	8·3	...	...	...	3·0	...	3·0	13·3	8	15
10	...	...	...	7·1	3·0	...	...	7·3	2·2	...	...	5·4	1·1	...	...	2·7	10·7	10	0
11	1·8	...	...	4·3	1·6	...	...	3·9	2·2	...	...	5·4	2·2	...	...	5·4	8·9	22	40
12	1·1	...	...	5·7	1·9	...	...	4·6	3·5	...	...	1·5	1·9	...	...	0·8	8·5	1	50
13	2·3	...	...	1·0	...	4·5	...	3·0	...	6·9	...	4·6	...	8·1	...	3·4	12·3	19	20
14	...	2·9	...	6·9	...	3·2	...	7·7	...	5·9	...	5·9	...	4·4	...	6·6	13·0	7	30
15	...	5·0	...	5·0	...	5·3	...	5·3	...	7·7	...	3·2	...	7·3	...	3·0	11·3	18	15
16	...	6·2	...	2·6	...	7·7	...	3·2	...	7·7	...	5·1	...	2·7	...	6·6	12·8	14	35
17	...	2·9	...	6·9	...	...	...	7·5	...	...	...	6·7	...	2·9	...	6·9	10·9	13	5
18	...	2·9	...	6·9	...	2·6	...	6·2	...	5·3	...	5·3	...	6·8	...	6·8	13·9	19	0
19	...	...	...	5·0	...	4·3	...	1·8	...	7·4	...	1·5	...	7·1	...	...	17·3	23	30
20	...	11·7	...	...	...	4·1	...	4·1	...	5·6	3·7	...	...	7·4	7·4	...	17·4	0	30
21	...	10·8	4·5	...	...	4·3	...	1·8	...	6·3	...	...	...	6·9	2·0	...	16·8	5	10
22	...	4·3	1·8	...	...	3·8	...	...	...	2·1	...	...	...	Calm		...	8·4	0	5
23	1·8	...	...	1·8	2·9	...	...	...	3·5	...	...	1·5	1·9	...	...	0·8	3·6	13	0
24	1·9	...	...	0·8	...	0·3	...	1·7	1·8	...	...	1·8	0·9	...	...	0·9	6·1	11	20
25	...	1·6	...	0·7	...	1·6	...	0·7	...	0·7	...	1·6	...	1·0	...	2·3	2·2	0	40
26	...	0·7	...	1·6	...	Calm		...	...	...	...	1·3	...	...	...	0·4	2·0	5	55
27	...	Calm		...	...	1·2	...	1·2	...	2·7	...	2·7	...	3·3	...	3·3	4·6	20	20
28	...	1·8	...	1·8	...	3·5	...	3·5	...	5·8	...	2·4	...	2·7	...	2·7	8·4	16	5
29	...	...	...	4·2	...	2·2	...	5·4	...	0·8	...	4·1	...	...	...	0·8	8·3	10	40
30	...	Calm		...	1·5	...	...	3·5	3·8	...	...	3·8	2·1	...	...	5·0	8·6	19	50
S+N & W+E	98·7		113·6		99·3		112·1		131·2		108·6		101·4		100·5				
S−N & W−E	−59·5		−33·8		−52·9		−60·9		−78·2		−44·0		−74·2		−25·3				

ENGLAND E.:—GREAT YARMOUTH.

Height of Head above—Roof 10·7 m., Ground 12·8 m., M.S.L. 15·9 m.
Height of Cups above—Roof 3·7 m., Ground 18·3 m., M.S.L. 22·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust. (Gorleston.)	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	5·1	...	1·0	...	6·4	...	2·6	...	2·9	...	4·3	...	1·1	...	2·8	...	13·9	11	5
2	1·0	...	2·4	...	...	...	2·6	...	5·1	...	...	1·0	1·0	...	2·4	...	10·5	15	25
3	1·0	...	2·4	...	0·3	...	1·8	...	4·1	...	...	2·7	1·8	...	...	1·8	8·5	13	50
4	...	...	...	6·2	...	5·1	...	7·6	...	5·8	...	5·8	...	5·6	...	5·6	10·3	23	45
5	...	7·9	...	5·3	...	6·7	...	2·8	...	3·6	1·5	...	...	1·9	1·3	...	...	...	
6	1·1	...	1·7	...	3·8	...	2·6	...	6·2	...	...	...	0·8	...	4·2	...	14·3	12	10
7	0·4	...	2·0	...	...	0·7	3·5	...	...	1·7	...	2·5	...	0·4	...	2·0	7·3	10	5
8	...	1·4	...	3·3	...	3·0	...	3·0	...	5·2	...	2·1	...	3·5	...	3·5	9·5	16	30
9	...	Calm		...	...	0·9	...	4·5	...	1·6	...	4·0	...	2·9	...	6·9	10·0	23	50
10	...	5·1	...	5·1	...	3·6	...	8·8	...	5·7	...	3·8	...	6·4	...	2·6	12·3	19	25
11	...	5·3	...	5·3	...	4·0	...	4·0	...	2·3	...	2·3	...	2·5	...	1·7	9·6	0	50
12	...	1·7	...	1·1	...	1·6	4·0	...	...	1·5	3·6	...	...	0·6	1·5	...	8·5	13	55
13	...	Calm		...	...	3·5	0·7	...	...	6·1	...	1·2	...	3·8	...	8·8	17·0	23	50
14	...	10·4	...	7·0	...	9·7	...	4·0	...	8·2	...	...	...	4·8	1·0	...	19·3	16	20
15	...	4·6	...	...	...	7·9	...	...	...	11·6	...	2·3	...	10·6	...	4·4	21·0	16	0
16	...	8·7	...	5·8	...	9·2	...	6·2	...	9·1	...	3·8	...	8·1	...	5·4	12·6	6	15
17	...	7·9	...	5·3	...	6·0	...	4·0	...	7·4	...	4·9	...	8·8	...	3·6	...	...	
18	...	9·0	...	1·8	...	10·3	...	2·0	...	6·5	1·3	...	...	4·0	1·6	...	20·2	7	5
19	...	2·8	1·1	...	...	3·6	1·5	...	...	5·5	2·3	...	...	1·8	1·8	...	20·1	8	10
20	...	0·6	1·5	...	...	Calm		...	3·6	...	...	1·5	4·0	...	...	1·6	9·5	24	0
21	4·9	...	...	4·9	3·9	...	...	9·4	...	...	...	8·5	...	2·1	...	10·6	13·0	19	25
22	...	1·9	...	4·5	...	4·0	1·6	...	...	4·1	2·7	...	...	2·3	2·3	...	13·6	10	55
23	...	1·1	1·1	...	...	2·8	2·8	...	3·2	...	...	2·2	...	0·6	...	3·2	...	...	
24	...	3·9	...	...	...	3·9	...	...	...	4·5	0·9	...	...	3·2	0·6	...	10·3	10	15
25	...	2·9	...	0·6	...	4·0	...	1·6	...	5·2	...	...	...	3·2	0·6	...	10·0	17	10
26	...	2·3	0·4	...	...	2·6	0·5	...	...	4·9	...	...	...	2·1	0·9	...	9·4	14	50
27	...	2·3	2·3	...	...	3·6	2·4	...	...	4·8	2·0	...	...	4·8	1·0	...	13·6	16	15
28	...	4·9	...	...	...	6·8	...	1·3	...	7·2	...	...	...	5·6	...	...	14·6	23	0
29	...	8·5	...	...	...	6·9	...	...	...	7·7	...	1·5	...	7·4	...	1·5	14·6	5	30
30	...	7·3	...	10·9	...	7·5	...	11·1	...	7·8	...	11·7	...	7·3	...	10·9	18·0	16	35
S+N & W+E	114·0		83·0		132·8		96·9		153·1		80·4		118·0		96·1				
S−N & W−E	−87·0		−51·2		−103·0		−43·7		−102·9		−43·2		−100·6		−52·1				

9. Seismological Diary.

Earthquakes:—Eskdalemuir.

Day.	Phase.	Time, G.M.T.	Period.	Amplitudes. A_N.	A_E.	A_Z.	Δ.	Remarks.
		h m s	s	μ	μ	μ	km.	
5		15 43 to	...	...	...	...	...	
		15 48	...	...	...	...	...	Faint disturbance.
10	Pe	2 14 34	...	...	...	...	8600	
	S_1	2 24 23	...	...	...	...	...	
	L	2 39 47	...	...	...	...	...	
	F	3 25	...	...	...	...	...	
13	e	1 8 25	...	...	...	...	...	
	e	1 15 12	...	...	...	...	...	
	i	1 22 18	...	...	...	...	...	
	L	1 34	...	...	...	...	...	
	M	1 48	21	16	...	...	...	
	F	2 30	...	...	...	...	...	
15	P	8 38 9	...	...	...	...	6900	
	S	8 46 33	...	...	...	...	...	
	SR_1	8 51 42	...	...	...	...	...	
	L	8 58	...	...	...	...	...	
	F	9 15	...	...	...	...	...	
17	L	3 12 to	...	...	...	...	...	
		3 30	...	...	...	...	...	
21	P	22 44 8	...	...	...	...	8350	South California, according to press reports.
	S	22 53 45	...	...	...	...	...	
	L	23 8	...	...	...	...	...	
	M	23 12 28	22	71	...	..	...	
	M	23 14	21	...	33	...	...	
	M	23 14 28	22	72	...	...	...	
	M	23 16	21	46	...	...	...	
	F	1 47	...	...	...	...	...	
23	L	16 25 to	...	...	...	...	...	
		16 36	...	...	...	...	...	
24	L	3 6 to	...	...	...	...	...	Horizontal instruments under adjustment, 24 d. 20 h. to 25 d. 8 h. Disturbance recorded on Vertical. P apparently at 25 d. 2 h. 29 m. 56 s.
		3 12	...	...	...	...	...	
27	L_E	15 28	...	...	...	...	...	
	F	15 40	...	...	...	...	...	
28	L	11 40 to	...	...	...	...	...	
		12 0	...	...	...	...	...	

Microseisms of N. Component:—Eskdalemuir.

Day.	0 h. A_N.	0 h. T.	6 h. A_N.	6 h. T.	12 h. A_N.	12 h. T.	18 h. A_N.	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	1·5	5	1·4	5·5	1·5	5	1·2	5
2	1·0	4·5	0·9	5	0·9	5	0·7	5
3	0·8	5·5	0·9	5	1·0	4·5	0·8	4·5
4	0·8	4·5	0·7	4·5	0·9	4·5	0·5	5
5	0·4	5·5	0·5	5	0·5	5	0·7	4
6	0·9	5	1·0	5·5	1·4	5·5	1·8	6
7	2·9	6	2·8	6·5	2·3	6	2·1	5·5
8	1·4	5	0·9	5	0·9	5	0·9	6
9	1·0	6·5	1·3	5	2·3	6	3·3	6·5
10	2·5	6·5	1·6	5·5	1·8	5·5	1·0	5·5
11	1·3	5	1·1	5	0·8	4	0·5	5
12	0·5	4·5	0·5	4·5	0·5	4·5	0·6	4·5
13	0·5	5	1·0	5·5	0·8	5	...	...
14	...	...	...	...	0·5	4·5	0·6	4·5
15	0·6	5	0·7	4·5	0·9	5	0·9	4·5
16	0·7	5	0·7	4·5	0·5	5	0·5	4
17	0·5	4	0·2	4	0·3	3	0·4	4·5
18	0·6	4	0·5	5	0·5	5	0·8	4·5
19	1·0	4·5	0·9	5	0·6	5	0·6	5·5
20	0·8	4·5	0·6	5	0·5	5	0·5	5·5
21	0·5	5	0·4	5	0·4	5·5	0·5	5·5
22	...	...	0·9	5	1·0	5	1·0	6
23	1·0	6·5	0·7	6	0·9	5	0·7	5
24	0·5	5	0·5	4	0·4	5	0·2	5·5
25	...	...	...	...	0·3	5	0·1	4
26	0·1	5	0·2	5	0·3	5	0·4	5
27	0·3	5·5	...	...	0·4	5	0·4	5
28	0·4	5	0·2	4	0·2	5·5	0·5	5
29	0·4	5	0·7	5·5	0·9	5	0·9	5
30	0·9	5	0·9	5	1·0	4·5	0·5	5

Means for Month { A_N = 0·8. T = 4·9. } Normals, 1911–17 { A_N = 1·2. T = 5·4. }

Earthquakes:—Richmond (Kew Observatory).

Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h m	h m	
10	...	2 23	Small.
13	...	1 54	
27	...	15 33	Small.

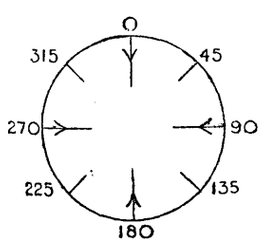
12. Aurora.

Day.	a.m. or p.m.	Moon.	Magnetic Character. Eskdalemuir.	Richmond.	Aurora Observations. Station.	Remarks.
3	p.	...	0, 1	0, 1	Aberdeen	Faint glow 22 h.
4	p.	☾	1, 2	1, 2	Wick	
					Deerness	
					Wick	
5	p.	...	2, 2	2, 2	Gordon Castle	
					Edinburgh	
					Glasgow	
					Deerness	
					Wick	
					Aberdeen	Moderately bright, greenish-white and dull red; appeared suddenly at 21 h.; rather active streamer display, fading till about 24 h.
6	p.	...	2, 1	2, 2	Dundee	
					West Linton	
					Eskdalemuir	Brilliant, 21 h.
					Oxford	
					Hartland Quay	Streamers, 21 h.
7	a.	...	2, 1	2, 2	Eskdalemuir	Visible through break in clouds to N.N.E., 1 h.
7	p.	...	1, 1	2, 1	Orkneys and Scotland generally	
8	a.	...			Eskdalemuir	Slight glow in N.N.W., 1 h.
10	p.	...	1, 2	1, 2	Kingussie	
					Deerness	
					Wick	Fine display.
					Aberdeen	After 20 h., a moderately bright glow and streamers white in colour spread over a rather extensive area (up to about 45° elevation), but seen only between clouds which covered six-tenths of sky.
11	p.	●	2, 2	2, 1	Castlebay	
					Fort William	
					Dundee	
					Edinburgh	
18	...	☽	...	...	...	
25	p.	...	2, 2	2, 2	Aberdeen	Moderately bright, arch and streamers, greenish-white and deep red, 20 h.–22 h. (not well seen on account of full moonlight).
26	...	○	...	...	...	
29	p.	...	1, 2	0, 1	Dublin (city)	21 h.

Note.—The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at the midnight of the night in question.

10. Soundings with Pilot Balloons.

Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	m/s.	By Anemometer. From N.	m/s.	At Heights above M.S.L. 500 m. From N.	m/s.	1000 m. From N.	m/s.	2000 m. From N.	m/s.	3000 m. From N.	m/s.	4000 m. From N.	m/s.	5000 m. From N.	m/s.	Cloud Observations. Type.	From N.	m/s.
		h. m.	°		°		°		°		°		°		°		°				
1	Cahirciveen	16 30	290	10	260	5·5	275	8·0	285	11·0	250	10·0	...	...	...	...	...	...	Ci.-St.	?	...
																			St.-Cu.	270	...
2	,,	7 40	290	8	360	6·5	335	7·0	315	8·0	305	8·5	290	8·0	315	14·5	335	14·5	Cu. and St.	315	...
2	,,	15 45	270	5	320	3·0	310	3·5	210	0·6	245	6·5	...	...	...	...	...	...	Ci.-Cu., Cu.	270	...
2	Aberdeen	7 30	270	8	—	0	280	14·0	295	6·0	230	5·0	...	...	...	...	...	...	St.-Cu.	250	...
2	Eskdalemuir	7 25	290	8	—	0	250	4·3	240	6·0	245	8·0	...	...	...	...	...	...	A.-Cu., Fr.-Cu.	270	...
2	S. Farnboro'	6 35	270	8	260	light	265	6·5	265	5·5	285	5·0	275	9·5	260	9·0	265	7·0	St.	...	...
2	,,	15 40	270	8	?	7·5	260	7·0	255	13·5	250	10·5	...	...	...	...	...	...	Cu.-Nb.	...	...
3	,,	6 35	?	?	—	0	215	3·1	230	3·5	240	3·0	270	8·5	...	...	...	...	Ci.	270	...
																			St.	...	...
3	Cahirciveen	8 15	110	10	95	8·0	100	16·5	130	17·0	135	13·0	...	...	...	...	...	...	Upper Cu. & St.	180	...
																			Lower do.	115	...
4	,,	8 0	110	10	—	light	?	?	120	5·5	120	6·0	...	...	...	...	...	...	Ci.	...	...
																			Cu.	115	...
5	S. Farnboro'	11 20	360	10	350	5·5	5	6·0	15	5·0	335	4·5	345	5·5	345	4·5	5	5·5	Fr.-Cu.	...	...
5	,,	14 35	360	10	350	3·0	350	6·0	360	2·5	315	3·0	315	5·5	310	6·5	330	9·5	...	...	...
6	Cahirciveen	12 20	320	20	310	3·7	310	10·0	310	13·5	300	13·0	...	...	...	...	...	...	Cu.	295	...
8	Aberdeen	7 30	230	8	210	2·0	205	13·0	220	10·0	160	3·0	350	4·0	15	10·0	...	...	A.-St.	360	...
8	Eskdalemuir	8 0	230	5	—	0	140	2·0	245	3·5	140	1·9	35	7·5	30	15·5	25	21·0	A.-St.	45	...
9	Cahirciveen	7 20	360	8	30	3·9	350	10·5	345	10·5	340	10·5	320	10·0	315	13·0	290	6·5	Cu.	315	...
12	S. Farnboro'	8 5	140	5	270	light	235	6·5	215	4·5	185	4·5	150	3·0	120	10·0	110	8·5	Fr.-St.	...	...
																			St.-Cu.	...	...
13	,,	7 0	50	5	250	light	15	7·5	15	8·5	70	3·5	...	...	...	...	...	...	St.	...	...
14	Cahirciveen	7 50	50	10	55	10·0	55	6·5	45	8·0	20	9·0	270	1·4	...	...	...	...	A.-Cu.	45	...
																			St. and Cu.	65	...
15	,,	7 15	50	10	20	1·0	10	7·5	10	10·0	20	11·5	...	...	...	...	...	...	Ci., A.-St.	...	...
																			St. and Cu.	45	...
15	,,	7 45	50	10	55	2·4	5	7·5	15	11·5	25	12·0	...	...	...	...	...	...	Ci., A.-St.	...	...
																			St. and Cu.	45	...
																			Ci., Ci.-St.	?	...
15	,,	12 0	20	12	25	7·0	15	9·5	25	11·5	20	13·0	...	...	...	...	...	...	A.-Cu.	45	...
																			Cu.	25	...
16	,,	7 25	20	10	40	2·1	45	7·0	25	11·0	30	8·0	...	...	...	...	...	...	Cu.	45	...
																			Ci.-St.	...	...
17	Eskdalemuir	17 30	50	10	45	7·0	30	7·5	30	13·5	30	7·5	...	...	...	...	...	...	...	...	...
18	Cahirciveen	17 15	50	8	5	7·0	35	8·5	40	8·0	15	19·0	...	...	...	...	...	...	Cu.-St.	25	...
21	,,	7 35	320	8	360	5·0	355	6·5	350	10·5	355	15·5	...	...	...	...	...	...	Cu. and St.	335	...
																			St.-Cu.	335	...
21	,,	16 55	?	?	—	light	50	1·7	25	1·1	295	9·5	...	...	...	...	...	...	A.-Cu. & St.	...	...
																			Cu.	335	...
22	Aberdeen	7 30	?	?	300	1·0	35	2·0	10	3·0	150	6·0	145	8·5	...	...	...	...	Ci., A.-Cu.	...	...
22	Eskdalemuir	7 15	?	?	—	0	345	1·2	360	1·8	150	2·3	175	6·5	155	9·0	...	...	Ci.-St.	165	3·1
23	S. Farnboro'	6 40	360	5	265	light	325	6·0	345	8·5	355	5·5	...	...	...	...	...	...	A.-Cu.	...	...
													6000 m.		7000 m.		8000 m.				
2	S. Farnboro'	6 35	(For observations at lower levels, see above.)										260	9·5	220	12·0	215	13·0			
5	,,	14 35											325	6·4	305	6·0	285	8·0			
12	,,	8 5											85	16·0	85	17·0	...	...			



Wind Protractor.

Height of Station above M.S.L. = H.
Height of Anemometer above ground = h.

	H.	h.
Aberdeen	14 m.	32 m.
Eskdalemuir	242 m.	15 m.
S. Farnborough	70 m.	31 m.
Cahirciveen	30 m.	13 m.

Notes on Pressure Distribution.

April 1918.

1 18 h. } Wide V over the British Isles.
2 7 h. }
18 h. V over the North Sea; high over the Baltic; low over the Azores.
3 7 h. Narrow N.W.-S.E. ridge over England; low developing S.W. of Ireland.
4 7 h. Extensive low centred over the Bay of Biscay.
5 13 h. Depression approaching Scotland from Iceland; high over the Baltic.
6 13 h. Low covering the British Isles, centred off N. of Scotland.
8 7 h. High over the Azores and over Finland; low over the Iceland region.
9 7 h. Low over the British Isles; gradient slight.
12 7 h. High over Finland; low covering Spain and the Bay of Biscay, centred near Lisbon.
13 7 h. Anticyclone between Scotland and Iceland; extensive continental low covering Spain, France, and Italy.
14 7 h. } Anticyclonic ridge from Scandinavia to the Azores.
15 7 h., 13 h. }
16 7 h. }
17 18 h. } High over the British Isles.
18 18 h. }
21 7 h., 18 h. Shallow low over the Channel.
22 7 h. Low over the Central Empires and Italy; high over the Azores and Scandinavia; low over Iceland.
23 7 h. A small low over East Anglia.

Notes on Ascents.

1st, 16 h. 30 m. Overcast.
2nd, 7 h. 40 m. Showery.
3rd, 6 h. 35 m. Dense low mist.
3rd, 8 h. 15 m. Overcast.
6th, 12 h. 20 m. Showery.
8th, 8 h. 0 m. Barometer rise checked, inclined to fall.
12th, 8 h. 5 m. Fr.-St. decreasing.
21st, 7 h. 35 m. Overcast.

10. Soundings with Pilot Balloons—*continued.*

Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	m/s.	By Anemometer. From N.	m/s.	At Heights above M.S.L. 500 m. From N.	m/s.	1000 m. From N.	m/s.	2000 m. From N.	m/s.	3000 m. From N.	m/s.	4000 m. From N.	m/s.	5000 m. From N.	m/s.	Cloud Observations. Type.	From N.	mr/s.
		h. m.	°		°		°		°		°		°		°		°			°	
24	S. Farnboro'	7 15	50	12	315	light	40	8·0	55	6·0	75	6·0	70	9·0	95	9·0	105	6·5	Ci.-St.	115	...
24	Eskdalemuir	12 0	70	5	135	6·0	140	4·9	105	6·0	150	11·0	...	...	...	...	...	...	Ci.-St. Cu. Fr.-Cu.	? 110 115	... 9·8 ...
24	Cahirciveen	7 40	140	8	145	6·5	140	6·0	170	9·0	125	5·5	160	6·5	...	...	...	...	Cu. Ci.	135 180	... ...
24	,,	16 25	140	8	190	5·5	150	4·5	160	9·5	160	8·0	170	10·0	180	9·0	200	10·0	Ci. Ci.-Cu., Cu.	...	...
25	,,	7 15	70	5	50	1·8	115	3·4	110	7·0	135	2·9	120	3·7	110	5·5	130	4·6	...	...	...
25	,,	15 10	?	?	290	2·5	240	1·9	110	5·0	135	8·5	140	4·7	150	4·7	110	2·7	Cu.	?	...
25	S. Farnboro'	9 15	50	8	360	3·5	35	9·5	50	14·0	60	12·5	60	5·0	...	...	...	...	St.-Cu., A.-Cu.	...	...
25	Eskdalemuir	7 20	90	5	70	4·1	75	4·9	115	9·0	130	7·5	120	7·0	85	8·3	...	...	Fr.-St.	45	...
26	,,	7 20	90	5	20	5·0	60	8·0	90	10·5	90	6·0	30	3·5	...	...	...	...	A.-Cu. St.-Cu.	35 25	1·4 ...
26	Cahirciveen	11 45	?	?	275	4·0	155	4·5	115	4·5	135	9·5	125	8·0	110	5·5	95	6·0	Cu.	155	...
27	Eskdalemuir	7 10	50	5	340	1·6	40	4·5	30	8·0	15	3·0	20	8·5	40	7·5	25	7·5	...	...	...
27	Cahirciveen	7 15	140	5	—	light	?	?	35	1·8	70	3·8	45	2·3	355	3·6	340	3·2	Ci. Ci.-Cu.	... 270	... ...
27	,,	16 0	?	?	295	1·0	360	2·8	30	1·8	75	5·0	...	...	...	...	...	...	Cu., Ci., Ci.-Cu.	360	...
28	,,	7 25	90	5	—	0	120	3·1	105	7·5	70	6·5	40	7·5	15	11·0	...	...	Ci.	...	...
28	,,	15 25	50	5	285	2·7	345	5·5	35	5·5	55	7·5	...	...	...	...	...	...	Cu.	45	...
29	,,	7 35	70	5	60	1·0	10	4·1	30	2·8	50	5·5	...	...	...	...	...	...	Ci.-St. Ci.	... 45	... ...
29	,,	15 40	90	5	275	3·8	230	1·5	80	3·2	150	1·9	55	3·5	60	3·8	90	1·4	Ci. Cu.	245 ...	... ...
30	,,	7 15	90	5	55	1·0	110	2·5	55	2·2	170	0·7	..	...	...	...	...	...	Ci., St., Ci.-Cu.	..	...
30	,,	11 35	?	?	265	4·6	185	2·7	105	3·1	165	2·8	90	2·2	110	5·0	155	3·8	Ci.-Cu. Cu. Ci.-St.	225 180 ?	... ...
30	Eskdalemuir	7 10	90	12	55	8·5	70	11·5	90	13·0	90	7·5	75	7·5	...	...	...	...	Ci.	?	...
					6000 m.		7000 m.		8000 m.		9000 m.		10,000 m.		11,000 m.		12,000 m.				
24	S. Farnboro'	7 15			110	7·5	...	...	...	...	...	...	...	...	...	...	...	...			
24	Cahirciveen	16 25	(For observations at lower levels, see above.)		185	11·0	190	5·5	195	3·7	...	...	...	...	...	...	...	...			
25	,,	7 15			145	6·0	145	4·4	...	...	...	...	...	...	...	...	...	...			
26	,,	11 45			125	3·7	45	2·7	315	2·4	310	7·0	320	10·0	290	10·0	315	10·0			
27	,,	7 15			330	3·5	...	...	...	...	...	...	...	...	...	...	...	...			
29	,,	15 40			5	3·9	355	8·0	335	12·5	...	...	...	...	...	...	...	...			
30	,,	11 35			215	6·5	185	4·5	230	4·0	190	4·3	250	3·2	225	2·0	135	2·4			

Notes on Pressure Distribution.

April 1918.

24 7 h., 13 h., 18 h.
25 7 h.
} Extensive Scandinavian anticyclone influencing the British Isles.

25 18 h.
26 7 h., 18 h.
} Ditto. Shallow low over the Netherlands.

27 7 h., 18 h. Pressure generally high; gradients slight.

28 7 h. 18 h.
29 7 h. 18 h.
30 7 h. 13 h.
} Extensive anticyclone covering the British Isles, centred near the Shetlands.

Notes on Ascents.

24th, 7 h. 15 m. Surface mist clearing.
24th, 12 h. 0 m. Barometer falling.
30th, 7 h. 10 m. Ci. near horizon.

11. Nephoscope Observations.

Aberdeen. Taken at 13 h. G.M.T.

Day.	Type of Cloud.	Velocity-height-ratio. Degrees from N.	Milliradians per Second.	Components. W.–E.	S.–N.	Remarks.
		°	mr/s.	mr/s.	mr/s.	
1	St.-Cu.	110	2·3	− 2·2	+ 0·8	Thin type of St.-Cu.
2	Cu.-Nb.	235	3·1	+ 2·5	+ 1·8	[different parts.
3	Cu.	5	2·5	− 0·2	− 2·5	Cu. changing to Cu.-Nb.; some variation in velocity of
4	St.-Cu.	83	6·3	− 6·2	− 0·8	Observation at 11 h. Fused sheet of cloud.
5	St.-Cuf.	184	23·0	+ 1·6	+23·0	Lifted sheet of stratus, becoming cumuliform. Height 1000 m. by pilot balloon.
6	Cu.	215	3·0	+ 1·7	+ 2·5	Cu. changing to Cu.-Nb. in the west.
9	St.-Cu.	178	6·0	− 0·2	+ 6·0	Thin sheet of St.-Cu. [given.
13	Cu.	360	10·0	0·0	−10·0	Really a Nb.-Cuf. type. Velocity varying; average
15	St.-Cu.	328	4·0	+ 2·1	− 3·4	Low sheet of St.-Cu.; height by pilot balloon, 1100 m.
17	St.-Cuf.	353	9·1	+ 1·1	− 9·0	Broken St., in cumuliform masses.
18	Nb.-Cuf.	353	12·0	+ 1·4	−11·9	Small type of Cu.-Nb., with snow squalls occasionally.
19	Cu.	1	9·1	− 0·2	− 9·1	Cu. at low altitude, about 500 m. at 8 h. by pilot
20	St.-Cu.	45	3·6	− 2·6	− 2·6	St.-Cu. formed from apices of Cu.-Nb. [balloon.
29	St.-Cu.	7	8·3	− 1·0	− 8·2	St.-Cu. at low altitude.
30	Cu.	105	8·3	− 8·0	+ 2·2	Cu. at low altitude, but of very typical form.

For Table 12, see p. 30.

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*

Eighth Year.—No. 5. MAY 1918]. Units based on the C.G.S. System. [*Price* 1*s.*

1. SUNSHINE AND SOLAR RADIATION.

Day.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W.							RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W.					ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W.						CAHIRCIVEEN.	
	Bright Sunshine.*		Radiation received on Horizontal Surface by Callendar Radiograph.					Bright Sunshine.*		Radiation at Noon by Ångström Pyrheliometer.			Bright Sunshine.*		Radiation by Ångström Pyrheliometer.				Bright Sunshine.*	
	Total.	Per cent. of Possible.	Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Maximum. For Day. Time.	Maximum. 11.30 h. to 12.30 h.	Total.	Per cent. of Possible.	Intensity.	Vertical Component.	Sky.	Total.	Per cent. of Possible.	Time.	Sky.	$\frac{p}{p_0}$ sec Z.	Intensity.	Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	0·1	1	580	17	50	14 53	24	2·1	14	...	...	...	0·8	5	...	...	...	...	0·1	1
2	0·0	0	590	17	53	11 7	21	0·0	0	...	...	...	0·1	1	...	...	...	...	5·1	34
3	1·7	11	1130	32	65	10 37	55	1·7	11	...	...	...	4·5	29	...	...	...	...	8·1	54
4	6·7	45	1470	41	*x* 86	12 8	*x* 86	7·1	48	73	59	Clear	0·0	0	...	...	...	...	10·6	71
5	0·0	0	355	10	25	7 30	14	0·0	0	...	...	...	5·8	38	...	...	...	...	5·1	34
6	5·0	33	1270	35	74	12 20	74	5·3	35	...	...	...	0·7	5	...	...	...	...	1·5	10
7	0·0	0	340	9	33	14 35	17	0·0	0	...	...	...	0·0	0	...	...	...	...	0·0	0
8	8·4	56	1760	48	75	12 5	75	7·5	50	58	48	Hazy	5·1	33	...	...	...	...	5·3	35
9	12·0	79	2130	58	75	11 28	74	12·4	82	69	57	Clear	7·4	47	...	...	...	...	0·0	0
10	10·0	66	1990	54	81	12 0	81	11·5	76	...	...	...	11·8	75	12 9	Clear	1·25	89	8·5	56
11	6·8	44	1570	42	68	12 2	68	8·2	54	53	44	Hazy	0·1	1	...	...	...	...	6·4	42
12	5·8	38	1250	34	84	12 54	84	6·3	41	...	...	...	2·3	14	...	...	...	...	0·0	0
13	1·2	8	700	19	76	14 18	61	2·0	13	...	...	...	0·0	0	...	...	...	...	3·8	25
14	1·3	8	880	23	75	13 12	68	2·1	14	...	...	...	5·5	34	...	...	...	...	0·0	0
15	4·4	28	1330	35	72	14 15	48	5·1	33	...	...	...	0·4	2	...	...	...	...	9·4	60
16	7·6	49	1730	46	81	12 10	81	9·1	58	...	...	...	1·0	1	...	...	...	...	0·1	1
17	6·5	42	1280	34	65	13 20	61	8·2	53	54	46	Hazy	12·2	75	...	...	...	...	9·2	59
18	12·6	80	2040	53	69	11 30	69	*x* 13·4	85	...	...	...	14·0	86	...	...	...	...	1·8	11
19	10·2	65	1660	43	63	13 3	61	6·5	41	...	...	...	5·5	34	...	...	...	...	8·1	1
20	13·6	87	*x* 2280	59	72	10 50	71	*x* 13·4	85	63	54	Hazy	13·3	81	...	...	...	...	3·9	25
21	13·2	84	2100	54	75	11 42	75	*x* 13·4	85	67	57	Clear	8·1	49	...	...	...	...	5·1	32
22	13·0	82	1950	50	62	12 56	61	13·0	82	59	50	Hazy	9·4	57	...	...	...	...	7·1	45
23	6·5	41	1370	35	81	13 10	78	5·5	35	...	...	...	0·0	0	...	...	...	...	9·9	62
24	0·0	0	*n* 230	6	*n* 20	12 52	11	0·1	1	...	...	...	0·3	2	...	...	...	...	10·6	66
25	2·7	17	1390	35	74	12 19	74	5·8	36	...	...	...	5·2	31	...	...	...	...	9·8	61
26	0·2	1	550	14	41	12 8	41	2·5	16	...	...	...	2·6	16	...	...	...	...	*x* 15·0	93
27	11·0	68	2140	54	85	13 55	73	12·6	78	61	53	Hazy	6·3	38	...	...	...	...	11·6	72
28	6·0	37	1450	37	77	12 40	76	7·4	46	...	...	...	13·5	86	...	...	...	...	14·0	87
29	11·6	72	2130	53	76	11 38	76	*x* 13·4	83	64	56	Hazy	12·9	77	...	...	...	...	14·6	90
30	13·0	80	1920	48	71	13 1	69	13·2	81	59	51	Hazy	12·4	74	...	...	...	...	14·6	90
31	*x* 14·3	88	2010	50	68	13 5	66	12·8	79	47	41	Hazy	*x* 15·0	89	12 10	Hazy	1·20	75	14·6	90
Means	6·61	43	1406	37	67	—	61	7·16	46	—	—	—	5·68	35	—	—	—	—	6·90	44
Normal	6·13	40	1484	—	—	—	—	6·48	42	—	—	—	5·23	33	—	—	—	—	6·55	42
	←—5 years—→		3 years					←—35 years—→					←—5 years—→						←—35 years—→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M. S. L.:—H = 9·1 m. H_b = 13·7 m. H_a = 26·4 m. Above Ground: h_t = 1·3 m. h_r = 0·56 m. h_a = 13·9 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity. Vapour Pressure.		Humidity. Percentage.		Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount (0–10) and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9h.		21 h.		9 h.	21 h.				
	mb.	mb.	*a.* 200+	*a.* 200+	*a.* 200+	*a.* 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	*a.* 200+		
1	1016·0	1017·2	83·2	82·5	*n* 84	80	9·9	10·6	80	89	100	6	155	4	10●	4	2·7	76	*o. n.* ●⁰ *a.* Fine *p.*	
2	1017·0	1009·7	84·9	83·5	88	83	10·7	10·8	78	85	145	7	110	4	9	10●	6·2	80	*o. n.* Fair, with ∞ *a.* and *p.* ● *n.*	
3	1006·7	1008·5	84·8	84·2	88	84	12·3	12·0	90	91	160	5	170	6	10	7	7·5	82	Dull to fair *a.* Fine *p.* and *n.*	
4	1009·7	1009·3	86·5	84·6	89	83	11·4	10·0	74	74	150	5	120	6	7	6	—	81	Fine bright day.	
5	1006·7	1006·5	83·9	82·8	89	81	9·3	11·1	72	92	85	4	—	0	10	3	—	82	Fine *n.* o. *a.* c. and dry, with ∞ *p.*	
6	1007·2	1009·0	82·7	83·5	86	*n* 78	11·5	10·9	96	86	—	0	300	3	*10*≡⁰	10∞	—	*n* 75	Fine and ☽ *n.* ≡ to ≡⁰ and ⊕ *a.* o. and	
7	1010·7	1013·8	83·5	83·5	85	83	12·1	11·7	96	93	255	5	300	3	10	10	1·5	82	*o. n.* o. d. to ●⁰ *a.* Dull day. [∞ *p.*	19° 37′·3
8	1014·9	1013·1	84·4	84·0	88	84	11·6	10·9	87	84	280	2	180	4	10	8	—	83	*o. n.* and *a.* Fine dry day. —	17844 γ
9	1008·7	1009·3	85·8	85·4	88	84	12·4	13·6	85	95	135	5	—	0	10●	10	1·4	82	*o. n.* o. d. p. *a.* Dull day.	68° 5′·2
10	1012·0	1014·3	87·0	84·3	88	82	13·3	11·5	84	87	330	2	345	5	4	10	—	79	*o. n.* ∞ *a.* Fine day.	
11	1014·4	1012·8	84·0	83·1	86	83	9·4	10·0	72	81	320	6	305	5	10	10	1·3	80	c. to o. *a.* ⊕ 7 h. Fine day.	
12	1010·0	1001·6	83·0	83·2	85	82	11·2	10·7	92	87	285	2	280	6	10	10	4·3	81	c. to o. p. *n.* o. p. *a.* ● to d. *p.*	
13	1000·2	1003·3	83·7	83·2	86	81	10·1	10·5	79	85	305	7	260	2	4	10	3·8	80	p. *n.* and *a.* c. to o. *p.*	
14	1001·4	1000·0	85·1	84·6	85	83	13·2	13·0	94	96	195	2	175	6	10	10	5·9	82	p. *a.* Damp showery day.	
15	1001·7	1003·7	86·2	84·8	88	83	12·8	12·2	85	89	175	6	175	7	7	7	6·3	82	● *n.* Fine day.	
16	1007·0	1007·8	85·1	85·5	87	84	12·8	12·4	91	86	175	4	140	7	10●	8	1·9	83	p. *a.* Dull day.	
17	1007·1	1012·6	85·3	84·3	88	84	12·6	12·2	89	92	195	7	180	4	10	7	1·4	83	p. *n.* and *a.* Fair day and evening.	
18	1016·5	1019·6	85·9	85·3	89	84	13·0	13·4	88	94	175	6	180	4	10	7	0·3	82	o. day. Fair *p.*	
19	1022·7	1022·3	86·8	86·1	89	83	13·0	12·7	83	85	180	3	170	4	8	10	—	82	Fair to fine *a.* o. *p.* and *n.* Ground swell.	
20	1018·7	1018·0	87·7	86·4	89	84	13·6	13·3	82	87	170	9	175	3	9	8	—	83	Fair day, with high clouds.	
21	1014·5	1014·2	90·3	86·5	90	*x* 86	15·1	14·5	77	94	170	3	170	6	7	10	0·3	83	⊕ 8 h. c. to o. *a.* Fair *p.* o. d. later.—	19° 34′·6
22	1012·8	1008·6	88·5	85·4	90	84	14·5	13·6	83	95	165	7	170	2	4	10●	8·6	84	o. *n.* Fine *a.* o. to ● *p.*	17845 γ
23	1016·7	1022·3	85·9	85·7	88	83	10·3	13·0	70	89	270	9	220	4	4	10	3·9	81	p. *n.* Fine day. o. evening.	68° 6′·7
24	1022·9	1021·0	87·6	85·6	89	85	13·2	13·7	80	95	215	5	175	5	4	10	2·0	—	Fine *a.* Fair *p.* d. later.	
25	1021·5	1024·4	84·9	84·3	87	83	11·3	10·2	82	77	56	5	355	6	6	2	*x* 8·7	83	● *n.* Fine bright day.	
26	1026·4	1027·1	85·6	83·9	87	81	10·1	10·7	70	83	56	4	330	2	3	1	—	76	☽ *n.* Fine dry day.	
27	1028·9	1032·3	80·4	84·7	89	82	12·8	11·1	84	81	—	1	360	3	4	6	—	80	Fine *n.* ⊕ *a.* Fine day.	
28	1032·8	1031·4	87·9	85·1	91	82	12·7	12·6	76	90	—	1	180	2	3	3	—	78	☽ *n.* Fine day. ⊕ *a.* and *p.*	
29	1030·1	1029·3	89·6	85·7	92	80	12·4	10·8	*n* 66	74	155	3	170	3	3	3	—	77	☽ *n.* Fine dry day, with ∞. ⊕ 17 h.	
30	1029·6	1029·9	90·0	85·7	91	79	12·8	12·6	67	86	—	0	—	0	1	2∞	—	76	☽ *n.* Very fine day, with ∞.	
31	1029·7	1030·5	88·9	86·8	*x* 93	80	14·3	13·9	80	89	—	0	—	0	3∞	1∞	—	77	☽ ∞ *n.* ⊕ *a.* Fine dry day.	19° 35′·9
Means	1015·3	1015·6	86·0	84·7	88·2	82·5	12·1	11·9	82	87		4·2		3·7	7·1	7·2	68·0	80·5†	Monthly Totals or Means. —	17844 γ
Normal	1013·9	1014·3	84·8	83·8	87·5	81·0	11·0	10·9	79	84		5·0		4·3	—	—	79·3	—	Normals.	68° 6′·0
	←—45 years—→				←—30 years—→						←—35 years—→						45 yrs.			

* By Campbell-Stokes Sunshine Recorder. † Mean of 30 days only. *x* denotes the maximum and *n* the minimum value in the column.

Wt. 37652/515—400—4/19.—N. & Co., Ltd. Gp. XV.

3. METEOROLOGY :—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 5·5 m. Barometer, H_b = 10·4 m. Cups of Anemometer, H_a = 25 m.
Heights above Ground :—Thermometers, h_t = 3·0 m. Rain-gauge, h_r = 0·53 m. Cups of Anemometer, h_a = 20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	Remarks.
							Vapour Pressure.		Percentage.										
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
			a.	*a.*	*a.*	*a.*									Tenths of Sky covered.				
	mb.	mb.	200+	200+	200+	200+	millibar.		%	%	°	m/s.	°	m/s.			mm.	*a.* 200+	
1	1022·8	1025·7	81·0	79·7	*n* 82	79	7·0	7·4	66	75	67	7	90	4	9	10≡⁰	—	77	Dull to fine.
2	1026·2	1024·1	82·1	81·3	86	80	9·2	8·7	80	80	90	3	79	6	10≡⁰	0∞	—	79	Dull. ∞
3	1017·8	1012·5	84·6	84·7	89	79	10·2	10·4	75	76	79	8	135	5	? 9≡⁰	10⊤	11·0	77	≡ early. Cloudy. ☈ 21 h. 5 m.–21 h. 15 m.
4	1011·9	1011·5	85·0	86·9	92	83	11·8	12·1	85	77	247	4	270	2	10	9≡⁰	2·1	82	● early. Fine after 9 h.
5	1007·5	1003·0	85·5	82·9	86	82	11·8	11·7	82	97	56	5	—	1	10≡⁰	10≡⁰	1·7	77	Dull. ● 10 h. 10 m.–11 h. 20 m. and in *p.*
6	1006·9	1007·9	86·8	87·2	91	83	12·0	12·2	77	76	225	3	304	2	1	2≡⁰	0·2	81	● early. Fine 8 h.–13 h. ∞ *p.*
7	1005·8	1005·7	82·5	82·4	85	81	11·0	9·6	93	82	360	4	360	4	10●≡⁰	9	*x* 12·3	80	Dull, with ●.
8	1008·2	1010·4	83·5	86·0	91	81	9·7	11·3	77	76	360	4	360	2	7	1	—	79	Fair to 10 h. Fine later. v. *p.*
9	1010·6	1008·9	85·2	86·6	92	80	8·6	8·5	61	55	360	3	23	2	2	1∞	—	76	Fine. ∞ in evening.
10	1010·9	1012·4	81·9	84·2	87	79	8·3	10·9	73	83	23	4	—	1	2	0≡⁰	—	75	Fine. ∞ in evening.
11	1012·7	1007·0	81·6	85·1	92	*n* 78	8·8	11·5	79	82	23	2	214	4	? 0≡⁰ ☌	10	—	*n* 73	≡⁰ and ☌ early. Fine 8 h. 30 m.–17 h.
12	1004·2	1005·5	84·0	83·7	88	81	9·9	9·2	76	72	247	3	270	2	10●	1	3·9	79	Showery. ▲ 10 h. 15 m. and 10 h. 45 m.
13	1000·0	1001·0	83·3	83·0	88	81	11·4	10·7	92	88	180	5	203	2	10●	1≡⁰	7·1	78	o., with ● *a.* p. *p.*
14	1007·3	1011·2	83·7	84·8	90	79	10·5	11·7	82	85	236	3	203	5	10	10	—	74	Dull, with fine intervals.
15	1013·7	1014·4	86·6	87·0	93	84	13·0	11·3	84	71	203	3	203	3	10	2	—	84	Dull *a.* Fine, with v. *p.*
16	1014·9	1013·8	92·0	88·7	97	83	13·3	12·6	61	71	169	3	—	1	8	0	—	78	Fine to ● *a.* Fine *p.*, with v.
17	1012·9	1012·8	92·7	90·0	98	84	16·6	15·2	73	79	—	1	—	1	? 3≡⁰	0≡⁰	0·2	78	Fine to 13 h. ☈ 14 h. ● *p.* Fine later.
18	1017·6	1020·9	90·8	90·9	96	85	13·7	14·0	68	69	325	3	337	2	0	? 0≡⁰	—	81	☌. Very fine.
19	1024·7	1025·7	91·9	88·8	96	84	13·0	11·2	60	63	—	1	79	2	0∞	4	—	79	Fine *a.* c. later.
20	1025·3	1022·6	91·3	88·7	98	83	11·4	9·5	55	54	90	4	90	4	? 0∞	0∞	—	77	☌. Fine.
21	1021·3	1019·7	93·4	92·4	*x* 100	84	14·5	14·3	61	64	90	3	146	2	0∞	1	—	78	☌ ≡⁰ early. Fine.
22	1018·4	1014·4	96·1	92·3	*x* 100	*x* 87	11·5	15·1	*n* 41	68	135	3	90	4	0	10⊤◁	0·9	80	☌ ≡⁰ early. Fine. ☈ 20 h.–24 h.
23	1012·9	1016·3	90·3	84·1	91	83	16·0	11·2	82	85	214	7	236	8	9	10●	6·1	83	☈ 6 h.–8 h. ● early. p.
24	1016·1	1019·6	84·8	88·0	90	83	9·6	11·5	70	68	293	7	326	4	10	10	0·7	81	● early. Dull.
25	1020·7	1018·1	88·9	89·0	93	85	12·3	13·2	69	73	315	2	281	2	6	10	—	84	Fine to c.
26	1019·9	1024·0	85·6	85·3	89	84	13·7	10·4	95	73	11	4	360	4	10≡⁰	10	—	79	● d. early. Dull to 15 h. 30 m. Fine.
27	1026·4	1028·0	86·9	85·2	91	83	9·6	9·0	61	64	11	4	—	1	0	1	—	80	Fine to fair.
28	1028·7	1029·7	88·0	86·1	92	81	11·7	10·1	69	67	11	2	23	4	3∞	3	—	75	Fair to fine. ∞⁰ *a.*
29	1031·2	1029·0	85·7	87·3	92	81	10·1	11·9	69	74	45	3	45	2	1	1∞	—	74	Fine, with ∞⁰.
30	1029·6	1028·5	88·5	90·1	95	79	11·9	13·0	68	67	—	1	—	1	1	7∞	—	*n* 73	☌ ≡⁰ early. Fine, with ∞.
31	1030·7	1030·7	90·8	88·9	95	82	11·7	10·9	58	61	79	4	101	2	0∞	1∞	—	76	≡⁰ early. Fine. ∞
Means	1016·7	1016·6	86·9	86·5	91·7	81·9	11·4	11·3	72	73		3·6		2·9	5·2	4·6	46·2	78·3	Monthly **Totals** or **Means.**
Normal	1015·0	1015·0	85·0	84·2	89·3	80·1	10·1	10·3	71	75		4·2		2·9	—	—	43·8	—	**Normals.**
	45 years						30 years				35 years						45 years		

4. METEOROLOGY :—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 242 m. Barometer, H_b = 237·3 m. Vane of Anemometer, H_a = 250 m.
Heights above Ground :—Thermometers, h_t = 0·9 m. Rain-gauge, h_r = 0·38 m. Vane of Anemometer, h_a = 15 m.

																			Remarks.
1	998·5	999·6	78·0	76·1	*n* 79	*n* 72	5·0	5·7	57	75	113	9	90	2	8	9∞	—	*n* 69	☼⁰. p. 7 h. 45 m. o. u. y. ∞ *p.*
2	1030·1	997·7	77·9	78·2	80	75	6·7	6·3	77	71	124	7	113	6	10≡⁰	10	0·2	74	≡⁰●⁰ early. Dull. ∞ after 9 h.
3	993·9	990·6	80·0	78·0	84	74	7·0	7·3	70	84	79	6	34	4	9∞	10∞	—	72	b. ∞ 1 h. ≡⁰ *a.* c. y. *p.* ∞ *n.*
4	985·6	982·9	78·4	79·7	81	77	8·6	9·6	97	98	45	6	180	7	10≡⁰	10●≡	7·4	76	≡⁰ 7 h. ●²≡⁰ *a.* d. *p.* ●≡ *n.*
5	985·1	982·6	81·0	78·2	89	78	8·8	8·5	83	97	—	1	34	9	10	10≡⁰	0·5	78	≡ 1 h. y. ∞ 9 h.–15 h. ≡⁰●⁰ *n.*
6	980·3	982·9	79·9	80·7	84	79	9·4	10·0	95	96	45	9	34	3	10	10≡⁰	4·9	78	≡⁰● till 9 h. ≡⁰ *p.* ≡⁰ *n.*
7	985·4	986·3	80·8	79·1	83	79	9·4	8·5	89	90	23	5	23	4	10≡⁰	10	0·1	79	≡⁰ till 16 h. ●⁰ 18 h. 30 m.
8	986·6	985·8	82·0	80·0	88	77	8·1	7·7	71	77	45	5	360	3	10	1	—	76	o. to c. y. v. ⊕ 13 h. Clear *n.*
9	984·1	984·4	86·9	78·4	90	73	7·9	6·5	*n* 50	73	67	2	360	4	0	0	—	70	☌. Fine *a.* o. y. *p.* Fine *n.*
10	986·0	985·9	81·9	80·4	89	74	7·4	8·2	65	80	34	5	—	1	0	3☌	—	70	Fine. y. *a.* and *p.* ☌ *n.*
11	982·4	977·9	81·0	79·4	82	76	8·1	8·6	76	90	214	4	—	1	10≡⁰	9	9·9	73	b. ☌ 1 h. ≡⁰● *a.* ☈●²▲² 18 h. Fair *n.*
12	975·1	973·0	80·0	79·2	85	74	7·7	7·8	77	83	349	3	259	4	10	3	—	72	o. *a.* ⌒ 17 h. 30 m. Fine *n.*
13	970·1	971·2	80·9	80·8	83	77	8·2	9·4	77	89	146	5	—	0	10	10≡⁰	1·5	74	●² 4 h. 30 m. Dull, with ≡⁰.
14	974·9	977·8	82·7	82·3	85	77	7·0	11·1	58	96	236	4	203	6	7	10≡⁰	2·1	74	Fine. ☌ early. o. to c. ≡⁰ *n.*
15	980·0	982·4	83·6	83·3	86	82	11·0	11·9	87	96	203	10	203	9	10≡⁰	10≡⁰	5·7	81	≡⁰●⁰ till 7 h. ● 16 h. and after 20 h.
16	985·1	986·2	84·3	85·5	89	83	11·9	11·7	90	81	191	9	—	1	10≡⁰	9	9·1	83	●≡⁰ till 10 h. Dull later.
17	985·0	986·0	91·2	82·6	93	81	14·1	10·8	68	91	169	4	—	1	4∞	8	2·1	80	o. p. early. ∞² *a.* ☈●² *p.* Mock sun 19 h.
18	989·8	993·6	86·0	81·2	90	76	9·2	8·9	62	83	247	6	—	1	1	1	—	78	☿ 1 h. ☌ v. y. most of day. [30 m.
19	996·7	997·3	82·0	81·6	89	75	11·4	9·5	100	85	203	4	—	1	10≡⁰	4	0·1	72	Fine 1 h. ≡ 8 h. v. y. ⊕ *p.* Fine *n.*
20	995·4	993·6	88·1	84·1	92	76	11·2	9·7	66	74	157	4	—	0	8	8	—	73	☐ 1 h. ≡⁰☌ 7 h. ⊕ y. ∞ *a.* y. v. *p.*
21	992·1	991·1	88·1	84·9	96	79	15·3	12·3	90	89	146	2	—	1	10	10∞☌	0·6	76	☌ ≡⁰⊕● 8 h. ⊤ 14 h. y. ∞². *p.* and *n.*
22	990·5	987·7	92·1	88·0	*x* 99	81	16·0	14·0	73	83	135	2	214	6	9≡⁰	10●≡⁰	*x* 15·5	—	☌. ⊤ *a.* and *p.* ☈●² 17 h. 30 m.–21 h.
23	981·5	982·9	86·3	85·1	87	83	14·6	13·2	96	94	—	0	293	5	10●≡⁰	10	11·7	84	≡⁰●² 5 h.–11 h. ≡ 14 h. 30 m. and 19 h.
24	988·5	991·5	87·5	85·4	91	*x* 85	13·6	9·7	83	68	304	7	293	3	9	10	—	83	●⁰ 7 h. o. y. ∞ *p.* o. *n.*
25	991·6	991·6	87·3	83·9	90	81	10·5	11·7	65	91	236	5	—	1	6	10●	5·2	77	☌⊕. c. to o. y. *a.* ● after 15 h.
26	996·7	998·7	82·7	80·4	87	79	10·7	9·0	89	88	34	6	—	1	10	2☌	2·0	81	● till 3 h. Dull to bc. v. y. ☌
27	999·4	1000·0	86·0	83·5	89	76	11·4	10·4	77	82	225	4	304	5	8	10	1·5	73	☌. c. to o. *a.* ●² 13 h. ⊕ 18 h.
28	1002·2	1002·4	85·6	82·5	90	78	8·6	9·6	59	81	326	7	337	2	8	2	—	77	o. early. ⊕ *a.* y. ∞ *p.* Clear *n.*
29	1002·0	1000·1	86·5	85·0	91	74	11·3	11·7	73	84	225	8	236	3	1	7	—	—	☌². b. to fair.
30	1001·0	1003·0	87·9	84·0	92	79	11·7	11·1	70	85	270	3	—	1	4	0	—	75	☌ *a.* Fair to fine. Clear *n.*
31	1003·6	1003·5	89·6	83·7	95	77	12·2	8·7	65	68	270	3	—	1	2	3	—	74	≡ in valley. ☌. Fine *a.* Clear *p.* and *n.*
Means	989·3	989·4	84·1	81·8	87·9	77·6	10·1	9·6	76	85		5·0		3·1	7·5	6·8	80·1	75·9*	Monthly **Totals** or **Means.**
Normal 1911-15	987·4	987·6	82·5	80·4	86·2	76·6	9·3	8·9	78	85		5·5		3·5	—	—	69·5	—	**Normals.**

Temperatures at or below the normal freezing point of water are printed in small type.

* Mean of 29 days only.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Extremes.	Magnetic Force. Horizontal Comp't. Mean Time.		Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination. North.	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 2·15. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +.	Charge per cc. ×10¹⁶. −.	Air-Earth Current. ×10¹⁶.
	About 15 h.																About 15 h.		About 15 h.
	a.	*a*.			h m	γ	h m	° ′	h m	° ′			v/m.	v/m.	v/m.	v/m.	coulomb.		amp/cm².
	200+	200+	cm.	cm.															
1	81·6	80·9	300	302	...	...	...	...	...	...	1	0	355	660	565	630	...	...	1·45
2	81·2	80·9	298	...	11 7	18399	14 24	14 56·7	14 32	66 59·0	0	0	420	580	620	620	0·41	0·34	0·45
3	81·4	81·0	295	...	...	...	...	...	...	...	1	1	460	710	525	855	0·26	0·45	0·55
4	82·4	81·1	292	...	...	...	...	...	...	...	0	1	170	315	265	...	...	...	...
5	83·7	81·1	288	...	...	...	...	...	...	...	1	1	...	...	195	330	...	...	...
6	83·5	81·1	285	...	...	...	...	...	...	...	0	1	130	265	130	475	0·28	0·00	0·35
7	84·4	81·2	281	...	...	...	...	...	...	...	0	2	265	0	250	340	0·32	0·43	0·75
8	83·6	81·5	279	...	...	...	...	...	...	...	0	0	195	340	225	330	0·50	0·13	0·65
9	84·6	81·8	278	...	11 4	18416	...	...	...	...	0	0	210	370	210	620	0·77	0·43	1·25
10	85·0	81·9	277	...	...	...	14 23	14 57·1	14 22	66 56·9	0	0	250	355	315	355	0·15	0·17	1·10
11	85·0	82·0	277	...	...	...	...	...	...	...	1	0	380	340	195	160	...	...	...
12	85·1	82·2	276	...	...	...	...	...	...	...	1	1	0	*z*+	−15	275	...	...	...
13	85·0	82·4	275	...	...	...	...	...	...	...	0	2	145	−25	290	435	0·47	0·41	1·80
14	84·5	82·5	274	...	...	...	...	...	...	...	1	0	340	300	225	105	0·39	0·90	0·65
15	85·0	82·6	272	...	...	...	...	...	...	...	1	0	80	160	210	290	1·27	0·86	1·75
16	85·6	82·7	270	...	11 10	18426	14 23	14 57·9	14 32	66 56·1	2	1	145	225	145	170	0·39	0·54	0·85
17	86·5	82·9	269	...	...	...	...	...	...	...	2	1	160	315	*z*±	410	...	...	...
18	87·2	82·9	266	...	...	...	...	...	...	...	1	0	185	355	185	355	...	...	...
19	88·0	83·1	263	...	...	...	...	...	...	...	1	1	160	250	210	160	...	...	...
20	88·0	83·4	261	...	...	...	...	...	...	...	1	0	80	210	55	710	...	...	...
21	88·3	83·6	258	...	...	...	...	...	...	...	1	0	225	515	105	300	0·80	0·30	0·65
22	89·1	83·8	255	...	...	...	...	...	14 7	66 57·4	0	1	120	210	460	*z*±	0·15	0·62	0·75
23	89·5	83·9	253	...	11 13	18420	14 25	14 57·0	...	...	0	1	130	130	105	40	1·33	1·51	0·80
24	88·0	84·1	251	...	...	...	...	...	...	...	0	1	55	265	340	290	0·56	0·56	2·60
25	87·5	84·3	249	...	...	...	...	...	...	...	0	0	275	290	250	225	...	...	...
26	88·0	84·5	247	...	...	...	...	...	...	..	0	0	210	145	265	250	...	...	...
27	87·7	84·7	246	...	...	...	...	...	...	..	0	0	250	395	225	355	1·20	0·77	0·90
28	87·7	84·7	245	...	...	...	...	...	...	...	0	0	185	315	185	370	0·34	0·30	0·95
29	87·6	84·8	244	...	...	...	...	...	...	...	0	0	290	445	235	275	...	...	...
30	87·9	84·8	243	...	11 6	18402	14 26	14 59·0	14 44	66 57·1	1	1	185	235	160	195	0·45	0·13	0·75
31	88·3	84·8	242	242	...	...	...	...	...	...	0	0	210	550	395	315	0·39	0·43	0·85
M.	85·8	82·8	268	—	—	—	—	—	—	—	—	—	224*	322*	255*	355*	—	—	—
	85·1	83·0																	
	←—12 years—→																		

* Mean of 26 days.

6. GEOPHYSICS :—ESKDALEMUIR.

Day.	Magnetic Force. North Component. Maximum. 15000 γ+. h m	γ	Minimum. 15000 γ+. γ	h m	West Component. Maximum. 4000 γ+. h m	γ	Minimum. 4000 γ+. γ	h m	Vertical Component. Maximum. 44000 γ+. h m	γ	Minimum. 44000 γ+. γ	h m	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre.* Factor 6·11. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +.	Charge per cc. ×10¹⁶. −.	Air-Earth Current. ×10¹⁶.
																			About 15 h.		About 15 h.
															v/m.	v/m.	v/m.	v/m.	coulomb.		amp/cm².
1	21 6	1054	902	2 7	21 7	976	863	1 32	19 55	1096	944	2 26	2	0 *a*	85	120	145	350	...	...	...
2	19 17	1017	931	11 56	23 45	971	896	6 27	19 50	1086	1049	1 57	1	2 *b*	220	205	150	330	...	...	...
3	17 42	1011	936	11 47	14 23	978	896	7 22	18 0	1080	1045	12 15	0	0 *a*	365	385	295	270	...	...	...
4	17 11	1011	921	12 32	{14 58 / 15 5}	986	906	5 8	18 11	1099	1049	10 39	1	2 *c*	215	150	105	285	...	...	...
5	18 21	1065	920	12 50	{13 35 / 18 19}	975	883	7 46	16 3	1111	1038	5 30	1	1 *b*	445	215	295	70	...	...	...
6	19 16	999	942	13 19	12 36	973	898	7 25	18 50	1076	1034	12 20	0	2 *c*	−3085	15	245	100	...	...	...
7	22 5	1020	943	11 12	13 16	964	896	7 27	7 15	1074	1050	11 55	0	1 *a*	220	280	100	295	...	...	...
8	17 49	1012	936	10 51	13 35	992	895	7 45	17 5	1082	1048	12 20	0	0 *a*	315	195	180	195	...	...	...
9	19 17	1026	951	{10 57 / 11 7}	13 40	974	896	8 35	17 58	1080	1050	2 0	0	0 *a*	155	150	145	220	...	...	...
10	23 42	1022	942	11 32	14 0	966	887	7 27	19 0	1074	1048	{11 8 / 11 39}	0	0 *a*	145	265	205	205	...	...	...
11	20 37	1071	956	11 44	13 59	980	869	20 31	20 30	1090	1054	11 19	1	2 *c*	200	180	145	215	...	...	...
12	22 36	1023	926	10 46	15 1	980	897	1 5	18 45	1078	1052	11 41	1	1 *b*	120	95	155	185	...	...	...
13	17 25	1014	941	11 44	15 12	968	896	1 0	*q* {17 5 / 18 20}	1086	1054	12 23	0	1 *b*	70	200	50	120	...	...	...
14	18 23	1017	921	12 32	13 44	976	852	6 36	16 2	1081	1051	24 0	1	0 *a*	265	185	185	360	...	...	...
15	16 39	1075	912	13 22	14 22	*x* 1010	879	8 25	{17 36 / 17 43}	1112	1042	{12 5 / 12 54}	1	1 *a*	120	180	115	150	...	...	...
16	18 40	1090	*n*<718	§	18 7	1007	<707	§	19 48	1036	*n*<809	{22 29 / 24 0}	2	1 *b*	70	115	230	215	...	...	...
17	19 48	*x* 1107	*n*<718	§	22 8	972	*n*<706	§	14 4	*x* 1135	*n*<809	§	2	1 *b*	*z*+	220	*z*+	245	...	...	...
18	17 7	1040	894	5 1	{13 39 / 15 36}	963	870	8 44	17 20	1103	1009	5 41	2	1 *a*	335	150	195	270	...	...	...
19	18 49	1069	931	11 20	{14 35 / 22 30}	979	896	7 8	15 46	1105	1005	2 24	2	0 *a*	520	430	155	250	...	...	...
20	19 18	1042	922	1 19	14 2	978	885	7 30	16 46	1091	1066	1 16	1	0 *a*	285	185	255	415	...	...	...
21	22 30	1024	930	10 12	{13 20 / 13 31}	957	885	7 46	19 8	1080	1011	1 40	1	1 *b*	105	*z*+	285	430	...	...	...
22	22 53	1032	943	11 48	14 2	960	890	2 16	20 5	1074	1042	1 50	0	1 *c*	465	200	185	*z*+	...	...	...
23	0 32	1007	941	10 38	14 5	968	900	6 33	20 15	1074	1052	0 35	0	2 *c*	85	*z*±	−145	135	...	...	...
24	17 57	1027	953	12 30	17 56	957	888	7 23	6 52	1072	1053	11 50	0	0 *a*	80	145	130	195	...	...	...
25	16 26	1014	950	{10 45 / 10 47}	12 32	969	894	6 5	17 53	1085	1046	11 15	0	2 *b*	155	170	5	−610	...	...	...
26	17 3	1005	947	12 31	13 6	970	892	7 55	17 40	1074	1035	12 2	0	1 *b*	−55	65	130	295	...	...	...
27	18 22	1014	962	9 55	12 37	968	904	8 18	17 40	1083	1049	11 30	0	1 *b*	280	215	130	185	...	...	...
28	19 21	1017	946	12 45	14 2	966	898	7 35	18 35	1077	1050	12 15	0	0 *a*	170	215	250	360	...	...	...
29	18 42	1046	963	11 10	18 42	983	892	9 56	20 0	1095	1038	12 9	1	0 *a*	215	330	195	250	...	...	...
30	19 25	1022	932	8 50	14 39	982	887	8 39	18 15	1091	1045	4 26	1	0 *a*	315	250	220	430	...	...	...
31	17 52	1023	942	11 11	17 49	953	890	8 22	19 28	1084	1037	11 35	0	0 *a*	215	220	205	305	...	...	...
M.	—	1028†	936†	—	—	973†	889†	—	—	1086†	1040†	—	—	—	‡90	‡197	‡171	‡219	—	—	—

The letters *x* and *n* denote the maximum and the minimum values in the column.

† Mean of 29 days; 16th and 17th omitted.

* The potential gradient is reckoned positive if the potential increases upwards.

‡ Mean of 27 days.

z Indeterminate.

§ During the night between the 16th and 17th, violent disturbances took place (see Aurora Table, p. 42), and the lightspots were deflected off the paper for long periods. The times were:—North component, 22 h. 25 m.–22 h. 52 m.; 23 h. 13 m.–23 h. 37 m.; 0 h. 0 m.–0 h. 40 m.; 1 h. 22 m.–1 h. 42 m. West component, 22 h. 40 m.–22 h. 54 m.; 23 h. 35 m.–23 h. 56 m.; 0 h. 0 m.–0 h. 48 m. Vertical component, 22 h. 29 m.–24 h. 0 m.; 0 h. 0 m.–1 h. 2 m.; 1 h. 16 m.–2 h. 17 m.

7. JERSEY (ST LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M. S. L.:—H = 54 m. H_b = 55 m. Above Ground:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level. 7 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in Degrees Absolute. 7 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 7 h.	14 h.	21 h.	Mean.	Rain 0 h. to 24 h.	REMARKS.
	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	a.	%	%	%	%		
	mb.	mb.	mb.	mb.	200+	200+	200+	200+	200+	200+	200+					mm.	
1	1012·6	1015·3	1017·7	1015·2	80·8	82·0	81·4	82·9	80·8	81·6	80·7	98	99	98	98	0·5	● early. ≡0 0 h. ≡2 10 h. 3 m. 15 h. 3 m.
2	1018·3	1015·9	1013·2	1015·8	80·6	89·0	83·8	89·7	n 77·5	84·1	77·5	100	77	88	88	—	≡2 began before 4 h. ≡0 7 h. ⊕ 16 h.
3	1007·1	1004·7	1006·6	1006·1	84·9	90·0	82·6	92·9	80·3	86·1	80·3	76	54	100	77	3·1	●0 13 h. ●2 14 h. ↱ in SSW 15 h. 45 m.
4	1008·2	1007·3	1005·0	1006·8	82·1	85·5	82·5	87·0	79·3	83·3	79·3	97	82	92	90	—	[≡2 20 h. 40 m.
5	1001·5	999·1	1000·3	1000·3	82·0	83·0	82·5	n 84·0	81·8	82·7	80·4	97	98	99	98	10·2	●2 4 h.
6	1002·9	1003·3	1002·8	1003·0	82·5	86·3	83·1	88·6	81·4	84·4	77·2	93	75	81	83	—	
7	1000·5	1000·4	1001·3	1000·7	83·2	83·7	83·0	84·6	82·0	83·3	79·6	88	91	99	93	5·4	●0 11 h. 45 m. ≡0 15 h. ●
8	1003·1	1005·3	1006·5	1005·0	82·5	84·4	83·9	85·6	82·3	83·7	82·1	92	83	76	84	—	Drops of rain frequently.
9	1005·8	1004·9	1003·8	1004·8	82·7	85·8	82·2	87·0	81·4	83·8	77·1	93	78	76	83	—	
10	1003·3	1003·8	1005·4	1004·2	83·7	90·2	82·0	91·1	81·7	85·7	79·3	86	61	89	79	—	
11	1005·4	1004·9	1004·1	1004·8	81·2	85·8	81·7	87·6	80·5	83·4	77·7	97	78	98	91	—	≡2 from before 4 h. ∞ 10 h. 30 m.
12	1002·9	1004·1	1004·2	1003·7	84·0	86·2	82·6	87·0	79·8	83·9	80·3	88	67	88	81	—	
13	997·9	996·3	998·9	997·7	83·0	83·7	81·9	85·4	81·8	83·2	80·0	98	100	96	98	r 15·4	●2 4 h. ∞ 9 h. ●2 13 h.
14	1004·2	1006·1	1006·7	1005·7	83·5	85·1	84·3	87·0	81·3	84·2	76·5	92	78	93	88	—	
15	1007·8	1007·7	1007·4	1007·6	83·9	90·3	85·0	91·0	83·2	86·7	81·6	91	63	82	79	—	
16	1007·8	1006·9	1006·7	1007·1	88·8	96·1	88·6	96·5	84·0	90·8	81·1	71	n 44	71	62	—	
17	1006·6	1007·4	1009·1	1007·7	91·7	93·6	87·4	95·8	87·4	91·2	81·1	66	67	76	70	—	
18	1012·0	1014·2	1015·9	1014·0	85·8	91·6	86·0	93·5	84·9	88·4	81·9	79	65	67	70	—	
19	1017·4	1018·2	1018·2	1017·9	87·9	95·3	87·9	95·9	84·9	90·4	81·3	70	63	75	69	—	∞ 4 h. 30 m.
20	1017·3	1015·9	1015·7	1016·3	90·8	98·0	90·8	98·2	86·5	92·9	84·0	73	61	81	72	—	
21	1014·2	1013·7	1013·0	1013·6	93·1	100·0	92·6	r 100·6	88·8	95·1	83·4	67	48	70	62	—	
22	1011·1	1009·4	1008·9	1009·8	93·5	98·0	89·8	99·6	x 89·3	94·0	83·8	76	68	83	76	3·0	T 14 h. ↱ 16 h. 5 m.
23	1012·6	1018·3	1019·8	1016·9	86·1	87·8	84·0	88·4	83·4	85·9	85·0	93	57	84	78	0·1	●0 4 h. 30 m.
24	1018·3	1018·2	1018·2	1018·2	85·1	88·9	84·4	89·1	83·0	86·1	79·7	88	76	95	86	—	
25	1018·2	1017·3	1015·7	1017·1	85·5	89·6	84·4	89·9	83·0	86·5	79·5	82	73	95	83	—	
26	1014·2	1014·6	1016·6	1015·1	85·7	87·2	85·7	89·0	83·8	86·3	79·9	92	81	86	86	—	
27	1019·5	1020·5	1022·2	1020·7	84·4	88·7	84·6	89·9	83·0	86·1	77·5	88	63	81	77	—	
28	1023·5	1022·9	1022·7	1023·0	86·1	90·0	86·2	91·6	82·5	87·3	76·5	55	63	74	64	—	
29	1023·8	1023·4	1023·0	1023·4	86·0	88·3	83·7	89·4	83·5	86·2	79·9	77	65	79	74	—	
30	1023·5	1022·9	1027·0	1024·5	85·8	91·0	85·3	92·0	82·1	87·2	77·6	66	45	56	56	—	
31	1023·3	1021·9	1022·9	1022·7	87·5	92·9	86·5	93·8	82·7	88·7	n 75·8	56	49	74	60	—	
Means	1011·1	1011·1	1011·7	1011·3	85·3	89·3	84·8	90·5	82·8	86·6	79·9	83	70	84	79	37·7	
Normal	1009·7	1009·8	1010·0	1009·8	84·1	87·4	83·8	88·7	82·0	85·2	79·0	82	66	82	76	41·7	

JERSEY (ST LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0–12 on the Beaufort Scale). 7 h. Dir.	(0–12)	14 h. Dir.	(0–12)	21 h. Dir.	(0–12)	Mean.	Sunshine.* Total.	Per cent. of Possible.	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. Tenths. 7 h.	Upper. Type. 7 h.	Direction. 7 h.	Lower. Type. 7 h.	Direction. 7 h.	Tenths. 14 h.	Upper. Type. 14 h.	Direction. 14 h.	Lower. Type. 14 h.	Direction. 14 h.	Tenths. 21 h.	Upper. Type. 21 h.	Direction. 21 h.	Lower. Type. 21 h.	Direction. 21 h.	Mean Amount.
								hr.	%																
1	E	3	E	3	ENE	1	2·3	0·0	0	10	...	...	Nb.	...	10	...	...	≡	...	9	...	...	...	...	9·7
2	E	3	ENE	3	ENE	4	3·3	9·2	63	10	...	...	...	...	3	Ci.	...	...	...	0	...	...	...	...	4·3
3	E	3	SW	2	WNW	2	2·3	3·0	20	9	A.-Cu.	SW	...	...	8	A.-Cu.	SW	Nb.	S	10	...	...	≡	...	9·0
4	W	2	ENE	3	ENE	3	2·7	4·3	30	10	...	...	...	...	7	...	...	Cu.	NNE	8	...	...	...	...	8·3
5	NE	2	W	2	WSW	2	2·0	0·2	1	10	...	...	Nb.	...	10	...	...	Nb.	NW	10	...	...	...	...	10·0
6	SW	2	SSW	1	NE	2	1·7	11·0	75	8	...	...	St.-Cu.	SW	3	...	...	Cu.	NE	7	...	...	...	...	6·0
7	N	3	N	3	NW	4	3·3	0·8	6	10	...	...	...	...	10	...	...	Nb.	...	10	...	...	Nb.	...	10·0
8	NNW	3	NW	2	NW	2	2·3	0·4	3	10	...	...	Nb.	NNW	10	...	...	Nb.	...	8	...	...	...	...	9·3
9	NW	2	NW	2	NNE	2	2·0	5·7	38	7	A.-Cu.	NE	...	...	8	A.-Cu.	SW	...	...	4	...	...	...	...	6·3
10	NE	1	ENE	3	NE	3	2·3	9·3	62	8	...	...	...	...	4	A.-Cu.	ENE	...	...	5	A.-Cu.	...	...	...	5·7
11	NE	3	ESE	2	WNW	2	2·3	6·1	40	10	...	...	≡	...	7	...	...	Cu.	SE	10	...	...	...	...	9·0
12	WNW	3	W	4	WSW	3	3·3	10·0	66	3	A.-Cu.	SW	Cu.-Nb.	WNW	5	Ci., Ci.-Cu.	NW	Cu.	WNW	6	A.-Cu.	...	...	...	4·3
13	SW	4	WSW	3	W	2	3·0	1·7	11	10	...	...	Nb.	...	10	...	...	Nb.	WSW	3	A.-Cu.	...	...	...	7·7
14	WSW	3	SW	3	SSW	2	2·7	4·8	31	5	A.-Cu.	NNE	Cu.-Nb.	WNW	10	...	...	...	...	10	...	...	...	...	8·3
15	S	3	SSW	2	ENE	3	2·7	8·7	58	8	A.-Cu.	SSE	...	...	4	Ci.	...	...	...	5	A.-Cu.	SSE	...	...	5·7
16	E	2	SE	1	ENE	3	2·0	13·8	90	3	Ci.-St., A.-Cu.	...	...	...	0	...	...	...	...	0	...	...	...	...	1·0
17	ESE	1	NNW	2	N	3	2·0	15·3	98	1	A.-Cu.	SW	...	...	3	Ci.-Cu., A.-Cu.	SSE	Cu.	...	4	Ci.-Cu., Ci.	...	...	...	2·7
18	NE	3	NNE	3	NE	3	3·0	13·9	90	6	A.-Cu.	W	...	...	1	Ci.	...	...	...	0	...	...	...	...	2·7
19	NNE	3	NE	2	ENE	4	3·0	15·4	100	0	...	...	...	...	0	...	...	...	...	0	...	...	...	...	0·0
20	ENE	2	ENE	2	SSW	1	1·7	15·4	100	0	...	...	...	...	0	...	...	...	...	2	A.-Cu.	...	...	...	0·7
21	SSE	2	SSW	1	ENE	3	2·0	15·5	100	0	...	...	...	...	3	...	...	Cu.	...	1	...	...	...	...	1·0
22	SSE	1	S	2	SE	1	1·3	11·5	74	0	...	...	...	...	3	Ci.	...	...	...	5	...	...	...	...	2·7
23	WSW	4	WSW	5	W	4	3·7	11·8	76	9	...	...	...	...	1	...	...	Cu.	WSW	0	...	...	...	...	3·7
24	WNW	3	WNW	5	NW	3	3·7	6·9	44	8	...	...	Cu.-Nb.	WNW	5	...	...	Cu.	WNW	2	Ci.	...	...	...	5·7
25	NW	3	WNW	3	NW	2	2·7	11·7	75	0	...	...	...	...	4	Ci.	...	...	...	5	Ci.	...	...	...	3·7
26	N	3	N	3	ENE	4	3·3	3·9	25	8	...	...	St.-Cu.	NW-NNE	8	...	...	...	...	2	...	...	...	...	6·7
27	NE	1	NE	4	NNE	2	2·3	9·5	61	10	...	...	...	...	5	A.-Cu.	ENE	Cu.	ENE	2	...	...	...	...	5·7
28	NNE	2	N	3	N	3	2·7	15·7	100	0	...	...	...	...	2	Ci.	...	...	...	2	...	...	...	...	1·7
29	NE	3	ENE	3	NE	2	2·7	15·5	99	2	...	...	Cu.	ENE	2	...	...	Cu.	...	0	...	...	...	...	1·0
30	ENE	3	ENE	3	NE	2	2·7	15·8	100	0	...	...	...	...	0	...	...	...	...	2	...	...	...	...	0·7
31	ENE	3	ENE	3	ENE	3	3·0	15·9	100	0	...	...	...	...	0	...	...	...	...	0	...	...	...	...	0·0
Means		2·6		2·7		2·6	2·6	282·7	60	5·4	—	—	—	—	4·7	—	—	—	—	4·3	—	—	—	—	4·1
Normal		3·5		3·8		3·4	3·6	256·4	54	6·2	—	—	—	—	5·1	—	—	—	—	5·0	—	—	—	—	5·1

* Actinic rays by Jordan Recorder.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	1·7	...	8·3	...	1·9	...	9·3	2·6	...	...	3·8	3·0	...	...	1·3	13·0	9	55
2	1·7	...	...	2·5	...	Calm		...	...	1·9	1·3	...	1·9	...	...	4·5	8·2	18	30
3	...	...	...	6·2	2·1	...	...	10·6	...	1·2	...	5·8	2·0	...	...	10·0	14·7	21	5
4	1·3	...	...	6·5	...	...	7·9	...	3·0	...	3·0	...	1·1	...	1·7	...	10·5	1	50
5	1·7	...	2·5	...	1·7	...	...	8·3	...	4·3	...	2·9	...	3·3	...	3·3	12·4	8	55
6	...	4·1	...	2·7	0·6	...	...	2·9	5·8	...	1·2	...	2·8	...	1·1	...	12·0	13	50
7	...	Calm		...	...	Calm		...	...	2·3	0·4	...	...	2·6	0·5	...	5·4	13	15
8	...	2·7	...	1·8	...	2·2	...	1·4	...	4·8	1·0	...	...	Calm		...	8·3	13	25
9	...	Calm		...	...	Calm		...	...	1·4	1·4	...	...	1·6	1·6	...	4·0	13	25
10	...	1·7	1·1	...	...	2·4	...	5·7	...	2·9	...	4·3	...	1·7	...	1·1	9·4	6	35
11	...	Calm		...	1·9	...	4·5	...	...	Calm		...	4·0	...	4·0	...	8·6	9	30
12	...	1·7	8·7	...	...	6·7	2·8	...	2·3	...	5·5	...	4·2	...	6·2	...	12·0	16	10
13	6·6	...	...	...	...	...	7·2	...	2·0	...	4·8	...	...	Calm		...	11·5	2	0
14	...	Calm		...	2·4	...	3·6	...	6·1	...	1·2	...	5·8	...	1·2	...	12·0	23	40
15	6·6	...	...	...	8·3	...	1·7	...	7·1	...	1·4	...	3·8	...	0·8	...	16·0	10	35
16	5·8	...	1·2	...	5·9	...	...	...	3·8	...	2·6	...	1·1	...	1·1	...	11·3	2	25
17	...	Calm		...	3·3	...	1·4	...	4·0	...	4·0	...	4·7	...	3·1	...	11·2	13	55
18	4·3	...	2·9	...	2·5	...	1·7	...	5·2	...	3·4	...	3·2	...	2·2	...	8·7	0	50
19	5·1	...	1·0	...	5·8	...	1·2	...	4·7	...	3·1	...	2·2	...	1·4	...	9·6	5	5
20	1·9	...	1·3	...	...	Calm		...	2·3	...	2·3	...	0·8	...	1·8	...	6·5	13	55
21	...	Calm		...	3·5	...	...	0·7	5·5	...	3·7	...	1·9	...	1·3	...	10·8	12	20
22	4·8	...	1·0	...	...	Calm		...	...	1·8	1·8	...	1·4	...	2·2	...	9·5	0	20
23	1·3	...	1·9	...	3·0	...	3·0	...	...	2·6	13·1	...	...	5·4	13·0	...	22·0	17	25
24	...	4·8	11·6	...	...	2·1	5·2	...	...	1·9	4·5	...	2·0	...	3·0	...	17·5	0	15
25	3·0	...	...	...	5·5	...	1·1	...	3·3	...	1·4	...	...	6·0	...	...	9·4	21	10
26	...	5·5	1·1	...	...	3·3	...	...	...	1·4	...	2·2	...	2·1	...	0·9	9·2	4	0
27	...	...	...	1·6	1·1	...	...	2·8	...	2·0	3·0	...	0·8	...	1·8	...	8·0	22	0
28	...	1·3	1·9	...	...	3·0	2·0	...	...	2·2	1·4	...	...	Calm		...	8·5	7	10
29	...	Calm		...	1·7	...	2·5	...	3·0	...	2·0	...	2·1	...	2·1	...	6·0	19	35
30	3·5	...	0·7	...	...	...	1·6	...	...	1·3	1·9	...	...	Calm		...	5·5	14	15
31	...	Calm		...	...	1·3	1·9	...	...	2·7	1·8	...	...	Calm		...	5·0	14	0
S+N & W+E	71·1		66·5		72·2		91·0		95·4		90·2		72·4		71·2				
S−N & W−E	24·1		7·3		26·4		7·6		26·0		52·2		25·2		29·0				

SCOTLAND N.:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	...	Calm		...	1·6	...	4·0	...	1·5	...	...	3·6	6·7	...	...	2·8	8·2	22
2	5·2	...	...	3·4	7·4	...	...	4·9	7·6	...	...	5·1	5·1	...	...	5·1	9·8	14
3	3·7	...	...	5·5	3·5	...	...	8·5	3·1	...	...	7·6	1·2	...	...	6·1	9·8	11
4	2·1	...	...	5·2	1·7	...	...	8·3	1·8	...	...	9·0	...	...	...	8·2	11·5	24
5	...	...	...	13·4	4·6	...	...	11·2	4·0	...	...	9·7	1·3	...	...	6·8	13·4	3
6	...	...	...	7·2	...	1·7	...	8·3	...	...	...	7·5	1·4	...	...	7·1	9·5	7
7	...	...	...	6·9	...	1·5	...	7·4	...	3·0	...	7·3	...	0·9	...	4·5	9·5	11
8	...	...	...	4·6	2·0	...	...	4·8	2·8	...	...	2·8	...	0·8	...	4·2	5·6	2
9	0·7	...	...	3·5	...	...	...	3·9	...	...	...	5·6	...	0·9	...	4·5	6·2	13
10	...	...	...	4·3	...	...	...	5·2	4·6	...	...	6·8	6·5	...	...	6·5	9·8	22
11	4·8	...	...	1·0	0·9	...	1·3	...	1·4	...	...	3·3	1·4	...	...	3·3	7·9	1
12	0·6	...	...	2·9	...	2·5	...	1·7	...	0·4	...	0·9	...	0·8	...	0·6	4·3	7
13	...	...	...	4·6	6·8	...	1·3	...	5·6	...	...	5·6	5·5	...	...	3·7	9·2	13
14	4·7	...	...	3·1	4·0	...	...	1·6	3·3	...	...	1·4	2·4	...	...	1·0	6·6	1
15	2·8	...	...	2·8	7·9	...	...	3·3	3·9	...	...	...	3·5	...	...	0·7	8·9	12
16	4·3	...	...	...	7·2	...	...	...	5·5	...	...	2·3	3·8	...	...	0·8	8·2	11
17	...	Calm		...	2·7	...	...	1·8	3·0	...	...	3·0	2·2	...	...	3·2	5·2	16
18	1·3	...	0·9	...	3·8	...	9·1	...	...	Calm		...	...	Calm		...	11·5	8
19	4·8	...	...	1·0	2·6	...	...	...	2·6	...	...	...	...	Calm		...	4·9	3
20	2·3	...	...	2·3	6·1	...	...	1·2	4·8	...	...	2·0	...	Calm		...	6·6	7
21	3·3	...	1·4	...	...	3·4	5·2	...	...	3·5	...	3·5	...	0·9	...	4·5	7·9	6
22	...	0·8	...	3·8	...	...	...	6·2	1·6	...	...	8·0	2·0	...	...	4·8	8·9	11
23	...	...	...	5·2	3·7	...	...	3·7	1·8	...	...	4·3	...	Calm		...	6·9	4
24	...	Calm		...	...	2·5	1·7	...	...	3·4	5·2	...	...	2·7	4·1	...	7·5	17
25	...	3·0	3·0	...	...	3·0	3·0	...	...	5·2	3·4	...	...	3·8	5·7	...	7·5	22
26	...	4·9	4·9	...	...	4·4	4·4	...	...	3·0	...	...	0·9	...	...	1·3	7·2	11
27	3·3	...	...	1·4	0·4	...	2·3	...	2·5	...	2·5	...	1·4	...	1·4	...	5·6	11
28	...	...	6·6	...	...	...	8·2	...	3·8	...	5·7	...	1·6	...	...	...	9·5	12
29	2·2	...	1·4	...	4·7	...	4·7	...	5·1	...	7·6	...	...	...	5·2	...	11·8	14
30	1·3	...	6·5	...	1·6	...	8·0	...	...	...	9·2	...	...	1·0	5·1	...	10·2	13
31	1·1	...	2·8	...	3·3	...	...	...	...	...	7·5	...	...	1·0	2·4	...	8·5	14
S+N & W+E	57·2		109·6		95·5		135·2		88·8		140·4		59·7		103·6			
S−N & W−E	39·8		−54·6		57·5		−28·8		51·8		−58·2		34·1		−55·8			

ENGLAND S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	7·6	...	...	7·6	6·2	...	...	6·2	3·5	...	...	3·5	3·5	...	...	3·5	12·7	5	5
2	7·3	...	...	4·9	5·9	...	...	5·9	9·8	...	...	9·8	9·4	...	...	9·4	16·2	19	40
3	5·6	...	...	3·7	2·7	...	...	6·6	1·5	...	...	3·5	0·4	...	0·2	...	13·6	0	15
4	1·2	...	0·5	...	3·8	...	...	...	3·8	...	...	3·8	2·7	...	...	2·7	6·1	13	55
5	1·2	...	...	1·2	1·5	...	...	1·5	0·9	...	...	0·9	...	Calm		...	2·8	4	40
6	...	Calm		..	0·9	...	...	0·9	1·5	...	...	1·5	...	Calm		...	1·3	12	55
7	0·9	...	...	0·9	...	3·5	1·5	...	...	6·2	2·6	...	...	5·6	5·6	...	10·0	23	5
8	...	6·2	4·2	...	...	6·9	4·6	...	...	5·0	5·0	...	...	3·5	3·5	...	11·9	5	25
9	...	0·9	0·9	...	...	1·8	1·8	...	3·5	...	...	1·5	1·5	...	...	1·5	2·6	13	55
10	0·7	...	...	1·6	1·0	...	...	2·3	1·8	...	...	1·8	1·3	...	...	3·1	1·7	21	5
11	0·5	...	...	1·2	...	Calm		...	...	4·6	...	...	...	5·8	2·4	...	8·1	19	40
12	...	5·9	3·9	...	...	7·7	3·2	...	...	4·2	2·8	...	...	...	5·8	...	10·0	21	40
13	...	3·0	7·3	...	...	2·6	6·2	...	...	8·1	3·4	...	...	6·2	6·2	...	11·7	13	10
14	...	2·7	2·7	...	0·9	...	4·9	...	3·5	...	3·5	...	4·6	...	1·9	...	6·4	2	15
15	5·8	...	2·4	...	6·6	...	1·3	...	7·1	...	...	...	6·7	...	...	...	7·7	13	40
16	4·2	...	...	...	3·8	...	...	...	2·1	...	0·4	...	2·8	...	0·6	...	5·4	2	25
17	2·8	...	0·6	...	2·5	...	0·5	...	1·7	...	0·3	...	1·2	...	0·2	...	1·1	2	5
18	...	Calm		...	0·8	...	0·2	...	1·3	...	...	...	...	Calm		...	Calm		
19	0·4	...	...	...	1·3	...	...	...	0·9	0·9	...	...	...	2·1	...	1·4	2·0	21	45
20	...	1·2	...	1·2	3·3	...	...	3·3	3·2	...	...	2·1	4·2	...	...	2·8	5·0	10	25
21	2·7	...	...	1·8	2·4	...	...	1·6	1·8	...	1·8	...	1·2	...	1·2	...	3·9	0	55
22	...	...	...	...	1·5	...	1·5	...	0·9	...	0·9	...	1·8	...	1·8	...	3·3	23	35
23	...	5·8	8·6	...	...	4·6	11·1	...	...	6·5	9·7	...	...	4·2	6·2	...	16·3	7	55
24	...	2·6	6·2	...	...	2·8	4·2	...	...	1·5	3·5	...	...	1·0	2·3	...	8·5	0	25
25	...	1·3	3·1	...	...	1·5	3·5	...	0·8	...	4·1	...	0·3	...	1·3	...	4·9	12	55
26	...	5·6	...	5·6	...	4·7	...	4·7	...	6·2	...	2·6	...	4·6	...	1·9	10·6	4	20
27	...	2·7	...	1·1	...	1·6	...	0·7	...	3·9	1·6	...	...	3·2	...	0·6	4·5	15	5
28	...	2·7	...	1·1	...	3·0	...	3·0	...	2·2	...	5·4	...	2·3	...	2·3	6·4	17	15
29	...	2·7	...	2·7	...	...	...	4·6	3·2	...	...	2·1	1·4	...	...	0·9	5·6	9	25
30	1·8	...	...	1·2	0·8	...	...	1·9	...	...	...	2·5	...	1·0	...	2·3	2·3	23	15
31	...	0·8	...	1·9	...	0·3	...	1·7	2·7	...	...	1·8	...	...	...	2·1	2·7	10	45
S+N & W+E	86·8		78·1		86·9		89·4		103·9		83·3		82·5		73·7				
S−N & W−E	−1·4		2·7		4·9		−0·4		5·3		−2·3		3·5		4·7				

ENGLAND E.:—GREAT YARMOUTH.

Height of Head above—Roof 10·7 m., Ground 12·8 m., M.S.L. 15·9 m.
Height of Cups above—Roof 3·7 m., Ground 18·3 m., M.S.L. 22·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust. (Gorleston.)	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	5·8	...	8·7	...	4·0	...	9·7	...	1·9	...	9·6	...	1·4	...	7·1	13·3	1	5
2	...	1·6	...	8·0	...	1·3	...	6·8	...	1·2	...	5·8	...	1·2	...	5·8	10·1	1	30
3	...	1·0	...	5·1	...	1·6	...	8·0	...	1·3	...	6·8	...	1·9	...	9·3	11·0	22	10
4	...	1·3	...	6·8	1·3	...	...	3·0	1·1	...	1·1	...	...	Calm		...	10·7	3	15
5	...	1·1	...	2·8	...	4·2	...	0·8	...	1·2	...	6·1	...	...	...	4·3	9·0	16	30
6	0·6	...	...	2·9	4·5	...	...	1·9	3·0	...	...	1·3	...	Calm		...	9·7	4	55
7	...	3·6	...	...	...	6·2	...	...	...	4·3	...	2·9	...	7·6	...	7·6	13·4	21	55
8	...	5·3	...	5·3	...	3·7	...	3·7	...	4·8	...	1·0	...	2·4	...	1·0	11·7	0	5
9	...	2·3	...	...	...	4·2	0·8	...	...	3·9	...	...	...	2·0	...	...	10·7	23	5
10	...	3·2	0·6	...	...	4·8	1·0	...	...	5·9	...	...	...	4·9	...	...	11·4	12	15
11	...	2·0	...	...	...	1·6	...	...	1·0	...	...	5·1	3·7	...	...	3·7	10·3	23	35
12	2·3	...	...	0·4	...	...	3·0	...	...	2·1	...	2·1	2·9	...	0·6	...	13·0	11	35
13	1·5	...	0·6	...	5·5	...	1·1	...	6·8	...	...	1·3	1·8	...	0·8	...	15·5	13	45
14	1·6	...	1·6	...	0·6	...	2·9	...	2·6	...	3·8	...	2·0	...	0·4	...	12·0	17	5
15	2·3	...	0·4	...	3·8	...	0·8	...	6·8	...	...	1·3	3·6	...	...	1·5	15·3	13	40
16	3·0	...	...	1·3	1·8	...	...	0·8	1·3	...	...	1·9	...	Calm		...	6·5	2	30
17	1·1	...	...	1·7	...	Calm		...	1·1	...	...	1·7	...	Calm		...	5·3	19	5
18	0·9	...	2·1	...	...	2·8	1·1	...	...	5·2	...	...	...	3·3	...	...	10·8	14	20
19	...	Calm		...	...	2·6	...	...	...	1·6	...	...	0·4	...	...	2·3	4·5	9	20
20	...	Calm		...	2·0	...	...	3·0	1·1	...	...	2·8	0·8	...	...	1·8	4·2	9	45
21	0·6	...	...	1·5	0·6	...	...	1·5	1·3	...	...	1·9	1·3	...	...	1·9	...	...	
22	...	Calm		...	0·9	...	...	1·3	1·0	...	...	2·4	...	...	...	4·3	...	...	
23	3·3	...	...	1·4	4·6	...	...	...	3·1	...	7·6	...	3·7	...	3·7	...	17·5	13	15
24	1·1	...	1·7	...	...	4·5	1·9	...	...	4·5	...	0·9	...	2·1	2·1	...	12·2	8	20
25	...	3·0	3·0	...	...	3·0	2·0	...	...	3·6	...	...	...	Calm		...	11·0	7	40
26	...	3·0	...	...	...	5·9	...	...	...	3·9	...	...	...	3·9	...	...	11·3	10	35
27	...	4·2	...	0·8	...	4·2	...	0·8	...	5·8	...	1·2	...	1·6	...	0·3	10·0	14	40
28	...	1·6	...	0·3	...	4·0	1·6	...	...	6·2	...	...	...	4·3	...	...	13·5	14	45
29	...	2·3	...	...	...	4·5	...	0·9	...	2·5	...	1·7	...	Calm		...	8·7	1	50
30	...	1·8	1·8	...	...	1·9	1·3	...	...	2·0	...	0·8	...	Calm		...	7·4	4	30
31	...	Calm		...	...	1·3	...	1·9	0·5	...	...	2·6	...	Calm		...	6·1	8	40
S+N & W+E	61·4		58·8		91·9		61·6		92·6		73·7		56·8		58·5				
S−N & W−E	−24·8		−35·2		−40·7		−26·6		−31·2		−48·7		−16·4		−43·3				

9. Seismological Diary.

Earthquakes :—Eskdalemuir.

Day.	Phase.	Time, G.M.T.	Period.	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	Δ.	Remarks.
		h m s	s	μ	μ	μ	km.	
3	L	17 46 to	...	...	...	...	...	
		17 58	...	...	...	...	...	
4	P	6 19 11	...	...	...	...	9350	P taken from vertical record.
	PR_1	6 22 51	...	...	...	...	...	
	S	6 29 39	...	...	...	...	...	
	L	6 47 28	...	...	...	...	...	
	M	6 56 8	28	18	...	...	...	
	F	7 40	...	...	...	...	...	
6		5 30 to	...	...	...	...	...	Faint disturbance.
		5 48	...	...	...	...	...	
10	L	16 30	...	...	...	...	...	
11	e	21 51 1	...	...	...	...	...	Preliminary phases very faint.
	e	21 53 47	...	...	...	...	...	
	S (?)	22 0 51	...	...	...	...	...	
	L	22 21 8	...	...	...	...	...	
	F	23 45	...	...	...	...	...	
16		22 0 to	...	...	...	...	...	Slight disturbance. P probably at 21 h. 37 m. 40 s.
		22 35	...	...	...	...	...	
19	L	1 0 to	...	...	...	...	...	
		1 27	...	...	...	...	...	
19		11 34 to	...	...	...	...	...	Faint disturbance.
		11 47	...	...	...	...	...	
20	P	14 45 25	...	...	...	...	5900	Time marking arrangements working unsatisfactorily; times given with considerable reserve. For same reason no times are given for the disturbance recorded soon after 18 h.
	PR_1	14 47 45	...	...	...	...	...	
	S	14 52 56	...	...	...	...	...	
22	eP	6 50 9	...	...	...	...	...	Two prominent isolated waves in E.-W. direction; times of maximum displacement 7 h. 11 m. 38 s. and 7 h. 14 m. 33 s.
	eS	6 56 52	...	...	...	...	...	
	F	8 35	...	...	...	...	...	
23	P	12 9 29	...	...	...	...	8700	P very faint on horizontal traces. Time taken from vertical.
	S	12 19 23	...	...	...	...	...	
	SR (?)	12 24 14	...	...	...	...	...	
	L	12 33	...	...	...	...	...	
	M	12 35 29	27	36	...	...	...	
	M	12 35 32	29	...	27	...	...	
	M	12 38 22	19	30	...	...	...	
	F	15 10	...	...	...	...	...	
25	P	19 48 45	...	...	...	...	8200	
	S	19 58 12	...	...	...	...	...	
	SR	20 3 49	...	...	...	...	...	
	L	20 13	...	...	...	...	...	
	F	22 10	...	...	...	...	...	
31	L	6 4 to	...	...	...	...	...	
		6 15	...	...	...	...	...	
31	eP	8 58 22	...	...	...	...	...	Slight disturbance.
	iS	9 8 6	...	...	...	...	...	
	L	9 26 41	...	...	...	...	...	
	F	10 0	...	...	...	...	...	
31	e	21 15 27	...	...	...	...	...	
	e	21 18 56	...	...	...	...	...	
	L	21 28	...	...	...	...	...	

Microseisms of N. Component :—Eskdalemuir.

Day.	0 h. A_N.	0 h. T.	6 h. A_N.	6 h. T.	12 h. A_N.	12 h. T.	18 h. A_N.	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	...	...	...	...	0·6	4	0·6	4
2	...	...	...	...	0·2	4	0·6	4
3	0·5	4·5	0·6	4	0·6	4	0·7	4·5
4	0·7	4	0·7	4	0·5	4·5	0·6	4
5	0·8	4	0·8	4	1·0	4·5	1·0	
6	0·8	4	0·8	4	0·6	4	0·6	4
7	0·6	4	0·3	4	0·3	4	0·3	3
8	...	...	...	...	0·2	4	0·2	4
9	...	...	0·3	3·5	0·2	4	0·4	5
10	...	...	0·4	5·5	...	...	0·4	5
11	...	...	0·6	5·5	0·7	5	0·6	4
12	0·8	4·5	0·5	5	...	...	0·7	4
13	0·7	4·5	0·5	5	0·5	4·5	0·5	4
14	0·4	5	0·5	4·5	0·4	4·5	0·3	4
15	0·4	4·5	0·4	5	0·3	6	0·4	5
16	0·5	5	0·4	4·5	0·5	5	0·3	4
17	0·5	4	0·4	4·5	0·5	4	0·5	4
18	0·3	4·5	0·3	4·5	0·2	4	0·3	5
19	0·7	7	1·0	7	1·1	7	1·0	6·5
20	1·2	6	1·0	6·5	1·0	6	0·7	5·5
21	0·7	5·5	0·5	5·5	0·5	5	0·4	5
22	0·3	4·5	0·2	4·5	0·2	4	0·2	4
23	0·3	4·5	0·4	5	0·5	5	0·4	5
24	0·4	4·5	0·5	5	0·7	5·5	0·5	6
25	0·6	5·5	0·8	6	0·9	6	0·8	5·5
26	0·8	6	0·8	5·5	0·7	6·5	0·7	6
27	0·5	6	0·7	5·5	0·5	6	0·8	7
28	1·5	7	1·4	7	0·6	6	...	...
29	0·2	6	0·2	5·5	0·6	5	1·2	6
30	1·2	6	1·2	6	1·0	6	0·9	5
31	0·7	5	0·7	4·5	0·5	5	0·4	4·5

Means for Month $\begin{cases} A_N = 0·6. \\ T = 5·0. \end{cases}$ Normals, 1911–17 $\begin{cases} A_N = 0·7. \\ T = 4·8. \end{cases}$

Earthquakes :—Richmond (Kew Observatory).

Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h m	h m	
6	...	5 43	Small.
15	...	9 39	Very small.
16	...	22 17	Small.
19	...	1 16	Very small.
19	...	11 29	Very small.
20	14 43	15 0	Amplitude on trace 5·5 mm.
20	18 18	18 55	Small.
22	...	7 36	Very small.
23	12 34	12 47	Amplitude on trace 1·8 mm.
25	19 48	20 30	Small.

10. Soundings with Pilot Balloons.

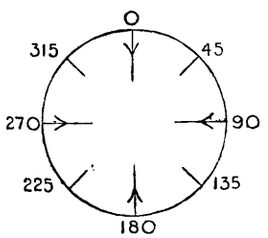
Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	m/s.	By Anemometer. From N.	m/s.	At Heights above M.S.L. 500 m. From N.	m/s.	1000 m. From N.	m/s.	2000 m. From N.	m/s.	3000 m. From N.	m/s.	4000 m. From N.	m/s.	5000 m. From N.	m/s.	Cloud Observations. Type.	From N.	m/s.
		h. m.	°		°		°		°		°		°		°		°			°	
3	S. Farnboro'	14 20	140	16	115	6·5	120	15·0	125	14·5	170	12·0	195	11·5	...	...	...	...	A.-St.	170	...
5	Cahirciveen	7 55	110	5	95	6·5	135	4·4	150	14·0	130	9·5	...	...	...	...	...	...	St.	135	...
																			A.-St.	...	...
5	,,	16 0	?	?	145	5·5	110	3·0	100	4·8	105	8·5	115	11·5	...	...	...	...	Cu.	135	...
																			A.-Cu., Ci.-St.	...	...
6	,,	11 20	340	5	330	2·6	350	6·0	350	8·5	335	3·2	350	6·5	50	3·1	...	...	Cu.	25	...
																			A.-St., High Cu.	...	...
8	,,	16 30	250	5	240	4·7	200	4·8	330	3·8	275	7·0	290	7·5	265	5·0	285	8·5	Ci.-Cu., A.-Cu.	245	...
																			Lower Cu.	225	...
8	,,	7 35	250	5	350	6·5	350	9·5	35	10·5	90	4·0	30	6·0	...	...	...	...	High St.-Cu.	45	...
																			A.-Cu.	...	...
8	S. Farnboro'	14 30	320	15	340	5·0	360	6·0	20	4·0	30	1·3	...	...	...	...	...	...	A.-Cu.	...	...
																			Ci.	205	...
8	Eskdalemuir	7 20	70	10	360	2·5	60	3·3	105	7·0	130	5·5	110	9·0	...	...	...	...	A.-St.	...	...
9	,,	7 20	?	?	—	0·0	35	2·6	350	2·2	355	5·0	310	8·0	310	12·0	310	13·0	...	...	...
9	S. Farnboro'	6 55	360	5	350	1·5	30	8·5	350	7·0	270	4·0	250	4·5	245	5·0	320	5·0	Ci.	225	...
9	,,	14 5	360	5	345	2·0	15	3·5	20	3·5	305	6·0	245	7·5	255	5·0	280	2·2	Ci.	245	...
10	,,	7 0	70	5	15	2·0	15	9·0	360	8·5	320	10·0	290	8·0	...	...	...	...	...	...	...
10	,,	14 10	50	5	15	2·0	25	5·0	10	5·0	355	5·5	15	5·0	30	4·0	360	4·0	Fr.-St.	...	...
10	Eskdalemuir	11 55	140	5	45	5·0	75	3·5	50	4·0	5	5·0	355	6·5	350	6·0	335	7·0	Ci.	...	...
10	Cahirciveen	12 30	?	?	325	4·5	10	3·3	25	6·5	50	5·5	65	8·0	65	6·5	...	...	A.-Cu.	45	...
																			Cu.	45	...
																			Low Cu.	295	...
11	S. Farnboro'	6 40	?	?	light		65	1·7	345	1·9	360	2·4	50	1·4	350	1·6	200	3·5	...	...	...
14	Eskdalemuir	7 5	230	8	200	3·7	250	3·2	260	5·5	255	8·0	260	7·0	...	...	...	...	Ci.	285	4·2
																			Cu.	260	...
15	S. Farnboro'	14 45	230	10	180	6·0	185	6·0	200	9·5	215	8·0	...	...	...	...	...	...	St.-Cu.	180	...
																			Ci.	180	...

Day.	Station.	Time of Start, G.M.T.	6000 m. From N.	m/s.	7000 m. From N.	m/s.	8000 m. From N.	m/s.	9000 m. From N.	m/s.	10,000 m. From N.	m/s.	11,000 m. From N.	m/s.	12,000 m. From N.	m/s.
9	S. Farnboro'	6 55	320	1·4	295	5·0	...	...	...	...	...	...	...	...	...	...
9	,,	14 5	290	2·6	...	...	...	..	...	...	...	...	...	...	...	...
10	,,	14 10	135	2·3	60	5·5	45	6·5	...	...	...	...	..	...	...	...
10	Eskdalemuir	11 55	310	6·0	300	8·5	...	...	...	...	...	...	...	...	...	...
11	S. Farnboro'	6 40	150	3·5	285	4·0	220	6·5	270	4·0	275	7·0	...	...	...	...

(For observations at lower levels, see above.)

Height of Station above M.S.L. = H.
Height of Anemometer above ground = h.

	H.	h.
Aberdeen	14 m.	32 m.
Eskdalemuir	242 m.	15 m.
S. Farnborough	70 m.	31 m.
Cahirciveen	30 m.	13 m.



Wind Protractor.

Notes on Pressure Distribution.

A striking feature of the pressure distribution was the persistence of two anticyclones which lasted from the 4th to the 17th. The one over Scandinavia, sometimes extending as far as Greenland; the other oscillating between Spain and the Azores. The British Isles were generally in the shallow trough between the anticyclones.

May 1918.
3 13 h. Scandinavian anticyclone influencing the British Isles; Low off S. of Ireland.
5 7 h., 18 h. } Low over England and Ireland.
6 13 h. }
8 7 h., 13 h., 18 h. }
9 ,, ,, ,, } Shallow Low over the British Isles and Low over the Central Empire.
10 ,, ,, ,, }
11 Low off N. of Scotland. Slight gradient over England.
14 7 h. } Extensive Low over the British Isles, centred off S. of Iceland.
15 13 h. }

Notes on Ascents.

8th, 7 h. 20 m. Overcast, barometer rising slowly.
14th, 7 h. 5 m. Clear, barometer rising slowly.
15th, 14 h. 45 m. "V."

10. Soundings with Pilot Balloons—*continued.*

Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	m/s.	By Anemometer. From N.	m/s.	At Heights above M.S.L. 500 m. From N.	m/s.	1000 m. From N.	m/s.	2000 m. From N.	m/s.	3000 m. From N.	m/s.	4000 m. From N.	m/s.	5000 m. From N.	m/s.	Cloud Observations. Type.	From N.	m/s.
		h. m.	°		°		°		°		°		°		°		°			°	
16	S. Farnboro'	7 15	180	7	95	1·0	165	6·0	155	6·0	185	6·5	...	...	...	...	...	...	Nb., St.-Cu. A.-Cu., Ci.	155	...
16	,,	14 5	180	5	125	3·5	150	4·5	140	3·5	150	4·0	190	6·5	190	7·5	200	9·5	...	...	...
17	,,	6 55	180	5	light		150	5·5	155	4·0	205	4·0	215	2·0	180	7·0	190	8·5	Ci.-Cu.	180	...
17	Eskdalemuir	7 10	180	7	360	0·3	140	3·6	185	7·5	195	12·0	190	14·5	...	...	...	...	Ci. Ci.-St., Cu.	210	3·8
18	,,	7 10	230	8	180	4·2	250	4·6	255	12·5	250	11·0	230	8·0	230	8·5	...	...	Ci., Fr.-St.	...	...
18	S. Farnboro'	6 55	320	7	320	2·5	360	7·0	275	4·0	255	9·0	235	8·5	230	12·5	230	11·5	...	...	...
20	,,	6 40	140	7	light		120	8·0	115	5·5	200	2·9	205	2·8	165	4·0	120	4·0	...	...	...
20	Eskdalemuir	7 15	230	10	—	0·0	?	?	200	8·5	215	10·5	220	15·0	210	13·5	...	...	Ci., Ci.-St.	250	2·1
20	S. Farnboro'	14 0	140	5	135	1·0	135	2·7	145	4·0	200	3·5	215	4·0	160	4·0	...	...	Ci.	...	...
20	Cahirciveen	7 25	200	10	170	10·0	180	18·0	205	17·0	205	12·0	205	21·0	...	...	...	...	Cu. St., Ci.	180	...
20	,,	15 35	230	6	175	8·0	195	8·0	200	10·0	205	19·0	205	18·0	...	...	...	...	Ci.-St. Cu.-St. Cu.	180	...
21	,,	7 20	200	8	175	4·5	175	11·0	195	13·0	200	13·0	205	23·0	...	...	...	...	St., A.-Cu., Ci. Cu. and St.	205	...
21	S. Farnboro'	6 50	200	5	light		165	9·0	170	6·0	205	4·5	190	6·5	225	5·0	195	6·5	A.-Cu.	190	...
21	,,	14 35	230	5	—	—	175	6·5	165	5·0	215	4·0	245	4·0	220	7·5	215	8·0	Cu.	...	...
21	Eskdalemuir	7 15	180	6	—	0·0	190	5·0	200	10·5	200	9·0	210	11·5	...	...	...	...	Ci., Ci.-St. A.-St.	225	...
22	S. Farnboro'	6 15	160	5	light		140	10·0	140	6·0	155	5·0	160	3·5	165	5·0	185	7·5	...	...	...
22	,,	14 55	160	4	110	5·0	145	7·0	135	7·5	160	6·5	155	7·5	...	...	...	...	Cu., St.	100	...
23	Cahirciveen	12 35	320	18	275	7·5	275	8·5	275	11·0	290	10·5	...	...	...	...	...	...	Ci.-St., Ci. Cu.	315	...
24	,,	17 15	230	8	180	8·5	220	9·5	220	10·5	260	11·0	...	...	...	...	...	...	Ci.-St., St. Cu.	270	. .
24	S. Farnboro'	7 30	320	25	275	13·5	310	15·0	315	21·0	320	24·0	...	...	...	...	...	...	St.-Cu. A.-St., A.-Cu.	205	...
24	,,	14 35	320	15	305	10·0	300	11·5	330	15·0	325	11·0	...	...	...	...	...	...	St.-Cu.	225	...
25	,,	6 45	320	8	285	3·5	330	10·5	325	5·5	320	6·5	...	...	...	...	...	...	Ci.	315	...
25	,,	7 5	320	8	285	3·5	330	10·5	330	5·0	325	3·5	320	4·0	325	6·0	290	8·0	Cu.	...	...
25	Cahirciveen	16 15	340	7	345	8·5	5	8·0	355	8·0	340	8·5	...	...	...	...	...	...	Cu.	360	...
25	Eskdalemuir	7 10	320	5	315	2·6	295	4·5	280	7·5	295	8·5	255	4·1	...	...	...	...	Ci., Ci.-St.	225	...

				6000 m.		7000 m.		8000 m.		9000 m.		10,000 m.		11,000 m.		12,000 m.				
16	S. Farnboro'	14 5		215	10·5	210	11·0	210	10·0	215	8·0	220	8·5	210	11·5	210	12·5			
17	,,	6 55	(For observations at lower levels, see above.)	205	8·5	210	9·0	...	...	...	...	...	...	...	...	...	...			
20	,,	6 40		140	5·0	180	3·0	210	2·2	190	1·2	...	...	...	...	...	...			
21	,,	6 50		185	8·0	190	9·5	195	11·5	...	...	...	...	...	...	...	...			
21	,,	14 35		195	10·0	200	12·0	...	...	...	...	...	...	...	...	...	...			
22	,,	6 15		175	13·0	160	11·0	...	...	...	...	...	...	...	...	...	...			

Notes on Pressure Distribution.

May 1918.

16 7 h., 13 h. } Scandinavian anticyclone centred over the Baltic; Low W. of Ireland.
17 7 h. }

18 7 h. Anticyclonic ridge extending from England to the Azores; Low over Iceland region.

20 7 h. Anticyclone covering the British Isles; centred over the North Sea.

21 7 h., 13 h. High over the North Sea; Low W. of Ireland.

22 7 h., 13 h. High over the North Sea; Low W. of Ireland.

23 13 h. Shallow depression over the North Sea.

24 7 h., 13 h., 18 h. Extensive anticyclone over the Bay of Biscay, extending to Ireland; Low over Denmark.

25 7 h., 18 h. Anticyclone over the British Isles.

Notes on Ascents.

20th, 7 h. 15 m. Barometer falling slowly.

21st, 7 h. 15 m. Overcast, thundery appearance.

24th, 7h. 30 m. "V."

24th, 14 h. 35 m. "V."

25th, 7 h. 10 m. Ci. forming and disintegrating. Very uniform.

10. Soundings with Pilot Balloons.

Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	m/s.	By Anemometer. From N.	m/s.	At Heights above M.S.L. 500 m. From N.	m/s.	1000 m. From N.	m/s.	2000 m. From N.	m/s.	3000 m. From N.	m/s.	4000 m. From N.	m/s.	5000 m. From N.	m/s.	Cloud Observations. Type.	From N.	mr/s.
		h. m.	°		°		°		°		°		°		°		°			°	
26	Cahirciveen .	7 20	360	5	light		5	5·5	360	5·5	15	3·2	...	...	...	...	...	...	Cu.	360	...
26	,,	15 50	360	5	320	6·5	10	2·5	20	1·5	305	2·0	340	6·0	350	6·5	320	8·0	Cu.	...	...
27	,,	7 30	?	?	light		305	1·6	310	3·2	270	2·8	260	3·4	...	...	...	...	Ci., Ci.-St., A.-Cu.	245	...
																			St.-Cu.	315	...
27	,,	11 30	?	?	280	4·5	320	4·6	320	3·3	290	5·0	...	...	...	...	...	...	Ci.-St.	...	...
																			Cu.	295	...
27	,,	16 45	?	?	340	6·0	335	6·0	310	3·4	325	8·0	275	7·5	...	...	...	...	A.-Cu., Cu.	315	...
27	S. Farnboro' .	6 50	20	5	—	—	50	4·5	65	7·5	35	7·0	30	7·5	10	7·5	10	11·5	Fr.-St.	...	...
27	Aberdeen .	7 30	230	5	225	2·0	290	4·5	270	4·0	280	8·0	...	...	...	...	...	...	Ci.	280	...
27	Eskdalemuir .	7 30	230	5	160	0·5	245	3·6	275	6·0	250	6·0	250	1·2	305	7·0	310	11·0	Ci.	270	2·5
																			A.-Cu	310	2·1
																			Cu.	275	7·1
28	,,	7 15	320	10	315	8·0	320	8·0	350	5·0	330	12·5	...	...	...	...	...	...	Ci.	335	6·8
																			Cu.	315	...
28	S. Farnboro' .	6 45	360	5	295	2·5	350	7·0	360	7·0	355	8·5	350	7·0	...	...	...	...	Ci., Cu.	315	...
																			St.-Cu.	...	...
28	Cahirciveen .	7 25	?	?	165	1·2	165	3·0	165	2·2	355	1·6	...	...	345	9·0	310	10·5	Ci.-St.	295	...
28	,,	16 55	200	5	195	6·0	205	6·0	140	7·5	180	3·1	195	2·0	280	4·2	285	4·3	Ci.-St.,Ci.-Cu.	295	...
																			Ci.	...	...
29	S. Farnboro' .	8 35	50	10	10	3·5	25	6·0	45	6·0	50	9·5	35	11·0	35	12·0	35	15·0	Ci.	25	...
																			St.-Cu., St.	...	...
29	,,	14 10	50	8	20	1·0	25	3·5	45	5·0	50	10·0	50	12·0	40	13·0	30	12·0	Ci.	90	...
29	Cahirciveen .	15 55	230	6	180	6·0	195	4·5	210	5·5	220	8·0	240	8·0	250	7·0	260	10·0	Ci.-Cu.,Ci.-St.	245	...
29	Aberdeen .	7 30	270	10	210	2·0	210	4·0	260	13·0	245	8·0	...	...	...	...	...	...	Ci.-Cu., Lent.	250	...
29	Eskdalemuir .	7 25	250	10	225	6·0	240	7·0	255	11·0	260	9·5	270	9·0	...	...	...	...	...	...	...
30	Cahirciveen .	7 30	?	?	—	0·0	190	2·2	175	4·5	180	3·6	235	4·4	...	...	...	...	Ci.-Cu.,Ci.-St.	270	...
																			A.-St.	225	...
30	,,	16 55	?	?	335	1·1	210	3·1	120	5·0	175	7·0	205	5·0	235	2·1	...	...	Ci.	270	...
																			Ci., St.	270	...
30	S. Farnboro' .	6 30	50	5	—	0·0	25	2·5	50	7·5	50	8·5	...	...	...	...	...	...	...	...	...
30	,,	6 55	50	5	—	0·0	30	2·5	10	6·5	35	8·0	15	12·0	30	9·5	...	...	...	...	...
30	,,	14 50	?	?	20	1·0	25	4·0	5	4·0	5	4·0	40	7·5	...	...	...	...	Cu.	...	...
31	,,	6 35	90	7	light		85	5·5	85	9·0	60	6·5	55	7·0	55	7·5	95	8·0	...	...	...
31	,,	14 45	70	5	35	3·0	85	4·0	65	7·0	85	1·8	65	5·5	85	5·5	75	5·0	Fr.-Cu.	45	...
31	Cahirciveen .	7 15	?	?	light		155	4·9	195	6·5	155	6·0	...	...	...	...	...	...	Ci.-St.	...	...
31	,,	12 20	?	?	290	1·0	180	1·2	90	3·7	125	8·0	130	8·0	120	2·3	90	0·8	Ci.-St.	...	...
31	Eskdalemuir .	11 35	?	?	305	5·0	295	4·0	285	4·0	300	7·5	305	9·5	...	...	...	...	Ci.	330	1·5
																			Cu.	325	3·1
31	,,	20 35	?	?	—	0·0	310	3·8	310	6·0	310	10·0	315	12·0	...	...	...	...	Ci.	90	0·7
																			Ci.-St.	90	...

Day.	Station.	Time of Start, G.M.T.	At Heights above M.S.L. 6000 m. From N.	m/s.	7000 m. From N.	m/s.	8000 m. From N.	m/s.	9000 m. From N.	m/s.	10,000 m. From N.	m/s.	11,000 m. From N.	m/s.
26	Cahirciveen .	15 50	300	11·0	305	17·5	300	22·5	...	...	...	...	...	...
27	S. Farnboro' .	6 50	355	11·0	360	18·0	350	20·0	...	...	..	...	...	...
28	Cahirciveen .	7 25	310	15·0	310	13·0	320	14·5	...	...	...	...	...	...
31	S. Farnboro' .	6 35	70	8·0	75	7·5	50	7·5	20	5·0	30	6·0	20	11·5
31	,,	14 45	110	4·5	360	2·7	35	4·0	35	7·5	35	9·0	...	...
31	Cahirciveen .	12 20	320	3·3	275	2·5	...	...	...	...	...	...	...	...

(For observations at lower levels, see above.)

Notes on Pressure Distribution.

May 1918.
26th–31st. Anticyclonic ridge over the British Isles, approximately S.W.–N.E.

Notes on Ascents.

27th, 7 h. 30 m. Ci. to Ci.-Cu., becoming dense Ci.-Cu. later.
28th, 6 h. 45 m. Very misty.
28th, 7 h. 15 m. Barometer rising slowly.
29th, 7h. 25 m. Barometer very steady.
30th, 6 h. 30 m. Thick surface mist.
30th, 6 h. 55 m. Thick surface mist.
31st, 20 h. 35 m. Barometer rising slowly.

11. Nephoscope Observations.

Aberdeen. Taken at 13 h. G.M.T.

Day.	Type of Cloud.	Degrees from N.	Velocity-height-ratio.			Remarks.
			Milliradians per Second.	Components.		
				W.–E.	S.–N.	
		°	mr/s.	mr/s.	mr/s.	
1	Cu.	115	12·5	−11·3	+ 4·3	Cu. changed to Cu.-Nb. later.
3	Ci.	252	1·6	− 1·5	+ 0·5	Ci. increasing to a bank in the west, radiating point [W.S.W. ⊕.
	Fr.-Cu.	148	17·0	− 9·0	+14·5	
7	St.-Cu.	142	5·0	− 3·1	+ 3·9	Thin sheet of fused St.-Cu., opening occasionally.
13	St.-Cu.	208	2·5	+ 1·2	+ 2·2	Heavy St.-Cu. sheet.
14	St.-Cu.	230	5·0	+ 3·8	+ 3·2	
15	St.-Cuf.	210	12·0	+ 6·0	+10·4	St. in large, indefinite, and somewhat cumuliform masses.
16	St.-Cuf.	189	25·0	+ 8·2	+23·7	Cloud low in altitude.
17	Ci.-Cu.	206	5·4	+ 2·4	+ 4·9	Ci.-Cu. to A.-Cu. inclined to mass in lenticular sheets.
21	A.-Cu.	210	5·0	+ 2·5	+ 4·3	A.-Cu. alternately fusing into sheets and opening up again.
22	Ci.-St.	214	2·4	+ 1·3	+ 2·0	Ci. to Ci.-St. sheets, with ⊕.
27	St.-Cu.	268	4·5	+ 4·5	+ 0·1	A.-Cu. to St.-Cu. in large sheets.
28	Cu.	300	3·9	+ 3·4	− 2·0	Cirro-nebula above, with ⊕.
29	Ci. to Ci.-Cu.	273	2·0	+ 2·0	− 0·1	Patches of Ci. to Ci.-Cu.; really the "speckle cloud" type.

12. Aurora.

Day.	a.m. or p.m.	Moon.	Magnetic Character.		Aurora Observations.	
			Eskdalemuir.	Richmond.	Station.	Remarks.
3	...	☾	...	...	...	
10	...	●	...	...	...	
16	p.	...	2, 2	2, 2	Clacton	24 h.
					Rothesay	Grand display.
17	p.	☽	2, 2	2, 1	Donaghadee	
					Holyhead	
18	p.	...	2, 2	1, 1	Eskdalemuir	Slight glow.
25	...	○	..	...	...	

Note —The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at the midnight of the night in question.

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*

Eighth Year.—No. 6. JUNE 1918.] Units based on the C.G.S. System. [*Price* 1*s.*

1. SUNSHINE AND SOLAR RADIATION.

Day.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W.							RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W.					ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W.							CAHIRCIVEEN.	
	Bright Sunshine.*		Radiation received on Horizontal Surface by Callendar Radiograph.					Bright Sunshine.*		Radiation at Noon by Ångström Pyrheliometer.			Bright Sunshine.*		Radiation by Ångström Pyrheliometer.					Bright Sunshine.*	
	Total.	Per cent. of Possible.	Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Maximum. For Day. Time.	Maximum. 11.30 h. to 12.30 h.	Total.	Per cent. of Possible.	Intensity.	Vertical Component.	Sky.	Total.	Per cent. of Possible.	Time.	Sky.	$\frac{p}{p_0}$ sec Z.	Intensity.	Total.	Per cent. of Possible.	
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%	
1	10·3	64	1710	43	68	13 23	66	11·7	72	54	47	Hazy	x13·3	78	12 10	Haze	1·20	72	x14·8	91	1
2	?13·2	81	? 1880	47	72	12 35	71	12·8	79	...	...	...	12·6	74	...	...	...	...	14·7	90	2
3	10·4	64	1660	41	76	10 57	61	10·7	66	...	...	...	7·8	46	...	...	...	...	x14·8	90	3
4	2·9	18	1050	26	62	14 40	49	2·5	15	...	...	...	10·9	64	12 10	Clear	1·19	83	13·5	82	4
5	9·1	55	? 1426	35	69	12 20	69	7·0	43	...	...	...	12·2	71	...	...	...	...	3·0	18	5
6	12·7	77	? 2090	51	71	11 25	70	13·1	80	66	58	Hazy	10·9	64	...	...	...	...	0·0	0	6
7	0·0	0	640	16	45	12 30	45	0·1	1	...	...	...	10·6	62	...	...	...	...	10·5	64	7
8	9·5	58	1900	47	77	12 30	77	9·4	57	57	50	Ci.	4·4	26	...	...	...	...	2·9	18	8
9	5·3	32	1160	28	65	10 45	49	5·0	30	...	...	...	0·5	3	...	...	...	...	8·0	48	9
10	6·9	42	1410	35	x 95	11 0	83	7·3	44	...	...	...	5·2	30	...	...	...	...	9·7	58	10
11	9·0	55	1830	45	77	12 53	74	10·0	61	53	47	Hazy	4·6	27	...	...	...	...	1·5	9	11
12	9·2	56	1840	45	75	12 20	75	10·0	61	51	45	Hazy	0·0	0	...	...	...	...	0·2	1	12
13	3·5	21	1040	25	62	9 12	42	2·1	13	...	...	...	3·0	17	...	...	...	...	2·3	14	13
14	1·0	6	n 580	14	n 43	7 19	29	1·1	7	...	...	...	10·0	58	...	...	...	...	6·3	38	14
15	12·8	8	2050	50	94	11 3	x 91	13·5	82	...	...	...	8·1	47	...	...	...	...	12·0	72	15
16	7·7	47	1560	38	88	11 28	86	9·3	56	...	...	...	1·7	10	...	...	...	...	9·4	57	16
17	5·2	31	990	24	77	10 10	4	5·7	34	...	...	...	2·0	11	...	...	...	...	4·6	28	17
18	4·8	29	1430	35	78	10 28	58	4·4	27	...	...	...	0·3	2	...	...	...	...	0·0	0	18
19	1·6	10	860	21	80	11 10	12	2·5	15	...	...	...	0·1	1	...	...	..	...	5·5	33	19
20	5·0	30	1200	29	73	10 45	59	5·0	30	...	...	...	0·3	2	...	...	...	...	0·3	2	20
21	4·5	27	1670	41	90	12 12	90	7·1	43	80	71	Clear	2·3	13	...	...	...	...	2·6	16	21
22	10·3	62	1940	47	89	13 49	86	9·6	58	69	61	Ci.	10·9	63	...	...	...	...	10·1	61	22
23	12·8	77	1790	43	88	12 19	88	x14·2	86	...	...	...	11·6	67	...	...	...	...	0·0	0	23
24	4·6	28	1080	26	80	13 9	51	4·9	30	...	...	...	11·2	64	...	...	...	...	5·7	34	24
25	8·9	54	1710	42	88	13 35	84	9·4	57	...	...	...	3·0	17	...	...	...	...	6·6	40	25
26	9·9	60	1520	37	71	12 43	58	8·6	52	...	...	...	4·7	27	...	...	...	...	13·4	80	26
27	10·0	60	x 2130	52	85	11 31	85	10·9	66	78	69	Ci.	0·0	0	...	...	...	...	10·1	60	27
28	1·8	11	1100	27	79	13 37	34	0·9	5	...	...	...	0·6	3	...	...	...	...	3·5	21	28
29	x13·5	82	2110	51	77	13 1	72	13·1	79	...	...	...	11·6	67	...	...	...	...	3·4	20	29
30	9·1	55	1480	36	67	14 25	42	10·0	61	...	...	...	11·3	65	...	...	...	...	14·1	85	30
Means	7·53	46	1495	36	75	—	62	7·73	47	—	—	—	6·20	36	—	—	—	—	6·80	42	Means
Normal	6·97	43	1657	—	—	—	—	6·57	40	—	—	—	5·43	32	—	—	—	—	6·27	38	Normal
	←— 5 years —→		3 years					←— 35 years —→					←— 5 years —→						←— 35 years —→		

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M. S. L.:—H = 9·1 m. H_b = 13·7 m. H_a = 26·4 m. Above Ground: h_t = 1·3 m. h_r = 0·56 m. h_a = 13·9 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity. Vapour Pressure.		Humidity. Percentage.		Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount (0–10) and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9h.		21 h.		9 h.	21 h.				
	mb.	mb.	a. 200+	a. 200+	a. 200+	a. 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	a. 200+		
1	1031·2	1031·0	90·8	88·1	95	83	14·3	14·6	71	86	—	0	—	0	3⊙⊙	7⊙⊙	—	79	Fine. ☾. ⊙ *n.* y.	
2	1028·6	1024·6	91·0	89·2	96	83	15·5	13·4	76	73	—	0	—	1	6⊙⊙	0⊙⊙	—	81	☾. ⊙ *n.* Fine y. ⊙	
3	1021·4	1019·5	92·2	89·8	x 97	84	14·9	12·6	68	66	155	3	—	1	0⊙⊙	2⊙⊙	—	81	☾. ⊙ *n.* Fine y. ⊙	
4	1020·6	1022·2	92·0	89·0	94	85	14·8	15·1	68	84	—	0	180	3	0⊙⊙	2⊙⊙	—	81	☾. ⊙ *n.* Fine. ⊙. T *p.*	
5	1023·0	1022·7	89·6	87·8	92	84	14·8	15·0	79	90	160	3	—	1	9⊙⊙	10⊙⊙	—	81	⊙ *n.* o. to c. *a.* and *p.* Fair later.	
6	1021·0	1019·1	88·9	86·9	90	x 86	15·0	15·3	84	97	180	5	260	6	10	10●	3·3	82	Fine, with ⊙ *n.* Dull day. ● *p.*	
7	1024·0	1026·5	88·1	86·3	89	84	10·9	10·6	n 64	70	290	3	—	0	3	8	—	82	o. to c. *n.* and *a.* Fine day.	17848 γ
8	1026·1	1021·1	88·1	88·4	91	83	13·4	15·8	73	91	160	5	180	6	8	10	4·2	81	Fine *n.* o. *a.* d. to ●⁰ *p.* ● *n.*	19° 35′·5
9	1022·7	1026·3	85·4	85·2	89	84	10·2	10·4	71	74	290	12	335	11	8	8	5·0	83	p. *n.* Fair day, with p.	—
10	1028·1	1028·7	87·0	85·8	88	85	12·4	10·5	78	71	325	10	320	5	2	10	0·1	83	Fine *n.* and day. c. to o. later.	
11	1028·5	1028·8	87·2	86·1	90	84	13·5	10·5	84	70	305	4	325	3	10	9	—	79	c. to o. *n.* Fair day. o. later.	—
12	1027·1	1025·6	87·5	86·8	90	85	13·8	15·2	84	97	250	5	255	5	10	10	—	82	o. *n.* *a.* Fair to dull day.	—
13	1024·8	1020·0	87·7	87·8	91	85	14·6	13·8	88	83	245	5	240	10	10	10	0·6	86	d. *n.* o. *a.* Fair to dull day.	68° 7′·9
14	1017·4	1016·7	86·4	83·6	87	83	10·2	9·3	67	73	280	6	290	9	10	7	1·9	82	o. to c. *n.* c. *a.* p. q. *p.*	
15	1014·3	1010·6	84·7	82·4	n 86	n 81	9·3	8·9	68	76	325	9	320	7	7	8	4·4	79	q. p. *n.* and *a.* Fine day, with p. q.	
16	1010·9	1012·8	84·4	84·1	n 86	n 81	10·0	10·3	75	78	355	6	350	9	4	9	4·3	78	c. p. *n.* Fair, with p. day.	
17	1014·3	1010·2	84·0	84·5	88	82	9·5	10·4	73	77	350	5	215	3	8	10	3·2	81	Fair *n.* and day. o. and ● evening.	
18	997·8	999·3	85·7	84·8	87	83	13·1	12·6	90	92	270	7	335	2	8	4	x 17·7	82	● *n.* and *a.* p. or ● to fair *p.*	
19	1009·9	1018·0	86·1	85·2	88	84	12·6	11·6	84	82	330	7	325	2	9	3	—	82	Fair to o. Fine evening.	
20	1016·2	1018·5	86·8	85·7	89	85	14·9	12·7	95	87	245	9	295	5	10	10	0·8	81	Fine to o. p. *n.* o. d. during day.	
21	1016·2	1020·1	86·4	86·0	89	85	15·1	12·5	99	84	245	10	280	9	10	10	7·9	85	p. to ● *n.* and *a.* b. to c. and o. *p.*	
22	1021·3	1026·0	87·3	84·4	88	83	11·3	9·8	70	73	300	7	330	4	4	6	0·1	84	o. *n.* Fine *a.* and *p.*	
23	1028·1	1025·0	86·5	85·5	88	82	11·3	13·9	73	96	—	1	—	0	9	10	1·1	n 77	Fair *n.* Dull day. p. evening.	17862 γ
24	1022·0	1021·0	86·5	85·8	89	85	15·1	12·7	98	87	335	6	330	3	10	8	0·5	85	o. d. *n.* and *a.* Fine day.	19° 38′·5
25	1018·6	1019·8	85·3	85·7	91	84	10·9	10·8	77	74	70	5	55	2	10	3	—	83	Fine. ⊕ mock-sun and sun-pillar *p.*	68° 5′·0
26	1022·7	1022·3	85·4	84·5	88	82	9·1	10·7	n 64	79	50	5	350	6	2	5	—	79	Fine. Faint mock-sun *p.*	
27	1021·1	1018·9	86·8	86·6	89	83	11·7	13·3	75	86	290	4	245	4	4	10	0·6	80	Fine, with ⊕ *a.* p. evening.	
28	1019·2	1021·8	86·1	86·0	89	84	12·3	12·2	82	82	330	4	330	3	8	9	0·7	82	d. p. *n.* and *a.* Fair day.	
29	1023·6	1023·7	88·4	88·7	91	82	13·7	14·0	79	79	—	0	—	1	7	9	—	79	Fine *n.* and *a.* Fair day.	
30	1023·1	1022·5	91·6	88·8	93	84	15·5	14·4	73	81	—	0	320	2	2	5	—	79	Fine and calm.	17855 γ
Means	1020·8	1020·8	87·5	86·3	89·9	83·6	12·8	12·4	78	81		4·9		4·1	6·7	7·4	56·4	81·3	Monthly Totals or Means.	19° 37′·0
Normal	1014·5	1014·7	87·2	86·3	89·8	83·7	13·2	13·0	80	84		4·7		4·1	—	—	90·5	—	Normals.	68° 6′·4
	←— 45 years —→						←— 30 years —→				←— 35 years —→						45 yrs.			

* By Campbell-Stokes Sunshine Recorder.

x denotes the maximum and *n* the minimum value in the column.

Wt. 37652/515—400—5/19.—N. & Co., Ltd. Gp. XV.

3. METEOROLOGY:—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H = 5·5 m. Barometer, H_b = 10·4 m. Cups of Anemometer, H_a = 25 m.
Heights above Ground:—Thermometers, h_t = 3·0 m. Rain-gauge, h_r = 0·53 m. Cups of Anemometer, h_a = 20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	Remarks.
							Vapour Pressure.		Percentage.										
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
			a.	*a.*	*a.*	*a.*									Tenths of Sky covered.				
	mb.	mb.	200+	200+	200+	200+	millibar.		%	%	°	m/s.	°	m/s.			mm.	*a.* 200+	
1	1031·4	1029·8	90·7	90·5	*x* 98	84	12·7	14·9	63	75	101	2	—	1	? 0 ∞	0 ∞	—	79	Fine. ∞⁰.
2	1029·0	1023·1	91·2	93·9	*x* 98	82	10·9	12·7	53	52	—	1	326	2	0 ∞	1 ∞	—	76	Fine. ∞⁰.
3	1023·3	1023·0	89·0	86·8	92	83	11·7	11·0	65	70	79	4	23	3	? 0 ∞	3 ≡⁰	—	77	Fine to c.
4	1024·4	1023·9	85·7	86·8	90	81	8·8	11·3	60	72	23	3	67	2	9	10	—	76	☂ Dull to fine.
5	1024·1	1023·4	86·6	86·0	92	81	9·6	9·2	62	62	67	3	101	3	7	1 ∞	—	73	≡ early. Fine to fair.
6	1024·7	1023·7	89·1	88·0	95	79	9·1	10·1	*n* 50	60	—	1	203	2	0 ∞	1	—	*n* 71	Fine. ∞⁰ *a.*
7	1022·9	1023·8	89·0	88·1	92	82	10·4	14·3	58	84	203	4	—	1	10	2 ≡⁰	0·4	76	Dull to fair. Showers.
8	1028·1	1027·6	87·9	88·0	93	82	9·4	12·3	56	73	349	3	—	1	6	1 ∞	—	75	Fine *a.* Fine to fair *p.*
9	1020·9	1014·2	90·1	84·6	92	82	11·4	10·0	59	74	203	5	259	3	9	2	0·7	75	Fine to dull. Showers *p.*
10	1013·5	1020·9	84·5	86·5	91	82	10·0	11·4	74	74	23	6	11	4	10	1 ∞	2·4	80	● early. Dull to fine.
11	1022·6	1023·4	89·1	88·8	95	83	12·0	11·1	66	62	360	3	349	3	? 1 ∞	8	—	77	Fine most of day. ∞.
12	1024·4	1021·9	88·0	89·9	94	83	10·8	12·2	64	64	349	2	293	3	0 ∞	7	—	77	Fine to c. ∞ *a.*
13	1021·9	1018·6	90·7	89·0	95	*x* 86	14·0	13·7	70	76	281	4	247	3	10	1	—	83	Dull to 16 h. 30 m. Fine later.
14	1015·7	1009·6	89·4	85·1	91	84	13·1	12·8	71	91	247	5	247	3	9	10	*x* 8·2	82	Fine early. o. later. ● in *p.*
15	1009·7	1006·9	85·0	83·8	*n* 89	81	8·4	8·7	60	68	270	4	293	2	7	1	—	76	Fine most of day. v. *p.* ☾ 14 h. 35 m.
16	1006·5	1007·4	84·8	83·3	90	79	8·7	10·2	63	82	281	3	203	2	6	1	3·4	72	⊕ 8 h. 50 m. ▲ p. 11 h. 45 m. ☈ 16 h. Dull
17	1008·7	1010·9	86·0	84·2	*n* 89	*n* 78	10·1	10·7	68	81	—	1	45	4	4 ∞	9 ☾<	0·5	72	☂ Fine to dull. ☈ 21 h. [to fine.
18	1009·3	1004·6	86·4	84·1	*n* 89	81	9·1	11·9	60	91	214	5	169	4	9	10●	4·2	74	Fine early. Dull later. ● 19 h.–24 h.
19	1002·6	1009·8	87·3	87·3	91	84	14·1	13·8	87	85	124	2	—	1	10	10	7·8	83	Dull, with showers. ●² 17 h.
20	1013·9	1012·2	89·0	87·5	92	*x* 86	13·0	15·2	72	93	304	2	247	4	3 ∞	10	0·4	84	Fine to dull. ∞ *a.* ●⁰ 17 h. 5 m.–20 m.
21	1015·1	1012·8	88·3	88·1	92	85	10·7	14·3	62	84	293	5	259	5	7	8	—	83	Fine to 13 h. Dull later. v. *a.*
22	1013·3	1017·7	87·5	86·1	91	83	9·5	7·7	58	51	281	7	304	5	7	5	—	81	Fine to fair.
23	1021·6	1021·9	86·2	86·2	91	81	9·0	8·8	60	59	315	8	337	2	4	1	—	76	Fine. v. *p.*
24	1015·6	1016·0	84·9	84·7	90	81	12·1	10·4	88	76	270	3	—	1	10	4 ≡⁰	0·8	73	Dull *a.* ● 8 h.–11 h. 35 m. Fine *p.*
25	1015·6	1015·5	86·4	83·0	90	80	9·9	8·2	65	67	281	2	349	3	7	2	—	73	Fine to fair. v. *p.*
26	1017·7	1015·5	86·4	87·9	91	79	8·8	11·6	58	69	326	3	259	2	8	7	—	74	Fine to fair.
27	1015·6	1015·5	86·3	89·1	92	81	9·3	12·9	61	71	304	5	—	1	4	9	—	75	Fine to 14 h. 30 m. c. later. v.
28	1016·8	1018·9	88·7	88·9	92	85	12·9	13·8	73	77	293	2	—	1	9	10 ≡⁰	0·7	81	Fair to dull. ● 17 h.–17 h. 35 m.
29	1023·1	1023·9	88·7	88·6	95	84	12·1	12·0	68	68	34	4	90	2	5 ≡⁰	0 ∞	—	78	Fine. ∞.
30	1021·9	1017·7	91·0	91·6	97	81	11·5	14·8	56	70	—	1	—	1	0 ∞	? 1 ∞	—	75	Fine to 15 h. c later. ∞.
Means	1018·5	1017·8	87·8	87·2	92·3	82·1	10·8	11·7	64	73		3·4		2·5	5·7	4·5	29·5	76·9	Monthly Totals or Means.
Normal	1015·3	1015·3	88·3	87·6	92·8	83·4	12·3	12·5	71	75		3·6		2·7	—	—	55·6	—	Normals.
			45 years				30 years				35 years						45 years		

4. METEOROLOGY:—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3 12′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H = 242 m. Barometer, H_b = 237·3 m. Vane of Anemometer, H_a = 250 m.
Heights above Ground:—Thermometers, h_t = 0·9 m. Rain-gauge, h_r = 0·38 m. Vane of Anemometer, h_a = 15 m.

																			Remarks.
1	1004·5	1003·4	92·2	87·7	*x* 97	76	9·0	10·8	*n* 41	65	315	3	293	5	0	5 ∞	—	72	☂ early. b. to o. y.
2	1000·6	997·2	92·0	86·1	96	78	10·1	10·5	47	70	293	6	326	2	1	5	—	76	Fine day, with ∞. y.
3	997·9	997·3	84·4	81·5	90	79	11·1	9·1	83	82	45	3	23	3	10 ≡⁰	2	—	78	o. ≡⁰ ☂ *a.* v. y. later.
4	997·8	996·7	86·1	84·0	93	75	8·6	10·9	57	84	—	1	—	1	0	0 ∞	—	72	☂ *a.* b. to c. ∞ *p.*
5	995·5	994·5	89·1	86·0	94	79	12·5	12·0	69	81	135	2	—	1	0 ∞	1 ∞	—	76	≡☂ early. Fine day.
6	994·2	989·7	87·3	86·4	92	77	13·1	13·8	81	90	203	5	214	9	2 ≡⁰	10 ≡⁰	1·4	74	≡⁰☂ *a.* b. to o. e.
7	990·7	995·7	85·6	79·9	88	77	9·3	7·9	64	80	293	7	—	1	5	1	*x* 11·1	81	≡⁰●² early. Clear later. y.
8	998·6	997·4	84·0	80·2	87	76	8·7	9·0	67	89	236	5	—	0	10	3	—	74	o. to c. ☂ *a.* v. y.
9	983·3	982·5	82·8	81·7	*n* 84	77	11·1	9·4	92	84	169	7	34	3	10 ≡⁰	9	3·2	? 75	c. to o. ● *a.* and *p.*
10	992·4	994·4	83·8	83·8	91	77	9·1	8·0	71	62	34	5	293	4	9	3	—	73	c. to o. *a.* bc. *p.* Fine *n.*
11	996·1	996·8	84·5	80·6	88	77	10·1	8·0	75	77	270	4	281	3	10	4	—	74	b. to o. y. Fine *n.*
12	994·1	990·7	81·9	84·8	85	75	9·4	11·8	83	86	225	7	247	6	10●	10	1·8	71	Fair to o. *a.* ●⁰ *p.* o. ≡⁰ later.
13	989·3	978·8	84·0	85·4	89	81	11·2	12·4	86	87	214	6	236	14	10	10● ≡⁰	1·0	82	o. to fair. ●⁰ *a.* and *p.* e.
14	981·0	977·3	83·7	79·5	86	76	8·1	7·0	63	72	270	12	259	7	2	5	0·7	78	Fair with *p.* at times. ▲ about 15 h.
15	975·4	975·2	81·3	78·7	85	77	7·6	7·5	69	82	281	8	281	5	7	7	6·1	74	● and ▲ squalls at times.
16	975·7	979·3	81·2	81·5	87	76	8·9	10·2	83	92	349	4	—	1	10●	10 ≡⁰	*x* 11·1	73	Fair to o. v. y. ●² 20 h. 45 m.
17	982·4	981·7	81·9	82·0	86	78	8·5	10·2	75	89	—	1	—	2	10	6	1·2	78	o. to fair. p. at times. v.
18	977·1	975·8	82·5	82·7	85	78	8·7	9·3	74	78	146	5	79	3	10 ≡⁰	9 ∞	1·6	76	c. to o. ≡⁰ *a.* ●⁰ at times.
19	980·6	984·6	85·0	83·8	88	80	10·3	11·8	74	92	67	2	293	2	10 ∞	10● ≡⁰	1·8	78	o. to c. ≡⁰ *a.* g. *p.* ● began 20 h. 20 m.
20	982·6	981·1	83·0	82·9	86	80	8·5	9·8	70	81	203	6	270	5	10	9	2·1	77	o., with ● and ≡⁰ at times.
21	983·5	979·3	82·0	82·8	86	79	8·6	10·5	75	87	225	6	270	9	10	10● ≡⁰	1·2	75	Fine to o. ● from about 13 h.
22	977·4	985·3	80·5	79·6	85	78	8·6	7·9	83	81	281	13	293	12	8	2	3·8	79	o. to c., with ● and ▲. Mock sun 9 h.
23	992·8	992·1	84·6	80·7	88	78	7·9	8·4	58	80	315	8	270	3	4	7	—	75	Fine to c., with v. y.
24	987·2	988·0	82·8	81·4	87	77	7·6	7·6	63	69	349	7	360	3	6	4	—	75	c. most of day. v. y.
25	987·9	988·7	81·5	80·3	86	*n* 73	7·0	8·7	63	85	11	3	34	2	10	4	0·2	*n* 70	b. to o., with v. ●⁰ 14 h. 45 m
26	989·2	986·3	84·0	81·8	89	77	8·3	8·2	64	73	304	3	304	7	4	7	0·1	75	o. generally. y.
27	984·8	985·0	85·1	84·2	86	81	10·9	11·4	78	86	270	6	259	4	9	10	0·9	80	o., with ●⁰ between 10 h. and 18 h.
28	988·1	992·5	86·1	85·5	88	*x* 82	11·4	12·8	76	89	23	2	—	1	9	4	—	81	o. most of day. Fine *n.*
29	995·1	995·5	87·5	85·6	92	78	11·5	12·6	70	87	247	4	304	3	5 ≡⁰:	2	—	74	Fine. ☂≡ early. ≡⁰ 7 h. y. *p.*
30	993·6	991·9	90·8	84·3	93	79	14·3	8·9	71	67	203	3	—	1	6 ≡⁰:	2	—	77	Fair to fine. ≡⁰ *a.* v. y. *p.*
Means	989·0	988·5	84·7	82·8	88·5	77·7	9·7	9·9	71	81		5·1		4·1	6·9	5·7	49·3	75·8	Monthly Totals or Means.
Normal 1911-15	986·7	986·9	85·5	83·5	89·1	79·6	11·1	10·8	77	84		5·3		3·6	—	—	80·2	—	Normals.

Temperatures at or below the normal freezing point of water are printed in small type.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Magnetic Force. Horizontal Comp't. Mean Time.	Horizontal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination. North.	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 2·49. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +	Charge per cc. ×10¹⁶. −	Air-Earth Current ×10¹⁶.
													About 15 h.				About 15 h.		About 15 h.
	a.	a.																	
	200+	200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′			v/m.	v/m.	v/m.	v/m.	Coulomb.		Amp/cm².
1	88·4	84·9	241	242	...	...	...	...	...	...	0	0	105	185	185	245	...	...	...
2	88·9	85·0	240	...	...	...	...	...	...	...	0	0	200	290	135	75	...	...	...
3	89·4	85·1	239	...	...	...	...	...	...	...	0	0	170	395	320	380	0·52	0·07	1·65
4	88·7	85·2	237	...	...	...	...	...	...	...	0	0	490	425	410	395	0·62	0·47	1·60
5	87·9	85·4	236	...	...	...	...	...	...	...	0	0	245	580	350	290	0·56	0·04	0·80
6	87·6	85·5	234	...	11 10	18407	14 23	15 1·0	...	...	0	0	335	230	90	155	0·37	0·39	0·35
7	88·1	85·5	233	...	...	...	...	...	14 27	66 57·7	0	0	90	120	75	215	...	...	...
8	87·6	85·6	231	...	...	...	...	...	...	...	0	0	120	275	170	185	...	...	...
9	88·0	85·6	230	...	...	...	...	...	...	...	2	1	155	170	75	260	...	...	...
10	87·2	85·6	230	...	...	...	...	...	...	...	2	1	−15	520	335	365	0·84	0·26	1·85
11	87·4	85·7	229	...	...	...	...	...	...	...	1	0	230	320	215	135	0·26	0·24	0·75
12	87·9	85·6	229	...	...	...	...	...	...	...	1	0	135	230	200	245	0·43	0·13	0·40
13	88·9	85·7	229	...	...	...	...	...	14 42	66 56·5	1	0	275	335	245	245	0·30	0·26	1·25
14	88·6	85·7	229	...	11 8	18376	14 26	14 56·8	...	...	1	1	120	215	245	245	...	...	...
15	87·4	85·8	228	...	...	...	...	...	...	...	1	1	350	245	245	260	...	...	...
16	87·1	85·8	227	...	...	...	...	...	...	...	1	1	215	275	z	245	...	...	...
17	86·8	85·9	226	...	...	...	...	...	...	...	1	1	275	305	200	z±	0·45	0·07	1·05
18	86·9	85·9	224	...	...	...	...	...	...	...	0	1	245	245	200	−365	1·20	1·48	1·60
19	86·8	85·8	223	...	...	...	...	...	...	...	0	1	90	365	335	275	...	...	...
20	87·7	85·7	221	...	11 11	18429	14 41	14 55·0	14 33	66 57·9	0	0	200	275	120	185	...	...	...
21	88·0	85·8	220	...	...	..	...	...	...	...	1	0	230	245	...	200	...	...	...
22	88·0	85·8	218	...	...	...	...	...	...	...	0	0	200	215	120	215	...	...	...
23	87·3	85·7	217	...	...	...	...	...	...	...	0	0	155	170	105	185	...	...	...
24	87·0	85·8	216	...	...	...	...	...	...	...	0	1	260	215	170	260	0·60	0·28	0·80
25	86·6	85·9	216	216	...	...	...	...	...	...	0	1	295	290	105	90	0·17	0·30	0·50
26	86·8	85·8	216	...	...	...	...	...	...	...	1	0	105	245	170	215	0·24	0·00	1·05
27	87·0	85·8	217	...	11 5	18404	14 24	14 56·2	14 35	66 58·0	0	0	200	245	200	185	0·71	0·60	1·00
28	87·9	85·8	217	...	...	...	...	...	...	...	0	1	230	320	135	135	0·75	0·41	0·85
29	88·1	85·8	217	...	...	...	...	...	...	...	0	0	320	395	200	335	...	...	...
30	88·7	85·9	217	...	...	...	...	...	...	...	0	0	215	245	120	105	...	...	...
M.	87·8	85·6	226	—	—	—	—	—	—	—	—	—	204*	287*	195*	204*	—	—	—
	88·1	85·6																	
	←12 years→																		

* Mean of 27 days only.

6. GEOPHYSICS :—ESKDALEMUIR.

Day.	Magnetic Force. North Component. Maximum. 15000 γ+. h m	γ	Minimum. 15000 γ+. γ	h m	West Component. Maximum. 4000 γ+. h m	γ	Minimum. 4000 γ+. γ	h m	Vertical Component. Maximum. 44000 γ+. h m	γ	Minimum. 44000 γ+. γ	h m	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre.* Factor 6·19. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +	Charge per cc. ×10¹⁶. −	Air-Earth Current ×10¹⁶.
															About 15 h.				About 15 h.		About 15 h.
	h m	γ	γ	h m	h m	γ	γ	h m	h m	γ	γ	h m			v/m.	v/m.	v/m.	v/m.	Coulomb.		Amp/cm².
1	19 27	1007	940	10 46	{14 1 / 14 18}	955	885	8 39	18 40	1070	1033	13 10	0	0 a	270	190	205	225	...	...	...
2	19 17	1010	956	12 10	14 9	968	891	{8 34 / 8 39}	19 40	1064	1036	11 35	0	0 a	155	135	185	485	...	...	...
3	20 9	1008	953	10 55	{15 16 / 15 33}	955	899	8 53	{4 37 / 21 3}	1061	1037	12 32	0	0 a	325	140	225	625	...	...	...
4	21 20	1017	967	11 8	13 19	970	901	6 31	20 50	1059	1026	12 15	0	0 a	140	85	140	350	...	...	...
5	18 4	1035	950	12 12	13 44	978	894	7 7	19 7	1063	1033	11 35	0	1 b	185	240	745	290	...	...	...
6	17 16	1021	934	11 35	13 4	986	892	9 13	18 0	1066	1030	12 5	1	1 b	340	215	150	235	...	...	...
7	17 26	1021	939	11 38	13 48	974	886	8 24	18 55	1066	1036	11 58	1	1 b	−120	205	140	450	...	...	...
8	18 35	1024	919	11 50	12 39	978	895	8 9	17 25	1060	1036	12 45	0	0 a	200	155	120	235	...	...	...
9	23 35	1079	948	22 27	19 26	987	n 848	23 56	19 58	1093	1012	24 0	2	1 b	135	35	155	140	...	...	...
10	{13 32 / 13 37}	1075	n 838	9 50	14 45	x 998	891	0 48	13 30	x 1233	n 905	2 22	2	1 a	250	150	215	325	...	...	...
11	20 55	1016	904	2 43	15 10	971	873	8 45	16 10	1084	1034	2 55	1	0 a	220	105	190	200	...	...	...
12	17 57	1069	884	4 16	20 32	973	864	{6 51 / 7 17}	18 25	1097	940	4 33	2	0 a	185	155	70	120	...	...	...
13	18 33	1020	926	2 6	16 17	952	880	0 40	20 25	1079	997	2 37	1	1 a	115	100	220	85	...	...	...
14	23 43	1004	908	11 9	15 25	966	871	3 30	16 6	1089	1013	4 6	1	1 b	85	170	90	240	...	...	...
15	? 19 44	?x 1088	920	11 19	19 21	982	877	8 30	17 55	1085	1019	23 31	2	2 c	−30	170	320	215	...	...	...
16	19 0	1035	922	4 56	15 49	965	870	3 7	19 30	1079	994	2 3	1	2 b	350	−150	355	−250	...	...	...
17	19 12	1077	935	11 52	14 41	964	877	7 27	19 5	1078	1011	0 29	1	1 b	90	115	70	150	...	...	...
18	{19 57 / 20 3}	1027	937	8 52	{14 20 / 15 9}	951	877	7 25	19 28	1068	1039	11 48	0	1 a	300	225	135	215	...	...	...
19	0 24	1011	952	10 15	{17 50 / 18 10}	945	886	6 16	17 39	1066	1042	1 15	0	1 b	375	255	150	5	...	...	..
20	23 39	1033	951	12 30	13 47	951	885	7 25	19 2	1068	1036	11 40	0	1 a	190	85	140	235	...	...	...
21	17 58	1045	940	11 3	17 58	976	868	8 26	19 40	1074	1026	12 37	1	1 a	250	165	70	135	...	...	...
22	18 5	1008	946	9 10	14 29	948	886	7 50	19 20	1062	1050	12 0	0	1 c	135	z−	1440	180	...	...	...
23	{4 27 / 4 56}	998	944	10 57	14 14	966	891	5 49	17 45	1063	1034	11 30	0	0 a	140	135	140	290	...	...	...
24	17 53	1010	946	11 12	{12 56 / 15 0}	960	898	6 15	17 0	1073	1037	11 32	0	1 a	105	235	140	180	...	...	...
25	17 45	1018	955	11 0	14 7	961	892	6 35	4 10	1063	1029	12 20	0	1 b	190	180	−535	220	...	...	...
26	18 29	1048	952	10 41	16 5	983	877	8 30	19 0	1088	1030	11 15	1	0 a	325	205	200	275	...	...	...
27	17 53	1016	933	11 0	14 59	956	873	7 24	19 20	1067	1041	0 8	0	1 a	180	115	130	120	...	...	...
28	22 50	1012	946	11 31	15 4	960	884	8 3	20 20	1064	1042	11 26	0	0 a	150	115	120	140	...	...	...
29	19 6	1024	958	11 25	15 21	957	893	{7 43 / 7 49}	{4 15 / 4 45}	1064	1037	12 50	0	0 a	290	205	180	385	...	...	...
30	20 8	1008	946	{11 43 / 11 57}	13 13	958	892	{7 52 / 8 35}	19 50	1067	1038	12 15	0	0 a	325	140	140	235	...	...	...
M.	—	1029	935	—	—	966	883	—	—	1077	1022	—	—	—	197†	147†	159†	226†	—	—	—

† Mean of 29 days.

* The potential gradient is reckoned positive if the potential increases upwards.
x denotes the maximum and *n* the minimum value in the column.

z – Indeterminate, − negative value.

7. JERSEY (ST LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M. S. L. :—H = 54 m. H_b = 55 m. Above Ground :—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level.				Air Temperature in Degrees Absolute.						Min. Temp. on Grass.	Percentage of Humidity.				Rain 0 h. to 24 h.	REMARKS.
	7 h.	14 h.	21 h.	Mean of 3 Readings.	7 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.		7 h.	14 h.	21 h.	Mean.		
	mb.	mb.	mb.	mb.	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	%	%	%	%	mm.	
1	1024·5	1024·3	1023·7	1024·2	89·0	94·0	87·8	94·2	85·0	90·0	82·6	78	49	69	65	—	Fine.
2	1023·0	1021·1	1019·0	1021·0	89·3	94·8	87·0	95·4	85·0	90·3	80·8	62	*n* 34	67	54	—	Fine.
3	1017·0	1015·4	1015·4	1015·9	89·4	96·3	86·2	*x* 97·0	85·0	90·8	77·3	55	43	82	60	—	∞ 7 h. Fine.
4	1016·7	1016·7	1016·6	1016·7	86·0	88·7	84·4	92·6	83·7	87·1	81·4	71	60	77	69	—	Fine.
5	1016·5	1016·6	1017·0	1016·7	85·7	90·5	85·3	93·0	83·3	87·6	79·9	80	61	76	72	—	Fine.
6	1018·5	1018·6	1019·1	1018·7	87·2	91·7	85·3	92·9	82·7	88·0	78·9	65	41	77	61	—	Fair.
7	1019·1	1019·9	1020·2	1019·8	87·2	89·0	87·3	90·0	83·1	87·3	76·7	68	75	88	77	—	●0 18 h.
8	1022·3	1022·9	1022·7	1022·6	86·9	91·3	85·9	91·7	83·3	87·8	79·6	77	59	66	67	—	Fine.
9	1018·6	1016·9	1014·9	1016·7	87·0	87·0	84·6	89·9	83·0	86·3	76·1	85	77	76	79	—	●0 at intervals *p*.
10	1009·4	1011·7	1015·1	1012·1	83·6	87·1	85·8	88·5	82·5	85·5	80·9	83	66	82	77	2·2	● 1 h.–7 h.
11	1018·1	1018·3	1018·6	1018·3	86·0	89·2	87·6	90·9	84·4	87·6	81·5	87	60	66	71	—	
12	1019·0	1020·2	1019·9	1019·7	87·2	90·4	85·5	91·3	85·0	87·9	81·6	75	49	80	68	—	
13	1019·4	1019·3	1018·6	1019·1	86·1	90·2	86·4	92·0	83·9	87·7	78·9	91	78	96	88	—	
14	1015·9	1013·4	1009·3	1012·9	86·2	90·0	86·0	90·4	84·9	87·5	82·8	89	67	98	85	1·1	● early. ● 20 h. 40 m.
15	1008·5	1007·4	1005·3	1007·1	85·0	87·4	83·5	88·4	83·0	85·5	80·0	65	54	73	64	—	
16	1002·9	1003·0	1004·1	1003·4	81·6	88·0	82·6	88·9	*n* 81·0	84·4	73·3	89	50	84	74	2·3	from the West, 6 h. 15 m. ● 6 h. 25 m.
17	1003·9	1005·6	1007·7	1005·8	85·8	87·4	83·8	89·2	81·2	85·5	74·3	67	60	84	70	—	
18	1005·7	1003·3	997·5	1002·2	84·7	87·5	85·8	88·5	81·2	85·5	*n* 72·5	67	71	95	78	*x* 4·0	●0 12 h.–12 h. 45 m. ●2 14 h. 30 m.
19	999·5	1003·6	1007·0	1003·4	85·2	90·0	85·6	90·5	84·5	87·2	82·5	93	59	92	81	2·1	● 1 h. 20 m. -5 h.
20	1011·0	1014·1	1013·8	1013·0	86·6	87·2	86·8	91·2	84·2	87·2	79·9	92	86	93	90	0·2	● 22 h. 30 m.
21	1014·1	1014·6	1014·3	1014·3	86·5	87·1	86·4	*n* 87·7	*x* 85·7	86·7	85·8	96	95	98	96	1·7	● 4 h. 15 m. ≡● 8 h. ≡● 17 h.
22	1015·4	1016·2	1017·3	1016·2	86·2	88·0	85·1	89·7	84·9	86·8	83·2	85	79	89	84	—	
23	1019·8	1021·3	1020·1	1020·3	85·6	87·8	84·2	89·2	83·4	86·0	77·9	66	55	84	68	—	
24	1015·4	1011·3	1012·2	1012·9	84·9	85·8	85·5	88·0	81·8	85·2	74·6	75	98	76	83	2·6	●0 9 h. ● 10 h.–14 h. Fair after 16 h.
25	1012·1	1011·0	1011·0	1011·3	86·0	88·3	85·5	90·0	82·8	86·5	77·1	75	51	72	66	—	
26	1012·7	1012·9	1012·3	1012·7	85·0	88·5	84·0	89·6	82·5	85·9	78·0	72	56	81	70	—	
27	1012·7	1013·5	1013·5	1013·3	86·0	89·3	85·2	90·0	82·2	86·5	75·4	77	57	84	73	—	⊕ 16 h.
28	1013·5	1013·9	1015·0	1014·2	86·6	89·8	85·3	91·4	83·7	87·4	78·1	82	71	90	81	—	
29	1015·9	1016·3	1016·5	1016·2	89·5	94·7	87·5	94·9	83·0	89·9	75·5	74	53	76	68	—	
30	1014·7	1012·2	1011·9	1013·0	88·6	93·7	89·2	94·0	85·6	90·2	82·9	73	48	68	63	—	
Means	1014·5	1014·5	1014·3	1014·5	86·4	89·7	85·7	91·0	83·5	87·4	79·0	77	62	81	74	16·2	
Normal	1010·7	1010·7	1011·0	1010·8	86·7	90·0	86·3	91·2	84·5	87·7	81·4	83	67	83	78	48·3	

JERSEY (ST LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0–12 on the Beaufort Scale).			Mean.	Sunshine.*		Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming.															Mean Amount.
							Tenths.	Upper.		Lower.		Tenths.	Upper.		Lower.		Tenths.	Upper.		Lower.		
								Type.	Direction.	Type.	Direction.		Type.	Direction.	Type.	Direction.		Type.	Direction.	Type.	Direction.	
	7 h.	14 h.	21 h.		Total.	Per cent. of Possible.	7 h.	7 h.	7 h.	7 h.	7 h.	14 h.	14 h.	14 h.	14 h.	14 h.	21 h.	21 h.	21 h.	21 h.	21 h.	
	Dir. (0–12)	Dir. (0–12)	Dir. (0–12)		hr.	%																
1	ENE 3	ENE 3	NE 2	2·7	15·9	100	0	…	…	…	…	0	…	…	…	…	0	…	…	…	…	0·0
2	ENE 2	ENE 3	NE 2	2·3	15·9	100	0	…	…	…	…	0	…	…	…	…	0	…	…	…	…	0·0
3	E 1	NE 2	ENE 3	2·0	15·9	100	0	…	…	…	…	0	…	…	…	…	0	…	…	…	…	0·0
4	ENE 4	ENE 4	ENE 3	3·7	16·0	100	0	…	…	…	…	0	…	…	…	…	0	…	…	…	…	0·0
5	ENE 4	NNE 4	ENE 3	3·7	15·9	99	2	…	…	Cu.	ENE	0	…	…	…	…	0	…	…	…	…	0·7
6	E 2	NNE 2	NE 2	2·0	16·0	100	0	…	…	…	…	0	…	…	…	…	0	…	…	…	…	0·0
7	SW 1	WSW 2	NW 3	2·0	3·8	24	5	Ci.-Cu.	N	…	…	10	…	…	…	…	10	…	…	…	…	8·3
8	NNE 2	NE 2	ENE 3	2·3	14·9	93	2	Ci.	…	…	…	3	A.-Cu.	N	…	…	0	…	…	…	…	1·7
9	SSW 2	W 3	WNW 3	2·7	8·1	50	8	A.-Cu.	SW	…	…	10	A.-Cu.	WSW	…	…	8	A.-Cu.	W	…	…	8·7
10	WNW 5	N 5	N 4	4·7	4·6	29	10	…	…	Nb.	NW	6	A.-Cu.	NNE	…	…	4	A.-Cu.	NE	…	…	6·7
11	NNE 2	N 4	N 3	3·0	14·3	89	7	A.-Cu.	NNE	Cu.-Nb.	NNE	0	…	…	…	…	6	…	…	…	…	4·3
12	NNE 2	N 3	NW 3	2·7	16·0	99	0	…	…	…	…	1	Ci.	…	…	…	7	Ci.-Cu., A.-Cu.	NW	…	…	2·7
13	NW 2	WSW 3	W 3	2·7	2·4	15	10	…	…	St.-Cu.	NW	7	…	…	Cu.	WNW	10	…	…	…	…	9·0
14	W 3	WSW 4	WSW 4	3·7	2·5	16	10	…	…	…	…	8	…	…	St.-Cu.	WSW	10	…	…	Nb.	…	9·3
15	NW 4	W 4	WNW 3	3·7	15·1	93	4	…	…	Cu.	NW	4	…	…	Cu.	WNW	3	…	…	Cu.	W	3·7
16	SW 2	WNW 2	NW 1	1·7	13·9	85	7	A.-Cu.	W	Nb.	W	3	…	…	Cu.	NW	0	…	…	…	…	3·3
17	N 3	N 3	NW 2	2·7	13·2	82	2	…	…	Cu.	NNW	6	A.-Cu.	NW	Cu.	NW	0	…	…	…	…	2·7
18	WSW 3	SSW 4	SSW 4	3·7	2·8	18	10	…	…	St.-Cu.	W	10	…	…	…	…	10	…	…	Nb.	WSW	10·0
19	WNW 3	NW 3	WNW 3	3·0	11·7	72	7	A.-Cu.	NW	Nb.	WNW	3	…	…	Cu.	NW	2	A.-Cu.	…	…	…	4·0
20	NNW 4	W 4	W 5	4·3	6·9	43	4	Ci., A.-Cu.	N	…	…	10	…	…	Cu.	W	10	…	…	…	…	8·0
21	WNW 4	W 4	WSW 4	4·0	0·0	0	10	…	…	…	…	10	…	…	…	…	10	…	…	Nb.	…	10·0
22	W 4	W 4	WNW 3	3·7	4·9	30	7	…	…	Cu.	WNW	8	A.-Cu.	WNW	Cu.-Nb.	WNW	4	A.-Cu.	WNW	…	…	6·3
23	NNW 4	NNW 3	NW 3	3·3	15·8	98	5	…	…	Cu., Cu.-Nb.	NNW	6	Ci.	W	Cu.	NW	3	Ci., A.-Cu.	…	…	…	4·7
24	WNW 2	SW 3	NNW 3	2·7	3·1	19	9	…	…	Cu.-Nb.	NW	10	…	…	Nb.	…	2	…	…	…	…	7·0
25	NW 2	N 3	NNW 2	2·3	12·6	78	0	…	…	…	…	0	…	…	…	…	10	A.-Cu.	NW	Cu.-Nb.	NNW	3·3
26	ENE 2	N 3	NNE 2	2·3	*x* 16·1	99	3	Ci.	WNW	…	…	4	Ci., A.-Cu.	SW	…	…	0	…	…	…	…	2·3
27	NW 2	WNW 3	WNW 2	2·3	14·2	88	2	…	…	Cu.	NW	3	…	…	Cu.-Nb.	N	4	A.-Cu.	WNW	…	…	3·0
28	NW 2	WSW 3	NNW 2	2·3	8·7	54	7	Ci., Ci.-Cu., A.-Cu.	NNW	Cu.-Nb.	NW	6	…	…	…	…	1	A.-Cu.	…	…	…	4·7
29	N 1	NE 3	ENE 3	2·3	15·6	97	0	…	…	…	…	2	…	…	Cu.	E	0	…	…	…	…	0·7
30	ENE 4	ENE 5	ENE 3	4·0	*x* 16·1	100	0	…	…	…	…	0	…	…	…	…	0	…	…	…	…	0·0
Means	2·7	3·3	2·9	2·9	332·8	68·9	4·4	—	—	—	—	4·3	—	—	—	—	3·8	—	—	—	—	4·2
Normal	3·3	3·7	3·2	3·4	250·5	51·9	6·6	—	—	—	—	5·4	—	—	—	—	5·2	—	—	—	—	5·7

* Actinic rays by Jordan Recorder.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	Ca	lm	...	...	Ca	lm	...	...	1·7	1·1	...	...	Ca	lm	...	3·5	12	15
2	...	Ca	lm	...	...	1·7	1·1	...	...	2·8	1·1	...	...	1·5	0·6	...	3·0	12	45
3	...	Ca	lm	...	...	2·1	0·9	...	...	3·0	1·3	...	...	1·9	...	1·3	7·9	24	0
4	...	Ca	lm	...	...	Ca	lm	...	...	4·0	1·6	...	...	1·7	1·1	...	7·4	0	50
5	...	Ca	lm	...	3·6	...	2·4	...	1·4	...	2·2	...	2·5	...	2·5	...	7·5	10	15
6	5·7	2·4	2·4	...	5·7	...	2·4	...	7·6	...	3·1	...	7·3	...	3·0	...	15·0	16	5
7	5·3	5·3	5·3	...	...	2·1	5·2	...	...	1·0	2·4	...	1·9	...	4·5	...	14·4	1	30
8	...	Ca	lm	...	...	...	1·6	...	2·5	...	2·5	...	3·2	...	2·2	...	8·0	22	45
9	6·9	...	...	...	7·4	...	4·9	...	3·1	...	15·4	...	...	9·5	14·1	...	33·5	17	30
10	...	14·0	5·8	...	...	12·9	2·6	...	...	5·6	...	...	...	3·0	2·0	...	24·3	0	10
11	...	2·5	1·7	...	...	3·6	2·4	...	...	1·7	2·5	...	...	Ca	lm	...	8·2	5	50
12	...	Ca	lm	...	...	1·2	5·8	...	7·1	...	4·7	...	2·9	...	4·3	...	12·2	15	10
13	1·3	...	6·8	...	1·1	...	5·5	...	6·8	...	4·6	...	3·5	...	3·5	...	14·6	16	45
14	...	1·6	8·0	...	...	1·4	7·1	...	3·7	...	5·5	...	...	1·9	9·3	...	17·4	0	50
15	...	2·4	12·3	...	...	2·0	10·3	...	1·7	...	8·3	...	...	...	5·6	...	17·0	2	50
16	...	4·4	6·6	...	...	4·0	6·0	...	...	1·9	4·5	...	...	7·7	1·5	...	11·0	23	25
17	...	6·8	4·6	...	...	4·1	2·7	...	...	3·2	2·2	...	...	0·8	1·8	...	10·3	4	15
18	2·7	...	1·8	...	6·8	...	1·3	...	11·6	...	...	2·3	3·6	...	...	...	13·7	9	15
19	1·1	...	...	1·7	...	3·1	...	4·7	...	4·3	...	...	...	2·7	1·8	...	7·8	23	10
20	...	Ca	lm	...	2·1	...	5·2	...	4·0	...	6·0	...	...	1·7	8·7	...	13·4	11	0
21	...	3·3	7·9	...	2·4	...	3·6	...	4·0	...	6·0	...	...	1·4	7·1	...	15·8	23	40
22	...	...	9·8	...	...	2·8	14·1	...	...	4·4	10·6	...	...	6·4	9·6	...	23·9	5	20
23	...	5·8	8·7	...	...	5·4	8·1	...	...	2·1	5·2	...	3·1	...	4·7	...	15·2	7	10
24	...	1·2	5·8	...	...	4·9	4·9	...	...	4·8	2·0	...	...	5·8	1·2	...	11·2	3	40
25	...	5·8	2·4	...	...	7·9	3·3	...	...	6·1	1·2	...	...	7·9	...	...	11·7	22	55
26	...	6·5	1·3	...	...	6·1	2·5	...	...	3·5	3·5	...	...	1·6	1·6	...	11·9	0	20
27	...	4·7	7·1	...	...	3·3	7·9	...	...	1·5	7·4	...	1·8	...	4·3	...	12·5	12	0
28	...	1·3	6·5	...	...	0·7	3·5	...	...	0·9	2·1	...	...	Ca	lm	...	10·7	0	25
29	...	Ca	lm	...	...	0·6	1·5	...	...	1·4	1·4	...	...	Ca	lm	...	4·1	11	5
30	...	Ca	lm	...	...	1·4	1·4	...	...	3·0	1·3	...	...	2·6	0·5	...	5·1	15	15
S+N & W+E		83·3		106.5		100·4		122·9		110·4		112·0		87·9		96·8			
S−N & W−E		−37·3		103·1		−42·2		113·5		−3·4		107·4		−28·3		94·2			

SCOTLAND N.:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	1·0	...	2·4	...	...	...	6·2	...	...	2·3	5·5	...	...	...	4·9	...	7·9	12
2	...	...	6·9	...	...	...	10·5	...	...	6·4	9·6	...	...	4·9	3·3	...	12·1	14
3	...	3·3	1·4	...	...	2·6	...	...	...	0·9	...	2·1	...	0·6	...	3·2	4·3	6
4	...	...	...	2·6	2·2	...	...	3·2	3·5	...	...	3·5	3·3	...	...	3·3	5·6	11
5	4·1	...	...	2·7	5·7	...	...	3·8	6·0	...	...	6·0	4·2	...	...	4·2	8·5	15
6	4·9	...	...	3·3	5·5	...	...	3·7	9·1	...	...	3·8	5·8	...	...	1·2	9·8	15
7	3·3	...	7·9	...	3·0	...	7·3	...	1·9	...	9·3	...	3·0	...	3·0	...	9·5	15
8	3·0	...	3·0	...	3·8	...	5·7	...	1·0	...	5·1	...	2·3	...	...	0·4	8·2	12
9	4·4	...	...	6·6	7·4	...	...	7·4	4·1	...	...	2·7	2·0	...	...	...	12·1	12
10	...	1·5	7·4	...	...	...	9·5	...	3·6	...	8·8	...	4·2	...	6·2	...	11·5	14
11	...	...	6·9	...	...	...	7·9	...	...	...	9·5	...	...	...	7·2	...	10·2	11
12	1·8	...	1·8	...	6·5	...	1·3	...	2·2	...	11·3	...	...	...	7·5	...	11·8	16
13	1·3	...	6·5	...	4·9	...	4·9	...	7·2	...	...	...	11·4	...	11·4	...	22·6	24
14	...	...	19·0	...	...	...	14·9	...	...	...	8·5	...	...	...	2·6	...	24·9	1
15	...	...	3·6	...	...	2·9	6·9	...	...	3·6	8·8	...	...	1·3	6·5	...	9·5	15
16	...	11·6	4·8	...	...	9·7	4·0	...	...	10·0	4·1	...	...	6·4	2·6	...	12·5	3
17	...	4·9	4·9	...	...	4·7	7·1	...	...	2·9	6·9	...	0·6	...	2·9	...	9·8	11
18	2·0	...	...	...	3·8	...	...	2·6	2·8	...	...	1·1	3·6	...	...	1·5	5·2	12
19	...	Ca	lm	...	1·1	...	...	1·7	1·3	...	...	3·0	1·8	...	...	0·8	4·3	19
20	0·4	...	...	2·0	4·6	...	...	...	7·5	...	...	...	...	2·0	10·0	...	11·5	22
21	...	2·2	10·9	...	...	...	8·5	...	...	2·3	5·5	...	0·3	...	1·6	...	11·8	2
22	...	Ca	lm	...	...	1·8	4·3	...	...	6·4	9·6	...	...	4·6	6·8	...	13·8	11
23	...	6·5	6·5	...	...	7·2	7·2	...	...	5·8	8·7	...	...	2·9	6·9	...	12·1	8
24	...	5·7	3·8	...	...	9·8	6·6	...	...	8·3	8·3	...	...	7·6	7·6	...	13·1	11
25	...	7·4	7·4	...	...	7·4	7·4	...	...	6·5	6·5	...	...	6·9	6·9	...	13·4	11
26	...	6·3	6·3	...	...	3·9	9·4	...	...	2·6	13·1	...	...	5·7	8·5	...	13·4	15
27	...	5·8	5·8	...	...	2·9	4·3	...	...	2·6	3·8	...	...	1·6	1·6	...	9·2	1
28	...	Ca	lm	...	...	2·1	2·1	...	...	3·3	3·3	...	...	2·3	2·3	...	5·2	16
29	1·1	...	1·1	...	2·4	...	5·7	...	...	...	7·2	...	0·8	...	3·8	...	8·2	16
30	1·3	...	6·5	...	4·2	...	6·2	...	2·9	...	14·5	...	...	1·7	8·7	...	16·4	14
S+N & W+E		83·8		142·0		110·1		170·3		117·0		190·1		91·8		137·4		
S−N & W−E		−26·6		107·6		0·1		125·5		−10·8		145·7		−5·2		108·2		

ENGLAND S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	1·8	...	...	4·3	5·0	...	...	5·0	1·9	...	...	4·6	1·3	...	...	3·1	8·5	10	35
2	0·8	...	...	1·9	1·0	...	...	2·3	1·2	...	...	1·2	...	Ca	lm	...	4·8	11	25
3	1·8	...	...	1·8	...	...	...	1·3	0·5	...	...	2·5	1·3	...	...	3·1	6·0	23	45
4	5·6	...	...	5·6	6·8	...	...	6·8	6·2	...	...	6·2	3·0	...	...	3·0	10·8	7	30
5	1·8	...	...	1·8	...	0·8	...	1·9	...	2·7	...	1·1	...	Ca	lm	...	2·5	23	30
6	...	Ca	lm	...	...	2·5	...	0·5	...	1·1	2·7	...	...	1·1	2·7	...	3·1	23	55
7	...	...	5·0	...	...	2·1	...	...	...	1·9	...	0·8	...	1·3	...	...	8·0	8	15
8	...	1·3	...	...	...	1·3	...	...	2·7	...	1·1	...	1·9	...	0·8	...	2·3	24	0
9	5·2	...	3·5	...	...	8·3	8·3	...	...	10·4	10·4	...	...	13·8	5·7	...	22·5	23	50
10	...	15·4	...	...	...	13·5	...	2·7	...	9·2	...	...	...	5·3	...	1·1	21·7	0	10
11	...	6·3	...	...	...	4·6	...	1·9	...	4·2	...	2·8	...	4·2	...	...	10·0	2	10
12	...	2·1	...	...	...	3·8	...	...	...	4·3	1·8	...	...	5·6	3·7	...	7·8	19	5
13	...	3·5	3·5	...	...	4·3	1·8	...	...	3·5	3·5	...	...	4·1	4·1	...	8·6	19	10
14	...	4·7	4·7	...	...	2·4	5·8	...	...	5·8	2·4	...	...	10·1	6·8	...	14·0	21	0
15	...	7·7	5·1	...	...	6·9	4·6	...	...	6·5	6·5	...	...	7·2	7·2	...	14·8	5	30
16	...	2·1	0·4	...	...	1·8	1·2	...	...	4·5	0·9	...	...	4·6	1·9	...	7·9	18	35
17	...	3·5	...	2·3	...	3·5	...	3·5	...	3·8	...	...	...	3·3	...	...	7·7	5	50
18	1·9	...	4·6	...	7·4	...	7·4	...	...	5·3	5·3	...	...	5·3	5·3	...	15·5	10	55
19	...	2·3	2·3	...	...	4·7	4·7	...	...	5·7	1·1	...	...	5·0	2·1	...	9·4	18	30
20	...	7·5	...	...	...	5·4	2·2	...	...	3·7	8·9	...	...	7·1	7·1	...	12·5	22	15
21	...	6·0	9·0	...	...	6·0	9·0	...	...	6·3	9·4	...	...	10·4	10·4	...	17·4	23	45
22	...	8·6	8·6	...	...	8·3	5·6	...	...	5·6	5·6	...	...	7·3	3·0	...	15·6	5	45
23	...	6·3	...	...	...	3·2	...	0·6	...	3·3	...	...	...	2·4	1·6	...	8·7	2	5
24	...	3·0	4·5	...	...	8·9	3·7	...	...	6·2	...	1·2	...	4·6	...	...	12·5	11	0
25	...	0·8	...	...	...	0·8	4·1	...	...	3·5	...	5·2	...	2·4	...	5·8	8·0	15	45
26	...	0·8	...	4·1	...	1·9	...	4·6	...	3·5	...	3·5	...	2·7	...	2·7	7·0	18	55
27	...	3·3	...	3·3	...	2·7	...	2·7	...	6·6	2·7	...	...	2·3	1·0	...	7·3	14	55
28	...	4·8	3·2	...	...	2·3	2·3	...	...	2·7	2·7	...	...	Ca	lm	...	6·5	4	15
29	...	0·7	0·3	...	...	2·3	...	2·3	...	1·9	...	4·6	...	...	...	3·8	6·9	17	10
30	...	...	...	5·8	2·2	...	...	5·4	0·6	...	...	3·2	1·0	...	...	4·9	8·8	10	0
S+N & W+E		109·6		85·6		124·7		102·2		125·3		101·9		118·6		90·9			
S−N & W−E		−71·8		23·8		−79·9		19·2		−99·1		28·1		−101·6		35·9			

ENGLAND E.:—GREAT YARMOUTH.

Height of Head above—Roof 10·7 m., Ground 12·8 m., M.S.L. 15·9 m.
Height of Cups above—Roof 3·7 m., Ground 18·3 m., M.S.L. 22·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust. (Gorleston.)	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	0·5	...	...	2·6	0·4	...	...	2·3	...	...	...	3·3	...	Ca	lm	...	8·4	12	55
2	...	...	...	3·0	...	1·8	1·8	...	...	5·9	...	...	...	Ca	lm	...	13·0	13	35
3	...	2·3	...	...	...	4·8	1·0	...	...	6·2	...	...	...	3·3	...	...	13·2	10	40
4	...	4·6	...	...	...	3·0	...	3·0	...	3·2	...	2·2	...	4·9	...	3·3	9·4	3	20
5	...	Ca	lm	...	...	3·2	...	2·2	...	2·4	...	3·6	...	1·9	...	4·5	7·8	21	55
6	...	Ca	lm	...	0·9	...	...	4·5	2·4	...	...	5·7	1·7	...	...	2·5	9·2	14	15
7	3·3	...	...	...	3·3	...	3·3	...	1·8	...	4·3	...	...	Ca	lm	...	11·6	9	10
8	...	...	2·3	...	...	4·9	...	...	...	3·3	...	3·3	1·3	...	...	3·0	9·5	8	10
9	3·6	...	...	...	7·1	...	...	1·4	4·8	...	...	2·0	1·1	...	2·8	...	14·5	11	5
10	...	Ca	lm	...	...	5·5	...	1·1	...	6·5	...	1·3	...	3·3	1·4	...	12·3	14	30
11	...	3·3	...	...	1·1	...	2·8	...	...	3·3	...	1·4	...	Ca	lm	...	11·5	1	5
12	...	2·0	0·4	...	...	Ca	lm	...	4·7	...	...	3·1	...	0·3	1·6	...	10·8	15	10
13	...	0·6	2·9	...	...	1·5	3·6	...	1·1	...	5·5	...	1·4	...	3·3	...	13·0	18	10
14	1·0	...	4·8	...	...	2·0	4·8	...	1·8	...	4·3	...	1·3	...	3·0	...	11·8	6	55
15	...	1·6	4·0	...	...	...	6·2	...	...	0·8	4·2	...	...	...	2·0	...	14·4	17	45
16	1·0	...	2·4	...	...	...	3·6	...	5·6	...	...	...	2·5	...	2·5	...	16·5	15	20
17	0·8	...	1·8	...	...	5·2	...	...	...	3·6	...	2·4	...	1·3	...	0·9	9·2	10	10
18	...	Ca	lm	...	5·7	...	...	2·4	6·4	...	2·6	...	3·6	...	...	...	16·4	13	0
19	2·8	...	...	2·8	5·3	...	...	5·3	3·0	...	...	3·0	0·9	...	...	2·1	14·2	5	10
20	0·8	...	...	1·8	...	2·4	1·0	...	...	1·3	...	3·0	0·8	...	4·2	...	12·5	16	50
21	...	2·7	4·1	...	...	3·8	2·6	...	...	1·2	...	6·1	1·6	...	4·0	...	13·5	7	30
22	...	...	5·2	...	...	...	8·9	...	...	4·8	11·6	...	...	1·5	7·4	...	22·8	12	20
23	...	1·1	5·5	...	...	5·1	5·1	...	...	4·8	2·0	...	...	Ca	lm	...	18·0	10	15
24	...	...	4·3	...	...	4·4	4·4	...	...	4·7	3·1	...	...	1·7	2·5	...	16·8	14	0
25	...	1·0	2·4	...	...	2·2	1·4	...	...	2·5	...	1·7	...	1·9	1·3	...	11·7	10	25
26	...	2·4	3·6	...	...	3·6	2·4	...	...	1·8	...	1·8	...	Ca	lm	...	13·2	8	20
27	1·3	...	3·0	...	...	2·7	4·1	...	...	2·1	...	0·9	1·1	...	2·8	...	10·2	8	25
28	0·5	...	2·6	...	...	...	3·3	...	...	Ca	lm	...	...	1·5	...	0·6	10·2	12	0
29	...	4·3	...	1·8	...	3·0	...	1·3	...	1·0	...	2·4	1·7	...	...	1·1	8·0	3	30
30	2·2	...	1·4	...	2·5	...	...	1·7	4·7	...	...	3·1	1·3	...	...	0·9	10·0	12	0
S+N & W+E		43·7		62·7		85·4		85·5		95·7		87·9		41·9		57·7			
S−N & W−E		−8·1		38·7		−32·8		35·1		−23·1		−12·7		−1·3		19·9			

9. Seismological Diary.

Earthquakes:—Eskdalemuir.

Day.	Phase.	Time, G.M.T.	Period.	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	Δ.	Remarks.
		h m s	s	μ	μ	μ	km.	
1	L	6 32 to	...	...	...	...	...	
		6 49	...	...	...	...	...	
1	L	9 8 to	...	...	...	...	...	
		9 23	...	...	...	...	...	
1		14 37 to	...	...	...	...	...	Slight disturbance. Preliminary phases very feebly marked. P probably at 14 h. 37 m. 46 s.
		16 30	...	...	...	...	...	
3	P	0 13 7	...	...	...	...	6430	
	S	0 21 6	...	...	...	...	...	
	L	0 30 29	...	...	...	...	...	
	Mn	0 31 41	17	18	...	...	...	
	Me	0 31 52	16	...	19	...	...	
	Me	0 38 6	17	...	17	...	...	
	Mn	0 38 18	17	20	...	...	...	
	F	2 45	...	...	...	...	...	
4	Pe	4 24 10	...	...	...	...	9100	
	S (?)	4 34 27	...	...	...	...	...	
	L	4 50	...	...	...	...	...	
	F	6 15	...	...	...	...	...	
4	Pe	17 31 40	...	...	...	...	...	Well marked group of anti-epicentral long waves of low amplitudes from 19 h. 35 m. to 19 h. 48 m.
	e	17 52 51	...	...	...	...	...	
	eL	18 11	...	...	...	...	...	
	L	18 25	22	...	...	...	...	
	L	18 28	20	...	...	...	...	
	F	20 0	...	...	...	...	...	
5	L	23 33 to	...	...	...	...	...	
		24 9	...	...	...	...	...	
7	P	21 39 27	...	...	...	...	9040	
	S	21 49 40	...	...	...	...	...	
	L	22 6	33	...	...	...	...	
	M	22 16	16	11	...	...	...	
	F	...	...	...	...	...	...	
8		20 45 to	...	...	...	...	...	Slight disturbance.
		21 40	...	...	...	...	...	
10	L	16 27 to	...	...	...	...	...	
		16 39	...	...	...	...	...	
11		12 50 to	...	...	...	...	...	Faint disturbance.
		13 50	...	...	...	...	...	
12		5 0 to	...	...	...	...	...	
		5 15	...	...	...	...	...	Faint disturbance.
13		1 10 to	...	...	...	...	...	
		1 42	...	...	...	...	...	Faint disturbance.
15		0 30 to	...	...	...	...	...	
		0 42	...	...	...	...	...	Faint disturbance.
16		12 46 to	...	...	...	...	...	
		13 30	...	...	...	...	...	Faint disturbance.
21	L	5 0 to	18	...	...	...	...	Long waves on E.-W. instrument.
		5 11	...	...	...	...	...	
24	e	15 15 11	...	...	...	...	...	
	L	15 44	...	...	...	...	...	
	F	17 0	...	...	...	...	...	
27	e	21 50 7	...	...	...	...	...	
	Ln	22 12	18	...	...	...	...	
	F	22 50	...	...	...	...	...	
29	L	5 23	...	...	...	...	...	

Microseisms of N. Component:—Eskdalemuir.

Day.	0 h. A_N.	0 h. T.	6 h. A_N.	6 h. T.	12 h. A_N.	12 h. T.	18 h. A_N.	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	0·3	4	0·2	4	0·4	4·5	0·4	4·5
2	0·3	4	0·4	5	0·5	6	0·6	5
3	0·6	5	0·5	5	0·5	5	0·4	5·5
4	0·4	4·5	0·3	5	0·4	5	...	...
5	0·4	5	0·2	5	0·3	5	0·2	4
6	0·2	5·5	0·5	4	0·3	4·5	0·5	4
7	0·8	5	0·8	4·5	0·8	5	0·9	5
8	0·8	5·5	0·9	6	1·0	6·5	1·6	6·5
9	1·6	6	1·1	6	1·5	5	1·5	6
10	1·0	5	0·8	5	0·8	6	0·9	5
11	0·8	5	1·1	6·5	1·2	6	0·5	6
12	1·2	6	0·9	6·5	1·0	6·5	0·9	6
13	0·7	5	0·7	5	0·9	4·5	0·8	5
14	1·8	5	1·5	5·5	1·5	6	1·6	5
15	1·2	5	1·2	5	1·1	5·5	1·2	5
16	1·2	5	1·1	5	1·1	5	1·2	5
17	0·9	5	0·8	5	0·6	5	0·5	5
18	0·5	5	0·7	5	1·0	4·5	1·1	4
19	1·1	4	0·8	4·5	0·9	4·5	0·6	4·5
20	0·6	4·5	0·2	4·5	0·3	4·5	0·2	4
21	0·5	4	0·5	4	0·4	4·5	0·5	4·5
22	0·6	5	0·9	4·5	1·1	4	1·0	5·5
23	0·8	6	0·8	5	0·9	4·5	0·6	5
24	0·6	5	0·6	4	0·6	4	0·6	4·5
25	0·8	4	0·6	4·5	0·8	5	1·0	4·5
26	0·3	5	0·9	5	0·9	5	0·8	5
27	0·8	4·5	0·8	4	0·7	4	0·4	4·5
28	0·6	4	0·2	4	0·2	4	0·2	4
29	0·2	4	0·1	3·5	0·2	4	0·2	4
30	0·4	5	0·5	5	0·7	5	0·9	5

Means for Month $\begin{cases} A_N = 0·7. \\ T = 4·9. \end{cases}$ Normals, 1911–17 $\begin{cases} A_N = 0·4. \\ T = 4·5. \end{cases}$

Earthquakes:—Richmond (Kew Observatory).

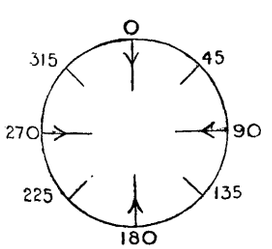
Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h m	h m	
1	...	6 44	Very small.
3	0 20	0 39	Amplitude on trace 1·2 mm.
4	...	18 47	Small.
7	...	22 18	Amplitude on trace 1·2 mm.
10	...	16 43	Very small.
12	...	5 12	Very small.
27	...	22 20	Very small.

10. Soundings with Pilot Balloons.

Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind.														Cloud Observations.		
			Geostrophic.		By Anemometer.		At Heights above M.S.L.												
							500 m.		1000 m.		2000 m.		3000 m.		4000 m.		5000 m.		
			From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	Type.	From N.	mr/s.
		h. m.	°		°		°		°		°		°		°		°			°	
1	Cahirciveen .	7 55	90	8	—	0·0	145	5·5	135	7·0	125	4·1	130	6·5	125	6·0	...	...	A.-St.	...	...
1	,,	16 5	—	—	260	1·8	335	1·5	100	2·7	155	6·0	165	6·0	145	4·8	145	3·7	Ci., Ci.-St.	45	...
1	S. Farnboro' .	6 40	90	6	—	0·0	140	1·0	10	4·0	360	9·0	...	...	...	...	...	...	St.-Cu., St.	360	...
1	Eskdalemuir .	7 10	320	4	135	0·1	310	3·2	330	9·0	335	9·5	315	14·0	...	...	...	...	...	...	...
2	Cahirciveen .	7 45	90	5	—	0·0	165	4·9	200	8·0	165	5·0	180	4·7	215	4·1	150	4·2	Ci.-St., A.-Cu.	135	...
2	,,	16 20	—	—	275	1·0	175	5·5	145	7·0	140	9·0	...	...	...	...	...	...	Cu.	115	...
2	Eskdalemuir .	7 20	320	8	225	0·3	315	3·1	315	12·5	310	10·5	...	...	...	...	...	...	Ci.	330	0·7
3	,,	16 50	140	5	55	5·5	60	4·5	30	5·5	355	6·5	10	9·5	360	8·5	...	...	Ci.	...	...
3	Aberdeen . .	7 30	360	8	340	3·0	350	7·5	350	7·0	355	7·0	...	...	...	...	...	...	St.-Cu.	335	...
3	Cahirciveen .	7 30	—	—	light		150	4·6	160	6·0	145	6·5	125	14·5	...	...	...	...	...	...	...
3	,,	15 35	—	—	155	5·0	145	4·8	140	6·5	160	9·5	...	...	...	...	...	...	...	...	...
3	S. Farnboro' .	6 40	90	6	65	2·0	65	4·0	355	8·0	335	9·0	...	...	...	...	...	...	...	...	...
4	Cahirciveen .	7 25	140	4	—	0·0	145	5·5	155	8·0	155	7·5	140	7·5	160	7·5	160	8·0	A.-St.	...	...
4	,,	15 40	—	—	265	2·7	195	6·0	130	6·0	145	7·0	190	6·5	...	...	...	...	Cu.	135	...
4	Eskdalemuir .	7 20	160	10	115	0·2	60	1·0	350	5·5	10	7·0	10	6·5	5	6·0	5	5·5	Ci.	335	...
5	,,	7 35	160	10	135	0·4	205	1·6	330	4·0	335	6·5	15	5·5	30	5·5	10	5·5	...	...	...
5	S. Farnboro' .	6 35	70	8	—	0·0	45	6·0	45	5·5	40	6·0	25	8·0	25	8·0	20	13·0	St.-Cu.	45	...
5	,,	14 45	70	8	light		55	3·1	55	3·2	360	2·0	25	9·0	...	...	...	...	Fr.-Cu.	...	...
6	,,	6 40	90	6	135	1·0	135	2·2	95	4·0	355	8·5	360	8·5	360	12·5	25	12·0	...	...	...
6	Eskdalemuir .	7 10	230	8	135	1·2	225	4·0	245	6·0	190	5·0	205	1·8	315	1·2	...	...	...	...	...
7	,,	7 30	270	8	290	6·0	285	5·5	285	8·5	265	14·5	...	...	...	...	...	...	Fr.-Cu. Cu.-Nb.	290	6·2
7	S. Farnboro' .	6 50	270	8	205	light	220	10·0	245	9·0	250	6·5	255	4·5	...	...	...	...	Ci.-St., A.-St., A.-Cu.	...	...
8	,,	6 50	320	4	315	light	40	6·0	355	4·0	305	8·0	...	...	...	...	...	...	Ci., Ci.-St., Ci.-Cu.	360	...
8	,,	7 10	320	4	5	1·0	40	6·0	10	4·0	310	8·0	280	11·0	305	16·0	...	...	Ci.-Cu., Ci., Ci.-St.	315	...
8	Aberdeen . .	7 40	270	7	250	1·5	275	5·0	270	5·0	290	9·0	255	10·5	...	...	...	...	Ci.	275	5·0
10	Cahirciveen .	7 30	340	18	340	8·5	335	13·0	330	24·5	355	18·0	...	...	...	...	...	...	A.-Cu., Low Cu.	335	...
10	,,	12 10	340	14	340	6·5	335	13·5	325	12·5	330	14·5	...	...	...	...	...	...	Ci.-Cu., Ci. A.-St., Cu.	360 335	...
12	Aberdeen . .	7 20	230	12	225	3·0	260	7·0	250	6·5	260	17·0	...	...	...	...	...	...	A.-St.	240	...
12	S. Farnboro' .	6 45	20	5	light		5	4·5	340	6·0	330	8·0	340	7·0	350	14·5	...	...	...	...	...
12	Eskdalemuir .	7 10	270	12	225	6·0	240	6·5	255	13·0	265	13·5	270	18·0	...	...	...	...	Fr.-Nb. Ci.-Neb., A.-St.	270 290	...
13	Eskdalemuir .	7 15	270	10	225	5·0	260	7·5	285	10·0	270	20·5	...	...	...	...	...	...	Nb., Fr-Nb. A.-St.	270 315	...
15	Cahirciveen .	8 5	290	14	330	6·5	315	13·5	320	16·5	315	13·5	...	...	...	...	...	...	Cu.	315	...
15	,,	17 0	320	10	335	9·5	320	15·0	320	10·0	310	7·5	315	14·0	...	...	...	...	A.-Cu., Cu.	315	...
15	S. Farnboro' .	6 40	290	10	270	3·5	285	10·0	295	10·0	295	13·0	...	...	...	...	...	...	Cu., Fr.-Cu.	...	...
16	Cahirciveen .	7 30	360	6	5	7·0	5	10·0	5	10·0	5	11·0	...	...	...	...	...	...	Cu., St.-Cu.	360	...
													6000 m.		7000 m.		8000 m.				
1	Cahirciveen .	16 5	(For observations at lower levels, see above.)										120	2·9	90	5·0	65	7·5			
2	,,	7 45											150	4·7	...	...	...	...			
5	S. Farnboro' .	6 35											10	12·0	10	16·0	...	...			
6	,,	6 40											15	14·0	10	15·0	...	...			

Height of Station above M.S.L. = H.
Height of Anemometer above ground = h.

	H.	h.
Aberdeen . . .	14 m.	32 m.
Eskdalemuir . .	242 m.	15 m.
S. Farnborough . .	70 m.	31 m.
Cahirciveen . .	9 m.	13 m.



Wind Protractor.

Notes on Pressure Distribution.

June 1918.

1 7 h., 18 h. Anticyclone centred over the British Isles.
2 7 h., 18 h. Anticyclone over the British Isles.
3 7 h., 18 h. } S.W.–N.E. anticyclonic ridge over the British Isles.
4 7 h., 18 h. }
5 7 h., 13 h. Anticyclone over the British Isles, extending northwards; Low over Iceland.
6 7 h. Anticyclone over the British Isles, centred over the Channel.
7 7 h. High over England and Ireland; Low over Iceland.
8 7 h. Anticyclone over the British Isles; centred over the Bay of Biscay.
10 7 h., 13 h. High centred off W. of Ireland; secondary over the Channel.
12 7 h. Anticyclone extending from the Azores to the British Isles.
13 7 h. Anticyclone centred over the Bay of Biscay; Low extending from Iceland to Scandinavia.
15 7 h., 18 h. } Low over the British Isles, centred over Scandinavia.
16 7 h. }

Notes on Ascents.

1st, 7 h. 10 m. Barometer steady, inclined to rise.
2nd, 7 h. 20 m. Barometer falling slowly.
12th, 7 h. 10 m. Overcast.
13th, 7 h. 15 m. Barometer unsteady; dull.

10. Soundings with Pilot Balloons—*continued.*

Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	m/s.	By Anemometer. From N.	m/s.	At Heights above M.S.L. 500 m. From N.	m/s.	1000 m. From N.	m/s.	2000 m. From N.	m/s.	3000 m. From N.	m/s.	4000 m. From N.	m/s.	5000 m. From N.	m/s.	Cloud Observations. Type.	From N.	mr/s.
		h. m.	°		°		°		°		°		°		°		°			°	
17	S. Farnboro'	6 40	360	6	lig	ht	10	1·6	350	4·0	230	0·7	330	1·8	...	...	...	...	A.-Cu., Cu.	315	...
18	,,	6 30	230	12	lig	ht	230	7·5	215	10·0	210	11·5	...	...	...	...	...	...	Ci.	315	...
																			Ci.-St., A.-Cu.	...	...
19	Cahirciveen	16 50	340	15	345	9·0	330	12·0	345	10·5	330	14·0	315	13·0	...	...	...	...	Cu.-St.	295	...
																			Ci.-Cu.	315	...
20	S. Farnboro'	6 40	320	10	lig	l.t	310	7·0	335	7·5	320	6·0	...	...	...	...	...	...	Ci.	360	...
																			Fr.-St.	...	...
20	Eskdalemuir	7 15	250	10	180	3·0	240	4·5	245	9·5	255	9·0	...	...	...	...	...	...	A.-St.	240	4·9
																			St.	270	...
21	,,	7 10	290	10	250	2·7	290	4·1	285	5·5	305	3·0	300	8·0	...	...	...	...	A.-St., A.-Cu.	295	...
																			St.-Cu.	...	...
21	S. Farnboro'	6 45	320	10	280	4·5	295	9·0	305	14·0	310	13·5	305	19·5	310	25·5	...	...	A.-Cu.	280	...
																			St.-Cu., Fr.-Cu.	...	...
22	,,	6 35	290	16	275	9·0	285	15·0	285	16·0	295	22·5	295	22·0	...	...	...	...	A.-Cu.	295	...
24	Cahirciveen	16 45	360	5	340	7·5	340	15·0	335	10·5	330	15·0	...	...	...	...	...	...	St.-Cu., A.-Cu.	335	...
24	Eskdalemuir	7 20	320	10	340	7·5	335	10·5	340	12·5	355	10·5	340	14·5	...	...	...	...	Cu., Fr.-Cu.	335	...
25	S. Farnboro'	6 30	320	5	315	2·0	320	4·5	315	4·0	305	12·0	295	12·0	310	20·5	300	19·0	A.-Cu., Ci.-Cu.	315	..
25	Cahirciveen	11 50	—	—	55	6·0	80	3·0	40	4·5	340	7·0	...	...	...	...	...	...	St.	360	...
																			A.-Cu, A.-St.	335	..
26	,,	7 20	20	5	55	7·0	30	8·0	360	7·0	350	5·0	360	11·5	335	13·0	360	16·5	St., Cu.	360	...
27	,,	11 20	290	10	345	5·0	310	4·5	305	6·5	325	6·5	290	9·5	300	12·0	...	...	Ci. and Ci.-St.	315	...
																			A.-Cu., Cu.-St.		
27	S. Farnboro'	6 35	320	10	285	4·5	300	10·0	315	9·5	345	8·5	325	13·5	...	...	...	...	Ci.	315	...
28	,,	6 55	290	7	lig	ht	305	6·0	305	7·5	310	6·0	...	...	...	...	...	...	St.-Cu.	...	...
29	,,	7 20	—	—	—	0·0	120	1·6	30	2·6	15	7·0	30	7·5	25	7·5	...	...	Cu.-St.	...	...
29	,,	9 35	—	—	30	2·5	30	2·5	45	2·5	350	3·5	30	8·0	10	11·0	...	...	A.-Cu. & St.	25	...
																			Fr.-St.	...	...
30	Cahirciveen	7 20	90	8	lig	ht	80	4·3	75	4·9	65	7·5	75	3·8	65	7·0	50	8·0	Cu. & St.-Cu.	45	...
																			Ci.	...	...
30	,,	15 50	50	7	360	8·0	40	5·5	90	3·5	5	4·5	40	5·0	20	6·0	35	6·0	Ci.-St., Ci.	...	...
																			Cu.	45	...
													6000 m.		7000 m.		8000 m.				
30	Cahirciveen	7 20	(For observations at lower levels, see above.)										100	5·5	80	5·5	145	5·5			
30	,,	15 50											350	2·8	...	...	...	...			

Notes on Pressure Distribution.

June 1918.
17 7 h. High over the Atlantic, centred near the Azores; Low over Scandinavia.
18 7 h. Low off W. of Ireland; High over the Azores.
19 18 h. Shallow Low over the British Isles; secondary over the Channel.
20 7 h., 21 7 h., 22 7 h. } Anticyclone extending from the Azores to the Bay of Biscay; Low over Iceland region.
24 7 h., 18 h., 25 7 h., 13 h., 27 7 h., 13 h. } Extensive Atlantic anticyclone; Low over Scandinavian peninsula.
28 7 h. Low over Iceland; High over the Bay of Biscay; Low over Scandinavia.
29 7 h., 30 7 h. } Low over Iceland; anticyclone over the British Isles, centred off W. of Ireland.

Notes on Ascents.

21st, 7 h. 10 m. Barometer rising, inclined to be unsteady.
25th, 11 h. 50 m. Drops of rain fell during ascent; overcast.

11. Nephoscope Observations.

Aberdeen. Taken at 13 h. G.M.T.

Day.	Type of Cloud.	Degrees from N.	Velocity-height-ratio. Milliradians per Second.	Components. W.-E.	S.-N.	Remarks.
		°	mr/s.	mr/s.	mr/s.	
1	Ci.	288	1·4	+ 1·3	− 0·4	Ci. to Ci.-St. in patches.
7	Cu.	292	3·6	+ 3·3	− 1·3	Cu. changing into Cu.-Nb.
8	St.-Cu.	257	5·0	+ 4·9	+ 1·2	St.-Cu. formed at apices of Cu.-Nb.
11	Cu.	304	5·0	+ 4·1	− 2·8	Degraded Cu. in sheet. Velocity varying slightly;
12	St.-Cu.	268	6·9	+ 6·9	+ 0·2	[average given.
14	Cu.	276	6·3	+ 6·2	− 0·6	
17	Cu.	295	5·2	+ 4·7	− 2·3	Transitional type, between Cu. and St.-Cu.
18	St.-Cu.	194	6·0	+ 1·4	+ 5·8	
21	St.-Cu.	277	2·3	+ 2·3	− 0·3	Thin sheet of St.-Cu.
24	Cu.-Nb.	334	23·0	+ 10·0	− 21·0	Measurement made of Fr.-Nb. which formed basal
						[part of Cu.-Nb. mass.
27	Cu.	306	7·1	+ 5·7	− 4·2	
29	St.-Cu.	284	7·3	+ 7·1	− 2·0	Thin, flat St.-Cu.

12. Aurora.

The only observation of Aurora reported during the month was at Stonehenge in the evening of the 15th.

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

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1. SUNSHINE AND SOLAR RADIATION.

Day.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W.							RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W.					ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W.						CAHIRCIVEEN.	
	Bright Sunshine.*		Radiation received on Horizontal Surface by Callendar Radiograph.					Bright Sunshine.*		Radiation at Noon by Ångström Pyrheliometer.			Bright Sunshine.*		Radiation by Ångström Pyrheliometer.				Bright Sunshine.*	
	Total.	Per cent. of Possible.	Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Time.	11.30 h. to 12.30 h.	Total.	Per cent. of Possible.	Intensity.	Vertical Component.	Sky.	Total.	Per cent. of Possible.	Time.	Sky.	$\frac{p}{p_0}$ sec Z.	Intensity.	Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	10·2	62	1780	43	75	11 45	75	10·8	65	58	51	Hazy	10·0	58	…	…	…	…	*x*15·5	93
2	6·0	36	1460	36	69	10 29	50	5·2	32	…	…	…	9·7	56	…	…	…	…	12·6	76
3	11·2	68	2330	57	85	11 51	85	11·0	67	71	62	Clear	*x*13·5	78	…	…	…	…	14·1	85
4	*x*12·6	77	*x* 2400	59	78	13 9	76	*x*13·0	79	53	46	Ci.	12·6	15	…	…	…	…	10·7	65
5	3·7	23	1720	42	90	12 35	87	4·0	24	…	…	…	0·7	4	…	…	…	…	8·2	50
6	6·2	38	1230	30	72	13 53	53	6·8	41	…	…	…	9·0	52	12 19	Clear	1·18	89	8·0	48
7	5·3	32	1410	35	78	10 49	76	5·4	33	…	…	…	1·3	8	…	…	…	…	0·2	1
8	8·8	54	1800	44	68	11 28	63	7·9	48	…	…	…	1·9	11	…	…	…	…	7·7	47
9	9·8	60	1710	42	79	14 25	52	9·2	56	…	…	…	10·2	60	…	…	…	…	7·1	43
10	2·5	15	1130	28	80	10 55	65	2·4	15	…	…	…	2·4	14	…	…	…	…	2·3	14
11	0·9	6	520	13	68	11 36	68	1·2	7	…	…	…	5·2	31	…	…	…	…	3·1	19
12	5·5	34	1340	33	*x* 92	11 30	*x* 92	5·9	36	…	…	…	4·8	28	…	…	…	…	11·0	67
13	10·7	66	1640	41	83	10 58	82	9·2	57	…	…	…	4·1	24	…	…	…	…	9·7	60
14	0·9	6	*n* 510	13	*n* 35	15 5	14	0·3	2	…	…	…	7·2	43	…	…	…	…	4·3	26
15	1·1	7	800	20	72	13 10	32	1·2	7	…	…	…	5·9	35	…	…	…	…	10·6	65
16	7·0	43	1450	37	78	10 32	72	6·3	39	…	…	…	3·5	21	…	…	…	…	8·9	55
17	0·7	4	692	18	62	11 16	24	0·2	1	…	…	…	7·8	46	…	…	…	…	5·8	36
18	11·2	70	1600	41	84	12 30	84	9·1	57	…	…	…	5·4	32	…	…	…	…	11·3	70
19	1·3	8	570	15	47	7 38	19	1·2	8	…	…	…	4·1	25	…	…	…	…	7·8	48
20	2·9	18	780	20	53	8 32	8	2·4	15	…	…	…	0·0	0	…	…	…	…	7·3	45
21	11·0	70	1800	46	85	12 33	83	11·7	74	…	…	…	7·0	42	…	…	…	…	4·5	28
22	0·7	4	880	23	56	12 45	31	0·1	1	…	…	…	0·5	3	…	…	…	…	2·1	13
23	1·3	8	530	14	54	15 28	14	2·3	15	…	…	…	0·0	0	…	…	…	…	11·8	74
24	8·7	55	1620	42	84	12 45	82	8·6	54	82	70	Clear	4·7	29	…	…	…	…	10·4	66
25	9·2	59	1550	41	83	12 30	83	8·6	55	…	…	…	6·3	38	…	…	…	…	5·0	32
26	2·4	15	930	24	62	11 22	56	2·0	13	…	…	…	6·1	37	…	…	…	…	7·2	46
27	3·5	22	1150	31	77	12 22	77	4·9	31	…	…	…	1·6	10	…	…	…	…	8·4	54
28	1·9	12	1310	35	71	10 27	45	1·7	11	…	…	…	12·2	75	…	…	…	…	4·0	25
29	10·8	70	1750	47	79	12 22	79	9·3	60	53	45	Hazy	8·2	51	…	…	…	…	6·1	39
30	6·7	43	1130	30	63	12 29	63	9·5	61	…	…	…	7·4	46	…	…	…	…	8·9	57
31	11·1	72	1710	46	58	13 25	55	10·4	68	…	…	…	2·8	18	…	…	…	…	0·0	0
Means	6·00	38	1330	34	72	—	60	5·87	37	—	—	—	5·35	32	—	—	—	—	7·58	48
Normal	5·65	36	1291	—	—	—	—	6·48	41	—	—	—	5·00	30	—	—	—	—	5·13	32
	←5 years→		3 years					←35 years→					←5 years→						←35 years→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M. S. L.:—H = 9·1 m. H_b = 13·7 m. H_a = 26·4 m. Above Ground: h_t = 1·3 m. h_r = 0·56 m. h_a = 13·9 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity. Vapour Pressure.		Humidity. Percentage.		Wind—Veer from North in degrees and Speed in metres per second. 9h.		21 h.		Cloud Amount (0–10) and Weather. 9 h.	21 h.	Rain 0 h. to 24 h.	Min. Temp. on Grass.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.										
	mb.	mb.	*a.* 200+	*a.* 200+	*a.* 200+	*a.* 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	*a.* 200+		
1	1023·5	1024·8	89·1	87·2	90	84	13·1	13·4	72	83	320	5	360	5	1	4	—	78	Fine *n.* Fine day. ⊕ 13 h.	17850 γ 19° 34′·2
2	1027·9	1030·8	87·7	88·6	93	85	13·0	14·0	78	80	45	6	—	0	4	1	—	84	Fine to o. *a.* Fine day.	—
3	1032·5	1032·5	91·3	88·2	93	83	15·8	15·2	76	89	—	1	—	0	1∞	6	—	80	☌. Very fine. ⊕ *p.*	—
4	1033·3	1031·8	89·0	87·2	90	83	14·2	12·7	79	79	330	7	360	5	4	8	—	80	☌. ⊕ 10 h.–15 h. Fine day. 2nd	68° 5′·5
5	1029·5	1026·2	90·6	88·2	91	84	13·9	13·7	70	80	280	2	285	5	4	10	—	*n* 77	Fair *n.* Fine *a.* c. to o. *p.*	
6	1025·0	1025·2	87·9	88·2	90	86	12·2	15·6	73	91	315	4	—	1	7	10	—	86	Fair *a.* Fine to o. *p.*	
7	1022·2	1016·5	90·0	88·6	92	87	16·5	15·8	86	90	225	5	210	5	10	10	0·2	84	o. to c. *n.* and *a.* d. to c. *p.*	
8	1011·8	1007·5	87·9	84·2	89	83	11·4	10·1	68	77	280	6	290	7	2	3	5·3	83	p. to c. *n.* o. *a.* p. to c. *p.*	
9	1001·1	999·8	84·1	84·6	*n* 88	83	11·3	11·0	86	81	250	5	325	2	8	7	7·0	81	p. *n.* and *a.* p. to fair *p.*	
10	1002·0	999·3	85·1	85·3	*n* 88	83	11·4	12·9	81	91	345	2	275	9	8	10	10·0	78	p. to fine *a.* ● *p.*	
11	1001·8	999·9	86·2	84·2	89	84	12·2	12·7	81	96	275	9	—	0	8	5	6·2	84	o. p. *n.* and *a.* p. later.	
12	1001·0	1007·9	86·5	86·3	90	84	12·0	13·2	78	87	305	8	305	5	2	5	1·7	81	Fair *n.* p. *a.* Fair day.	
13	1010·0	1004·4	89·9	87·7	91	84	14·1	12·1	74	73	230	2	135	7	5	10	0·6	79	Fair *n.* and day. ⊕ *p.*	
14	995·9	999·4	88·4	87·4	92	87	17·1	15·1	99	93	205	4	195	5	10	7	9·8	85	o. ● *n.* and *a.* Fair to o. later.	
15	1003·8	1004·3	88·2	87·0	92	84	15·4	13·2	90	83	—	1	—	0	8	3	4·0	85	p. *n.* and *a.* Fair to fine later.	
16	998·3	1003·4	88·6	87·3	91	83	16·9	14·4	96	89	170	5	180	4	10	5	8·9	79	●² *a.* Fair day.	
17	1002·6	1001·3	88·9	87·6	92	86	14·1	14·5	79	88	140	2	—	0	7	5	0·4	84	Fine day. ☋ *p.*	
18	1004·3	1009·0	90·7	87·9	92	85	15·2	14·4	76	86	220	5	215	5	3	3	—	82	☌. Fine day.	
19	1011·7	1009·7	88·7	87·8	92	86	15·4	14·5	87	87	210	4	185	4	7	6	—	84	Fine. ⊕ 16 h. to 17 h.	
20	1005·5	1008·4	88·2	86·8	91	*n* 82	14·2	13·1	83	84	—	0	240	2	8	8	2·1	79	Fine, with ☌. ⊕ 13 h.	
21	1009·7	1001·1	90·4	86·5	91	85	15·0	14·2	76	92	220	5	80	7	8	10●	*x* 21·3	82	p. to fine *n.* o. later. ●² *p.*	
22	997·0	998·1	89·7	87·9	91	*x* 88	17·9	14·1	95	84	200	4	340	5	10	8	3·1	85	● *n.* o. *a.* c. to o. later.	
23	1001·3	1004·0	88·6	86·7	91	86	13·8	13·7	79	88	280	6	235	4	6	7	1·8	85	Fair to fine. p. *p.*	
24	1006·3	1008·0	88·9	87·4	91	85	14·7	13·7	82	84	255	5	250	7	8	6	1·9	83	Fine. c. to p. *p.*	
25	1008·0	1007·1	87·3	86·3	89	85	13·1	13·7	81	90	240	10	245	12	5	10	11·2	83	c. p. *n.* and *a.* c. to o. later. ● *p.*	
26	1009·2	1016·4	87·7	87·2	89	86	12·6	13·7	76	85	305	9	345	6	8	6	0·8	85	o. and p. *n.* and *a.* Fair day.	17841 γ
27	1019·3	1020·4	88·2	86·9	91	86	12·5	14·0	73	89	340	6	—	0	8	8	—	85	c. to o. *n.* and *a.* Fine day.	19° 36′·6
28	1020·5	1018·7	87·8	88·4	92	84	14·7	16·1	88	93	175	4	155	6	10	10	1·2	81	c. *n.* Fair day. o. d. *p.*	68° 6′·0
29	1017·7	1017·1	88·7	88·9	93	*x* 88	16·6	14·5	94	81	165	7	155	7	10	8	2·6	88	o. to d. *n.* o. *a.* Fair *p.*	
30	1013·0	1009·0	91·4	92·2	*x* 94	*x* 88	13·2	13·0	63	59	150	9	130	11	7	8	—	87	Fine dry day.	
31	1006·8	1006·7	89·4	88·2	91	*x* 88	18·1	16·5	98	98	175	4	—	0	10●	10●	20·6	88	o. *n.* Intermittent ● from 5 h. 40 m.	17846 γ
Means	1011·4	1011·2	88·6	87·3	90·8	84·9	14·2	13·8	81	85		4·9		4·4	6·7	7·0	120·7	82·7	Monthly Totals or Means.	19° 35′·4
Normal	1014·0	1014·5	88·3	87·4	90·7	85·1	14·5	14·2	83	86		4·6		4·0	—	—	99·9	—	Normals.	68° 5′·8
	←45 years→						←30 years→				←35 years→						45 yrs.			

* By Campbell-Stokes Sunshine Recorder.

x denotes the maximum and *n* the minimum value in the column.

Wt. 37652/515—400—6/19.—N. & Co., Ltd. Gp. XV.

3. METEOROLOGY :—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 5·5 m. Barometer, H_b = 10·4 m. Cups of Anemometer, H_a = 25 m.
Heights above Ground :—Thermometers, h_t = 3·0 m. Rain-gauge, h_r = 0·53 m. Cups of Anemometer, h_a = 20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	Remarks.
							Vapour Pressure.		Percentage.										
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
															Tenths of Sky covered.				
	mb.	mb.	*a.* 200+	*a.* 200+	*a.* 200+	*a.* 200+	millibar.		%	%	°	m/s.	°	m/s.			mm.	*a.* 200+	
1	1018·1	1017·3	92·2	93·1	*x* 99	85	14·6	15·6	66	67	11	2	—	1	1∞	3∞	—	79	Fine. ∞ *a.*
2	1020·7	1027·5	90·3	87·6	93	84	11·7	11·4	60	69	360	4	23	5	3∞	1	—	84	Fine to dull ∞ *a.*
3	1029·5	1029·6	87·3	88·3	93	82	9·6	10·8	59	63	11	4	34	4	1	9	—	78	Fine after 7 h.
4	1029·5	1027·2	90·1	92·2	98	*n* 81	10·3	14·6	53	66	11	5	—	1	2	10	—	*n* 74	Fine to 18 h. c. later.
5	1024·3	1020·5	91·4	91·2	96	*x* 88	11·8	9·3	56	45	337	3	315	2	8	4	—	85	Fair to fine.
6	1020·3	1020·6	89·2	91·4	95	87	12·5	13·0	68	62	326	4	—	1	10	0∞	—	83	Fair to dull *a.* Fine *p.*
7	1020·9	1017·6	91·1	91·2	97	85	13·6	14·1	66	68	—	1	225	2	10	4	—	78	o. to 9 h. Fine later.
8	1012·0	1005·4	93·8	91·9	98	86	14·6	12·7	60	59	203	4	—	1	6	2	—	80	Fair to fine.
9	1004·6	1005·1	89·2	86·9	94	83	10·4	10·4	57	66	248	5	215	3	5	1	—	82	Fine to fair.
10	1003·7	1003·0	85·3	84·0	*n* 90	83	12·5	11·2	88	86	203	4	248	2	9●	6	12·7	77	p. ☇●²▲ 6 h. 15 m.
11	1002·2	1005·8	86·5	86·5	*n* 90	83	13·7	13·4	89	87	214	7	225	4	10●	3	*x* 26·6	79	p., with fine intervals.
12	1000·7	1005·8	89·5	86·6	91	84	13·6	12·8	73	83	214	8	225	4	4	1	2·6	81	p. v. *a.*
13	1011·7	1013·1	88·9	88·3	93	84	12·5	12·6	70	73	236	3	214	3	5	3	0·5	79	Fine to fair. v. p. *p.*
14	1008·5	1007·7	87·0	89·7	93	82	14·4	15·6	91	83	248	6	236	4	10●	2	3·9	76	● 5 h. 30 m. to 9 h. Dull.
15	1012·5	1011·1	90·8	90·9	95	87	16·2	18·1	80	89	203	6	180	6	10	9	0·8	84	Dull. d. at times. v. *p.*
16	1008·0	1010·3	93·0	91·6	97	*x* 88	17·1	16·1	74	76	146	2	248	4	5	8	0·4	86	☇ 3 h. 15 m. Fine to fair.
17	1010·5	1005·8	91·9	89·0	95	*x* 88	17·1	16·9	79	94	214	6	214	3	10≡⁰	10	4·9	81	● 17 h. 38 m. to 20 h. 10 m. ☇ 18 h.
18	1008·1	1015·3	91·3	88·9	94	*x* 88	14·6	13·6	70	76	225	4	203	3	5	2	1·2	85	Fair to fine, with *p.* ●² 17 h. 45 m.
19	1017·1	1014·5	91·9	90·0	92	86	15·8	17·9	73	93	214	4	—	1	10	10	9·6	80	Fine to dull. ● 10 h. 20 m. to 16 h. 15 m.
20	1008·2	1003·8	93·0	90·5	94	*x* 88	17·4	16·9	75	85	338	4	360	2	7	10	2·1	85	Fine early. ● *a.* ┳ *n.*
21	1010·1	1012·6	89·9	89·8	94	87	12·2	14·8	64	78	214	4	225	4	8	3	0·3	85	● 10 h. 15 m. v. p. ⊕ 18 h.
22	1010·5	1005·8	91·1	87·9	92	87	14·2	14·6	69	87	214	3	191	2	10	10	2·2	83	Fair to dull. ● 16 h. to 18 h. 50 m.
23	997·9	1003·5	88·8	89·9	94	87	17·3	15·1	97	79	214	4	214	3	10●≡⁰	4	10·4	86	● 7 h. 35 m. to 14 h. Fair later.
24	1008·3	1011·2	90·0	87·2	93	86	12·5	14·8	65	92	—	1	—	1	7	9●	18·7	82	p. ●² 11 h. 20 m. ┳ 13 h. 35 m. q. 16 h. 10 m.
25	1012·5	1012·5	89·2	87·3	92	86	13·5	13·8	74	85	203	8	225	4	6	9	14·9	82	Fine *a.* p. later. ☇ 18 h.
26	1008·5	1005·0	89·3	86·1	91	85	13·4	13·3	73	89	203	5	203	3	9	3	9·4	83	Dull to fine. ☇●² 17 h.
27	1010·2	1017·4	88·1	86·7	91	84	12·4	12·3	73	79	191	2	214	4	8	3	0·2	82	Dull to fine. ┳ 13 h. 45 m. p. *p.*
28	1021·0	1021·2	88·5	89·1	93	82	13·7	16·0	78	88	338	2	—	0	10	6≡⁰	—	77	Fair to fine. ≡⁰ *n.*
29	1021·7	1020·2	91·6	90·5	97	84	16·4	16·9	77	85	—	1	—	1	1≡⁰	7≡⁰	—	80	⊃ ≡⁰ early. Fine to fair.
30	1019·6	1017·2	92·2	91·9	98	86	16·1	16·9	73	78	—	1	—	1	0∞	? 2≡⁰	—	80	⊃⊃ ≡⁰ early. Fine to fair. ∞
31	1017·2	1015·2	91·9	90·3	97	86	15·8	15·5	73	79	124	3	101	4	? 0≡⁰	1∞	—	80	⊃⊃ ≡⁰ early. Fine. ∞
Means	1013·2	1013·2	90·1	89·2	94·1	85·2	13·9	14·2	72	78		3·9		2·7	6·5	5·0	121·4	81·2	Monthly **Totals** or **Means.**
Normal	1014·7	1014·5	90·1	89·5	94·7	85·4	13·7	14·1	71	76		3·4		2·4	—	—	60·1	—	**Normals.**
			45 years				30 years				35 years						45 years		

4. METEOROLOGY :—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3 12′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 242 m. Barometer, H_b = 237·3 m. Vane of Anemometer, H_a = 250 m.
Heights above Ground :—Thermometers, h_t = 0·9 m. Rain-gauge, h_r = 0·38 m. Vane of Anemometer, h_a = 15 m.

																			Remarks.
1	990·8	992·2	85·7	84·5	90	81	10·8	11·1	74	82	281	5	—	1	6	10∞	—	77	*n.* Fine ⊃. Fair midday. ⊕. Dull *n.*
2	999·2	1002·3	85·4	85·6	92	80	10·7	11·6	75	80	45	4	—	1	9	8	—	79	o. *a.* Fine. v. y. *p.* c. *n.*
3	1003·4	1002·4	87·7	87·2	94	77	10·3	13·0	62	81	90	3	—	1	0	1	—	73	Fine all day. y. midday.
4	1002·3	999·3	90·3	83·1	91	80	10·4	9·4	53	76	259	5	270	5	9	10	—	77	Fine. ⊃ early. v. y. midday. ●⁰ *p.*
5	993·0	990·3	84·7	84·5	88	82	9·4	11·9	69	88	236	8	259	6	9	10	0·5	85	Dull. ● at 15 h. and 21 h.
6	989·9	992·2	87·8	86·0	91	84	11·9	11·3	71	76	281	8	247	4	4	9	0·2	82	Dull. ●⁰ 1 h. Fair *a.* and *p.* Dull *n.*
7	991·0	987·5	86·1	85·7	90	83	13·9	13·7	93	94	225	5	180	5	10≡⁰	10≡⁰	0·9	82	Dull. ●⁰≡⁰ 7 h.–9 h. p. 14 h. and 18 h.
8	980·5	977·8	86·6	80·1	90	78	13·7	8·9	89	88	191	8	—	1	10≡⁰	3	2·1	85	≡ 1 h. Dull. ● *a.* Fine *n.*
9	973·4	974·3	84·4	78·7	87	75	10·2	8·0	76	87	180	4	—	1	9	1	3·0	75	≡ 1 h. ⊃ to o. ●² *a.* v. *p.* and *n.*
10	974·1	972·3	85·0	82·5	*n* 86	*n* 74	9·3	10·2	67	86	101	2	56	2	9	9≡⁰	2·1	*n* 71	⊃⊃ ² 1 h. ●┳ q. 10 h. 30 m. ┳ 14 h.
11	970·4	971·8	86·4	83·1	89	76	9·4	11·3	62	92	—	1	203	2	6∞	9≡⁰	10·5	74	⊃⊃⁰≡⁰ early. ☇●² *p.* p. ≡⁰ *n.*
12	970·4	973·6	85·5	82·6	89	79	11·8	9·6	82	81	180	3	270	5	8≡⁰	10≡⁰	1·6	81	≡⁰●⁰ early. o. to c. p. 16 h. 30 m.
13	979·1	982·6	85·1	81·1	89	78	9·0	9·3	64	86	270	7	—	1	9	2≡⁰	—	83	o. ≡⁰ 1 h. o. to c. *a.* and *p.* Fine *n.*
14	980·1	975·8	87·8	86·1	92	79	10·2	13·3	61	89	146	5	124	4	7	10≡⁰	3·8	80	≡⁰ 1 h. ∞ *a.* and *p.* ≡⁰●⁰ 22 h.–23 h.
15	979·9	982·3	87·2	85·3	91	*x* 85	12·9	12·5	80	88	191	6	—	1	6	8	0·4	85	≡⁰●⁰ early. b.c. to o. *a.* Fair *p.* and *n.*
16	976·0	978·3	87·8	86·9	91	*x* 85	15·0	15·1	90	96	349	3	191	4	10	10≡⁰	11·2	82	●²≡⁰ 1 h.–8 h., then o. to c.
17	981·2	977·2	87·9	87·8	93	*x* 85	13·2	15·3	79	92	191	5	—	2	9≡⁰	10●≡⁰	7·5	85	≡⁰●⁰ 7 h. Fine *a.* and *p.* ☇●² 22 h.
18	974·0	978·6	86·7	85·6	90	84	12·9	12·7	83	88	225	6	236	9	8	9	7·9	85	●² 1 h. 30 m. Fair *a.* ☇●² 16 h.–17 h.
19	982·7	985·1	86·1	84·3	90	82	13·5	11·8	90	89	203	8	203	3	10	6	1·2	80	p. *a.* and *p.* Finer later.
20	980·4	975·6	85·2	86·0	87	82	12·9	13·5	91	91	67	4	360	3	10	10≡⁰	7·1	79	⊃ 1 h. ●≡⁰ *a.* and *p.* ☇ 23 h.
21	976·5	980·1	85·2	84·0	90	81	11·3	10·5	80	81	293	10	259	3	10	1	*x* 12·2	84	●²≡⁰ till 7 h. o. *a.* Fine later. v.
22	977·9	972·7	85·9	87·0	89	77	13·0	15·5	88	98	157	3	157	3	10	10≡⁰	11·2	—	≡⁰ 7 h. p. *a.* ●≡⁰ after 13 h. 30 m.
23	970·0	971·9	87·6	85·4	89	83	15·7	12·6	95	88	157	3	259	4	10≡⁰	10≡⁰	5·7	86	Dull, with ≡⁰●⁰ most of day.
24	973·8	977·3	85·7	83·1	88	79	11·7	11·3	80	92	259	6	214	3	9	2	4·4	—	c. 1 h. p. ▲●² 12 h.
25	978·5	978·1	85·9	83·9	88	82	11·0	11·4	75	88	203	6	169	3	10	10	1·1	80	Dull to fair. v. y. *p.* ● after 23 h.
26	978·2	983·2	85·7	82·9	89	82	11·5	10·5	79	87	67	3	34	4	9	1	8·2	82	●² early. ☇ 12 h. 30 m. ∞ *p.* < *n.*
27	987·9	990·3	84·3	84·6	89	80	11·1	11·9	84	88	45	4	—	0	10	5≡⁰	0·8	79	● till 1 h. Dull day. ∞ *p.* Fine *n.*
28	992·6	993·5	88·4	83·9	92	77	13·2	11·6	76	90	—	1	—	1	5⊃	1∞	—	75	⊃. Fine. ⊕ y. ∞ *a.* and *p.* ≡⁰ *n.*
29	993·9	993·8	85·4	84·4	91	81	12·4	12·2	87	91	203	3	—	1	10≡⁰	0	—	80	≡ at first. Very fine *p.* and *n.*
30	993·0	991·3	87·6	87·9	*x* 96	79	14·0	15·3	85	91	—	0	23	3	2	3∞	0·1	—	≡ till 8 h., then very fine. ∞ *p.* ≡⁰ *n.*
31	990·2	989·2	85·8	85·4	90	83	13·3	13·8	91	96	34	3	23	4	10≡⁰	10≡⁰	—	82	Dull. ≡⁰ *a.* Fair *p.* ≡⁰ *n.*
Means	983·4	983·6	86·4	84·5	90·0	80·3	11·9	11·9	78	88		4·6		2·9	8·2	6·7	103·7	80·3*	Monthly **Totals** or **Means.**
Normal 1911-15	986·5	986·6	86·8	85·1	90·3	81·5	12·4	12·3	78	87		4·7		3·4	—	—	77·3	—	**Normals.**

* Mean of 28 days only.

Temperatures at or below the normal freezing point of water are printed in small type.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Magnetic Force. Horizontal Comp't. Mean Time.	Horizontal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination. North.	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 2·44. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +.	Charge per cc. ×10¹⁶. −.	Air-Earth Current ×10¹⁶.
	a.	*a.*																	
	200+	200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′			v/m.	v/m.	v/m.	v/m.	About 15 h.		About 15 h.
																	Coulomb.		Amp/cm².
1	89·3	85·9	216	…	…	…	…	…	…	…	1	0	105	240	105	165	0·45	0·30	0·40
2	90·0	85·9	215	…	…	…	…	…	…	…	1	0	60	210	330	240	0·39	0·24	2·15
3	89·0	86·1	214	…	…	…	…	…	…	…	1	0	—	255	225	240	1·01	1·05	1·75
4	89·3	86·2	213	…	11 12	18431	14 26	14 57·5	14 27	66 59·6	0	0	180	300	225	90	1·16	0·50	…
5	90·1	86·2	212	…	…	…	…	…	…	…	0	0	105	195	165	240	0·56	0·45	0·70
6	90·0	86·3	211	…	…	…	…	…	…	…	0	0	135	150	120	165	…	…	…
7	89·9	86·6	210	…	…	…	…	…	…	…	0	0	150	270	105	135	…	…	…
8	90·3	86·7	209	…	…	…	…	…	…	…	1	0	120	195	135	120	0·97	0·26	1·20
9	90·4	86·8	209	…	…	…	…	…	…	…	1	1	135	180	105	180	0·86	0·77	0·20
10	89·1	86·8	208	…	…	…	…	…	…	…	1	2	−180	≷±	225	570	1·29	0·88	1·25
11	88·1	86·8	208	…	11 3	18396	14 21	14 56·5	14 24	66 57·8	1	2	135	≷±	≷±	270	…	…	…
12	87·8	86·8	207	…	…	…	…	…	…	…	1	1	45	240	≷±	330	…	…	…
13	87·7	86·8	207	…	…	…	…	…	…	…	1	1	150	165	≷±	225	…	…	…
14	87·9	86·8	207	…	…	…	…	…	…	…	1	1	285	−15	120	210	…	…	…
15	88·2	86·8	207	…	…	…	…	…	…	…	1	0	120	195	150	240	0·82	0·77	1·45
16	89·5	86·8	207	…	…	…	…	…	…	…	0	1	≷±	195	165	225	0·86	0·58	1·00
17	90·0	86·7	207	…	…	…	…	…	…	…	0	1	135	300	315	195	0·41	0·24	0·75
18	90·0	86·8	206	…	11 5	18397	14 23	14 57·1	14 32	66 56·8	0	1	150	165	≷−	330	…	…	…
19	89·5	86·8	205	…	…	…	…	…	…	…	0	1	240	210	135	240	…	…	…
20	89·8	86·9	205	…	…	…	…	…	…	…	0	2	255	405	−165	360	…	…	…
21	89·7	87·0	204	…	…	…	…	…	…	…	0	1	210	60	165	300	…	…	…
22	89·8	86·9	204	…	…	…	…	…	…	…	0	1	225	270	195	195	…	…	…
23	89·5	86·9	203	203	…	…	…	…	…	…	0	1	60	−540	255	360	0·41	0·26	0·90
24	89·4	86·9	204	…	…	…	…	…	…	…	0	2	210	240	720	≷−	0·71	0·56	5·35 †
25	89·6	87·1	205	…	11 5	18432	14 30	15 3·2	…	…	1	1	285	270	≷±	480	…	…	…
26	89·4	87·0	208	…	…	…	13 28	14 57·4	14 30	66 58·6	1	2	270	360	−135	540	…	…	…
27	88·9	87·1	211	…	…	…	…	…	…	…	1	1	225	315	15	345	…	…	…
28	88·7	87·0	215	…	…	…	…	…	…	…	2	0	300	210	165	180	…	…	…
29	89·6	87·1	218	…	…	…	…	…	…	…	1	0	195	390	135	180	0·60	0·15	0·70
30	90·1	87·1	220	…	…	…	…	…	…	…	1	0	210	360	195	210	…	…	…
31	90·9	87·1	221	222	…	…	…	…	14 43	66 58·4	1	0	180	240	135	360	…	…	…
M.	89·4	86·7	210	—	—	—	—	—	—	—	—	—	177*	205*	135*	230*	—	—	—
	90·0	87·3	←12 years→																

* Mean of 22 days only.

6. GEOPHYSICS :—ESKDALEMUIR.

Day.	Magnetic Force. North Component. Maximum. 15000 γ+.		North Component. Minimum. 15000 γ+.	West Component. Maximum. 4000 γ+.		West Component. Minimum. 4000 γ+.		Vertical Component. Maximum. 44000 γ+.		Vertical Component. Minimum. 44000 γ+.		Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre.* Factor 6·20. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +.	Charge per cc. ×10¹⁶. −.	Air-Earth Current ×10¹⁶.
	h m	γ	γ	h m	γ	γ	h m	h m	γ	γ	h m				v/m.	v/m.	v/m.	v/m.	About 15 h.		About 15 h.
																			Coulomb.		Amp cm².
1	16 13	1062	929	12 27	15 17	1003	890	7 4	19 15	1103	1039	{10 55 / 11 20}	1	0 *a*	265	180	180	80	…	…	…
2	18 13	1027	945	22 53	18 10	966	886	{5 54 / 5 57}	19 15	1078	1043	11 15	0	0 *a*	50	70	135	105	…	…	…
3	16 35	1040	940	{10 40 / 11 4}	{13 36 / 13 42}	968	883	6 11	20 56	1078	1056	4 25	0	0 *a*	90	40	150	240	…	…	…
4	18 4	1014	947	13 26	16 33	969	893	6 1	16 47	1078	1045	11 45	0	0 *a*	215	220	185	270	…	…	…
5	19 55	1017	953	12 50	14 10	955	886	5 58	17 46	1075	1051	10 5	0	1 *b*	130	180	105	120	…	…	…
6	19 32	1022	951	11 33	15 16	963	890	7 29	18 30	1074	1038	11 0	0	0 *a*	190	190	180	130	…	…	…
7	23 26	1034	944	11 18	13 41	963	880	7 42	16 40	1068	1043	12 56	0	1 *a*	190	215	70	100	…	…	…
8	18 17	1051	942	12 25	16 25	967	839	3 27	19 30	1084	1006	3 23	1	1 *b*	220	140	115	235	…	…	…
9	20 26	1058	921	11 19	14 41	973	879	9 14	20 33	1078	1040	1 5	1	1 *b*	570	140	130	185	…	…	…
10	{0 0 / 18 36}	1040	947	10 26	14 10	968	875	22 38	21 10	1073	999	23 37	1	1 *b*	270	150	−70	100	…	…	…
11	19 43	1045	906	1 0	14 53	980	847	0 37	19 30	1085	994	1 19	1	1 *c*	235	150	≷±	−555	…	…	…
12	21 19	1030	941	9 41	14 37	970	881	6 29	18 33	1080	1032	0 26	1	1 *b*	405	115	1070	235	…	…	…
13	15 17	1046	941	13 38	15 16	1000	876	8 13	17 14	1086	1044	3 0	1	0 *a*	170	100	130	215	…	…	…
14	18 41	1080	946	13 5	18 44	981	885	22 50	{19 43 / 19 52}	1081	1034	12 29	1	1 *b*	220	135	70	90	…	…	…
15	3 24	1018	919	9 32	14 28	970	879	{5 18 / 5 42}	17 15	1081	1020	2 15	1	0 *a*	365	135	135	140	…	…	…
16	18 48	1044	933	9 46	16 1	966	896	9 49	19 25	1087	1045	11 36	0	2 *b*	−285	365	135	215	…	…	…
17	22 53	1027	938	10 42	14 52	971	887	7 10	19 5	1075	1041	11 50	0	1 *b*	135	220	205	500	…	…	…
18	3 28	1027	931	10 49	13 35	958	884	5 35	18 29	1078	1031	3 10	0	1 *c*	240	170	90	140	…	…	…
19	18 26	1010	946	11 56	14 35	943	880	8 25	20 10	1073	1050	11 50	0	1 *b*	365	115	140	270	…	…	…
20	18 47	1012	953	11 46	15 8	960	895	{8 45 / 9 3}	5 20	1069	1049	12 40	0	1 *b*	225	100	135	−70	…	…	…
21	§	§	961	11 9	{14 6 / 15 36}	952	903	8 6	17 22	1075	1039	13 0	0	2 *c*	≷−	155	200	420	…	…	…
22	16 35	1017	954	10 25	15 0	971	896	6 50	18 0	1078	1038	12 5	0	1 *b*	225	65	50	305	…	…	…
23	20 7	1028	955	{13 20 / 13 30}	§	§	?880	?7 25	20 45	1075	1049	12 52	0	1 *b*	265	315	475	240	…	…	…
24	19 16	1030	953	12 2	15 15	973	§	§	20 6	1076	1043	11 53	0	1 *c*	325	65	40	365	…	…	…
25	18 39	*x* 1084	954	12 31	15 50	*x* 1025	872	6 56	18 6	*x* 1189	1045	12 21	2	1 *b*	300	185	0	355	…	…	…
26	18 28	1050	936	11 2	14 44	961	876	5 58	18 40	1108	1050	5 25	1	2 *c*	205	180	30	205	…	…	…
27	16 23	1014	925	10 35	14 39	966	895	7 55	17 10	1097	1058	3 5	1	1 *b*	285	120	150	475	…	…	…
28	17 33	1074	*n* 866	22 16	17 34	984	*n* 807	21 37	18 16	1124	958	22 7	2	?0 *a*	425	325	205	400	…	…	…
29	17 36	1047	911	{0 11 / 47 2}	4 8	961	835	0 19	19 10	1126	*n* 907	1 4	2	?0 *a*	‖	200	140	220	…	…	…
30	20 6	1025	908	6 50	0 22	973	874	9 0	{20 20 / 20 43}	1101	999	1 18	2	0 *a*	275	135	150	135	…	…	…
31	20 28	1044	915	14 2	13 18	961	864	20 20	20 18	1114	1055	0 36	1	0 *a*	390	365	150	440	…	…	…
M.	—	1037†	935†	—	—	971**	877**	—	—	1089	1031	—	—	—	‡240	‡169	‡162	‡222	—	—	—

* The potential gradient is reckoned positive if the potential increases upwards. *x* denotes the maximum and *n* the minimum value in the column.
‖ Jet choked. † Mean of 30 days. ** Mean of 29 days. ‡ Mean of 28 days. § No record. ≷− Indeterminate, negative value.

7. Jersey (St Louis Observatory).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M. S. L. :—H = 54 m. H_b = 55 m. Above Ground :— h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level. 7 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in Degrees Absolute. 7 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 7 h.	14 h.	21 h.	Mean.	Rain 0 h. to 24 h.	Remarks.
	mb.	mb.	mb.	mb.	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	a. 200−	a. 200+	%	%	%	%	mm.	
1	1012·1	1012·1	1013·0	1012·3	90·2	94·1	89·5	96·6	86·3	91·3	82·0	77	57	74	69	—	≡⁰ 14 h.
2	1014·7	1017·0	1019·4	1017·0	89·0	92·0	89·0	92·9	86·9	90·0	83·1	79	62	78	73	—	
3	1022·6	1023·7	1023·9	1023·4	87·3	89·3	86·1	91·6	85·2	87·9	82·0	63	57	82	67	—	
4	1024·2	1023·5	1022·5	1023·4	89·7	92·0	86·5	93·1	*n* 84·0	89·1	78·0	67	48	84	66	—	⊕ 11 h.
5	1020·5	1018·9	1017·7	1019·0	87·5	96·1	88·7	97·0	84·2	90·7	78·7	90	60	83	78	—	
6	1017·0	1017·5	1016·9	1017·1	90·0	92·5	87·8	93·6	85·7	89·9	79·3	68	62	87	72	—	u. 4 h.
7	1016·3	1015·1	1013·1	1014·9	91·1	94·5	89·2	95·9	85·5	91·2	78·1	73	58	74	68	—	●⁰ 10 h.
8	1007·8	1005·1	1004·1	1005·7	88·9	94·7	88·0	95·0	86·7	90·7	82·0	80	60	93	78	—	●⁰ 13 h.
9	1002·7	1002·7	1001·9	1002·3	87·7	88·5	85·3	90·9	84·9	87·5	79·7	71	58	80	70	0·3	● 14 h., 19 h.
10	999·1	999·0	1002·7	1000·2	86·4	87·1	86·7	*n* 86·6	84·3	86·8	80·6	83	82	80	82	3·1	● 4 h., 10 h., 13 h.
11	1002·5	1003·9	1004·3	1003·5	87·3	89·9	87·6	90·6	86·3	88·3	83·0	80	72	81	78	0·1	●⁰ on sea 9 h. 20 m. ● 12 h.
12	1000·3	1003·1	1006·2	1003·3	88·0	90·1	87·0	91·0	86·0	88·4	84·5	85	61	88	78	3·1	● 4 h., 7 h.
13	1008·7	1009·8	1008·7	1009·0	87·4	91·9	88·7	92·1	86·3	89·3	83·0	88	64	81	78	—	
14	1002·1	1002·9	1006·1	1003·7	88·4	92·0	88·4	93·5	86·9	89·8	86·9	98	89	96	94	*x* 22·0	●² morning. ●² 17 h.
15	1007·4	1006·6	1005·4	1006·5	89·1	91·7	91·4	93·4	87·6	90·6	85·9	97	96	89	94	1·2	● 1 h., and before noon.
16	1003·5	1004·3	1005·3	1004·3	90·0	93·2	90·8	95·5	89·0	91·7	85·4	93	77	87	86	1·8	⚿ over sea 3 h. ● 4 h., 9 h.
17	1003·9	1002·3	1003·3	1003·1	89·8	94·0	88·7	96·2	88·2	91·4	86·8	97	62	98	86	11·4	⚿ over sea 2 h. 30 m. ⚿●² 3 h. ●²
18	1006·1	1010·9	1012·7	1009·9	89·4	92·0	88·5	93·3	87·7	90·2	85·6	84	63	89	79	0·2	● 5 h. [15 h.
19	1012·6	1012·9	1010·9	1012·1	89·9	91·7	89·2	94·2	88·4	90·7	85·3	90	75	89	85	0·5	● 4 h.
20	1002·3	1001·3	1002·7	1002·1	89·0	88·7	88·7	91·3	87·2	89·0	83·3	96	98	98	97	18·3	⚿ over sea 3 h. 40 m.–4 h. 30 m. ⌒ on
21	1010·9	1012·2	1011·5	1011·5	88·0	91·4	88·5	92·5	87·3	89·5	85·3	88	70	88	82	—	[A.-Cu. ⚿● all day.
22	1007·7	1004·9	1000·7	1004·5	88·3	90·0	88·6	91·2	87·4	89·1	84·7	89	72	98	86	2·2	● 13 h., 14 h., 20 h.
23	993·1	998·7	1004·6	998·8	89·8	89·0	87·5	90·5	87·2	88·9	88·1	98	93	88	93	3·2	● *n*. ●⁰≡⁰ 4 h. ≡⁰ 15 h.
24	1007·2	1009·3	1009·5	1008·6	88·3	91·2	88·2	92·0	87·0	89·3	84·6	86	71	86	81	—	
25	1011·0	1011·8	1010·9	1011·2	88·0	91·1	88·5	91·8	87·2	89·3	84·8	89	63	77	76	—	
26	1008·2	1005·5	1004·5	1006·1	87·8	90·1	87·6	91·0	87·3	88·8	84·6	86	70	88	81	1·5	●⁰ 4 h., 10 h. ●² 16 h.
27	1007·8	1011·0	1013·5	1010·7	87·5	91·2	87·6	92·1	86·1	88·9	83·4	83	64	89	79	—	
28	1016·6	1017·4	1017·6	1017·1	88·5	91·9	87·0	93·0	85·5	89·2	78·9	87	69	91	82	—	
29	1017·1	1016·4	1015·6	1016·7	90·0	94·5	89·1	95·3	84·5	90·7	*n* 77·9	73	*n* 44	81	66	—	
30	1014·3	1012·4	1011·7	1012·7	91·3	97·8	91·2	98·2	84·5	92·6	82·4	78	45	68	64	—	
31	1009·8	1009·0	1006·7	1008·5	92·6	99·3	93·1	*x* 100·8	*x* 89·7	95·1	84·8	69	47	72	63	—	
Means	1009·4	1009·7	1009·9	1009·7	88·9	92·0	88·5	93·4	86·5	89·9	83·0	83·4	66·7	85·1	78·4	68·9	
Normal	1011·1	1011·3	1014	1011·3	88·8	92·2	88·4	93·4	86·5	89·8	83·3	82·6	66·4	83·2	77·4	45·4	

Jersey (St Louis Observatory).

Day.	Wind Direction and Force (0–12 on the Beaufort Scale). 7 h. Dir.	(0–12)	14 h. Dir.	(0–12)	21 h. Dir.	(0–12)	Mean.	Sunshine.* Total.	Per cent. of Possible.	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. Tenths. 7 h.	Upper. Type. 7 h.	Direction. 7 h.	Lower. Type. 7 h.	Direction. 7 h.	Tenths. 14 h.	Upper. Type. 14 h.	Direction. 14 h.	Lower. Type. 14 h.	Direction. 14 h.	Tenths. 21 h.	Upper. Type. 21 h.	Direction. 21 h.	Lower. Type. 21 h.	Direction. 21 h.	Mean Amount.
								hr.	%																
1	NE	3	N	3	NNE	2	2·7	*x* 16·1	100	0					0					1					0·3
2	NNE	2	N	4	ENE	4	3·3	13·8	86	3	Ci., A.-Cu.	NW			3	Ci.				2	A.-Cu.				2·7
3	ENE	4	NNE	4	NNE	2	3·3	12·9	80	4			Cu.	ENE	0					1					1·7
4	ENE	2	NE	2	NNE	2	2·0	15·6	97	7	A.-Cu.	NNE			1					4	Ci.				4·0
5	—	0	N	2	NW	1	1·0	11·2	69	10	A.-Cu.	NNE			4	Ci., Ci.-Cu.	N			2					5·1
6	N	2	WNW	3	WNW	1	2·0	14·7	92	4	Ci.	N			2	Ci.		Cu.		0					2·0
7	NNE	1	NNE	1	NNE	2	1·3	16·0	100	0					1			Cu.		0					0·3
8	E	2	NW	2	WNW	2	2·0	11·2	70	10	A.-Cu.	SW			7	A.-Cu.	SW			10					9·0
9	WSW	3	WSW	3	S	2	2·7	9·9	62	7	Ci.	SW	Cu.-Nb.	WNW	8			Cu., Cu.-Nb.	SW	7	A.-Cu.	SW	Cu.-Nb.		7·3
10	SW	5	WSW	4	WSW	5	4·7	7·7	48	7	Ci., A.-Cu	SW	Cu.-Nb.	SW	8	A.-Cu.	WSW	Nb.	WSW	6	A.-Cu.	WSW	Cu.-Nb.	WSW	7·0
11	SW	6	WSW	4	W	3	4·3	5·7	36	6	A.-Cu.	WSW	Cu.-Nb.	WSW	7	Ci. A.-Cu.	W SW	Cu.-Nb.	WSW	10			Cu.-Nb.	WSW	7·7
12	SW	4	WSW	5	W	4	4·3	10·7	68	10			Nb.	WSW	2	Ci.		Cu.		3	A.-Cu.		Cu.-Nb.		5·0
13	WSW	3	SW	3	SW	3	3·0	10·5	66	7	Ci.	SW	Cu.-Nb.	SW	2	A.-Cu.		Cu.	SW	7	A.-Cu.	SW			5·3
14	SSW	3	WSW	2	W	2	2·3	1·3	8	10			Nb.	SSW	7	A.-Cu.	SW	Nb.		6	A.-Cu.	SW			7·7
15	S	3	S	3	—	0	2·0	1·3	8	10			Nb.	SW	9			Nb.	SS W	6	A.-Cu.	SSW	Cu.	SSW	8·3
16	SW	2	SW	4	NNE	1	2·3	6·5	41	6	A.-Cu.	SSW	Cu.-Nb.	SW	10	A.-Cu.	SW			6	A.-Cu.	SW			6·7
17	—	0	NNE	2	SW	2	1·3	3·2	20	8	A.-Cu.	SW	Nb.	SW	7	Ci.-Cu., A.-Cu.	SW			8			Cu.-Nb., Nb.	WSW	7·7
18	SSW	4	W	4	SSW	2	3·3	13·4	85	0					1			Cu.		5	A.-Cu.	SW			2·0
19	SSW	3	WSW	4	ESE	2	3·0	8·6	55	6	Ci.-Cu., A.-Cu.	WSW	Cu.-Nb.	SW	3	Ci.-Cu.	W	Cu.	SW	6	A.-Cu.	SW			5·0
20	ENE	3	S	3	WSW	3	3·0	1·0	6	10			Nb.		10			Nb.		9	A.-Cu.	WNW	Cu.-Nb.	W	9·7
21	WSW	4	W	3	SW	2	3·0	12·3	79	5			Cu.-Nb.	W	3	Ci.	W	Cu.	W	6	A.-Cu.	SW	Cu.-Nb.	WSW	4·7
22	SSW	3	SW	3	SSW	3	3·0	4·8	31	7	A.-Cu.	SW	Cu.-Nb.	SW	10			Nb.		10			Nb.		9·0
23	SW	5	W	5	WNW	4	4·7	3·1	20	10			Nb.		10			Nb.	W	3			Cu.	WNW	7·7
24	WSW	4	W	4	W	4	4·0	12·3	80	7	A.-Cu.	WSW	Cu.-Nb.	WSW	6	A.-Cu.	SW	Cu.	W	7	A.-Cu.	SW			6·7
25	WSW	5	W	5	W	4	4·7	8·2	34	4			Cu.-Nb.	WSW	2	A.-Cu.	SW			10					5·3
26	WSW	4	SW	5	W	4	4·3	4·8	37	8	A.-Cu.	SW	Cu.-Nb.	WSW	3	Ci.-Cu.	WSW	Cu.	SW	10			Cu.-Nb.	WNW	7·0
27	NNW	3	NNW	3	NNW	3	3·0	14·4	94	3			Cu.	NNW	4			Cu.	NW	7	A.-Cu.	NW			4·7
28	NW	1	ENE	1	NNW	2	1·3	13·8	90	3	Ci.	NW	Cu.	W	4	Ci.-Cu.	NE	Cu.-Nb.	NNE	2	Ci.				3·0
29	SE	1	S	2	NNE	2	1·7	15·3	100	2	Ci.	N			0					0					0·7
30	E	1	ENE	2	E	4	2·3	15·2	100	0					0					0					0·3
31	ESE	1	SSE	2	ENE	4	2·3	13·4	88	0					3	Ci. A.-Cu.	SE SW			4	Ci., A.-Cu.				2·3
Means		2·8		3·1		2·6	2·8	309·0	63·4	5·6	—	—	—	—	4·4	—	—	—	—	5·0	—	—	—	—	5·0
Normal		3·1		3·6		3·1	3·3	273·7	56·2	6·4	—	—	—	—	5·2	—	—	—	—	5·0	—	—	—	—	5·5

* Actinic rays by Jordan Recorder.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s	m/s.	m/s.	h	m
1	...	2·3	0·4	...	...	2·1	2·1	...	...	Calm		...	...	...	2·3	...	7·6	24	0
2	...	...	7·9	...	...	...	7·2	...	...	...	5·2	...	...	...	4·3	...	12·0	5	35
3	...	...	4·9	...	...	5·8	1·2	...	...	3·6	2·4	...	...	1·9	1·3	...	8·0	8	45
4	...	1·9	1·3	...	...	Calm		...	...	0·4	2·0	...	...	3·0	3·0	...	6·8	21	25
5	...	Calm		...	...	...	8·2	...	2·8	...	6·7	...	...	...	6·2	...	13·2	10	40
6	...	2·5	6·1	...	...	2·1	5·2	...	0·7	...	3·5	...	2·5	...	2·5	...	10·8	4	40
7	...	0·7	3·5	...	2·2	..	3·2	...	5·2	...	3·4	...	4·3	...	2·9	...	10·8	17	50
8	4·5	...	1·9	...	5·5	...	3·7	...	1·8	...	2·7	...	2·8	...	1·1	...	11·5	7	15
9	0·8	...	4·2	...	2·0	...	4·8	...	6·1	...	2·5	...	3·5	...	0·7	...	10·3	3	25
10	2·5	...	...	2·5	2·7	...	...	1·8	3·6	...	1·5	...	3·6	...	1·5	...	11·0	3	55
11	...	Calm		...	2·4	...	...	1·0	3·3	...	4·9	...	4·0	...	4·0	...	10·6	23	40
12	2·8	...	2·8	...	...	0·7	3·5	...	3·8	...	5·7	...	...	...	6·2	...	11·9	15	40
13	..	2·0	4·8	...	1·0	...	4·8	...	5·5	...	3·7	...	3·0	...	2·0	...	10·5	16	15
14	2·3	...	...	2·3	2·9	...	...	4·3	6·1	...	...	2·5	5·8	...	5·8	...	14·3	21	0
15	1·7	...	3·1	...	5·5	...	3·7	...	3·6	...	1·5	...	1·3	...	...	3·0	11·1	9	25
16	1·5	...	0·6	...	4·7	...	3·1	...	4·6	...	...	...	5·2	...	2·1	...	11·1	11	45
17	4·8	...	1·0	...	4·2	...	0·8	...	...	Calm		...	4·8	...	1·0	...	11·1	21	40
18	4·0	...	1·6	...	5·2	...	2·1	...	9·6	...	4·0	...	5·6	...	5·6	...	16·0	16	0
19	4·2	...	4·2	...	3·7	...	3·7	...	5·7	...	2·4	...	4·0	...	1·6	...	12·1	4	45
20	1·6	...	...	...	...	...	...	7·5	4·5	...	1·9	...	...	3·4	8·2	...	14·1	17	30
21	...	1·8	9·0	...	...	...	6·9	...	6·0	...	4·0	...	4·4	...	4·4	...	12·7	16	5
22	5·8	...	...	1·2	10·0	...	...	2·0	8·9	...	...	...	6·8	...	1·3	...	16·2	8	25
23	4·3	...	2·9	...	2·8	...	1·1	...	1·5	...	7·4	...	...	...	4·6	...	13·0	16	10
24	1·8	...	4·3	...	4·7	...	7·1	...	6·0	...	4·0	...	4·0	...	4·0	...	13·8	16	10
25	3·3	...	4·9	...	5·6	...	5·6	...	7·1	...	4·7	...	5·5	...	3·7	...	15·0	13	50
26	4·1	...	4·4	...	2·7	...	4·1	...	...	5·9	...	...	...	7·1	1·4	...	12·7	0	45
27	...	4·5	0·9	...	...	4·2	0·8	...	...	2·3	2·3	...	...	2·1	2·1	...	9·0	0	15
28	...	2·4	1·0	...	...	Calm		...	...	Calm		...	1·9	...	1·3	...	7·2	23	15
29	1·3	...	1·8	...	4·5	...	1·9	...	3·6	...	2·4	...	0·9	...	1·3	...	8·8	9	5
30	0·9	...	1·3	...	2·1	...	...	0·9	...	1·6	0·3	...	...	1·6	...	4·0	6·9	22	50
31	...	...	...	2·3	4·7	...	...	3·1	3·0	...	...	1·3	1·6	...	...	1·6	8·6	14	0
S+N & W+E	76·6		87·1		94·0		105·4		116·8		82·9		94·6		95·0				
S−N & W−E	40·4		70·5		64·2		64·2		89·2		75·3		56·4		77·8				

SCOTLAND N.:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	...	0·4	2·3	...	2·4	...	3·6	...	...	...	3·6	...	...	3·6	1·5	...	5·2	2
2	...	2·3	0·4	...	...	1·5	0·6	...	...	3·2	2·2	...	...	0·9	2·1	...	4·3	14
3	...	...	2·6	...	...	2·0	4·8	...	...	2·3	5·5	...	...	...	3·0	...	8·5	23
4	...	1·4	7·1	...	...	2·9	6·9	...	...	...	4·6	...	4·2	...	4·2	...	8·2	24
5	5·5	...	2·3	...	...	...	8·9	...	...	...	8·2	...	...	...	3·9	...	9·8	11
6	...	2·4	5·7	...	...	4·0	4·0	...	...	2·6	...	...	...	...	...	2·0	6·6	10, 11
7	2·3	...	...	...	2·9	...	0·6	...	4·5	...	...	1·9	...	Calm		...	7·5	18
8	2·5	...	...	1·7	2·5	...	...	1·7	...	3·2	0·6	...	...	1·6	...	...	5·2	16
9	...	Calm		...	...	Calm		...	...	3·1	...	4·7	...	...	...	5·2	6·2	17, 19
10	1·9	...	...	1·3	2·0	...	...	0·4	3·3	...	...	3·3	0·6	...	...	3·2	5·9	18
11	...	...	...	5·6	...	...	...	7·2	...	3·5	...	3·5	...	5·7	3·8	...	7·5	7, 10, 12, 20
12	2·1	...	2·1	...	11·9	...	...	2·4	6·2	...	...	4·2	3·2	...	...	2·2	12·1	9
13	...	Calm		...	2·0	...	...	3·0	2·2	...	...	3·2	...	Calm		...	4·3	14
14	...	Calm		...	2·2	...	...	1·4	3·4	...	...	5·2	2·0	...	...	4·8	7·2	24
15	1·2	...	...	6·1	2·9	...	...	6·9	...	...	...	6·2	...	...	...	6·2	8·9	11
16	...	...	...	5·2	...	...	...	6·9	...	1·5	...	7·4	...	2·3	...	5·5	10·5	19
17	3·0	...	2·0	...	3·3	...	...	1·4	...	Calm		...	...	3·9	...	...	5·6	17
18	...	3·0	...	3·0	...	3·5	...	3·5	2·0	...	3·0	...	4·9	..	3·3	...	9·2	22
19	6·4	...	2·6	...	6·2	...	4·2	...	3·2	...	...	0·6	...	Calm		...	8·5	5
20	1·6	...	...	...	1·4	...	...	1·4	1·8	...	...	2·7	...	...	...	3·9	4·3	18
21	...	0·8	..	4·2	...	4·4	...	6·6	...	5·8	...	5·8	...	4·4	...	4·4	8·2	13
22	...	3·0	..	3·0	...	2·6	...	6·4	...	1·3	...	6·5	...	...	...	4·3	7·9	11
23	1·3	...	...	6·5	2·6	...	...	6·4	4·9	...	...	7·4	3·8	...	...	5·7	9·2	17
24	4·9	...	...	7·4	1·1	...	...	1·7	...	2·1	5·2	...	0·5	...	2·6	...	9·8	1
25	1·1	...	1·1	...	3·5	...	...	0·7	3·3	...	...	3·3	1·8	...	...	2·7	4·9	18
26	1·1	...	...	2·8	...	1·8	...	4·3	...	2·4	..	3·6	...	3·0	...	1·3	6·6	11
27	...	3·3	1·4	...	...	6·4	2·6	...	...	6·2	4·2	...	...	...	4·9	3·3	8·5	23
28	...	6·0	6·0	...	...	4·2	4·2	...	...	4·2	4·2	...	...	1·6	1·6	...	8·9	4
29	...	Calm		...	...	Calm		...	...	...	...	2·3	...	Calm		...	2·6	17
30	...	Calm		...	...	...	...	2·3	...	...	...	3·0	...	...	...	3·6	3·9	23
31	0·9	...	...	2·1	...	...	...	4·3	...	0·8	...	4·2	...	0·4	...	2·0	4·6	11
S+N & W+E	58·4		84·5		80·2		109·3		77·0		120·3		53·3		86·3			
S−N & W−E	13·2		−13·3		13·6		−28·5		−7·4		−37·7		−11·3		−27·7			

ENGLAND S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	3·8	...	3·8	...	3·5	...	3·5	...	3·3	...	3·3	...	3·3	...	...	6·8	16	30
2	...	3·3	...	...	...	3·7	...	5·8	...	5·3	...	5·3	...	3·5	...	5·2	8·9	10	30
3	...	...	...	3·8	1·3	...	...	3·1	...	1·3	...	2·0	...	1·8	...	1·8	6·2	0	0
4	...	3·3	...	...	...	2·3	...	1·0	...	3·5	...	1·6	...	1·2	...	0·5	4·7	7	0
5	...	0·4	...	0·2	...	2·7	...	2·7	...	4·6	...	1·9	...	5·3	1·1	...	8·4	22	30
6	...	4·9	1·0	...	...	4·5	0·9	...	...	5·0	2·1	...	...	1·6	0·7	...	7·0	14	30
7	...	Calm		...	...	0·7	0·3	...	...	1·3	...	...	...	0·8	...	...	2·6	0	5
8	...	Calm		...	...	2·1	3·2	...	...	5·0	5·0	...	...	5·0	5·0	...	14·1	22	15
9	...	4·2	6·2	...	...	2·9	6·9	...	...	1·5	7·8	...	...	1·6	3·9	...	17·7	0	55
10	...	0·8	1·9	...	...	6·6	2·7	...	...	3·0	7·3	...	...	4·0	9·6	...	15·4	19	40
11	...	5·6	13·5	...	...	6·3	9·4	...	...	3·0	7·3	...	1·1	...	5·7	...	16·9	3	40
12	...	4·5	10·8	...	...	2·5	12·3	...	...	7·7	7·7	...	...	5·8	8·6	...	18·8	6	55
13	...	3·2	4·8	...	...	1·8	1·8	...	3·0	...	3·0	...	7·8	...	...	1·5	10·0	22	55
14	4·6	...	...	...	4·2	...	6·2	...	...	...	7·5	...	2·9	...	6·9	...	9·5	2	10
15	1·3	...	3·1	...	5·0	...	2·1	...	...	Calm		...	0·7	...	0·3	...	9·0	10	15
16	2·3	...	2·3	...	4·6	...	1·9	...	2·4	...	5·8	...	1·0	...	2·3	...	8·8	13	35
17	1·1	...	2·7	...	4·6	...	...	...	3·5	...	3·5	...	5·8	...	2·4	...	9·0	23	45
18	3·0	...	7·3	...	...	3·8	9·2	...	5·1	...	7·7	...	1·9	...	4·6	...	14·6	7	40
19	1·0	...	2·3	...	0·8	...	1·9	...	1·6	...	3·9	...	10·4	...	...	4·3	12·2	21	40
20	6·9	...	2·9	...	4·1	...	4·1	...	...	6·3	...	...	...	7·1	7·1	...	12·2	9	10
21	...	1·5	7·8	...	...	2·7	6·6	...	...	...	5·0	...	6·6	...	2·7	...	10·8	23	55
22	8·6	...	5·8	...	8·6	...	5·8	...	1·1	..	5·7	...	1·6	...	3·9	...	12·9	11	5
23	0·8	...	1·9	...	...	6·6	2·7	...	...	5·8	8·6	...	...	3·0	7·3	...	12·0	11	55
24	...	1·6	8·1	...	...	1·6	8·1	...	...	3·2	7·7	...	...	3·0	7·3	...	11·0	9	10
25	...	3·2	7·7	...	...	3·5	8·5	...	...	3·2	7·7	...	...	4·3	10·4	...	17·4	13	35
26	...	4·6	11·1	...	...	7·2	10·7	...	...	10·4	10·4	...	...	10·4	7·0	...	19·2	5	45
27	...	7·7	3·2	...	...	5·0	2·1	...	...	5·4	2·2	...	...	2·7	1·1	...	10·2	4	35
28	...	1·6	0·7	...	...	1·2	0·5	...	0·7	...	1·6	...	...	Calm		...	1·5	16	45
29	1·9	...	...	0·8	2·5	...	...	...	3·0	...	...	1·6	3·0	...	...	3·0	4·5	17	5
30	2·1	...	...	2·1	4·1	...	...	4·1	5·6	...	...	3·7	5·9	...	...	3·9	7·6	16	40
31	6·2	...	...	2·6	4·6	...	...	1·9	3·9	...	...	1·6	4·6	...	...	1·9	7·6	23	5
S+N & W+E	94·0		118·4		115·6		130·0		109·6		138·5		117·7		120·0				
S−N & W−E	−14·4		91·8		−26·8		85·8		−48·0		96·5		−11·1		75·8				

ENGLAND E.:—GREAT YARMOUTH.

Height of Head above—Roof 10·7 m., Ground 12·8 m., M.S.L. 15·9 m.
Height of Cups above—Roof 3·7 m., Ground 18·3 m., M.S.L. 22·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust. (Gorleston.)	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	2·1	...	...	0·9	4·0	...	...	1·6	3·6	...	...	2·4	2·5	...	...	1·7	9·3	13	15
2	3·0	...	...	1·3	...	5·1	...	5·1	...	6·0	...	2·9	...	6·8	...	1·3	13·0	15	50
3	...	3·0	...	...	...	4·5	0·9	...	...	4·5	1·9	...	...	3·2	0·6	...	14·3	10	20
4	...	3·5	0·7	...	...	5·2	...	...	...	3·2	..	0·6	...	2·3	...	0·4	12·0	0	50
5	0·4	...	2·3	...	...	3·1	4·7	...	...	1·8	...	4·3	...	2·3	2·3	...	11·4	9	55
6	...	1·4	3·3	...	...	1·7	2·5	...	...	3·3	1·4	...	...	1·8	...	0·8	9·8	13	25
7	...	0·6	2·9	...	...	2·4	1·0	...	...	1·8	..	2·7	1·1	...	...	1·1	7·2	19	40
8	1·1	...	...	1·1	3·9	...	...	...	5·7	...	...	2·4	2·1	...	...	2·1	12·8	11	20
9	...	0·3	1·6	...	0·9	...	4·5	...	1·5	...	3·6	...	2·3	...	2·3	...	15·1	16	5
10	3·8	..	2·6	...	9·3	...	...	1·9	8·0	...	...	1·6	3·6	...	...	...	18·0	15	20
11	2·5	...	2·5	...	7·7	...	1·5	...	5·5	...	3·7	...	3·3	...	3·3	...	21·1	9	20
12	2·5	...	2·5	..	5·9	...	...	...	5·8	...	5·8	...	1·5	...	3·6	...	18·5	10	15
13	1·3	...	3·0	...	...	...	4·3	...	2·8	...	2·8	...	2·2	...	1·4	...	11·8	16	0
14	1·7	...	1·1	...	6·1	...	...	1·2	7·6	...	...	7·6	3·3	...	...	...	15·5	15	50
15	2·3	...	2·3	...	3·5	...	3·5	...	6·1	...	...	1·2	...	Calm		...	12·8	12	30
16	4·5	...	...	0·9	4·9	...	...	...	5·5	...	...	2·3	1·7	...	1·1	...	13·1	10	35
17	...	Calm		...	...	Calm		...	3·0	...	...	3·0	4·4	...	...	6·6	18·7	21	0
18	0·5	...	2·6	...	4·4	...	4·4	...	5·6	...	5·6	...	1·3	...	3·0	...	21·0	13	20
19	2·0	...	3·0	...	2·7	...	4·1	...	4·7	...	3·1	...	5·2	...	...	3·4	13·0	14	25
20	1·8	...	0·8	...	5·9	...	...	...	1·6	...	0·3	...	...	2·0	3·0	...	10·0	13	35
21	...	...	5·9	...	...	...	8·9	...	...	...	6·9	...	0·8	...	4·2	...	18·6	12	35
22	0·4	...	2·3	...	1·8	...	4·3	...	3·5	...	3·5	...	2·6	...	...	...	14·0	14	0
23	3·6	...	...	...	5·2	...	...	2·1	2·3	...	...	2·3	1·9	...	1·3	...	13·5	8	0
24	...	...	4·3	...	1·2	...	5·8	...	1·8	...	4·3	...	1·8	...	0·8	...	16·4	13	30
25	1·4	...	3·3	...	2·4	...	3·6	...	3·5	...	3·5	...	...	...	3·0	...	13·8	15	10
26	2·1	...	2·1	...	2·5	...	2·5	...	2·3	...	...	...	2·4	...	...	3·6	11·5	13	40
27	...	1·8	...	2·7	...	8·9	...	...	...	5·9	...	...	...	3·3	1·4	...	18·7	8	30
28	...	2·5	2·5	...	...	3·3	3·3	...	...	4·1	2·7	...	...	1·6	0·3	...	11·7	14	35
29	...	Calm		...	...	2·3	...	0·4	...	0·8	..	3·8	0·9	...	...	2·1	5·9	20	25
30	1·5	...	...	0·6	...	Calm		...	...	2·1	...	0·9	...	2·5	...	2·5	6·2	16	20
31	...	Calm		...	...	1·6	...	1·6	...	0·6	...	3·2	1·3	...	...	3·0	6·6	21	40
S+N & W+E	51·6		59·1		110·4		73·7		115·4		90·3		72·0		60·2				
S−N & W−E	25·4		44·1		34·2		45·9		45·4		7·9		20·4		3·0				

9. Seismological Diary.

Earthquakes :—Eskdalemuir.

Day.	Phase.	Time, G.M.T.	Period.	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	Δ.	Remarks.
		h m s	s	μ	μ	μ	km.	
1	e	6 22 30	...	...	...	...	...	
	e	6 26 44	...	...	...	...	...	
	in	6 33 15	...	...	...	...	...	
	L	6 55	...	...	...	...	...	
	M	7 5 17	27	15	...	...	...	
	F	8 45	...	...	...	...	...	
3	e	7 7 28	...	...	...	...	...	P well-marked on vertical record.
	i	7 12 32	...	...	...	...	...	
	i	7 16 31	...	...	...	...	...	
	i	7 20 33	...	...	...	...	...	
	L	7 30	...	...	...	...	...	
	M	7 36 39	26	27	...	...	...	
	M	7 43 40	35	81	...	...	...	Well-marked oscillation in N.W.-S.E. direction.
	M	7 58 12	30	32	...	...	...	
	F	10 30	...	...	...	...	...	
4	Pe	11 29 49	...	...	...	...	5100	Slight disturbance.
	S	11 36 40	...	...	...	...	...	
	L	11 42 40	17	...	...	...	...	
	F	11 58	...	...	...	...	...	
6	L	21 17 to	...	...	...	...	...	
		21 37	18	...	...	...	...	
8	P	10 33 40	...	...	...	...	7900	Assam. Preliminary portion notable for numerous oscillations of 5 secs. period. Time at epicentre 10 h. 22 m. 24 s. in agreement with Sydney. Coimbra (calc. from P and S) 10 h. 22 m. 28 s. Ottawa 10 h. 24 m. Press reports give 10 h. 20 m. (G.M.T.)
	PR_1 (?)	10 36 19	...	...	...	...	...	
	PR_2	10 38 35	...	...	...	...	...	
	S	10 42 54	...	...	...	...	...	
	SR_1	10 48 16	...	...	...	...	...	
	L	10 56	...	...	...	...	...	
	M	10 58	40	170	...	...	...	
	M	10 59	40	180	...	...	...	
	M	11 1	34	170	...	...	...	
	F	14 0	...	...	...	...	...	
9		2 45 to	...	...	...	...	...	Slight disturbance with no well-marked phases.
		3 15	...	...	...	...	...	
11	P	9 53 19	...	...	...	...	2550	
	S	9 57 30	...	...	...	...	...	
	L	9 59 24	22	...	...	...	...	
	F	10 42	...	...	...	...	...	
15	P	0 34 29	...	...	...	...	8200	Times uncertain owing to defective time-marking.
	S	0 44 0	...	...	...	...	...	
	L	0 56	...	...	...	...	...	
	F	2 0	...	...	...	...	...	
16	P	20 9 28	...	...	...	...	3600	S lost in changing sheet.
	S	(?)	...	...	...	...	...	
	L	20 18 29	...	...	...	...	...	
	F	21 0	...	...	...	...	...	
21	P	6 28 53	...	...	...	...	...	Moderate disturbance. Record confused with wind effects.
	F	9 0	...	...	...	...	...	
23	L	14 37 to	24	...	...	...	...	
		14 50	...	...	...	...	...	
24	L	12 18 to	20	...	...	...	...	
		13 7	...	...	...	...	...	
25	Pe	21 13 7	...	...	...	...	...	Slight disturbance. Preliminary phases feebly marked.
	L	21 32	...	...	...	...	...	
29	e	17 10 41	...	...	...	...	...	
	i	17 17 38	...	...	...	...	...	
	i	17 20 26	...	...	...	...	...	
	Le	17 47	38	...	...	...	...	
	Ln	18 5	20	...	...	...	...	
29	Le	18 5	20	...	...	...	...	
	F	19. 40	...	...	...	...	...	
31	P	14 43 44	...	...	...	...	...	Preliminary phases indistinct.
	Ln	15 13	20	...	...	...	...	
	Le	15 19	20	...	...	...	...	
	F	16 20	...	...	...	...	...	

Microseisms of N. Component :—Eskdalemuir.

Day.	0 h. A_N.	0 h. T.	6 h. A_N.	6 h. T.	12 h. A_N.	12 h. T.	18 h. A_N.	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	0·8	5·5	0·6	5·5	0·4	5·5	0·4	4·5
2	0·6	4	0·5	4·5	0·4	4·5	0·3	4
3	0·2	4	0·2	4·5	0·2	4	0·3	4
4	0·2	4·5	0·2	4	0·2	4	0·4	5
5	0·6	5	0·5	4·5	0·6	5·5	0·8	4
6	0·9	5	0·7	5·5	0·6	5	0·6	5
7	0·6	5	0·5	5	0·5	5	0·5	4
8	0·5	5	0·5	5	...	...	0·5	5
9	0·8	5	0·8	6	0·8	5·5	0·6	6
10	0·5	5	0·5	5	0·5	4	0·3	5·5
11	0·6	4	0·7	4	0·6	4	0·7	4
12	0·6	4	0·6	4	0·6	3·5	0·5	3·5
13	0·7	4	0·6	4	0·5	3·5	0·5	3·5
14	0·6	3	0·6	3	0·5	3·5	0·6	3·5
15	0·6	4	0·4	3·5	0·6	3·5	0·5	3·5
16	0·7	4·5	0·6	4	0·7	4	0·6	4
17	0·6	3·5	0·6	4	0·5	3·5	0·5	4
18	0·5	4	0·7	4	0·6	4	0·5	3·5
19	...	...	...	...	0·8	3·5	...	...
20	...	...	...	...	0·7	4	0·7	4
21	0·7	4	0·3	4·5	0·3	4	0·5	4
22	1·1	4	1·0	4·5	...	...	...	...
23	0·6	4·5	0·6	4·5	0·7	5	0·7	5
24	1·0	4·5	0·9	4·5	0·8	4	1·0	4
25	0·9	5	0·8	4	1·0	4·5	0·8	4·5
26	1·1	4	0·9	4	0·8	4	0·6	3·5
27	0·3	4	0·3	4	0·3	3	...	...
28	0·3	3	0·1	4	0·2	4	0·1	3
29	...	...	...	...	...	...	...	...
30	0·3	4	0·3	4	...	...	...	...
31	...	...	0·8	4·5	0·7	4	0·9	4

Means for Month $\begin{cases} A_N = 0·6. \\ T = 4·3. \end{cases}$ Normals, 1911–17 $\begin{cases} A_N = 0·3. \\ T = 4·4. \end{cases}$

Earthquakes :—Richmond (Kew Observatory).

Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h m	h m	
1	...	7 16	Small.
3	7 12	8 8	Amplitude on trace 3·4 mm.
4	...	11 36	Very small.
8	10 43	11 5	Amplitude on trace 2·8 mm.
15	...	1 9	
16	...	20 13	Small.
18	...	14 9	Small.
20	...	8 4	Very small ; doubtful.
21	...	7 45	Small.
24	...	12 31	Small.
25	...	21 47	Very small.
31	...	15 27	Amplitude on trace 1·2 mm.

10. Soundings with Pilot Balloons.

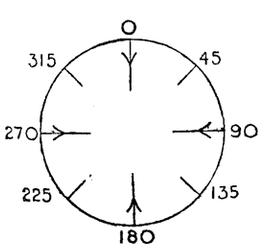
Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	Geostrophic. m/s.	By Anemometer. From N.	By Anemometer. m/s.	At Heights above M.S.L. 500 m. From N.	500 m. m/s.	1000 m. From N.	1000 m. m/s.	2000 m. From N.	2000 m. m/s.	3000 m. From N.	3000 m. m/s.	4000 m. From N.	4000 m. m/s.	5000 m. From N.	5000 m. m/s.	Cloud Observations. Type.	From N.	m/s.
		h. m.	°		°		°		°		°		°		°		°			°	
1	S. Farnboro'	7 0	?	?	light		25	6·5	10	6·0	355	5·5	355	5·0	10	9·0	355	8·0	...	...	...
1	,,	16 10	?	?	330	2·0	340	4·0	355	6·0	70	3·5	350	7·0	360	10·0	345	14·0	Ci., Cu.	...	...
1	Cahirciveen	7 10	30	8	330	1·5	10	4·7	15	5·5	5	6·0	355	7·5	...	...	...	...	St., Cu.	...	...
1	,,	15 4	360	8	325	7·0	10	9·0	360	13·5	360	13·0	355	11·5	...	...	...	...	Ci., Ci.-St. / A.-Cu., Cu.	335	...
2	,,	8 30	20	10	65	7·5	20	4·1	40	11·0	35	11·0	...	...	...	...	...	...	A.-Cu. / Cu., St.-Cu.	25 / 45	...
2	,,	15 30	?	?	35	2·8	70	4·2	50	9·0	30	10·0	...	...	...	...	...	...	Cu.	45	...
2	S. Farnboro'	7 0	30	10	350	5·0	5	8·0	345	6·0	345	5·0	340	7·5	320	8·5	335	10·5	Ci.	360	...
3	Eskdalemuir	7 15	?	?	65	2·6	50	2·5	350	1·5	320	6·0	340	9·0	350	10·5	...	...	...	...	...
3	Cahirciveen	7 25	?	?	calm		360	0·1	320	2·9	15	3·5	60	3·4	350	2·0	285	5·0	Ci. / Cu.	295 / 45	...
3	,,	15 35	?	?	295	3·0	310	1·9	75	0·7	35	2·5	315	3·5	300	6·0	310	9·0	A.-Cu. / Ci.-St.	295 / ...	...
4	,,	7 20	?	?	345	5·5	5	1·6	225	1·1	285	6·0	305	4·8	305	7·5	305	7·0	Ci.-Cu. / Ci.	315 / ...	...
4	,,	15 55	?	?	330	7·0	10	5·5	290	1·6	300	6·5	290	7·0	305	10·0	...	...	A.-Cu. / Cu.	315 / 335	...
4	Eskdalemuir	7 15	320	9	200	3·2	260	4·2	275	13·0	280	13·0	290	14·5	...	...	...	...	Ci. / A.-Cu.	315 / 295	...
4	Aberdeen	7 20	320	9	305	5·5	325	9·0	315	10·0	265	9·0	...	...	...	...	...	...	A.-Cu., St.-Cu.	270	2·6
4	S. Farnboro'	6 50	?	?	340	1·5	15	11·0	30	18·0	20	11·0	...	...	...	...	...	...	Ci.	225	...
4	,,	7 30	?	?	350	3·0	10	10·0	35	17·5	15	10·5	...	...	...	...	...	...	Ci.	225	...
5	,,	6 55	?	?	light		345	5·0	275	5·0	275	14·5	290	11·5	...	...	...	...	A.-Cu.	315	...
5	,,	14 10	320	9	290	3·0	285	6·0	315	5·0	310	9·0	315	10·0	335	12·0	...	...	Fr.-Cu. / Ci., Ci.-Cu.	... / 315	...
5	Eskdalemuir	7 15	300	13	200	6·0	260	6·0	275	22·5	285	22·0	...	...	...	...	...	...	St. / A.-St.	270 / 315	...
5	Cahirciveen	7 10	?	?	calm		315	6·0	330	8·0	335	10·0	340	11·5	...	...	...	...	Ci., Ci.-Cu.	335	...
6	,,	15 50	?	?	350	7·5	350	12·5	330	8·0	265	5·5	255	12·0	...	...	...	...	Cu.	360	...
6	S. Farnboro'	6 50	330	10	light		320	11·8	310	9·0	310	14·0	...	...	...	...	...	...	A.-Cu.	305	...
8	,,	6 50	?	?	190	1·0	210	4·5	200	4·5	230	4·0	255	8·0	255	15·5	260	16·5	Ci.-Cu., A.-Cu.	...	...
9	,,	6 35	270	10	250	5·5	260	10·5	260	10·5	260	8·0	225	19·5	215	22·5	...	...	Cu., Fr.-Cu.	...	...
9	Eskdalemuir	7 20	?	?	calm		...	...	145	3·0	145	3·7	165	7·0	...	...	...	...	A.-Cu., Cu. / Ci.	145 / 180	...
10	,,	7 20	?	?	60	0·8	145	5·5	150	7·5	160	7·0	...	...	...	...	...	...	Ci. / A.-Cu. / St.-Cu., Cu.-Nb.	225 / 155 / 135	...
10	Aberdeen	7 30	?	?	315	1·0	160	1·5	175	5·5	160	7·5	140	6·0	...	...	...	...	Ci.	135	...
13	,,	7 30	270	9	270	2·0	285	4·5	280	8·0	250	7·0	280	7·0	...	...	...	...	St.-Cu.	270	...
13	S. Farnboro'	7 0	270	13	250	2·5	275	9·5	275	7·5	270	11·0	...	...	...	...	...	...	A.-Cu.	...	...
13	Cahirciveen	8 5	270	7	260	1·4	240	3·8	245	5·0	255	8·5	...	...	...	...	...	...	Fr.-St. / Cu., St.-Cu.	... / 225	...

			6000 m.		7000 m.		8000 m.		9000 m.	
			From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.
1	S. Farnboro'	7 0	10	12·0	...	...	...	...	...	...
2	,,	7 0	350	19·0	...	...	...	...	...	...
3	Cahirciveen	7 25	290	6·5	305	5·5	...	...	...	...
3	,,	15 35	290	7·5	275	9·5	275	12·0	280	14·0
4	,,	7 20	320	10·0	335	9·0	...	...	...	...

(For observations at lower levels, see above.)

Height of Station above M.S.L. = H.
Height of Anemometer above ground = h.

	H.	h.
Aberdeen	14 m.	32 m.
Eskdalemuir	242 m.	15 m.
S. Farnborough	70 m.	31 m.
Cahirciveen	9 m.	13 m.



Wind Protractor.

Notes on Pressure Distribution.

July 1918.

1 7 h., 18 h. } Anticyclone over the British Isles, centred off the W. of Ireland.
2 7 h., 18 h. }

3 7 h., 18 h. } Anticyclone over the British Isles, centred over Ireland.
4 7 h., 18 h. }

5 7 h., 13 h. } Anticyclone over the British Isles, centred off S.W. of Ireland; Low
6 7 h., 18 h. } over the Baltic.

8 7 h. Low extending from Iceland to Scotland, centred midway; High over the Central Empires.

9 7 h. } Low over the British Isles, centred over the N. of Ireland.
10 7 h. }

13 7 h. Low over North Sea; High over the Azores, extending to the Bay of Biscay.

Notes on Ascents.

1st, 7 h. 0 m. Dense surface haze just cleared.
1st, 15 h. 40 m. Solar halo.
4th, 7 h. 20 m. Aberdeen A.-Cu. and St.-Cu. in lenticular sheets at various levels.
5th, 6 h. 55 m. Considerable haze.

10. SOUNDINGS WITH PILOT BALLOONS—*continued.*

Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	m/s.	By Anemometer. From N.	m/s.	At Heights above M.S.L. 500 m. From N.	m/s.	1000 m. From N.	m/s.	2000 m. From N.	m/s.	3000 m. From N.	m/s.	4000 m. From N.	m/s.	5000 m. From N.	m/s.	Cloud Observations. Type.	From N.	mr/s.
		h. m.	°		°		°		°		°		°		°		°				
13	Cahirciveen	16 20	?	?	180	8·0	205	9·0	175	11·0	210	9·0	...	...	...	...	...	...	A.-Cu.	225	...
																			Cu.	180	...
15	,,	16 40	?	?	210	2·8	175	4·2	150	3·6	165	5·5	2·0	10·5	210	12·0	205	12·5	Ci.-Cu.	155	...
																			Cu.	180	...
17	Aberdeen	7 30	?	?	180	3·0	215	4·0	245	4·5	215	7·5	...	...	...	...	...	...	St.-Cu.	200	...
18	Cahirciveen	7 55	?	?	220	6·0	245	7·0	245	9·0	240	8·0	...	...	...	...	...	...	Cu., St.-Cu.	225	...
19	,,	7 40	230	10	225	5·5	230	8·5	225	9·0	220	15·0	...	...	...	...	...	...	A.-Cu.	225	...
																			Cu., St.-Cu.	205	...
19	,,	16 30	?	?	280	5·0	210	6·0	205	5·5	230	5·5	...	...	...	...	...	...	Ci.-Cu	205	...
																			Ci.-St.	...	...
																			A.-Cu., St.	205	...
20	,,	7 40	?	?	Ca	lm	350	1·4	330	3·1	300	3·5	...	...	...	...	...	...	High Cu.	205	...
																			Cu., St.-Cu.	360	...
20	,,	15 55	?	?	275	4·9	280	6·0	280	8·5	260	7·0	...	...	...	...	...	...	Cu.	295	...
20	S. Farnboro'	6 55	210	11	165	6·0	200	11·0	210	12·5	210	20·5	...	...	...	...	...	...	Ci.	205	...
																			Cu., Fr.-St.	...	...
20	Aberdeen	7 30	?	?	200	2·0	145	8·5	165	10·0	155	9·0	...	...	...	...	...	...	A.-St.	...	...
21	Cahirciveen	7 25	230	10	230	4·5	250	8·5	255	10·0	250	11·5	...	...	...	...	...	...	Ci.-St.	...	...
																			Cu., Cu.-St.	225	..
24	S. Farnboro'	6 40	270	11	255	8·0	255	11·5	260	14·5	255	13·5	...	...	...	...	...	...	Ci.-Cu.,A.-Cu	...	...
																			St.-Cu. & Fr.-Cu.	...	...
27	Cahirciveen	12 0	?	?	325	4·8	340	3·8	360	3·0	325	4·8	330	9·5	325	11·5	...	...	A.-Cu.	315	...
																			Cu.	90	...
29	S. Farnboro'	6 25	?	?	lig	ht	225	0·8	235	4·0	330	2·5	325	3·5	315	6·0	335	11·0	Ci.	...	...
30	,,	6 30	?	?	lig	ht	35	1·9	?	0·3	320	3·3	285	3·4	310	3·7	310	8·0	A.-Cu.	...	...
30	Cahirciveen	7 20	180	11	135	8·5	175	12·5	175	24·5	180	11·0	185	8·5	175	18·5	...	...	Ci.	180	...
																			St., Lent. Cu.	180	...
																			Low St.	155	...
30	,,	11 20	?	?	165	10·5	160	14·5	160	24·5	165	25·5	...	...	...	...	...	...	A.-Cu.	155	..
																			Lent. Cu. & St.	180	...
30	,,	16 45	?	?	140	9·5	155	18·5	160	22·0	175	19·5	180	14·5	...	...	...	...	A.-Cu. & St.	180	...
																			Lent. Cu. & St.	180	...
30	Eskdalemuir	11 10	?	?	180	2·5	130	3·8	125	4·5	110	2·5	40	5·5	25	5·5	30	3·7	Cu.	90	...
31	S. Farnboro'	6 55	?	?	lig	ht	195	5·5	145	4·2	265	1·9	...	...	...	...	...	...	...	...	...

				6000 m.		7000 m.		8000 m.		9000 m.		10,000 m.		11,000 m.		12,000 m.	
15	Cahirciveen	16 40	(For observations at lower levels, see above.)	195	20·0	200	17·5	...	...	...	...	...	...	...	...	...	..
29	S. Farnboro'	6 25		360	10·5	...	...	...	...	...	...	...	...	...	...	...	...
30	,,	6 30		340	11·0	325	5·5	345	7·0	...	...	...	...	...	...	...	...
30	Eskdalemuir	11 10		335	1·5	315	3·0	55	1·2	305	1·8	295	3·8	310	4·9	340	5·5

Notes on Pressure Distribution.

July 1918.

13 18 h. South-westerly type.

15 18 h., 17 7 h. } Low centred off W. of Ireland.

18 7 h. Low centred over Scotland.

19 7 h., 18 h. South-westerly type.

20 7 h., 18 h. Low over the British Isles, centred over Ireland.

21 7 h. High over Bay of Biscay; Low over North Sea.

24 7 h. Low over the British Isles, centred over Scotland; High over the Bay of Biscay.

27 13 h. High over the British Isles; Low over the North Sea.

29 7 h., 30 7 h., 13 h., 18 h., 31 7 h. } Anticyclonic ridge over the British Isles; Low over the Atlantic and the Baltic.

Notes on Ascents.

17th, 7 h. 30 m. Cloud clearing rapidly.

24th, 6 h. 40 m. Increasing St.-Cu. and Fr.-Cu.

30th, 6 h. 30 m. A.-Cu. developing during ascent.

30th, 7 h. 20 m. An exceedingly complex sky consisting mainly of lenticular St. and Cu. (stationary type).

30th, 11 h. 20 m. Convection probable at all levels.

11. Nephoscope Observations.

Aberdeen. Taken at 13 h. G.M.T.

Day.	Type of Cloud.	Degrees from N.	Velocity-height-ratio.			Remarks.
			Milliradians per Second.	Components.		
				W.–E.	S.–N.	
			mr/s.	mr/s.	mr/s.	
1	St.-Cu.	274	3·0	+3·0	−0·2	Small St.-Cu. to A.-Cu. at edges of sheets.
3	Cu.	325	8·3	+4·7	−6·8	
4	Cu.	298	8·0	+7·0	−3·8	Rapidly formed fused sheet of Cu.
6	Cu.	275	7·1	+7·1	−0·6	A good deal of turbulence evident in the masses of Cu.
10	Ci.	168	2·0	−0·4	+2·0	A rather coarse variety of Ci., the quantity varying rapidly.
12	St.-Cu.	203	1·8	−0·7	+1·7	A.-Cu. to St.-Cu., mainly the latter.
13	Cu.-Nb.	271	3·6	+3·6	−0·1	Cu. changing to Cu.-Nb., with ●⁰ showers.
19	Cu.-Nb.	246	5·0	+4·6	+2·0	Cu. to Cu.-Nb.; central mass measured; great variation in velocities of different parts of cloud.
24	Cu.-Nb.	276	4·9	+4·9	−0·5	Thunder in afternoon.
25	Ci.	254	0·7	+0·7	+0·2	Faint indefinite Cu. in patches. Solar halo.
29	Ci.	315	1·4	+1·0	−1·0	Slight traces of hazy Ci.
31	Ci.	306	1·0	+0·8	−0·6	Observations made at *15* h. of fine bands of Ci. and "speckle-cloud," radiating point of bands was N.W. Some very typical plumes and tufted wisps were included in the bands, and also some very delicate "speckle-cloud."

Note.—From the 13th inst. till the end of the month the sky was covered practically continuously with sheets of uniform St. and Nb., accompanied by much fog.

12. Aurora.

None reported.

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*

Eighth Year.—No. 8. AUGUST 1918.] Units based on the C.G.S. System. [*Price* 1*s.*

1. SUNSHINE AND SOLAR RADIATION.

Day.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W.							RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W.					ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W.						CAHIRCIVEEN.	
	Bright Sunshine.*		Radiation received on Horizontal Surface by Callendar Radiograph.					Bright Sunshine.*		Radiation at Noon by Ångström Pyrheliometer.			Bright Sunshine.*		Radiation by Ångström Pyrheliometer.				Bright Sunshine.*	
					Maximum.															
					For Day.		11.30 h. to 12.30 h.													
	Total.	Per cent. of Possible.	Daily Total.	Per cent. of Planetary.	Amount.	Time.		Total.	Per cent. of Possible.	Intensity.	Vertical Component.	Sky.	Total.	Per cent. of Possible.	Time.	Sky.	$\frac{p}{p_0}$ sec Z.	Intensity.	Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	5·2	34	1400	38	65	12 18	65	5·2	34	50	42	Ci.	0·0	0	…	…	…	…	5·1	33
2	0·0	0	? 370	10	34	14 45	10	0·0	0	…	…	…	8·1	51	…	…	…	…	0·0	0
3	0·2	1	490	13	37	12 50	27	1·0	7	…	…	…	11·8	75	…	…	…	…	0·2	1
4	7·3	48	1490	41	67	12 20	67	7·2	47	…	…	…	0·8	5	…	…	…	…	0·0	0
5	0·6	4	760	21	62	12 6	62	0·4	3	…	…	…	0·0	0	…	…	…	…	4·2	28
6	5·7	38	1290	36	74	14 39	33	8·3	55	…	…	…	1·5	10	…	…	…	…	10·5	69
7	2·1	14	870	24	66	12 10	66	2·7	18	…	…	…	6·9	44	…	…	…	…	1·1	7
8	2·4	16	980	28	72	10 32	62	1·8	12	…	…	…	2·1	14	…	…	…	…	3·9	26
9	4·6	31	1220	35	81	13 28	55	5·9	39	…	…	…	5·0	32	…	…	…	…	0·1	1
10	8·9	60	1390	40	61	13 5	59	11·6	78	58	47	Hazy	6·9	45	…	…	…	…	4·1	27
11	4·7	32	1150	33	68	13 12	62	6·5	44	…	…	…	0·1	1	…	…	…	…	2·6	17
12	5·6	38	1320	38	72	13 38	68	8·0	54	…	…	…	5·6	37	…	…	…	…	10·4	70
13	12·5	85	1600	47	80	12 23	80	12·4	84	73	59	Clear	3·2	21	…	…	…	…	12·4	84
14	11·5	78	1990	58	76	11 38	70	12·0	82	75	60	Clear	1·7	11	…	…	…	…	5·2	35
15	12·3	84	1780	53	80	10 56	75	11·8	81	76	60	Clear	5·5	37	…	…	…	…	1·4	10
16	7·7	53	1340	40	58	12 15	58	6·8	47	…	…	…	1·5	10	…	…	…	…	0·0	0
17	0·6	4	460	14	65	14 21	15	0·2	1	…	…	…	0·8	5	…	…	…	…	0·4	3
18	10·5	73	1610	49	81	13 50	60	9·5	66	…	…	…	6·5	44	…	…	…	…	3·8	26
19	7·0	49	1370	42	81	12 48	71	6·2	43	60	47	Ci.	0·0	0	…	…	…	…	0·0	0
20	5·7	40	1120	34	66	13 45	33	6·3	44	…	…	…	0·0	0	…	…	…	…	0·0	0
21	9·2	64	1630	50	68	12 25	68	9·3	65	74	58	Hazy	1·2	8	…	…	…	…	0·7	5
22	12·5	88	1890	59	67	12 48	67	12·5	88	…	…	…	0·2	1	…	…	…	…	0·0	0
23	2·5	18	1100	35	62	?	?	2·7	19	…	…	…	8·0	55	…	…	…	…	9·8	69
24	11·0	78	1670	53	73	11 48	73	11·2	79	…	…	…	3·9	27	…	…	…	…	1·7	12
25	5·4	39	1140	36	71	9 22	48	4·0	29	…	…	…	0·0	0	…	…	…	…	4·2	30
26	1·4	10	670	22	49	9 32	37	1·7	12	…	…	…	0·0	0	…	…	…	…	2·0	14
27	0·3	2	588	19	42	8 11	30	0·1	1	…	…	…	0·0	0	…	…	…	…	1·5	11
28	1·2	9	560	18	54	13 20	26	1·3	9	…	…	…	7·5	53	…	…	…	…	9·3	67
29	7·8	57	1290	43	65	12 54	64	8·1	59	57	42	Hazy	4·2	30	…	…	…	…	2·9	21
30	2·8	20	940	31	76	11 4	60	3·1	23	…	…	…	3·7	26	…	…	…	…	1·9	14
31	5·7	42	1210	41	71	9 54	48	4·8	35	…	…	…	5·0	36	…	…	…	…	0·6	0
Means	5·65	39	1183	35	66	—	54	5·90	41	—	—	—	3·29	22	—	—	—	—	3·23	22
Normal	5·10	36	1167	—	—	—	—	6·03	42	—	—	—	4·32	29	—	—	—	—	5·00	35
	←5 years→		3 years					←35 years→					←5 years→						←35 years→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M. S. L.:—H = 9·1 m. H_b = 13·7 m. H_a = 26·4 m. Above Ground: h_t = 1·3 m. h_r = 0·56 m. h_a = 13·9 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount (0–10) and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	REMARKS.	Magnetism.
							Vapour Pressure.		Percentage.											Horizontal Force, Declination West, and Inclination.
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9h.		21 h.		9 h.	21 h.				
	mb.	mb.	a. 200+	a. 200+	a. 200+	a. 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	a. 200+		
1	1006·7	1008·4	89·9	88·6	92	88	18·0	16·0	94	91	280	2	320	3	9	9	1·8	87	● to o. *n.* Fair to dull *p.*	
2	1007·0	1004·8	88·2	87·6	89	87	14·7	15·5	86	94	350	5	345	10	10	10●	1·2	86	Dull. e. and d. *p.*	
3	1007·5	1009·4	88·4	87·7	90	86	15·9	13·6	92	82	360	6	325	4	10∞	9	0·2	87	d. to o. *n.* Dull.	
4	1007·6	1000·6	87·3	88·6	89	84	15·2	15·8	94	90	155	3	125	5	10	9	6·0	80	Fair *n.* o. *a.* ● 13 h.–15 h. d. *p.*	
5	1001·9	1004·8	89·3	86·5	90	84	16·7	12·8	91	83	275	2	280	11	10	9	8·7	84	c. *n.* p. *a.* Fine day. ● *p.*	
6	1011·1	1014·5	87·6	86·0	90	84	13·0	13·4	79	90	315	8	—	0	8	2☽	—	84	o. *n.* Fair *a.* ☽ *p.*	
7	1010·8	1014·1	87·2	87·2	90	83	15·3	14·1	95	88	165	8	245	4	10●	7	1·8	80	☽ *n.* ●⁰ *a.* c. to. o. *p.*	—
8	1017·0	1021·1	88·4	87·3	91	86	14·1	14·9	81	92	255	6	260	2	10	3	—	84	Fine *n.* o. to fair day. Fine *p.*	
9	1023·6	1025·4	89·4	89·3	*x* 93	87	18·1	17·4	98	95	225	2	185	4	10	10	0·6	84	Fine to o. d. *a.* and *p.*	
10	1023·0	1019·0	90·3	89·4	*x* 93	88	17·4	16·3	89	88	180	6	170	9	10	9	—	85	o. to c. *n.* and *a.* Fair day.	8th—
11	1014·5	1017·9	88·6	87·9	91	87	16·9	15·8	96	94	170	8	230	2	10●	3	*x* 16·6	88	o. *n.* ● *a.* Fine later.	
12	1022·1	1025·7	89·5	87·2	92	85	15·3	14·3	82	89	260	5	255	2	7	2	0·1	85	c. *n.* Fine bright day.	
13	1025·0	1018·9	90·6	88·8	92	85	16·4	16·2	82	91	180	7	175	8	2	9	—	82	Fine and bright.	
14	1013·6	1020·0	89·4	87·7	91	87	16·4	12·8	89	77	225	6	295	5	7	6	3·0	87	● *a.* Fine day.	
15	1022·0	1020·7	88·7	87·2	91	86	13·4	13·7	76	85	255	3	—	1	7	10	—	82	Fine to fair. Dull *p.*	
16	1017·3	1014·4	88·3	88·6	90	85	14·1	16·7	82	95	225	5	235	6	10	10	3·2	84	Dull *n.* Fair *a.* ● *p.*	
17	1014·4	1017·3	89·2	88·1	91	87	16·4	15·6	90	92	220	5	280	7	10	10	0·2	85	c. to o. *a.* o. to d. *p.*	
18	1020·5	1020·7	88·5	87·9	91	87	13·1	16·1	75	96	285	7	185	4	7	10	3·6	86	o. *n.* Fair *a.* o. to ● *p.*	
19	1019·5	1019·9	89·7	89·7	92	88	18·1	18·1	96	96	245	5	205	2	10	10	0·9	87	o. p. *n.* Dull e. ≡⁰ *p.*	
20	1018·8	1017·6	89·7	89·3	92	*x* 89	18·1	18·0	96	98	175	5	175	4	10	10	—	89	Dull e., with d.	
21	1014·0	1011·1	89·6	89·5	92	88	16·5	17·4	88	93	135	5	180	6	10	10	0·3	86	o. d. *n.* Fair ☽ *a.* Dull day.	
22	1006·7	1016·8	89·0	87·1	91	85	17·1	12·8	95	80	230	9	290	5	10	8	2·8	89	o. *n.* p. *a.* Dull day. Fair later.	—
23	1019·8	1016·7	88·4	87·1	90	83	14·2	14·2	82	89	155	2	185	4	7	8	—	79	Fine. ☽ *a.* ⊕ *p.*	
24	1011·2	1009·7	89·1	88·0	92	86	17·0	15·7	94	93	185	3	190	3	9	10	5·4	84	o. *n.* p. *a.* Fair day. o. p. *p.*	
25	1007·9	1012·3	87·9	87·1	89	86	15·6	12·5	93	78	270	4	315	6	10	8	2·7	84	o. p. *n.* and *a.* Fair *p.*	
26	1014·6	1015·4	87·7	87·9	91	86	13·3	14·8	80	88	290	3	235	2	8	10	1·0	83	o. d. to c. *a.* Dull *p.*	
27	1008·1	1017·7	88·9	86·4	89	86	16·8	10·9	94	71	235	10	345	8	10	9	5·9	87	● *n.* and *a.* Dull to fair day.	—
28	1022·5	1025·7	86·8	86·3	89	84	10·7	11·2	68	74	360	8	5	4	7	8	—	83	Fine and bright. y.	
29	1027·4	1027·1	86·8	87·5	90	*n* 81	12·6	14·0	81	85	—	1	275	2	8	8	—	*n* 77	Fine, with ☽ early. o. *a.* and *p.*	
30	1023·6	1021·8	88·5	87·3	89	87	16·8	13·2	96	82	245	7	310	5	10	9	3·8	84	o. to ● early. Dull *a.* Fair *p.*	
31	1016·6	1012·5	86·9	86·0	*n* 88	85	13·7	11·0	87	74	285	7	325	7	10	5	1·0	85	o. p. *a.* Fair to fine later.	
Means	1015·4	1016·2	88·6	87·5	90·5	85·9	15·5	14·7	88	88		5·3		4·7	8·9	8·1	70·8	84·4	Monthly **Totals** or **Means.**	
Normal	1012·7	1013·1	88·3	87·4	90·9	85·3	14·6	14·3	85	87		4·7		4·1	—	—	124·1	—	**Normals.**	
	←45 years→						←30 years→				←35 years→						45 yrs.			

* By Campbell-Stokes Sunshine Recorder.

x denotes the maximum and *n* the minimum value in the column.

Wt. 37652/515—400—7/19.—N. & Co., Ltd. Gp. XV.

3. METEOROLOGY :—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 5·5 m. Barometer, H_b = 10·4 m. Cups of Anemometer, H_a = 25 m.
Heights above Ground :—Thermometers, h_t = 3·0 m. Rain-gauge, h_r = 0·53 m. Cups of Anemometer, h_a = 20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	Remarks.
							Vapour Pressure.		Percentage.										
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
	mb.	mb.	a. 200+	a. 200+	a. 200+	a. 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	a. 200+	
1	1012·8	1010·3	92·3	90·6	98	87	16·0	14·1	72	71	101	4	79	6	? 5∞	10∞	—	82	≡⁰ early. Fair to fine. ∞².
2	1005·1	1004·1	90·3	88·8	91	87	15·3	16·0	78	90	90	5	180	2	10≡⁰	9	9·0	87	≡⁰ early. ● a. Dull.
3	1003·8	1005·2	87·9	88·3	92	86	15·6	15·0	93	87	—	1	—	1	10●≡⁰	7≡⁰	x 9·7	82	● a. Dull to c. T 14 h.
4	1007·5	1008·7	90·0	90·4	96	87	15·0	16·1	78	82	—	0	236	2	7	10	0·1	82	Fine 8 h.–16 h. 30 m. o. to c. later.
5	1007·5	1002·1	89·9	89·9	94	88	16·6	17·2	87	90	203	3	169	3	10	10	1·1	86	●⁰ a. Dull to fine. p. n.
6	1001·4	1008·0	88·9	87·9	93	86	12·7	13·4	71	80	225	4	—	1	9	1	1·4	82	Fair to fine. p.
7	1014·5	1015·7	89·8	90·5	96	86	15·5	16·3	82	82	304	2	203	2	10	2	—	80	Dull to fine.
8	1016·1	1017·9	89·7	88·8	93	87	15·3	13·5	81	76	259	4	270	2	9	9	0·2	84	●⁰ early. o. to c.
9	1020·4	1024·5	89·6	89·2	93	84	12·2	13·4	65	73	293	4	—	1	9	5	—	79	☌ early. o. to fine. v. p.
10	1026·1	1024·9	89·7	90·1	97	82	13·6	14·9	72	77	—	0	191	3	1	1	—	n 76	☌ early. Fine and calm. ∞⁰ p.
11	1024·1	1021·2	91·2	91·0	97	84	15·1	16·0	73	78	—	1	—	1	8	10	—	79	☌ early. Fine to fair. ⊕ 17 h. 35 m.
12	1020·8	1022·1	92·0	92·2	97	87	15·5	16·1	71	73	169	2	281	2	7≡⁰	7	—	82	Fine.
13	1026·1	1024·1	91·2	89·9	96	86	13·5	15·5	65	81	315	2	—	1	2	1	—	80	Fine. v. p.
14	1020·5	1016·0	92·5	91·0	97	85	14·4	14·9	64	73	203	5	214	3	0	1	—	79	☌ early. Very fine. ∞⁰ p.
15	1019·0	1018·6	90·5	89·1	95	86	12·1	15·2	61	84	315	3	—	0	1	7≡⁰	—	80	☌ early. Fine. v. p.
16	1017·3	1015·0	90·0	90·1	95	83	11·7	12·4	61	64	—	1	304	2	7≡⁰	10	—	n 76	☌⁰≡⁰. Fine to fair. ∞ p.
17	1015·2	1014·8	89·6	89·2	92	86	14·0	16·4	75	90	248	5	236	2	9	10	1·0	83	●⁰ in a. Dull to c. p. p.
18	1016·3	1018·6	91·7	88·0	94	86	14·3	12·3	67	73	293	4	293	2	7	0	—	85	Fine. v. p.
19	1020·2	1019·0	89·6	90·3	93	84	12·4	18·4	66	94	281	4	225	2	6	10≡⁰	—	77	☌ ≡⁰. Fine a. Dull p.
20	1020·7	1020·7	91·4	92·8	99	88	17·6	19·2	84	84	270	3	236	3	10	0	—	85	≡⁰. Dull a. Fine later.
21	1022·8	1018·6	91·1	93·2	100	89	17·9	19·0	87	81	236	3	191	2	9	1	—	87	≡⁰☌. Dull early. Fine later.
22	1014·8	1011·4	96·4	94·0	x102	x 90	18·8	17·5	66	71	214	4	236	3	2	1	—	83	≡⁰☌. Fine.
23	1017·8	1016·9	89·1	87·7	92	87	11·1	13·4	61	81	11	4	45	2	8	10	0·8	83	≡⁰. Fair a. Dull p., with ●.
24	1015·3	1015·5	88·9	88·7	95	85	12·3	13·1	69	74	23	2	—	1	4	0	—	84	Fine.
25	1014·1	1008·0	90·6	87·1	93	n 81	14·5	14·0	73	88	214	5	180	5	8	9	2·7	n 76	≡⁰☌. Fine a. Fair to o. p. ● n.
26	1008·5	1013·8	88·6	87·2	92	86	13·8	12·9	79	80	259	4	293	3	8	4	2·9	84	Dull to fine. p.
27	1015·4	1010·9	87·3	87·6	n 90	83	13·4	15·1	83	92	259	2	214	5	10	10●	3·5	78	≡⁰. Fair to dull. ● p.
28	1010·1	1017·9	88·1	85·0	91	85	15·1	12·1	89	87	270	2	—	1	10≡⁰	1≡⁰	0·9	86	≡⁰● early. Dull to fair.
29	1022·5	1022·6	87·1	88·5	92	85	11·2	12·9	70	74	349	3	315	3	1	8	—	78	≡⁰☌. Fine a. Fine to o. p.
30	1023·0	1016·2	86·1	89·3	91	82	11·2	14·9	75	81	293	2	248	3	10	10	—	77	≡⁰. Fine to o.
31	1011·8	1005·6	87·3	86·8	n 90	85	10·7	11·5	66	73	281	5	259	4	7	4	2·3	83	c. all day. p. 21 h.–23 h.
Means	1015·9	1015·1	89·9	89·5	94·4	85·5	14·1	14·9	74	80		3·0		2·4	6·9	5·7	35·6	81·5	Monthly **Totals** or **Means**.
Normal	1014·2	1014·1	89·6	88·8	94·1	85·1	13·9	14·1	75	80		3·5		2·5	—	—	56·6	—	**Normals**.
			45 years				30 years				35 years						45 years		

4. METEOROLOGY :—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 242 m. Barometer, H_b = 237·3 m. Vane of Anemometer, H_a = 250 m.
Heights above Ground :—Thermometers, h_t = 0·9 m. Rain-gauge, h_r = 0·38 m. Vane of Anemometer, h_a = 15 m.

																			Remarks.
1	987·6	986·2	85·0	84·6	87	83	12·8	12·9	92	95	45	5	23	5	10≡⁰	10≡⁰	—	83	Dull e. ≡⁰ all day.
2	982·9	980·7	85·8	85·0	x 93	83	12·7	12·2	87	88	45	4	34	2	10≡⁰	6∞	—	84	o. ≡⁰ till 10 h., then fine, with ∞.
3	979·6	979·5	88·4	86·1	92	82	11·4	13·0	66	87	67	6	34	3	5	10	—	79	o. 1 h. Very fine day. y. p. o. n.
4	979·7	979·6	88·0	86·8	91	85	12·7	14·7	75	94	—	0	—	0	10	10≡⁰	0·3	84	Dull day. ∞ p. ≡⁰ p. n.
5	978·9	973·4	86·2	86·9	91	85	14·0	14·6	93	93	—	0	79	6	10●≡⁰	10≡⁰	3·7	84	●≡⁰ till 12 h., then dull.
6	976·1	983·9	87·6	83·5	92	81	14·3	11·6	87	92	45	7	—	1	10	1☌	3·0	86	●≡⁰ early. o. a. ≡⁰●⁰ p. b. n.
7	986·3	984·3	87·6	86·0	x 93	77	12·9	13·1	78	88	157	2	203	7	9☌	10≡⁰	1·5	75	☌² a. Fair ∞ y. p. ≡⁰● later.
8	983·3	984·6	86·0	84·8	89	84	12·9	12·3	87	90	214	8	225	5	10	9	3·7	84	d. ≡⁰ 1 h. ●² 12 h. o. p. to c. later.
9	989·7	995·7	86·3	85·0	91	82	12·1	11·5	80	83	293	4	259	2	9	7	0·5	83	o. ≡⁰ 1 h.–1 h. 30 m. c. to fine later.
10	997·4	997·1	90·7	86·6	x 93	80	16·1	14·3	80	93	135	3	—	1	8	1	—	77	☌² a. Dull p. Very fine v. n.
11	994·3	990·7	89·7	87·0	x 93	83	16·8	14·1	89	89	157	2	203	3	10≡⁰	10	0·2	81	≡ till 8 h., then dull, with ∞.
12	990·8	994·0	87·7	85·5	92	84	15·1	11·9	91	83	203	4	259	3	9	8	9·4	85	≡⁰●² 3 h.–3 h. 30 m. o. to c. p. and n.
13	996·3	994·4	87·2	86·0	90	83	12·4	13·2	77	89	247	4	191	3	8	9	—	80	Fair a. o. u. v. p. p. 19 h.
14	985·6	983·8	86·9	85·8	89	84	13·2	11·0	84	75	203	12	247	10	10	5	5·1	82	☌ 1 h. ●²≡⁰ 11 h.–13 h. Fine later.
15	987·4	989·7	85·3	83·3	89	82	11·2	10·9	79	88	259	8	270	6	9	4	0·2	83	p. q. early. c. to bc. a. and p. Ψ n.
16	987·5	982·9	85·5	84·9	88	81	11·1	12·7	77	92	236	6	203	5	8	10●	4·1	78	☌²⊕⁰ to o. a. ●² after 22 h.
17	981·8	980·8	85·6	85·6	89	84	12·5	13·9	86	96	247	5	214	6	10	10≡⁰	10·7	83	●² till 2 h. 30 m. ●≡⁰ p. ●² 22 h.
18	983·1	987·8	85·7	84·7	90	84	12·8	11·3	88	83	247	7	259	4	9	9	5·3	84	p. till 15 h., then fair.
19	989·3	986·6	84·8	82·4	89	82	11·7	11·1	85	95	259	4	191	3	10	10●≡⁰	5·2	82	Fair early. ●≡⁰ after 15 h. e.
20	986·2	986·0	89·6	88·9	91	83	17·6	16·1	94	90	214	7	225	10	10≡⁰	9	3·5	81	≡●⁰ 3 h.–15 h., then o.
21	990·4	984·4	86·3	88·2	90	x 86	13·3	16·3	88	95	270	2	203	8	10	10●	2·0	85	● 2 h.–5 h. o. a. ≡⁰ d. to bc. p.
22	980·1	979·2	88·0	84·1	89	83	15·0	10·4	89	79	191	13	247	11	10	8	1·4	87	≡⁰ 1 h. o. g. a. ●²≡⁰ 16 h. c. q. n. 24 h.
23	990·2	989·3	84·0	81·2	89	79	10·0	9·9	77	92	191	4	—	2	7	3	—	78	Ψ² 1 h. Fine v. ⊕ a. ⊕² p. Ψ n.
24	985·9	985·4	84·9	84·8	89	n 76	12·1	12·8	88	93	225	6	180	3	7☌	9	—	n 74	☌²≡⁰ a. p. 13 h. b. v. after 15 h.
25	981·3	977·9	84·8	85·2	87	83	13·6	13·8	99	98	157	4	—	0	10≡	10≡	x 25·1	82	●² 2 h.–16 h. 30 m., then ≡⁰ d⁰.
26	978·8	983·6	85·9	86·0	89	84	13·4	12·9	91	87	315	4	293	2	10	10	0·1	83	●⁰ early. o. g. a. ∞ p. p. 18 h. 30 m.
27	983·6	980·8	84·0	85·0	86	82	12·2	13·6	94	98	203	3	23	2	10●≡⁰	10	14·7	79	o. at first. ●≡⁰ 7 h.–21 h. 30 m.
28	986·4	991·9	87·6	83·8	91	81	11·5	11·6	70	90	349	6	—	0	8	2	1·5	79	Fine to o. u. a. p. ⌒ T p. ● 18 h.–19 h.
29	994·3	993·8	85·1	83·7	89	77	11·1	10·1	79	79	293	5	247	5	8	7	—	75	≡⁰☌² early. c. to o. y. a. and p. p. n.
30	987·6	983·9	85·9	82·0	89	79	13·9	8·9	94	78	225	6	259	6	10	3	2·2	81	●⁰≡⁰ 3 h.–7 h. o. a., then fair to fine.
31	978·8	973·9	81·3	78·1	n 85	77	9·7	7·4	89	84	259	4	225	2	9	1	3·4	77	Fair. p. a. q. ●² 14 h. 30 m. Ψ n.
Means	985·8	985·3	86·4	84·9	90·0	80·3	12·9	12·4	85	89		5·0		4·1	9·1	7·5	106·8	81·2	Monthly **Totals** or **Means**.
Normal 1911-15	985·7	986·0	86·4	84·5	89·7	81·1	12·5	12·1	81	89		4·5		3·3	—	—	103·6	—	**Normals**.

Temperatures at or below the normal freezing point of water are printed in small type.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Magnetic Force. Horizontal Comp't. Mean Time.	Horizontal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination. North.	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre. Factor 2·16. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +.	Charge per cc. ×10¹⁶. −.	Air-Earth Current ×10¹⁶.
	a.	*a.*	cm.	cm.	h m	γ	h m	° ′	h m	° ′			v/m.	v/m.	v/m.	v/m.	About 15 h.		About 15 h.
	200+	200+															Coulomb.		Amp/cm².
1	91·0	87·3	221	222	11 5	18400	...	...	...	...	0	0	240	305	240	320	...	...	...
2	91·0	87·5	220	...	...	...	14 18	14 53·6	...	...	1	1	15	55	105	135	...	...	...
3	90·1	87·6	219	...	...	...	...	...	...	...	1	1	105	55	280	320	...	...	...
4	90·1	87·7	217	...	...	...	...	...	...	...	0	1	145	170	65	105	...	...	...
5	90·7	87·8	215	...	...	...	...	...	...	...	1	1	105	265	160	160	...	...	...
6	90·4	87·7	214	...	...	...	...	...	...	...	1	1	160	210	145	250	0·58	0·58	0·70
7	90·3	87·8	213	...	...	...	...	...	...	...	1	0	145	135	170	210	0·41	0·00	0·95
8	90·7	87·8	213	...	10 56	18377	14 23	14 56·5	14 42	66 57·3	1	0	210	210	120	280	0·30	0·30	0·30
9	90·3	87·9	212	...	...	...	...	...	...	...	1	0	210	265	185	160	0·90	0·24	0·50
10	90·0	87·9	212	...	...	...	...	...	...	...	0	0	225	360	120	160	...	...	...
11	90·5	87·9	212	...	...	...	...	...	...	...	1	0	160	210	120	160	...	...	...
12	90·9	87·9	211	...	...	...	...	...	...	...	0	0	185	400	105	160	...	...	...
13	91·1	87·9	211	...	...	...	...	...	...	...	0	0	200	290	135	145	0·45	0·41	0·40
14	91·0	88·0	210	...	...	...	...	...	...	...	1	1	145	240	185	280	0·56	0·19	0·75
15	91·0	88·1	209	...	11 0	18404	...	...	...	...	2	1	265	320	185	185	0·71	0·60	0·90
16	90·8	88·2	208	...	...	...	...	...	14 56	66 59·9	2	1 ?	160	505	—	145	0·34	0·17	...
17	90·7	88·2	207	...	...	...	14 25	14 56·0	...	...	0	1 ?	105	80	65	210	...	...	...
18	90·3	88·3	205	...	...	...	...	...	...	...	0	0	95	170	105	200	...	...	...
19	89·9	88·2	203	...	...	...	...	...	...	...	0	0	145	290	105	105	0·47	0·41	1·40
20	90·2	88·1	202	...	...	...	...	...	...	...	0	0	145	135	210	250	0·77	0·47	1·35
21	90·9	88·2	200	...	...	...	...	...	...	...	0	0	210	160	185	210	0·93	0·84	1·90
22	91·5	88·2	199	...	11 4	18405	14 32	14 56·5	14 41	66 54·8	0	0	170	320	240	200	0·82	0·37	0·90
23	91·7	88·3	199	199	...	...	...	...	...	...	0	1	105	320	265	265	0·41	0·43	1·20
24	90·9	88·4	199	199	...	...	...	...	...	...	1	0	80	250	80	135	...	...	...
25	90·5	88·6	200	...	...	...	...	...	...	...	2	1	95	120	120	210	...	...	...
26	89·8	88·5	201	...	...	...	...	...	...	...	1	1	105	170	120	280	0·80	0·17	0·55
27	89·2	88·4	202	...	...	...	...	...	...	...	1	1	250	360	145	185	...	...	...
28	89·2	88·3	202	...	...	...	...	...	...	...	1	1	105	135	80	185	0·22	0·17	0·40
29	88·9	88·3	203	...	11 10	18386	14 23	14 55·1	14 35	66 58·1	1	0	65	200	105	135	0·52	0·13	0·50
30	88·8	88·2	203	...	...	...	...	...	...	...	0	0	95	265	105	95	0·41	0·32	0·50
31	89·2	88·1	201	...	...	...	...	...	...	...	2	1	120	185	105	80	...	...	...
M.	90·4	88·0	208	—	—	—	—	—	—	—	—	—	147*	222*	145*	193*	—	—	—
	89·7	88·1																	
	←12 years→																		

* Mean of 30 days only.

6. GEOPHYSICS :—ESKDALEMUIR.

Day.	Magnetic Force. North Component. Maximum. 15000 γ+.		Minimum. 15000 γ+.		West Component. Maximum. 4000 γ+.		Minimum. 4000 γ+.		Vertical Component. Maximum. 44000 γ+.		Minimum. 44000 γ+.		Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre.* Factor 6·13. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +.	Charge per cc. ×10¹⁶. −.	Air-Earth Current ×10¹⁶.
	h m	γ	γ	h m	h m	γ	γ	h m	h m	γ	γ	h m			v/m.	v/m.	v/m.	v/m.	About 15 h.		About 15 h.
																			Coulomb.		Amp/cm².
1	0 8	1020	931	13 48	14 40	951	875	7 33	17 52	1086	1059	0 50	0	0 *a*	715	370	150	130	...	...	...
2	16 50	1082	941	17 3	16 48	981	875	22 27	20 33	1098	1053	11 49	2	0 *a*	235	195	200	135	...	...	...
3	17 21	1015	906	11 12	14 51	979	859	0 43	16 10	1096	1002	4 12	1	0 *a*	155	170	115	80	...	...	...
4	20 24	1039	939	11 14	14 23	974	886	{6 30 / 7 43}	21 18	1093	1039	12 30	1	1 *a*	95	135	130	115	...	...	...
5	18 8	1051	933	12 54	{12 15 / 13 10}	973	875	6 38	17 45	1116	1054	0 41	1	1 *b*	260	55	150	85	...	...	...
6	18 41	1047	893	13 42	13 25	975	869	4 20	19 47	1090	1042	2 38	1	1 *b*	80	265	95	285	...	...	...
7	20 20	1073	923	11 57	23 10	983	983	5 48	19 56	1104	1025	24 0	1	0 *a*	235	145	165	85	...	...	...
8	21 52	1064	906	10 39	14 10	976	868	23 27	18 53	1091	1022	0 0	1	1 *b*	170	105	70	105	...	...	...
9	§	§	§	§	14 40	971	875	6 39	18 20	1107	1020	1 17	1	0 *a*	120	105	105	495	...	...	...
10	§	§	§	§	16 44	957	887	2 26	17 50	1084	1043	1 5	1	0 *a*	220	115	250	370	...	...	...
11	§	§	§	§	14 20	976	872	7 55	20 8	1093	1046	1 15	1	0 *a*	650	205	205	330	...	...	...
12	18 3	1012	905	10 56	14 25	960	876	6 25	22 10	1081	1059	13 9	0	2 *c*	*z*±	270	105	220	...	...	...
13	21 52	1042	954	9 37	12 35	968	887	22 38	19 35	1095	1057	12 33	0	0 *a*	185	170	145	260	...	...	...
14	20 45	1034	938	12 21	12 53	959	887	22 39	18 35	1095	1031	23 23	1	? 1 *b*	–	–	–	–	...	...	...
15	20 30	*x* 1371?	868	22 23	18 15	*x* 1136	*n* 760	20 38	{20 / 20} {22 / 40}	*x* > 1258	990	22 34	2	?	–	–	–	170	...	...	...
16	19 33	1004	*n* 809	{9 / 10} {56 / 24}	13 2	974	852	10 25	12 0	1124	974	3 8	2	2 *b*	215	220	120	200	...	...	...
17	17 41	1002	925	10 58	14 3	953	888	4 25	9 20	1084	1063	13 5	0	2 *b*	80	165	195	200	...	...	...
18	19 53	997	947	11 52	14 58	945	892	6 28	8 12	1073	1058	3 55	0	1 *b*	180	80	20	200	...	...	...
19	20 40	1005	940	10 27	13 15	958	887	8 14	7 3	1072	1048	11 55	0	1 *a*	80	70	115	165	...	...	...
20	19 2	1009	912	14 4	13 40	969	889	8 7	19 28	1075	1044	11 52	0	1 *a*	230	155	35	130	...	...	...
21	19 46	1004	925	11 17	13 29	959	883	8 27	8 22	1079	1043	13 25	0	1 *a*	70	120	200	115	...	...	...
22	18 33	1020	941	11 57	13 48	981	897	{4 / 8} {53 / 15}	20 0	1077	1043	11 16	0	1 *a*	135	65	50	100	...	...	...
23	{16 / 23} {13 / 22}	1009	926	10 24	13 55	968	876	8 6	17 5	1074	1042	11 50	0	0 *a*	180	215	170	230	...	...	...
24	21 13	1051	911	24 0	13 6	984	862	23 12	18 38	1118	962	24 0	2	0 *a*	105	260	145	215	...	...	...
25	16 58	1031	873	12 0	15 25	975	851	0 31	17 35	1119	*n* 945	4 2	2	2 *c*	15	85	-370	85	...	...	...
26	23 22	1027	895	10 54	14 58	987	863	7 58	16 10	1106	976	3 18	2	0 *a*	130	215	205	170	...	...	...
27	19 5	1032	882	10 18	13 8	976	848	18 30	15 10	1104	1042	0 28	1	1 *a*	130	170	215	260	...	...	...
28	0 30	1044	914	11 39	0 38	964	877	8 56	18 54	1080	1034	0 52	1	1 *b*	400	280	100	220	...	...	...
29	0 14	1018	925	10 16	0 15	983	890	7 33	17 45	1080	1044	0 42	1	1 *a*	180	170	145	205	...	...	...
30	23 43	1014	942	11 3	13 55	954	884	8 8	18 35	1082	1051	12 32	0	1 *a*	70	235	150	200	...	...	...
31	18 43	1066	941	19 8	18 45	981	850	19 20	22 24	1155	1044	12 55	2	2 *c*	70	-335	*z*–	220	...	...	...
M.	—	1042†	916†	—	—	975	875	—	—	1100	1031	—	—	—	‡197	‡168	‡121	‡191	—	—	—

* The potential gradient is reckoned positive if the potential increases upwards. *x* denotes the maximum and *n* the minimum value in the column.
† Mean of 28 days. § Gas pressure failed. ‡ Mean of 27 days. 14th–15th. Partially earthed. *z* – Indeterminate, negative value.

7. JERSEY (ST LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M. S. L.:—H = 54 m. H_b = 55 m. Above Ground:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level.				Air Temperature in Degrees Absolute.						Min. Temp. on Grass.	Percentage of Humidity.				Rain 0 h. to 24 h.	REMARKS.
	7 h.	14 h.	21 h.	Mean of 3 Readings.	7 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.		7 h.	14 h.	21 h.	Mean.		
	mb.	mb.	mb.	mb.	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	%	%	%	%	mm.	
1	1005·3	1005·3	1002·6	1004·4	90·6	91·1	88·6	93·3	88·0	90·4	84·0	83	85	97	88	*r* 16·7	● 6 h.–11 h. ☥ 11 h.–15 h. ● 13 h. [and 18 h. ☈ 19 h. 45 m.
2	1000·1	999·9	999·1	999·8	88·1	92·0	89·1	92·8	88·1	90·0	86·6	98	67	83	83	—	
3	998·3	999·0	1001·1	999·5	88·1	92·9	88·4	94·0	86·7	90·0	85·6	87	68	90	82	0·7	● 1 h.–6 h.
4	1004·2	1009·4	1006·9	1006·9	90·0	90·0	88·7	92·2	86·2	89·4	79·8	84	82	81	82	—	
5	1002·9	1001·0	1002·1	1001·9	89·5	90·4	89·1	91·6	87·6	89·6	86·9	92	89	97	93	7·2	●² 8 h. ●⁰ 21 h.
6	1002·7	1002·6	1006·6	1003·9	88·0	88·5	88·1	*n* 90·5	87·2	88·5	84·2	77	83	90	83	3·3	●² 9 h. and 11 h. 30 m.
7	1010·3	1012·7	1013·1	1012·1	88·4	91·3	87·8	92·5	86·8	89·4	86·3	93	69	86	83	—	
8	1013·9	1015·5	1016·6	1015·4	89·0	91·2	88·0	93·0	87·6	89·8	84·9	92	59	89	80	0·5	● 2 h. and 16 h.
9	1018·5	1019·9	1021·0	1019·8	88·3	91·9	88·0	92·3	87·0	89·5	83·4	86	66	90	81	—	
10	1020·6	1020·5	1019·7	1020·2	89·5	93·9	88·8	94·4	86·4	90·6	80·0	85	64	81	77	—	
11	1017·5	1015·7	1015·4	1016·2	90·2	96·0	90·0	96·8	87·1	92·0	81·3	78	47	75	67	—	☥ 17 h. 40 m.
12	1015·4	1017·0	1019·3	1017·3	90·3	96·5	89·3	97·0	87·8	92·2	83·3	81	50	83	71	—	
13	1021·1	1021·1	1019·5	1020·6	89·7	94·0	89·3	95·3	87·1	91·1	84·4	82	57	76	72	—	Fine.
14	1015·7	1013·5	1013·3	1014·2	90·6	98·4	89·1	98·6	87·1	92·8	79·9	77	45	90	71	—	Fine.
15	1014·5	1014·5	1013·9	1014·3	88·8	92·9	88·1	93·4	87·1	90·1	83·6	87	65	78	77	—	
16	1012·3	1011·1	1012·7	1012·1	88·5	92·6	88·0	93·6	85·0	89·5	78·0	83	59	79	74	—	
17	1014·2	1015·5	1015·1	1014·9	89·0	92·8	90·0	93·5	86·4	90·3	80·1	77	67	86	77	—	♆ 20 h.
18	1015·3	1016·6	1017·3	1016·3	89·1	92·2	88·1	92·9	87·0	89·9	86·8	88	66	86	80	0·7	● 0 h. 30 m. and 5 h. 30 m.
19	1018·1	1019·2	1017·7	1018·3	89·2	89·1	89·8	90·9	86·7	89·1	81·3	85	97	98	93	1·2	● 10 h., 12 h., and 18 h. d. 21 h.
20	1017·8	1018·5	1017·7	1017·9	88·8	91·2	88·6	94·7	88·3	90·3	88·5	98	88	97	94	0·2	≡● 4 h.
21	1017·4	1016·2	1013·8	1015·8	91·8	100·8	97·8	102·1	87·6	96·0	83·1	90	52	70	71	—	Fine.
22	1011·3	1007·9	1009·3	1009·5	94·2	103·6	90·1	*x* 104·4	*x* 88·9	96·2	84·6	79	*n* 41	93	71	—	Fine. Clouds low and moving rapidly
23	1010·7	1010·7	1011·0	1010·9	89·3	91·6	88·4	92·0	87·8	89·8	83·4	85	70	84	80	0·4	● 18 h. [from 18 h. 30 m.–18 h. 50 m.
24	1010·6	1012·1	1012·3	1011·7	88·1	92·3	85·9	92·8	85·0	88·8	85·0	84	54	80	73	—	
25	1010·9	1007·1	1002·2	1006·7	87·4	92·7	89·1	93·5	*n* 84·0	89·3	*n* 76·4	80	56	88	75	9·0	●⁰☥ 16 h. ●² 17 h.
26	1008·1	1010·9	1011·9	1010·3	88·8	91·2	87·1	91·9	86·5	89·1	83·6	76	61	83	73	0·4	● 0 h. 15 m. and 2 h. 30 m.
27	1012·5	1012·2	1010·1	1011·7	87·7	92·0	90·1	92·6	86·6	90·0	80·3	87	62	74	74	—	●⁰ 17 h. 45 m.
28	1009·3	1011·7	1013·8	1011·5	87·8	90·1	88·7	91·4	87·4	89·1	84·6	80	74	83	79	—	●⁰ 8 h. 45 m.
29	1017·0	1019·0	1019·0	1018·3	88·0	90·5	86·3	92·0	86·1	88·6	84·2	81	66	82	76	—	
30	1019·5	1018·6	1015·9	1018·1	87·4	89·9	88·2	90·9	85·0	88·3	76·7	77	62	85	75	0·3	● 23 h. 20 m.
31	1011·0	1009·3	1005·9	1008·7	88·1	90·4	87·3	91·3	86·6	88·7	87·0	90	59	90	78	0·3	● 1 h. 30 m., 4 h. 20 m., and 20 h. 15 m.
Means	1012·2	1012·5	1012·1	1012·3	89·1	92·7	88·8	93·8	87·0	90·3	83·2	85	66	85	79	40·9	
Normal	1010·1	1010·2	1010·3	1010·2	89·0	92·3	88·8	93·3	87·1	90·1	83·9	83	68	82	78	39·0	

JERSEY (ST LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0–12 on the Beaufort Scale).			Mean.	Sunshine.*		Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming.														Mean Amount.
							Tenths.	Upper.		Lower.		Tenths.	Upper.		Lower.		Tenths.	Upper.		Lower.		
								Type.	Direction.	Type.	Direction.		Type.	Direction.	Type.	Direction.		Type.	Direction.	Type.	Direction.	
	7 h.	14 h.	21 h.		Total.	Per cent. of Possible.	7 h.	7 h.	7 h.	7 h.	7 h.	14 h.	14 h.	14 h.	14 h.	14 h.	21 h.	21 h.	21 h.	21 h.	21 h.	
	Dir. (0–12)	Dir. (0–12)	Dir. (0–12)		hr.	%																
1	SE 2	NE 1	NE 2	1·7	0·4	3	10	A.-Cu.	...	...	...	10	...	...	Nb.	...	10	...	...	Nb.	...	10·0
2	WSW 3	SW 3	SW 2	2·7	8·2	54	10	...	...	Nb.	...	7	Ci., A.-Cu.	SW	Cu.-Nb.	...	5	Ci., A.-Cu.	...	Cu.-Nb.	...	7·3
3	SW 3	SW 3	— 0	2·0	9·9	66	10	...	...	Nb.	SW	3	Ci.-Cu.	SW	Cu.	WSW	3	...	...	...	...	5·3
4	W 2	W 4	WSW 2	2·7	3·8	25	6	...	...	Cu.-Nb.	W	10	...	...	St.-Cu., Fr.-Nb.	W	10	...	...	Cu.-Nb.	WSW	8·7
5	SSW 4	W 3	W 4	3·7	1·3	9	8	...	...	Cu.-Nb.	SSW	10	...	...	Nb.	W	10	...	...	Nb.	...	9·3
6	WSW 5	W 5	WNW 4	4·7	0·8	5	7	...	...	Cu.-Nb.	W	10	...	...	Cu.-Nb., Nb.	WNW	10	...	...	...	...	9·0
7	WNW 3	WNW 4	SW 2	3·0	6·8	46	9	A.-Cu.	...	Cu.-Nb.	WNW	2	...	...	Cu.	W	7	A.-Cu.	WSW	...	...	6·0
8	W 2	WSW 3	WNW 3	2·7	6·5	44	8	...	...	Nb.	WNW	7	Ci.	W	Cu.	WNW	3	...	...	...	...	6·0
9	NW 3	NW 4	NNW 2	3·0	11·6	78	7	...	...	Cu.-Nb.	NW	4	Ci.-Cu.	W	Cu.	NW	0	...	...	...	...	3·7
10	NNE 2	WSW 2	ENE 3	2·3	12·7	86	4	...	...	Cu.	NNE	6	...	...	Cu.-Nb.	NE	0	...	...	...	...	3·3
11	ESE 2	ESE 1	ENE 2	1·7	11·3	77	1	A.-Cu.	...	...	...	2	Ci., A.-Cu.	...	...	...	7	A.-Cu.	...	...	...	3·3
12	— 0	N 2	NW 3	1·7	12·2	84	4	Ci., Ci.-Cu.	W	...	...	1	...	...	Cu.	NW	6	Ci.	...	...	...	3·7
13	NE 2	NE 2	NE 2	2·0	*x* 14·1	97	0	...	...	...	...	3	...	...	Cu.	ENE	0	...	...	...	...	1·0
14	S 2	W 2	NW 2	2·0	*x* 14·1	97	0	...	...	...	...	0	...	...	...	...	2	Ci.-Cu.	...	...	...	0·7
15	N 2	NNW 3	NE 2	2·3	10·7	75	6	...	...	Cu.	NNW	3	Ci.	...	Cu.	...	3	A.-Cu.	...	...	...	4·0
16	— 0	N 3	NNW 2	1·7	13·8	96	4	Ci.	W	...	...	3	Ci.-Cu.	SW	Cu.	NW	3	...	...	...	...	3·3
17	W 3	W 4	WSW 4	3·7	12·6	88	7	Ci.-Cu.	NW	Cu.	W	5	Ci.	...	Cu.	W	9	...	...	...	...	7·0
18	NW 3	WNW 4	WNW 2	3·0	9·2	65	6	A.-Cu.	WNW	...	...	8	...	...	Cu.-Nb.	W	0	...	...	...	...	4·7
19	WNW 3	WSW 3	W 3	3·0	0·1	1	9	A.-Cu.	NW	Cu.-Nb.	W	10	...	...	...	...	10	...	...	...	...	9·7
20	WSW 2	SW 3	ENE 1	2·0	4·8	34	10	...	...	Nb.	W	9	...	...	Cu.-Nb.	...	0	...	...	...	...	6·3
21	ESE 1	S 3	SE 2	2·0	*x* 14·1	100	0	...	...	...	...	0	...	...	...	...	0	...	...	...	...	0·0
22	SSW 1	SSW 2	NNW 2	1·7	13·7	97	3	Ci.	SW	...	...	2	Ci.	...	...	...	10	...	...	Cu.-Nb.	NNW	5·0
23	NNE 2	ENE 3	NNE 2	2·3	0·5	4	10	...	...	St.-Cu.	N	10	...	...	...	...	10	...	...	...	...	10·0
24	N 1	ENE 2	NW 1	1·3	11·0	79	3	Ci.-Cu.	...	Cu.	...	5	Ci.	WSW	Cu.	WSW	0	...	...	...	...	2·7
25	SSW 2	S 3	WSW 4	3·0	5·7	41	6	A.-Cu.	SW	Cu.	SW	7	...	...	...	...	8	...	...	Cu.-Nb.	W	7·0
26	WNW 3	WNW 4	WNW 3	3·3	11·3	81	5	...	...	Cu., Cu.-Nb.	WNW	5	Ci.	WNW	Cu.	W	3	A.-Cu.	...	...	...	4·3
27	WNW 3	WSW 4	SW 5	4·0	3·2	24	10	...	...	Nb.	W	7	A.-Cu.	WSW	Cu.	WSW	10	...	...	...	...	9·0
28	NW 4	NNW 5	NNW 3	4·0	5·0	37	10	...	...	Nb.	NW	7	A.-Cu.	NW	Cu.-Nb.	NW	4	A.-Cu.	WNW	...	...	7·0
29	NNE 3	N 3	N 2	2·7	9·9	73	6	A.-Cu.	NW	Cu.	NNW	1	...	...	Cu.	N	0	...	...	...	...	2·3
30	N 2	WNW 2	W 3	2·3	8·8	65	2	...	...	Cu.	NW	8	...	...	St.-Cu.	NW	7	...	...	...	...	5·7
31	NW 4	WNW 4	W 4	4·0	5·3	39	7	A.-Cu.	WNW	Nb.	WNW	3	A.-Cu.	...	Cu.	WNW	8	...	...	Nb.	...	6·0
Means	2·4	3·0	2·5	2·6	253·4	57·0	6·1	—	—	—	—	5·4	—	—	—	—	5·1	—	—	—	—	5·5
Normal	3·3	3·7	3·2	3·4	248·3	55·8	6·3	—	—	—	—	5·3	—	—	—	—	4·6	—	—	—	—	5·4

* Actinic rays by Jordan Recorder.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h. S.	3 h. N.	3 h. W.	3 h. E.	9 h. S.	9 h. N.	9 h. W.	9 h. E.	15 h. S.	15 h. N.	15 h. W.	15 h. E.	21 h. S.	21 h. N.	21 h. W.	21 h. E.	Max. in a Gust.	Time of Gust. h	Time of Gust. m
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.		
1	...	Ca	lm	...	1·8	...	...	1·8	1·6	...	0·3	...	...	Ca	lm	...	6·8	23	25
2	...	0·8	...	3·8	...	1·8	...	9·0	...	1·3	...	6·8	...	1·1	...	5·5	12·5	11	15
3	...	1·3	...	6·8	...	2·8	...	6·7	...	5·2	...	2·1	...	1·5	...	0·6	12·9	2	0
4	...	...	2·6	...	1·1	...	2·8	...	4·3	...	2·9	...	4·0	...	1·6	...	10·0	17	40
5	3·0	...	1·3	...	4·5	...	...	1·9	2·1	...	...	0·9	1·9	...	9·6	...	17·7	20	20
6	2·2	...	3·2	...	...	...	6·9	...	...	6·8	4·6	...	...	2·5	1·7	...	12·3	14	50
7	...	1·7	1·1	...	...	Ca	lm	...	6·1	...	2·5	...	6·1	...	1·2	...	12·9	19	25
8	2·0	...	4·8	...	4·7	...	7·1	...	5·3	...	5·3	...	...	...	8·5	...	15·5	23	35
9	...	...	9·8	...	...	...	7·5	...	2·3	...	5·5	...	2·0	...	3·0	...	14·9	1	15
10	1·3	...	0·9	...	2·1	...	2·1	...	3·2	...	2·2	...	2·1	...	0·9	...	9·4	11	25
11	1·8	...	0·8	...	5·8	...	...	1·2	4·8	...	2·0	...	4·1	...	2·7	...	10·9	10	50
12	4·0	...	1·6	...	1·8	...	1·8	...	3·8	...	2·6	...	3·0	...	3·0	...	7·9	1	15
13	...	...	5·9	...	...	...	4·3	...	5·7	...	2·4	...	4·8	...	1·0	...	11·4	16	10
14	6·1	...	2·5	...	8·0	...	1·6	...	7·4	...	4·9	...	...	...	7·5	...	15·8	8	40
15	...	1·7	8·7	...	...	...	7·2	...	3·3	...	4·9	...	1·4	...	2·2	...	12·2	2	25
16	1·4	...	2·2	...	2·4	...	3·6	...	5·5	...	3·7	...	4·2	...	4·2	...	11·7	19	15
17	4·4	...	4·4	...	1·2	...	6·1	...	4·7	...	4·7	...	4·4	...	6·6	...	15·4	21	40
18	...	...	6·6	...	...	...	8·9	...	...	...	8·9	...	...	0·8	4·2	...	14·7	10	30
19	...	1·1	5·5	...	0·7	...	3·5	...	6·4	...	2·6	...	4·9	...	4·9	...	11·1	0	50
20	3·3	...	4·9	...	4·7	...	4·7	...	7·4	...	4·9	...	7·6	...	5·1	...	16·5	18	5
21	7·1	...	4·7	...	7·3	...	3·0	...	8·3	...	1·7	...	6·6	...	4·4	...	15·7	16	50
22	6·9	...	2·9	...	8·2	...	3·4	...	9·4	...	3·9	...	...	...	10·2	...	18·0	13	50
23	...	2·8	6·7	...	...	1·4	1·4	...	...	1·8	1·8	...	...	Ca	lm	...	12·3	0	30
24	1·0	...	2·4	...	5·7	...	2·4	...	5·7	...	3·8	...	6·7	...	2·8	...	13·5	20	30
25	5·2	...	2·1	...	4·3	...	1·8	...	4·0	...	1·6	...	1·9	...	4·5	...	10·8	0	5
26	5·4	...	8·1	...	...	6·2	9·2	...	...	1·8	9·0	...	...	0·7	3·5	...	14·1	9	25
27	...	...	3·3	...	4·9	...	3·3	...	5·5	...	3·7	...	...	3·9	9·4	...	17·0	21	50
28	...	8·6	8·6	...	...	8·8	3·6	...	...	9·3	1·9	...	...	8·5	3·5	...	17·4	5	50
29	...	7·6	3·1	...	...	5·2	2·1	...	...	2·2	3·2	...	...	0·8	3·8	...	12·5	2	10
30	0·8	...	4·2	...	4·2	...	6·2	...	4·0	...	6·0	...	...	3·3	7·9	...	15·1	23	55
31	...	4·0	9·7	...	...	1·9	9·6	...	...	1·7	8·3	...	...	7·1	10·6	...	18·5	18	40
S+N & W+E	85·5		133·2		101·5		134·7		140·9		119·6		95·9		134·6				
S−N & W−E	26·3		112·0		45·3		93·5		80·7		100·0		35·5		122·4				

SCOTLAND N.:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h. S.	3 h. N.	3 h. W.	3 h. E.	9 h. S.	9 h. N.	9 h. W.	9 h. E.	15 h. S.	15 h. N.	15 h. W.	15 h. E.	21 h. S.	21 h. N.	21 h. W.	21 h. E.	Vel. in Max. Hourly Run.	Time of Max.
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	...	0·3	...	1·6	...	2·2	...	3·2	...	3·3	...	1·4	...	2·7	...	1·8	4·6	12
2	...	Ca	lm	...	...	0·9	...	2·1	1·1	...	...	2·8	1·3	...	...	3·0	4·3	16
3	0·9	...	...	4·5	0·9	...	...	4·5	...	...	...	3·9	...	...	...	3·0	5·6	13
4	1·3	...	...	3·0	...	2·0	...	4·8	...	0·9	...	2·1	2·3	...	...	...	5·2	9
5	4·7	...	...	4·7	3·4	...	...	5·2	2·3	...	...	5·5	...	...	...	5·2	6·9	14
6	...	1·1	...	5·5	...	2·1	...	5·2	...	2·3	...	2·3	...	Ca	lm	...	6·6	7
7	...	Ca	lm	...	...	Ca	lm	...	3·7	...	...	3·7	4·0	...	...	6·0	8·5	22
8	4·0	...	...	4·0	3·8	...	...	0·8	2·3	...	...	...	...	Ca	lm	...	7·2	1
9	...	Ca	lm	...	...	3·1	4·7	...	...	3·4	5·2	...	...	1·6	4·0	...	6·6	16
10	...	Ca	lm	...	3·6	...	...	...	4·3	...	...	1·8	2·5	...	...	1·7	4·9	13
11	1·9	...	...	1·3	4·9	...	...	...	4·3	...	...	1·8	4·2	...	...	0·8	8·2	18?
12	1·3	...	1·9	...	1·6	...	1·6	...	2·6	...	...	...	2·1	...	0·9	...	4·3	1
13	2·2	...	3·2	...	2·7	...	4·1	...	1·0	...	2·4	...	5·6	...	...	...	6·6	22
14	5·5	...	...	1·1	7·7	...	...	1·5	8·2	...	...	...	7·8	...	7·8	...	13·4	24
15	5·7	...	13·7	...	2·9	...	14·5	...	2·8	...	14·1	...	...	...	11·1	...	16·7	4
16	...	...	6·2	...	2·9	...	6·9	...	3·0	...	2·0	...	1·6	...	1·6	...	8·2	6
17	1·1	...	2·8	...	...	...	5·2	...	...	...	5·6	...	...	...	2·3	...	7·2	13
18	...	Ca	lm	...	0·5	...	2·6	...	...	1·4	7·1	...	...	1·9	4·5	...	7·5	17
19	...	1·1	2·8	...	...	1·0	2·4	...	...	Ca	lm	...	...	Ca	lm	...	3·3	8
20	3·5	...	...	3·5	3·3	...	...	...	5·8	...	8·7	...	3·4	...	8·2	...	10·5	15
21	3·0	...	7·3	...	3·7	...	5·5	...	1·2	...	6·1	...	...	...	2·0	...	11·1	11
22	...	3·7	...	3·7	...	2·8	...	6·7	...	1·3	...	6·8	3·3	...	...	...	19·3	24
23	...	4·1	10·0	...	...	3·4	8·2	...	...	...	9·2	...	4·0	...	1·6	...	18·0	1
24	3·0	...	...	3·0	...	...	4·3	...	...	3·5	3·5	...	...	Ca	lm	...	...	...
25	...	...	...	3·6	2·6	...	...	6·4	...	...	...	9·5	...	...	...	10·2	10·5	18
26	...	...	8·2	...	...	...	...	6·9	...	...	...	4·9	...	Ca	lm	...	9·5	1
27	...	Ca	lm	...	...	...	...	1·6	...	1·9	1·3	...	...	1·9	1·3	...	3·3	17
28	...	4·3	1·8	...	...	5·5	2·3	...	...	6·4	2·6	...	...	2·7	1·8	...	7·9	11
29	...	1·6	1·6	...	...	1·4	3·3	...	2·7	...	4·1	...	4·0	...	1·6	...	5·9	13
30	...	...	9·2	...	2·8	...	6·7	...	1·8	...	9·0	...	...	...	6·6	...	9·8	16
31	...	1·0	4·8	...	...	Ca	lm	...	...	2·3	2·3	...	...	6·9	2·9	...	...	...
S+N & W+E	55·3		113·0		71·7		121·2		73·8		129·7		63·8		89·9			
S−N & W−E	20·9		17·6		22·9		23·4		20·4		36·7		28·4		26·5			

ENGLAND S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h. S.	3 h. N.	3 h. W.	3 h. E.	9 h. S.	9 h. N.	9 h. W.	9 h. E.	15 h. S.	15 h. N.	15 h. W.	15 h. E.	21 h. S.	21 h. N.	21 h. W.	21 h. E.	Max. in a Gust.	Time of Gust. h	Time of Gust. m
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.		
1	1·6	...	...	0·7	2·7	...	...	1·1	1·7	...	...	...	1·9	...	0·8	...	5·6	2	40
2	1·8	...	1·2	...	...	1·8	4·3	...	...	2·4	1·6	...	...	3·4	8·1	...	9·7	22	50
3	...	0·3	1·7	...	0·9	...	...	4·5	...	2·7	...	2·7	...	2·9	...	...	8·9	0	20
4	...	4·1	4·1	...	...	2·7	2·7	...	...	...	5·0	...	3·8	...	3·8	...	8·0	1	45
5	5·0	...	5·0	...	2·2	...	5·4	...	...	7·1	7·1	...	...	7·0	10·4	...	18·4	18	55
6	...	8·8	13·2	...	...	13·0	13·0	...	...	9·1	9·1	...	...	7·7	5·1	...	24·0	6	55
7	...	4·1	4·1	...	...	...	2·1	...	3·8	...	2·6	...	...	2·1	5·0	...	8·6	1	30
8	...	1·6	3·9	...	...	1·5	3·5	...	...	1·0	4·9	...	...	2·8	4·2	...	7·2	16	15
9	...	2·3	3·5	...	...	2·3	3·5	...	...	1·6	3·9	...	...	1·5	3·5	...	8·0	1	15
10	...	0·7	1·6	...	1·5	...	...	1·5	2·7	...	...	1·8	3·3	...	...	3·3	7·1	23	30
11	3·5	...	...	3·5	4·5	...	...	3·0	2·7	...	...	1·1	2·1	...	...	...	9·4	18	40
12	2·5	...	0·5	...	...	3·2	2·1	...	...	2·3	3·5	...	...	3·3	3·3	...	6·4	8	55
13	...	1·8	1·8	...	...	0·6	0·6	...	...	0·9	0·9	...	...	1·2	1·2	...	4·4	0	20
14	4·1	...	...	0·8	1·5	...	3·5	...	...	0·8	4·1	...	...	4·7	4·7	...	9·0	19	50
15	...	4·5	0·9	...	...	1·7	...	...	...	3·1	...	1·3	...	1·2	...	0·5	6·4	2	40
16	...	1·2	...	0·5	...	2·5	...	...	...	2·3	3·5	...	...	2·4	5·8	...	8·9	23	50
17	...	...	9·2	...	...	...	9·2	...	...	...	8·3	...	...	3·7	8·9	...	14·5	19	45
18	...	4·9	7·3	...	...	4·2	4·2	...	...	2·4	5·8	...	...	1·9	4·6	...	14·1	0	55
19	...	...	5·4	...	...	...	7·5	...	...	...	6·7	...	...	0·9	4·5	...	9·6	5	35
20	...	...	5·4	...	...	0·2	0·8	...	3·2	...	2·1	...	1·8	...	1·2	...	4·9	15	20
21	4·5	...	...	3·0	4·5	...	...	3·0	4·8	...	3·2	...	2·1	...	2·1	...	10·1	11	45
22	3·5	...	1·5	...	2·3	...	2·3	...	0·9	...	4·5	...	...	7·0	1·4	...	13·6	18	40
23	...	5·0	...	...	...	2·7	...	1·8	...	2·1	...	2·1	...	1·7	...	...	9·7	0	30
24	...	1·7	0·3	...	...	0·3	1·7	...	3·8	...	3·8	...	3·9	...	5·9	...	9·7	21	45
25	3·3	...	3·3	...	...	2·1	5·0	...	...	2·6	6·2	...	...	7·6	7·6	...	13·4	19	45
26	...	7·1	7·1	...	...	5·0	5·0	...	...	2·8	4·2	...	...	1·6	3·9	...	13·5	1	55
27	...	...	3·3	...	2·2	...	5·4	...	3·5	...	8·5	...	...	4·2	6·2	...	11·0	15	10
28	...	7·3	4·9	...	...	9·4	1·9	...	...	7·5	...	...	...	5·8	...	...	12·8	12	10
29	...	4·6	...	...	...	2·7	...	1·1	...	4·9	1·0	...	...	4·5	0·9	...	8·2	18	20
30	...	2·7	1·1	...	...	2·3	2·2	...	...	1·1	5·7	...	...	3·5	8·5	...	10·5	21	5
31	...	5·0	5·0	...	...	2·7	2·7	...	...	3·2	7·7	...	...	5·6	8·3	...	12·8	19	35
S+N & W+E	97·5		103·8		83·2		104·7		87·0		122·9		107·1		123·7				
S−N & W−E	−37·9		86·8		−38·6		72·7		−32·8		104·9		−69·3		116·1				

ENGLAND E.:—GREAT YARMOUTH.

Height of Head above—Roof 10·7 m., Ground 12·8 m., M.S.L. 15·9 m.
Height of Cups above—Roof 3·7 m., Ground 18·3 m., M.S.L. 22·3 m.

Day.	3 h. S.	3 h. N.	3 h. W.	3 h. E.	9 h. S.	9 h. N.	9 h. W.	9 h. E.	15 h. S.	15 h. N.	15 h. W.	15 h. E.	21 h. S.	21 h. N.	21 h. W.	21 h. E.	Max. in a Gust. (Gorleston.)	Time of Gust. h	Time of Gust. m
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.		
1	1·3	...	...	3·0	1·6	...	...	4·0	1·1	...	...	5·5	1·3	...	...	6·5	10·0	23	50
2	...	...	...	8·9	...	1·9	...	9·6	...	...	...	7·2	2·0	...	...	4·8	11·8	13	5
3	1·5	...	...	3·6	2·8	...	...	1·1	6·9	...	...	2·9	2·3	...	0·4	...	13·0	11	50
4	...	Ca	lm	...	...	Ca	lm	...	...	Ca	lm	...	...	Ca	lm	...	6·7	9	5
5	...	Ca	lm	...	0·8	...	1·8	...	6·8	...	...	1·3	5·5	...	...	2·3	13·4	13	10
6	2·8	...	...	1·1	1·9	...	4·5	...	5·5	...	...	3·7	...	Ca	lm	...	16·5	4	15
7	...	Ca	lm	...	...	3·3	...	...	...	2·6	0·5	...	...	3·3	...	...	8·8	9	20
8	1·6	...	1·6	...	...	Ca	lm	...	0·6	...	3·2	...	...	0·5	2·6	...	9·3	16	40
9	...	...	3·9	...	...	1·0	4·8	...	...	2·7	1·8	...	...	2·2	1·4	...	10·7	9	35
10	...	Ca	lm	...	...	2·6	...	...	...	2·1	2·1	...	...	Ca	lm	...	6·8	19	15
11	2·3	...	...	2·3	3·2	...	...	2·2	6·4	...	...	2·6	4·5	...	...	1·9	11·5	11	35
12	...	Ca	lm	...	0·8	...	1·8	...	4·9	...	...	...	...	2·1	0·9	...	14·6	18	50
13	...	2·5	2·5	...	...	2·7	1·8	...	...	4·0	...	1·6	1·8	...	...	1·8	11·6	12	55
14	2·6	...	...	0·5	2·8	...	2·8	...	7·4	...	...	1·5	3·5	...	0·7	...	15·1	13	25
15	1·1	...	1·7	...	...	2·0	3·0	...	...	2·6	...	...	2·0	...	...	0·4	8·9	11	25
16	1·5	...	0·6	...	...	Ca	lm	...	...	...	3·3	...	1·4	...	1·4	...	7·3	22	25
17	1·6	...	1·6	...	...	...	5·9	...	...	1·6	4·0	...	...	0·4	2·3	...	12·0	10	20
18	0·7	...	3·5	...	...	4·0	6·0	...	...	2·5	6·1	...	...	1·9	4·5	...	13·5	10	15
19	...	0·9	4·5	...	...	2·3	5·5	...	...	1·1	2·8	...	...	Ca	lm	...	10·0	9	15
20	2·2	...	3·2	...	...	1·1	5·5	...	0·9	...	4·5	...	2·5	...	2·5	...	12·0	10	40
21	1·4	...	2·2	...	1·5	...	3·6	...	5·5	...	...	2·3	4·5	...	0·9	...	11·3	13	55
22	2·8	...	1·1	...	2·3	...	2·3	...	5·8	...	...	1·2	2·1	...	2·1	...	13·2	15	5
23	...	2·8	2·8	...	...	4·2	0·8	...	...	4·1	...	2·7	...	3·5	...	3·5	...	...	...
24	...	0·9	...	2·1	...	2·1	0·9	...	...	1·3	...	1·9	2·0	...	...	...	...	...	...
25	...	Ca	lm	...	3·0	...	1·3	...	7·7	...	...	1·5	6·5	...	...	1·3	...	...	...
26	1·8	...	0·8	...	0·8	...	3·8	...	...	0·7	3·5	...	...	1·5	3·6	...	11·7	14	35
27	...	0·5	2·6	...	...	0·8	3·8	...	0·9	...	2·1	...	2·8	...	1·1	...	8·5	12	50
28	1·5	...	0·6	...	...	2·3	2·3	...	...	4·2	4·2	...	...	3·0	2·0	...	16·0	15	30
29	...	3·3	3·3	...	...	3·5	3·5	...	...	2·5	2·5	...	...	1·7	1·1	...	13·5	9	35
30	...	1·4	2·2	...	...	...	3·3	...	2·3	...	5·5	...	0·9	...	4·5	...	9·6	13	55
31	...	0·9	4·5	...	...	1·3	6·5	...	1·0	...	5·1	...	0·7	...	3·5	...	11·3	14	20
S+N & W+E	39·9		64·7		56·6		92·4		95·7		87·1		66·4		58·0				
S−N & W−E	13·5		21·7		−13·6		58·6		31·7		15·3		26·2		13·0				

9. Seismological Diary.

Eskdalemuir Observatory.—Earthquake Bulletin, August 1918.

Lat. 55° 19′ N. Long. 3° 12′ W.

Instruments:—Two horizontal and one vertical Galitzin Seismographs with galvanometric registration.

Day.	Phase.	Time, G.M.T.	Period.	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	Δ.	Remarks.
		h m s	s	μ	μ	μ	km.	
1	L	12 57 to	...	...	...	...	...	
		13 18	20	...	...	...	...	
5		1 57 to	...	...	...	...	...	Prolonged slight disturbance, including long waves of period averaging 17 seconds, and of low amplitude.
		4 10	...	...	...	...	...	
6	L	23 4 to	20	...	...	...	...	
		23 24	...	...	...	...	...	
8	eP	10 9 7	...	...	...	...	10950	eP taken from the vertical record. The horizontal record gives a doubtful reading at 10 h. 9 m. 15 s.
	S	10 20 45	...	...	...	...	...	
	SR_1	10 27 22	...	...	...	...	...	
	SR_2	10 32 12	...	...	...	...	...	
	L	10 43	...	...	...	...	...	
	Me	11 2 38	25	...	13	...	...	
	Mn	11 6 6	21	11	...	...	...	
	F	12 20	...	...	...	...	...	
9		0 49 42	...	...	...	...	...	
	L	0 53	21	...	...	...	...	
	F	1 25	...	...	...	...	...	
10		8 52 to	...	...	...	...	...	Slight disturbances.
		19 4	...	...	...	...	...	
11		13 30 to	...	...	...	...	...	Slight disturbances.
		13 52	...	...	...	...	...	
12	L	0 21 to	18	...	...	...	...	
		0 48	...	...	...	...	...	
15	eP	17 55 0	...	...	...	...	...	The record of the first and most considerable disturbance on 15th August 1918 is confused with microseisms and with wind effects to an extent which makes accurate reading difficult. It has, therefore, been decided to publish no times in connection with it, except that P is probably at 12 h. 32 m. 30 s.
	Me	18 26 15	24	...	60	...	...	
	Mn	18 26 30	24	52	...	...	...	
	F	20 0	...	...	...	...	...	
16	eP	3 48 48	...	...	...	...	8700 ?	
	L	4 15	...	...	...	...	...	
	F	5 0	...	...	...	...	...	
16	eP	9 1 45	...	...	...	...	9500	
	L	9 27 30	...	...	...	...	...	
	F	10 8	...	...	...	...	...	
17	eP	7 6 47	...	...	...	...	9900	
	S (?)	7 17 40	...	...	...	...	...	
	SR_1	7 23 53	...	...	...	...	...	
	L	7 36 30	...	...	...	...	...	
	F	8 15	...	...	...	...	...	
18	L	6 55 to	...	...	...	...	...	
		7 30	...	...	...	...	...	
19	L	18 18 to	...	...	...	...	...	
		18 50	...	...	...	...	...	
20	L	0 48 to	...	...	...	...	...	
		1 13	...	...	...	...	...	
23	L	6 45	...	...	...	...	...	Earlier phases indistinct.
	F	9 15	...	...	...	...	...	
25	L	1 20 to	...	...	...	...	...	
		1 50	...	...	...	...	...	
26	L	6 33 to	...	...	...	...	...	
		7 0	...	...	...	...	...	
29	e	5 50 28	...	...	...	...	...	
	L	5 52 53	...	...	...	...	...	
	F	6 30	...	...	...	...	...	

Eskdalemuir Observatory.—Microseisms observed during August 1918.

The microseisms measured are those on the N-S Galitzin instrument, taking the mean of two or three of the largest oscillations observed during 30 minutes, including the hour to which they are referred in the table. The amplitudes given are expressed in microns (μ), and the hours refer to Greenwich Mean Time.

Day.	0 h. A_N.	0 h. T.	6 h. A_N.	6 h. T.	12 h. A_N.	12 h. T.	18 h. A_N.	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	0·4	5	0·6	4½	0·8	5	0·7	5½
2	0·6	5	0·8	4	0·8	4	0·3	4
3	0·6	4½	0·2	4	0·3	5	0·3	3
4	0·6	4	0·5	4½	0·5	4	0·2	4
5	0·3	4	0·1	3	0·4	3½	0·4	3½
6	0·4	3½	1·3	3½	0·9	3½	0·6	4
7	0·3	4	0·3	4	0·6	4	0·7	4
8	0·8	4	1·3	3	...	...	2·3	4
9	2·3	4	2·0	4	0·6	4	0·8	4
10	0·6	4	0·6	4	0·6	4	0·7	4
11	0·8	5	0·9	4½	0·8	4½	1·0	4½
12	0·8	5	0·7	4	0·5	6	0·6	5
13	0·6	5	0·6	4½	0·5	5	0·5	5
14	0·5	4½	0·8	4	1·1	4	1·2	5
15	1·3	6	1·0	5½	1·7	4½	...	...
16	1·3	4½	1·0	5	0·9	5	0·7	4
17	0·5	5	0·6	4	0 6	4	0·5	4
18	0·7	4	0·7	4	0·3	4	0·5	4½
19	0·6	4	0·5	4	0·2	4	0·3	3½
20	0·1	4	0·1	4	0·3	4	0·3	4
21	0·6	4	0·2	5½	0·5	4	0·6	4
22	0·5	4	0·3	4	0·8	4	0·9	3½
23	...	...	1·4	4	1·1	4	0·6	4
24	0·3	4	0·4	3½	0·2	4	0·2	4
25	0·2	4	0·1	3	0·6	4	0·3	4
26	0·8	3½	0·4	3	0 5	4	0·5	4
27	0·4	3½	0·1	3½	0·2	4	0·6	4
28	0·6	4	0·8	4	0·7	5	0·7	4
29	0·6	4	...	...	0·5	5	0·8	5
30	0·9	5	1·0	4½	1·1	4½	0·9	5½
31	1·2	6	1·2	6	0·9	5½	0·9	5

Means for Month $\begin{cases} A_N = 0·7. \\ T = 4·2. \end{cases}$ Normals, 1911–17 $\begin{cases} A_N = 0·4. \\ T = 4·4. \end{cases}$

Earthquakes:—Richmond (Kew Observatory).

Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h m	h m	
5	...	3 24	Very small.
7	...	15 8	Very small.
8	...	11 16	Small.
9	...	0 59	Small.
10	...	11 56	Very small.
10	...	18 51	Very small.
15	12 36	13 31	Amplitude on trace 11·9 mm.
15	...	18 32	
16	...	4 32	Small.
16	9 35	9 47	Small.
17	...	7 51	Small.
23	6 49	8 18	Small.

10. Soundings with Pilot Balloons.

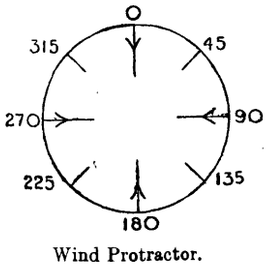
Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	Geostrophic. m/s.	By Anemometer. From N.	By Anemometer. m/s.	At Heights above M.S.L. 500 m. From N.	500 m. m/s.	1000 m. From N.	1000 m. m/s.	2000 m. From N.	2000 m. m/s.	3000 m. From N.	3000 m. m/s.	4000 m. From N.	4000 m. m/s.	5000 m. From N.	5000 m. m/s.	Cloud Observations. Type.	From N.	mr/s.
		h. m.	°		°		°		°		°		°		°		°			°	
1	S. Farnboro' .	6 35	155	8	90	1·0	155	11·0	165	10·0	200	2·3	230	2·8	230	5·5	195	5·5	Ci.-Cu., Ci.	...	...
1	Cahirciveen .	12 35	?	?	250	2·8	300	1·7	290	0·9	195	3·9	...	...	...	...	...	...	A.-Cu., A.-St.	205	...
																			Cu.	295	...
2	Eskdalemuir .	11 45	115	10	55	4·2	80	4·3	125	4·0	75	1·3	100	5·0	...	...	...	...	Fr.-Cu.	135	4·6
																			Cu.	...	...
3	,,	7 10	90	10	30	4·5	50	4·2	85	6·0	30	1·8	55	6·0	...	...	...	...	Ci.	?	...
																			Cu., Fr.-Cu.	65	...
5	Cahirciveen .	16 50	295	15	280	6·5	285	12·0	285	14·0	275	20·0	265	22·5	...	...	...	...	Cu.	295	...
7	Eskdalemuir .	7 20	?	?	calm		245	2·2	360	0·4	290	3·9	295	4·0	...	...	...	...	St.-Cu.	270	...
8	Cahirciveen .	7 15	245	12	250	4·7	265	10·0	270	12·0	265	16·5	270	18·0	275	17·5	...	...	High St., St.-Cu.	270	...
																			Low St.	225	...
9	S. Farnboro' .	6 10	315	12	275	5·0	305	11·0	310	12·5	300	14·5	...	...	...	...	...	...	Ci.	315	...
																			St., Fr.-St.	...	...
10	,,	6 35	!	?	calm		10	4·5	15	5·5	360	11·0	360	14·5	...	...	...	...	...	...	...
10	Eskdalemuir .	7 55	225	8	135	2·0	260	2·5	310	2·9	340	7·0	350	7·5	...	...	...	...	Fr.-Cu., St.	295	...
10	Cahirciveen .	15 30	225	8	180	10·5	165	11·5	185	25·5	200	22·0	205	21·0	...	...	...	...	Ci.-Cu., A.-Cu., St.	225	...
																			Lent Cu., Fr-Ci.	225	...
																			Cu.	180	...
10	Aberdeen . .	7 30	245	8	180	3·0	205	4·0	305	4·5	320	13·5	...	...	...	...	...	...	A.-Cu.	285	1·0
12	,,	7 30	225	6	210	0·5	265	5·0	255	2·0	240	8·0	245	7·5	...	...	...	...	A.-Cu.	195	...
																			Ci.-Cu.	...	...
12	S. Farnboro' .	6 45	225	5	calm		calm		340	4·0	210	5·5	245	12·5	230	9·0	...	...	Ci.	225	...
12	Cahirciveen .	7 25	225	5	245	3·5	270	7·5	260	8·5	265	10·5	275	16·5	...	...	...	...	St.-Cu., A.-Cu.	...	...
																			Cu.	245	...
12	,,	15 0	245	8	270	5·5	265	6·5	285	9·0	265	11·0	...	...	...	...	...	...	A.-St.	...	...
																			Cu.	245	...
13	,,	8 40	225	10	180	7·0	190	8·0	205	13·0	200	4·6	...	...	...	...	...	...	Cu.	180	...
13	S. Farnboro' .	6 40	315	5	calm		345	8·0	350	6·5	320	7·5	325	10·5	320	19·0	320	18·5	...	...	...
14	,,	6 45	225	8	light		195	11·0	200	11·0	200	8·0	200	7·0	...	...	...	...	...	...	...
15	,,	14 15	295	8	265	2·5	290	5·0	305	2·4	280	9·0	280	11·0	...	...	...	...	Fr.-Cu.	...	...
16	,,	6 50	?	?	calm		80	5·0	240	2·1	245	7·5	255	12·0	...	...	...	...	Ci., Ci.-Cu.	270	...
16	Aberdeen . .	7 30	270	10	200	3·0	285	6·5	275	8·0	275	8·0	...	...	...	...	...	...	St.-Cu., Cu.	270	...
16	Eskdalemuir .	7 21	245	8	200	2·7	250	5·5	255	9·5	255	9·0	...	...	...	...	...	...	Ci., A.-Cu.	245	...
																			St.-Cu., St.		
18	Cahirciveen .	16 40	295	8	275	1·9	270	6·5	270	10·5	280	15·0	...	...	...	...	...	...	A.-St., St.	270	...
																			Low Cu.		
19	S. Farnboro' .	6 50	295	8	270	3·0	300	8·5	310	11·5	305	18·0	...	...	...	...	...	...	St.-Cu., A.-Cu., Ci.-Cu. Ci.	295	...
21	,,	9 35	245	7	205	4·5	230	10·5	230	10·0	235	10·5	245	11·0	...	...	...	...	Fr.-St.	...	...
21	Cahirciveen .	7 15	225	6	145	1·2	150	6·5	175	13·5	180	19·5	...	...	...	...	...	...	Ci.	225	...
																			Low St.	155	...
23	S. Farnboro' .	7 10	315	7	?	?	25	10·0	25	8·5	240	5·0	...	...	...	...	...	...	Ci.-St., Ci.	270	...
																			A.-Cu., St.-Cu.	...	...
23	,,	14 15	45	7	?	?	10	2·0	95	6·0	220	3·2	230	9·0	...	...	...	...	A.-St., Ci.-St.	...	...
23	Cahirciveen .	8 10	?	?	light		220	3·4	270	3·3	295	3·4	...	...	...	...	...	...	Ci., Ci.-St., Ci.-Cu.	225	...
																			Cu.	245	...

(For observations at lower levels, see above.)

			6000 m.	
1	S. Farnboro' .	6 35	215	4·5

Height of Station above M.S.L. = H.
Height of Anemometer above ground = h.

	H.	h.
Aberdeen . . .	14 m.	32 m.
Eskdalemuir . .	242 m.	15 m.
S. Farnborough . .	70 m.	31 m.
Cahirciveen . .	9 m.	13 m.



Wind Protractor.

Notes on Pressure Distribution.

August 1918.

1 7 h., 13 h. Extensive anticyclone extending from Greenland to the Continent; Low over Ireland.

2 13 h. Low centred over the Irish Channel.

3 7 h. Low over the British Isles, centred near Land's End.

5 18 h. Secondary over Ireland, slight gradient.

7 7 h. Shallow Low over the British Isles; High extending from the Azores to Bay of Biscay.

8 7 h. Low centred off N. of Ireland; High over Bay of Biscay.

9 7 h. Low centred near Skudesnaes; anticyclone centred over Bay of Biscay.

10 7 h., 18 h. Anticyclone over the British Isles.

12 7 h., 13 h. Extensive anticyclonic ridge extending from the Azores to the Baltic; Low over Iceland region.

13 7 h. Anticyclone over the British Isles, centred over Bay of Biscay.

14 7 h. South-westerly type; High over S. England.

15 13 h. to 16 7 h. Low off N. of Scotland; anticyclone stretching from the Azores to the British Isles.

18 18 h. Southerly type.

19 7 h. Anticyclone over the British Isles, centred over the Bay of Biscay.

21 7 h. Anticyclone centred over France; Low between Iceland and Scandinavia.

23 7 h., 13 h. Atlantic anticyclone covering the British Isles; Low over Scandinavia.

Notes on Ascents.

1st, 6 h. 35 m. Overcast, with Ci.-Cu. descending rapidly.

10th, 7 h. 55 m. Barometer rise checked.

21st, 7 h. 15 m. Sky rapidly covering with low St.

10. Soundings with Pilot Balloons—*continued.*

Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	m/s.	By Anemometer. From N.	m/s.	At Heights above M.S.L. 500 m. From N.	m/s.	1000 m. From N.	m/s.	2000 m. From N.	m/s.	3000 m. From N.	m/s.	4000 m. From N.	m/s.	5000 m. From N.	m/s.	Cloud Observations. Type.	From N.	mr/s.
		h. m.	°		°		°		°		°		°		°		°			°	
23	Cahirciveen	12 20	225	6	230	4·8	210	6·5	220	7·0	250	4·6	240	6·5	245	9·0	...	...	Ci.-St., A.-Cu.	225	...
																			Cu.		
27	S. Farnboro'	7 0	270	7	light		275	5·5	280	8·0	285	8·5	290	11·0	...	...	...	...	A.-St.	295	...
28	,,	13 20	245	12	325	7·5	330	9·0	340	12·0	335	11·5	...	...	...	...	...	...	A.-Cu., St.-Cu.	295	...
28	Eskdalemuir	7 15	205	8	360	2·0	360	7·0	360	9·5	5	13·5	345	8·5	...	...	...	...	Ci.	355	2·5
																			Ci., A.-Cu.	340	2·6
28	Cahirciveen	7 40	225	14	350	6·0	355	9·5	350	16·0	345	15·5	...	...	...	...	...	...	A.-Cu. Cu. & St.	360	...
29	,,	7 15	245	8	light		330	4·5	320	8·5	300	5·5	295	7·0	310	12·0	330	9·0	Ci., Ci.-Cu.	360	...
																			Cu. and St.	315	...
30	S. Farnboro'	6 45	270	12	light		300	5·0	290	5·0	345	11·0	350	15·0	...	...	...	...	A.-Cu.	335	...
31	,,	6 40	295	10	280	5·5	305	13·0	315	9·0	285	19·0	285	16·0	...	...	...	...	Ci.	315	...
																			A.-Cu.	...	...
															6000 m.		7000 m.				
29	Cahirciveen	7 15	(For observations at lower levels, see above.)												335	13·0	340	15·0			

Notes on Pressure Distribution.

August 1918.

27 7 h. Anticyclone over the Bay of Biscay; Low N. of Ireland.

28 7 h., 13 h. High over the Atlantic; Low centred over North Sea; northerly gradient.

29 7 h. High over the British Isles, centred off S.W. of Ireland.

30 7 h. Anticyclone over the British Isles; Low off N. of Scotland.

31 7 h. North-westerly type.

Notes on Ascents.

27th, 7 h. Very misty on horizon.

28th, 13 h. 20 m. Very hazy.

28th, 7 h. 40 m. Convection probable.

30th, 6 h. 45 m. A.-Cu. coming over rapidly from 335°.

11. Nephoscope Observations.

Aberdeen. Taken at 13 h. G.M.T.

Day.	Type of Cloud.	Degrees from N.	Velocity–height–ratio. Milliradians per Second.	Components. W.–E.	S.–N.	Remarks.
		°	mr/s.	mr/s.	mr/s.	
8	Fr.-Cu.	255	4·0	+ 3·9	+ 1·0	
9	Cu.	306	7·3	+ 5·9	− 4·3	Degraded Cu. below a sheet of St.-Cu.
12	Cu.-Nb.	225	2·0	+ 1·4	+ 1·4	Velocity varying slightly.
13	Cu.	275	3·9	+ 3·9	− 0·4	[cumuliform masses.
14	Fr.-Cu.	225	30·0	+21·0	+21·0	Velocity approximate only. Probably low scud in
15	Cu.	281	6·8	+ 6·7	− 1·3	
16	A.-Cu.	257	4·5	+ 4·4	+ 1·0	Observation at 12 h.—fused sheet of A.-Cu.
17	Cu.-Nb.	278	3·6	+ 3·6	− 0·5	Central mass of cloud measured.
20	St.-Cu.	260	4·5	+ 4·4	+ 0·8	Fused St.-Cu.
21	A.-Cu.	265	7·1	+ 7·1	+ 0·6	A.-Cu. fusing into sheet.
22	St.	225	4·2	+ 3·0	+ 3·0	Observation at 12 h. 30 m. Sharp squall had occurred at 12 h. 20 m. Barometer very unsteady; high wind to a gale at night.
23	Cu.	265	5·6	+ 5·6	+ 0·5	Observation at 12 h. Ci.-St. sheet above with ⊕.
27	A.-Cu.	240	1·6	+ 1·4	+ 0·8	Observation at 12 h.
28	Fr.-Cu.	315	12·5	+ 8·9	− 8·9	Observation at 12 h.
29	Cu.	315	5·6	+ 4·0	− 4·0	Observation at 12 h. Degraded Cu.
30	A.-Cu.	270	5·6	+ 5·6	0·0	Observation at 12 h. Heavy A.-Cu.

12. Aurora.

Day.	a.m. or p.m.	Moon.	Magnetic Character. Eskdalemuir.	Richmond.	Aurora Observations. Station.	Remarks.
6	...	●	...	...	...	
14	...	☽	...	...	...	
15	p.	...	2, 2	2, 2	Eskdalemuir	Bright from 21 h., with streamers 22 h.–23 h.
22	...	○	...	...	...	
28	...	☾	...	...	...	
31	p.	...	2, 2	2, 2	Balta Sound	
					Ballater	Bright, with arch and streamers; white, green, and crimson.
					Arbroath	
					Eskdalemuir	Arch and streamers, after 21 h.
					Meltham	Glow at 20 h. 45 m. Bright streamers 21 h. 45 m.–22 h. 15 m. reaching halfway to zenith; slightly pink in places; extended in azimuth from Arcturus to Capella. Fine display 22 h.
					Dublin (city)	Fine display after 21 h.; white band and streamers.
					Holyhead	
					Haverfordwest	23 h. and later.

Note.—The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at midnight of the night in question.

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*

Eighth Year.—No. 9. SEPTEMBER 1918.] Units based on the C.G.S. System. [*Price* 1*s.*

1. SUNSHINE AND SOLAR RADIATION.

Day.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W.							RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W.					ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W.							CAHIRCIVEEN.
	Bright Sunshine.*		Radiation received on Horizontal Surface by Callendar Radiograph.					Bright Sunshine.*		Radiation at Noon by Ångström Pyrheliometer.			Bright Sunshine.*		Radiation by Ångström Pyrheliometer.					Bright Sunshine.*	
	Total.	Per cent. of Possible.	Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Maximum. For Day. Time.	Maximum. 11.30 h. to 12.30 h.	Total.	Per cent. of Possible.	Intensity.	Vertical Component.	Sky.	Total.	Per cent. of Possible.	Time.	Sky.	$\frac{p}{p_0}$ sec Z.	Intensity.	Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	*x* 11·5	85	*x* 1560	53	75	12 28	75	*x* 11·6	86	...	...	...	2·8	20	...	...	...	...	9·1	67
2	6·2	46	1070	37	69	12 48	66	6·4	47	...	...	...	5·0	37	...	...	...	...	1·6	12
3	11·0	82	1510	52	73	12 12	73	11·3	84	...	...	...	5·7	42	...	...	...	...	1·3	10
4	0·0	0	460	16	36	12 38	31	0·0	0	...	...	...	3·4	25	...	...	...	...	7·0	52
5	0·9	7	470	17	53	13 2	36	0·8	6	...	...	...	10·8	80	...	...	...	...	7·5	56
6	4·1	31	900	32	61	12 15	61	3·0	23	69	49	Hazy	*x* 12·0	84	12 11	Clear	1·49	85	*x* 10·2	77
7	2·5	19	850	31	52	10 56	29	2·9	22	...	...	...	3·0	22	...	...	...	...	3·1	23
8	3·9	30	880	32	65	13 25	53	3·5	27	...	...	...	1·4	11	...	...	...	...	8·2	63
9	7·2	55	1220	45	66	11 38	66	6·6	51	...	...	...	6·1	46	...	...	...	...	1·0	8
10	9·8	75	1270	47	74	12 18	74	9·5	73	82	57	Clear	1·6	12	...	...	...	...	7·8	60
11	7·4	57	1120	42	*x* 76	11 50	*x* 76	7·3	57	...	...	...	8·2	63	...	...	...	...	3·6	28
12	4·5	35	1020	39	70	12 2	70	5·0	39	78	53	Clear	3·6	28	...	...	...	...	3·7	29
13	6·6	52	950	37	57	11 4	41	5·4	42	...	...	...	6·5	50	...	...	...	...	0·0	0
14	0·0	0	*n* 250	10	15	15 10	15	0·0	0	...	...	...	0·0	0	...	...	...	...	0·0	0
15	4·1	32	620	24	61	12 30	61	3·8	30	...	...	...	0·0	0	...	...	...	...	0·0	0
16	0·6	5	490	20	32	9 35	19	0·1	1	...	...	...	0·0	0	...	...	...	...	4·6	37
17	7·7	62	1020	41	62	11 15	60	7·5	60	...	...	...	0·8	6	...	...	...	...	3·7	29
18	3·3	26	798	33	57	10 0	53	3·1	25	...	...	...	9·5	76	...	...	...	...	9·9	79
19	7·3	59	1040	43	65	12 0	65	7·5	60	...	...	...	0·5	4	...	...	...	...	2·8	23
20	8·1	66	1050	44	64	11 58	64	7·1	58	82	53	Clear	1·8	15	...	..	...	...	4·0	32
21	4·6	38	860	36	65	12 15	65	5·3	43	74	48	Clear	0·4	3	...	...	...	...	0·1	3
22	0·3	2	490	21	27	9 50	10	0·7	6	...	...	...	7·5	61	...	...	...	...	3·6	30
23	5·6	46	900	39	62	12 10	62	5·6	46	...	...	...	0·6	5	...	...	...	...	7·9	65
24	5·0	41	990	44	68	11 36	68	5·3	44	...	...	...	0·0	0	...	...	...	...	0·0	0
25	8·9	74	? 900	40	? 63	12 16	? 63	8·2	68	71	43	Clear	6·4	53	...	...	...	...	4·2	35
26	2·1	18	? 689	31	32	10 30	18	1·8	15	...	...	...	0·9	8	...	...	...	...	4·6	39
27	8·1	68	1030	47	65	12 10	65	9·1	76	77	46	Clear	3·5	29	...	...	...	...	0·8	7
28	? 9·3	79	1070	50	65	12 55	64	9·5	81	78	46	Clear	4·4	37	...	...	...	...	9·1	77
29	0·0	0	*n* 250	12	16	8 15	11	0·0	0	...	...	...	2·5	21	...	...	...	...	6·8	58
30	1·0	9	480	23	50	13 40	36	1·0	9	...	...	...	5·5	47	...	...	...	...	7·3	62
Means	5·07	41	874	35	57	—	52	4·97	40	—	—	—	3·80	30	—	—	—	—	4·47	36
Normal	5·30	43	969	—	—	—	—	4·83	39	—	—	—	4·30	34	—	—	—	—	4·43	36
	←5 years→		3 years					←35 years→					←5 years→						←35 years→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M. S. L.:—H = 9·1 m. H_b = 13·7 m. H_a = 26·4 m. Above Ground: h_t = 1·3 m. h_r = 0·56 m. h_a = 13·9 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity. Vapour Pressure.		Humidity. Percentage.		Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount (0–10) and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.				
	mb.	mb.	*a.* 200+	*a.* 200+	*a.* 200+	*a.* 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	*a.* 200+		
1	1013·2	1013·3	85·9	85·1	88	84	9·6	10·5	65	75	345	8	320	4	3	10	0·3	80	Fine *n.* and *a.* y. o. later.	
2	1012·0	1013·0	85·7	85·3	88	83	10·9	11·2	75	79	310	4	85	3	9	10	—	82	o to c. *n.* and *a.* ⊕ *a.* Fair day.	
3	1013·1	1007·5	87·1	86·6	89	81	10·9	14·2	68	92	105	4	80	8	5	10●	6·6	*n* 76	Fine to o. ● evening.	
4	1001·9	1004·8	85·9	86·6	90	85	13·3	13·4	90	87	65	10	75	6	10	3	13·2	85	● *n* and *a.* ⌒ *a.* ⊕ *p.*	
5	1005·7	1007·8	86·4	87·0	89	85	12·8	13·3	84	84	65	12	70	8	5	*5*	—	84	Fine to fair.	
6	1009·2	1010·5	89·3	86·9	*x* 93	85	15·1	14·5	82	92	130	2	—	0	4◑	1	1·1	86	o. p. *a.* Sultry day. ∞ *p.*	
7	1006·2	995·1	89·5	86·4	91	84	16·6	14·5	89	95	—	1	210	7	10	10●	12·1	81	∞ *n.* and *a.* Fine to o. ● *p.*	17846 γ 19° 35′·7 —
8	994·4	998·7	83·9	84·5	87	83	10·7	11·0	83	81	270	9	260	9	8▲	3	10·7	82	o. p. *n.* and *a.* Fair day, with △.	
9	995·4	991·6	85·5	84·9	88	84	12·7	11·4	88	83	195	3	255	9	10	4	9·9	81	c. p. to ● during day. Fine later.	
10	993·2	992·4	85·4	83·0	87	82	10·9	10·7	76	88	255	11	210	4	5	8	4·1	80	p. q. *n.* and *a.* p. during day.	— —
11	994·8	995·3	85·1	84·4	87	82	11·2	12·6	80	94	250	9	320	4	6	6	8·6	80	c p. *n.* and *a.* p. during day.	68° 5′·7
12	1005·8	1013·7	85·9	85·8	87	84	10·5	12·0	71	82	300	10	295	5	3	3	1·0	81	Fine, with p. *n.* and *a.* o. p. to c. *p.*	
13	1014·3	1004·7	86·0	86·4	88	83	13·4	13·3	90	87	—	1	130	7	10	10	10·4	81	Fine *n.* ⊕ *a.* ● *p.*	
14	1003·6	1007·6	87·3	86·8	89	86	15·8	15·5	98	99	230	6	185	2	10	8	2·7	83	●⁰ *n.* and *a.* Damp day. ≺ *p.*	
15	1002·9	998·7	88·1	88·2	89	*x* 87	16·7	17·1	98	100	—	0	180	5	10●	10●	21·7	84	● *a.* Damp day. p. *p.*	
16	996·1	991·8	87·6	86·4	90	86	15·7	13·9	95	91	210	4	155	7	9ϟ	10	10·0	87	●² *a.* d. to fair day. p. later.	
17	987·5	999·7	87·8	84·7	90	84	15·5	10·9	93	80	195	3	300	5	10	6	1·4	84	o. to c. p. during day Fair later.	
18	1004·4	1006·5	85·1	83·9	86	82	10·0	9·4	71	73	250	5	285	6	5	4	0·2	80	Fine dry day.	
19	1010·1	1016·0	83·4	82·9	86	83	9·8	9·5	78	79	285	11	305	3	7	2	1·9	81	Fair to fine, with p.	
20	1010·4	1008·3	83·4	85·0	87	81	11·4	11·8	91	85	180	6	270	10	10●	8	8·3	78	p. to ● *a.* p. ⌒ during day.	
21	1000·9	992·2	86·5	84·0	87	83	14·9	10·3	97	79	210	9	235	12	10●	4	*x* 31·9	83	●² *a.* p. day. ⋓ evening.	
22	982·9	990·0	84·2	83·7	86	81	10·1	9·4	77	74	215	9	290	12	7	4	7·8	80	q. *p.* Fair at times.	17829 γ
23	1002·0	1013·0	83·8	83·7	85	80	8·0	9·2	*n* 62	72	330	14	325	6	5	7	2·6	80	q. p. *n.* and *a.* Fair day, with q.	— 19° 34′·1
24	1007·5	1009·6	86·3	85·2	88	83	15·0	11·4	99	81	220	8	290	10	10●	2	3·7	79	Fair *n.* o. p. *a.* e.	68° 7′·2
25	1015·9	1017·4	85·2	84·7	87	84	10·1	11·6	72	85	285	10	230	3	9	7	1·1	82	Fair to o. p. at times.	
26	1009·8	1015·6	86·0	84·1	87	84	14·3	10·1	96	77	280	7	270	10	8	1	4·7	83	o. ● *n.* and *a.* Fair to fine later.	
27	1014·8	1009·5	84·0	84·0	87	83	11·1	10·2	85	78	240	9	255	10	8	3	3·1	80	Fine to o, with p.	
28	1011·9	1012·5	83·2	80·0	85	*n* 79	8·1	8·5	66	85	320	6	350	2	3	5	0·4	78	p. *n.* Fine y.	
29	1005·4	1010·7	81·5	82·0	*n* 84	80	8·3	7·6	75	67	60	4	360	5	10	3	1·7	77	Fair to dull. ● *p.*	
30	1020·4	1026·1	82·1	81·2	*n* 84	80	8·2	8·4	71	78	360	8	360	2	4	4	1·5	77	p. *n.* Fine y. p. evening.	17838 γ
Means	1004·9	1005·8	85·6	84·8	87·5	83·0	12·1	11·6	82	83		6·8		6·1	7·4	5·7	182·7	81·2	Monthly **Totals** or **Means**.	— 19° 34′·9
Normal	1014·3	1014·5	86·6	86·2	89·6	83·8	13·4	13·2	85	86		4·7		4·3	—	—	113·3 (45 yrs.)	—	**Normals.**	68° 6′·4
	←45 years→						←30 years→				←35 years→									

* By Campbell-Stokes Sunshine Recorder.

x denotes the maximum and *n* the minimum value in the column

Wt. 37652/515—400—8/19.—N. & Co., Ltd. **Gp. XV.**

3. METEOROLOGY :—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 5·5 m. Barometer, H_b = 10·4 m. Cups of Anemometer, H_a = 25 m.
Heights above Ground :—Thermometers, h_t = 3·0 m. Rain-gauge, h_r = 0·53 m. Cups of Anemometer, h_a = 20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity. Vapour Pressure.		Humidity. Percentage.		Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	Remarks.
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
	mb.	mb.	*a.* 200 +	*a.* 200 +	*a.* 200 +	*a.* 200 +	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	*a.* 200 +	
1	1005·5	1006·3	84·4	85·0	90	82	8·4	10·3	63	74	281	5	248	5	2	1	—	77	Fine.
2	1007·1	1010·3	86·6	85·9	90	83	11·4	10·8	74	73	248	5	259	3	6	1	0·1	79	Fine. v. *p.*
3	1014·7	1014·7	86·7	86·5	92	81	11·1	11·5	71	75	281	3	236	2	1∞	2	—	74	☌≡⁰. Fine. v. *p.*
4	1011·7	1009·1	87·1	88·7	92	84	12·8	13·4	80	76	113	3	90	4	10≡⁰	9≡⁰	0·4	79	Dull. ●⁰ at times.
5	1010·7	1013·1	88·7	88·1	93	*x* 88	15·7	15·5	89	91	79	3	101	4	10≡⁰	10≡⁰	11·4	82	Dull to fine. ☾●² 16 h.–16 h. 30 m.
6	1015·1	1014·8	88·9	88·7	94	*x* 88	16·1	15·9	90	90	—	0	191	2	10≡⁰	0	0·7	86	≡. o. to fine. p. *p.*
7	1011·0	1002·4	90·1	89·5	*x* 95	87	15·5	16·0	80	86	124	3	191	4	9	1	—	82	Dull to fine. p.
8	994·3	998·2	88·5	84·5	91	83	15·2	10·3	87	76	203	5	236	4	10	1	9·4	84	Dull, with p. ▲² 17 h. 40 m.
9	1001·3	989·9	86·7	86·9	91	82	10·6	14·5	68	92	236	5	169	7	6	10●	9·5	78	☌. Fine to o. ● 17 h. 30 m.–21 h. 30 m.
10	992·4	997·1	87·0	84·7	89	83	10·3	10·1	65	74	236	6	225	6	8	1	0·4	82	Fine to fair. p.
11	994·4	997·3	86·0	84·9	90	82	11·3	10·6	76	77	225	5	259	2	6	1	0·4	79	Fine to fair. v. *p.*
12	996·6	1005·5	85·9	84·5	89	83	10·0	11·0	68	81	281	4	236	3	8	1	0·3	78	●⁰ early. Fine to fair.
13	1013·2	1015·9	86·3	85·6	89	84	9·7	11·4	64	79	270	5	248	3	1	3	—	80	Fine to fair.
14	1011·1	1012·0	86·8	89·2	90	85	14·1	16·6	90	91	191	7	236	3	10●	10	6·0	81	● *a.* Dull. ●⁰ 13 h.–15 h.
15	1013·2	1009·7	89·6	86·7	94	84	17·5	14·4	93	93	214	4	—	1	10	4≡⁰ ☌	8·6	86	● *a.* .Fine to fair *p.* ☌
16	1006·4	1005·5	89·6	89·7	92	82	16·1	17·2	86	91	214	5	191	2	10	10●	0·8	78	≡☌. Dull to fair. ● *n.*
17	1003·0	1006·2	91·2	89·1	94	*x* 88	16·2	15·1	78	83	214	7	214	4	6	4	4·5	87	● early. Fine to fair.
18	1007·8	1005·6	90·8	89·0	93	87	15·8	16·8	78	93	214	4	—	1	8	10●	*x* 34·3	81	Showery.
19	1008·3	1014·1	85·1	83·8	88	83	10·5	10·1	75	78	281	5	225	5	3	3	4·3	81	● early. o. to fine. ▲ q. 14 h. 20 m.
20	1018·6	1011·7	84·9	85·1	89	81	9·5	11·5	69	82	236	4	191	6	6	10	3·0	76	Fine to fair. ● *n.*
21	1010·8	1005·3	86·0	87·4	90	83	11·6	13·0	78	80	236	5	191	7	4	10	1·1	80	● early. Fine to dull.
22	994·7	989·6	86·8	84·0	88	83	13·1	11·1	84	85	191	4	191	4	10	2	16·0	83	● early. Dull to fine. ● *n.*
23	991·6	1002·5	85·0	82·7	88	81	10·7	9·7	77	81	225	5	293	2	4	0	0·6	80	Fine to dull. ● 15 h.
24	1011·2	1009·7	84·9	85·7	89	79	10·7	12·7	78	87	281	2	214	6	2∞	10	0·5	73	Fine to o. ● *n.*
25	1011·2	1020·0	86·6	83·0	89	81	9·2	10·2	*n* 59	84	293	6	259	2	1	0	0·8	83	● early. Fine later.
26	1017·9	1011·3	85·7	87·5	89	80	10·9	14·4	75	88	214	7	236	4	3	8	—	75	☌. Fine to o.
27	1014·9	1011·3	84·1	83·4	88	81	9·7	9·4	74	75	259	4	214	5	1	0	0·1	77	☌☌. Fine. ∞ *a.* v. *p.*
28	1006·9	1011·9	84·1	79·9	86	78	8·7	7·7	66	78	270	6	270	2	6	0≡⁰	1·4	79	● early. Fine.
29	1010·4	993·4	80·9	79·9	*n* 82	*n* 76	8·6	9·2	81	93	—	0	34	5	10≡⁰	10●	25·5	*n* 70	⌙. o. and wet all day.
30	1007·9	1018·2	79·8	79·2	84	77	8·0	8·7	81	92	315	4	—	1	10●	? 0≡⁰	4·9	77	● early. Dull to fine. ● *p.*
Means	1007·1	1007·1	86·5	85·6	89·9	82·6	12·0	12·3	77	83			4·3			3·6	6·4	4·4	145·0	79·6	Monthly **Totals** or **Means.**
Normal	1016·0	1015·8	86·8	86·1	91·2	82·7	12·5	12·7	80	83			3·1			2·3	—	—	51·0	—	**Normals.**
	45 years						30 years				35 years						45 years		

4. METEOROLOGY :—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 242 m. Barometer, H_b = 237·3 m. Vane of Anemometer, H_a = 250 m.
Heights above Ground :—Thermometers, h_t = 0·9 m. Rain-gauge, h_r = 0·38 m. Vane of Anemometer, h_a = 15 m.

																			Remarks.
1	970·1	973·1	82·0	81·6	88	78	9·6	9·3	84	84	293	10	270	4	10●	2	6·4	73	♅. ● 9 h.–13 h. 30 m. ☾●² 16 h.
2	970·7	980·0	83·0	81·5	88	80	9·4	9·6	77	87	293	10	304	2	9	2	1·8	77	o. early. Fine, with p. later.
3	983·8	984·2	85·5	82·2	87	75	10·1	10·3	70	89	—	2	270	4	3∞	10	—	73	☌☌ ²∞ y. *a.* o. v. *p.* and *n.*
4	985·2	988·4	83·9	80·0	85	77	9·0	8·9	70	89	56	4	34	7	6	1	0·6	73	☌☌ ²⊕ 8 h. ●⁰≡⁰ *a.* o. to b. *n.*
5	989·6	988·7	83·3	76·5	86	75	8·2	6·9	*n* 66	88	67	7	349	2	2	0	—	73	☌² early. Fine day. ∞☌ *n.*
6	987·5	986·4	85·7	81·5	*x* 91	74	10·4	10·2	71	92	—	1	—	1	2	0	—	71	⌙² b. v. y. *a.* and *p.* ☌ *n.*
7	982·4	970·6	85·7	85·2	90	79	13·4	13·8	92	98	191	4	—	0	10≡⁰ ☌	10≡⁰	8·5	76	☌ ⁰≡⁰ *a.* ☾ 20 h. ≡⁰●² *n.*
8	958·6	962·7	84·6	79·6	87	79	12·9	8·0	95	82	157	6	270	3	10●²≡⁰	1	19·4	83	≡⁰●² till 13 h. p. *p.* Fine *n.*
9	965·2	961·8	81·7	79·2	85	78	9·2	8·7	82	93	236	6	360	2	9	10	0·8	75	p. *a.* and *p.* c. to o. *n.* ☇ 22 h.
10	954·4	960·0	79·9	80·3	84	79	8·6	8·4	87	82	247	5	259	7	10≡⁰	2	16·3	77	●²≡⁰ till 14 h., then fine. ⊕ *p.* v. *n.*
11	961·2	963·4	83·0	80·0	85	76	9·3	8·6	76	86	270	4	247	4	3	4	4·4	73	☌. ●²▲ 11 h. o. p. to c. v. *p.* Fair *n.*
12	963·5	974·4	82·9	82·0	87	76	9·3	9·9	77	87	247	6	349	5	9	10●	3·1	73	p. ▲●² 12 h. and 15 h. Fine *n.*
13	980·9	984·3	81·1	77·2	85	73	8·0	6·6	74	80	293	7	259	2	9	1	—	76	Fine till 8 h. o. p. *a.* v. y. *p.* Clear *n.*
14	982·1	986·3	77·7	77·4	80	*n* 72	7·8	6·5	91	78	45	3	23	3	10●	8	4·1	*n* 70	Fine early. ● 8 h.–13 h. d. *p.*
15	988·3	980·2	77·8	78·9	*n* 79	77	6·6	9·0	77	98	56	4	34	9	10	10●	27·4	76	Dull till 13 h. 30 m., then ●²≡⁰.
16	974·3	973·8	80·0	82·9	85	79	9·9	11·9	99	98	45	10	—	0	10●≡⁰	9≡⁰	*x* 48·8	78	Continuous ●²≡⁰ all day.
17	968·4	968·1	84·0	85·4	89	*x* 82	12·9	13·5	99	94	247	2	203	13	10≡⁰	10	14·7	81	Dull, with *p.* ☤ 12 h. q. *p.* and *n.*
18	975·3	976·9	82·4	77·0	86	76	9·0	7·6	77	94	225	9	—	0	8	1	0·2	80	p. early. b. v. y. *a.* and *p.* ♆ 22 h. 30 m.
19	970·3	974·2	81·0	81·4	83	77	9·1	9·0	85	82	214	9	281	8	10	5	2·1	73	Dull. q. p. till 18 h., then fine.
20	983·2	977·2	79·2	79·9	83	78	7·8	9·2	83	93	236	6	—	2	10●	10●	3·7	77	Fine early. o. y. *a.* and *p.* ● after 18 h.
21	975·4	961·4	81·1	85·0	85	80	10·3	13·6	96	98	191	3	203	12	10≡⁰	10●≡⁰	27·4	79	o. d. till 14 h. ●²≡⁰ till 22 h. q. *n.*
22	957·0	952·7	82·7	81·0	85	79	8·5	9·9	71	93	203	11	203	6	6	9	6·1	79	Fine at first. ●²▲ p. till 21 h.
23	956·2	973·0	82·3	81·0	85	78	9·7	9·4	83	88	281	5	304	3	9	5	6·1	77	♆ 1 h. ●² 11 h. 30 m.–13 h. Fine *n.*
24	976·1	972·8	80·0	82·0	85	79	9·0	8·6	90	75	225	10	270	8	10●	1	9·0	74	Fine early. ●≡⁰ 7 h. 30 m.–16 h. p. *n.*
25	974·8	983·6	81·0	79·9	84	79	8·4	8·2	79	83	259	12	214	7	3	8	5·6	77	q. p., with sunny intervals.
26	979·6	978·4	81·1	80·0	85	79	10·3	8·4	96	84	203	4	247	6	10≡⁰	5	4·5	78	Fine early. ●⁰≡⁰ 6 h.–12 h., then o.
27	978·8	973·0	81·0	78·7	83	77	8·5	7·7	80	84	236	8	247	7	9	7	8·0	75	p. till 7 h. △ 16h. ●✻ 19 h. ☇ 21 h. 30 m.
28	971·7	977·7	77·2	77·7	81	75	6·7	7·0	81	82	281	9	259	4	7	2	12·0	74	Sleet. q. to c. v. *a.* △ 16 h. b. ♅² *n.*
29	979·3	977·7	79·2	75·4	82	75	8·0	6·3	85	87	180	3	349	4	8	10	0·4	72	♅. ⊕ 8 h. 30 m. y. *a.* ●⁰*p.* ♅ *n.*
30	983·8	989·7	78·8	74·0	81	73	6·2	5·5	68	84	360	10	—	1	2	0	0·1	72	Fine or fair. v. y. *a.* and *p.* Clear *n.*
Means	974·3	957·2	81·6	80·1	84·9	77·1	9·2	9·0	82	88			6·3			4·5	7·8	5·4	241·5	75·5	Monthly **Totals** or **Means.**
Normal 1911-15	989·3	989·2	83·8	82·1	87·5	78·4	10·8	10·3	83	88			4·6			3·4	—	—	67·0	—	**Normals.**

Temperatures at or below the normal freezing point of water are printed in small type.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Magnetic Force. Horizontal Comp't. Mean Time.	Horizontal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination. North.	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient,* Volts per metre. Factor 2·16. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +	Charge per cc. ×10¹⁶. −	Air-Earth Current. ×10¹⁶.
	About 15 h.	About 15 h.	About 15 h.	About 15 h.	About 15 h.	About 15 h.	About 15 h.	About 15 h.	About 15 h.	About 15 h.			About 15 h.	About 15 h.	About 15 h.	About 15 h.	About 15 h.	About 15 h.	About 15 h.
	a. 200+	*a*. 200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′			v/m.	v/m.	v/m.	v/m.	coulomb.	coulomb.	amp/cm².
1	88·7	88·0	200	...	...	...	...	...	...	...	2	0	120	185	130	160	...	...	...
2	88·0	88·0	199	...	...	...	...	...	...	...	1	1	145	250	105	210	...	...	...
3	87·5	87·9	198	...	...	...	...	...	...	...	1	0	130	160	80	225	0·45	0·26	0·40
4	87·9	87·9	197	...	...	...	...	...	...	...	1	1	95	250	160	240	...	...	...
5	88·0	87·8	196	...	11 1	18393	14 25	14 53·8	14 20	66 59·2	1	2	105	130	*z*+	185	...	...	...
6	88·4	87·8	197	...	...	...	...	...	...	...	1	1	105	95	330	265	0·56	0·45	2·20
7	89·0	87·8	199	...	...	...	...	...	...	...	0	1	145	185	230	165	...	...	...
8	89·1	87·7	200	...	...	...	...	...	...	...	1	1	125	85	125	205	...	...	...
9	87·9	87·8	200	...	...	...	...	...	...	...	0	1	165	330	270	40	1·46	1·03	2·10
10	87·9	87·8	200	...	...	...	...	...	...	...	1	1	125	330	375	185	1·46	0·84	4·10
11	87·0	87·7	199	...	...	...	...	...	...	...	0	1	165	310	250	395	1·40	0·95	2·30
12	87·0	87·6	199	...	10 59	18405	14 26	14 52·2	14 32	66 56·3	0	1	185	250	165	475	0·71	0·54	...
13	86·9	87·6	199	...	...	...	...	...	...	...	0	0	230	250	205	250	...	...	...
14	86·9	87·3	198	...	...	...	...	...	...	...	0	1	165	185	125	230	...	...	...
15	87·5	87·3	196	...	...	...	...	...	...	...	0	1	85	105	165	330	...	...	...
16	87·3	87·1	195	...	...	...	...	...	...	...	2	0	185	330	165	350	0·47	0·34	1·20
17	88·0	87·1	194	...	...	...	...	...	...	...	1	1	60	250	205	270	...	...	...
18	88·0	87·0	193	193	...	...	...	...	14 31	66 59·5	1	2	85	85	290	*z*±	0·82	0·56	1·70
19	88·2	87·1	193	193	11 8	18358	14 18	14 54·8	...	..	2	1	145	270	105	330	0·84	0·58	0·45
20	87·1	87·1	195	...	...	...	...	...	...	...	1	1	165	375	230	230	...	...	...
21	86·9	87·1	197	...	...	...	...	...	...	...	2	1	165	290	205	185	...	...	...
22	87·0	87·0	199	...	...	...	...	...	...	...	1	1	85	270	330	270	...	...	...
23	86·4	87·0	200	...	...	...	...	...	...	...	1	1	...	375	*z*±	375	...	...	...
24	85·9	87·0	202	...	...	...	...	...	...	...	1	0	205	270	205	205	0·75	0·75	1·85
25	86·4	86·9	203	...	...	...	...	...	...	...	0	0	85	250	250	475	0·86	0·65	1·45
26	85·9	86·9	205	...	11 3	18393	14 24	14 53·9	14 32	66 58·9	0	0	230	375	250	270	...	...	...
27	85·9	86·8	207	...	...	...	...	...	...	..	0	0	250	375	205	415	0·69	0·67	0·90
28	85·7	86·8	207	207	...	...	...	...	...	...	1	1	40	270	205	685	...	...	...
29	84·8	86·6	206	...	...	...	...	...	...	...	1	2	270	435	−1200	*z*±	...	...	...
30	83·7	86·5	205	...	...	...	...	...	...	...	1	2	−60	−270	*z*±	435	...	...	...
M.	87·2	87·3	199	—	—	—	—	—	—	—	—	—	144‡	252‡	203‡	282‡	—	—	—
	87·2 ←—12 years—→	87·3																	

‡ Mean of 25 days.

6. GEOPHYSICS :—ESKDALEMUIR.

Day.	Magnetic Force. North Component. Maximum. 15000 γ+. h m	γ	Minimum. 15000 γ+. γ	h m	West Component. Maximum. 4000 γ+. h m	γ	Minimum. 4000 γ+. γ	h m	Vertical Component. Maximum. 44000 γ+. h m	γ	Minimum. 44000 γ+. γ	h m	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient,* Volts per metre. Factor 6·15. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +	Charge per cc. ×10¹⁶. −	Air-Earth Current. ×10¹⁶.
															About 15 h.	About 15 h.	About 15 h.	About 15 h.	About 15 h.	About 15 h.	About 15 h.
															v/m.	v/m.	v/m.	v/m.	coulomb.	coulomb.	amp/cm².
1	1 7	1023	891	7 54	13 7	1014	797	1 4	18 5	1114	1040	1 33	2	2 *c*	130	−35	555	245	...	...	...
2	23 50	1037	921	8 6	12 51	964	884	7 3	17 37	1078	1031	0 54	1	1 *c*	80	55	135	455	...	...	...
3	0 0	1035	926	9 23	22 54	970	873	5 54	16 25	1106	1041	5 48	1	0 *a*	225	225	200	210	...	...	...
4	20 33	1041	873	11 12	12 32	975	869	20 28	17 10	1082	1006	1 31	1	1 *a*	145	215	70	160	...	...	...
5	18 26	1093	915	9 50	13 40	960	837	18 17	18 17	1105	991	1 8	2	0 *a*	100	100	200	345	...	...	...
6	{17 29 / 18 2}	1052	928	10 55	12 52	965	879	8 1	17 5	1102	1043	23 50	1	0 *a*	425	175	215	440	...	...	...
7	16 41	1022	930	11 31	12 15	966	888	8 22	19 40	1086	1043	0 0	0	1 *b*	290	230	210	−225	...	...	...
8	19 1	1029	878	8 57	13 14	970	872	18 35	18 37	1088	1026	5 30	1	2 *c*	65	−35	195	245	...	...	...
9	21 44	1030	942	9 51	12 34	961	881	7 38	19 41	1075	1038	2 4	0	2 *b*	115	225	145	250	...	...	...
10	21 54	1017	937	11 3	13 55	962	863	21 51	19 10	1074	1049	12 40	0	2 *c*	−525	5	85	225	...	...	...
11	22 31	1010	941	11 51	13 30	958	888	8 10	16 28	1069	1047	{12 35 / 12 45}	0	1 *b*	210	200	30	185	...	...	...
12	22 45	1019	944	{10 20 / 10 40}	13 58	942	894	7 49	7 8	1070	1051	13 12	0	1 *c*	30	135	*z*±	−215	...	...	...
13	4 3	1004	926	14 27	14 14	967	885	4 38	16 20	1092	1049	12 12	0	1 *a*	145	150	100	275	...	...	...
14	20 6	1002	910	10 44	14 20	973	884	7 3	16 8	1093	1054	12 0	0	2 *b*	130	130	55	210	...	...	...
15	23 52	1008	924	11 38	13 5	947	877	24 0	15 30	1071	1052	12 0	0	2 *b*	80	30	−180	−505	...	...	...
16	16 8	1027	942	11 12	13 20	957	809	21 40	17 28	1118	1001	2 20	1	2 *c*	−1370	−380	55	80	...	...	...
17	{16 38 / 23 28}	1008	910	12 50	{14 51 / 14 56}	966	878	21 41	16 46	1127	1011	5 1	1	2 *c*	145	100	310	0	...	...	...
18	20 54	1024	918	{7 7 / 12 45}	{6 21 / 6 26}	983	835	20 43	20 41	1090	1015	6 43	1	1 *b*	70	180	175	340	...	...	...
19	21 16	1029	855	9 56	12 37	968	*n* 791	21 8	18 1	1122	959	3 37	2	1 *c*	390	80	−215	80	...	...	...
20	21 28	996	889	11 21	0 7	959	865	22 41	13 7	1110	998	3 24	1	1 *b*	85	110	195	230	...	...	...
21	16 34	*x* 1200	*n* 699	20 27	20 18	*x* 1079	814	21 23	16 30	*x* 1275	*n* 931	20 54	2	2 *b*	325	540	−175	−445	...	...	...
22	20 48	1007	908	10 28	13 53	946	*n* 791	20 39	18 29	1132	1033	0 0	1	1 *c*	145	70	535	−120	...	...	...
23	4 10	993	922	11 56	14 5	947	869	{2 20 / 7 38}	16 30	1099	1011	4 12	0	2 *c*	145	210	−575	475	...	...	...
24	20 23	1000	884	10 17	14 42	958	867	22 25	16 38	1115	1060	13 10	1	2 *b*	225	−590	160	145	...	...	...
25	{19 40 / 23 19}	979	913	11 38	13 15	948	872	8 15	16 30	1091	1058	11 50	0	2 *c*	145	−250	215	200	...	...	...
26	20 43	990	925	{13 4 / 13 8}	12 20	947	888	7 39	18 10	1089	1062	12 20	0	2 *b*	145	−870	245	180	...	...	...
27	4 48	1013	915	12 43	14 11	970	897	5 42	16 33	1113	1046	4 50	0	2 *c*	70	215	*z*+	800	...	...	...
28	23 56	1010	917	13 38	12 56	1002	868	8 39	17 52	1124	1046	12 27	1	2 *c*	80	805	70	275	...	...	...
29	20 33	1042	917	11 33	15 20	961	860	20 51	18 43	1101	1045	0 36	1	1 *b*	150	145	−15	345	...	...	...
30	16 53	1057	909	9 48	14 35	965	813	2 58	16 37	1114	968	1 33	1	1 *b*	−160	250	265	625	...	...	...
M.	—	1027	907	—	—	968	860	—	—	1104	1027	—	—	—	†76	†74	†116	†176	—	—	—

The letters *x* and *n* denote the maximum and the minimum values in the column.
† Mean of 28 days.

* The potential gradient is reckoned positive if the potential increases upwards.
z+ Indeterminate, positive value.

7. JERSEY (ST LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M.S.L.:—H = 54 m. H_b = 55 m. Above Ground:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level.				Air Temperature in Degrees Absolute.						Min. Temp. on Grass.	Percentage of Humidity.				Rain 0 h. to 24 h.	Remarks.
	7 h.	14 h.	21 h.	Mean of 3 Readings.	7 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.		7 h.	14 h.	21 h.	Mean.		
	mb.	mb.	mb.	mb.	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	%	%	%	%	mm.	
1	1002·7	1005·4	1006·4	1004·9	87·5	90·1	84·6	90·3	83·3	87·2	83·0	63	*n* 43	67	58	—	Heavy Nb. 10 h. ●⁰ 12 h. 30 m.
2	1006·3	1007·7	1009·1	1007·9	87·0	89·2	86·8	90·8	86·0	88·0	*n* 73·7	68	58	69	65	0·1	
3	1011·2	1011·9	1010·2	1011·1	88·0	91·8	89·6	92·0	86·3	89·5	80·4	68	53	82	68	—	
4	1005·8	1002·3	1003·0	1003·7	88·8	96·5	89·9	*x* 97·2	88·7	92·2	82·4	71	50	84	68	0·3	● 7 h., 9 h., 22 h. < in W. 20 h.
5	1003·9	1005·3	1006·9	1005·4	90·3	95·7	89·9	97·0	88·0	92·2	85·7	95	46	79	73	0·3	●⁰ 4 h. < in N.E. 20 h.
6	1009·3	1010·1	1008·9	1009·4	89·3	95·1	90·7	95·9	88·2	91·8	79·7	97	61	83	80	2·6	●² 3 h. 15 m. [●² 6 h. < in W. 20 h.
7	1003·4	1001·5	999·8	1001·5	90·9	94·2	89·7	95·5	*x* 89·5	92·0	85·1	86	73	90	83	4·9	<⁰ 0 h. 45 m. ◥● 2 h. < in E. 4 h.
8	994·6	995·8	998·9	996·5	87·4	89·1	87·4	90·6	85·8	88·1	86·5	91	60	75	75	2·9	● 2 h.–11 h. 40 m. and 19 h. 15 m.
9	1000·5	999·8	992·2	997·5	87·3	88·2	87·4	89·7	85·2	87·6	83·0	80	75	96	84	9·6	● 1 h. 30 m., 4 h. 20 m., 9 h. 50 m.
10	993·0	996·3	997·5	995·7	87·6	89·4	87·1	90·2	85·0	87·9	84·6	80	55	57	64	2·8	● 4 h. 45 m. p. 9 h. ●² 22 h.
11	994·3	996·9	996·6	995·9	84·6	90·1	86·8	90·6	83·5	87·1	83·2	87	60	81	76	9·2	● 2 h. 30 m., 11 h. 45 m., 20 h. and 22 h.
12	996·1	1003·3	1006·6	1002·0	85·4	89·1	86·8	90·1	85·0	87·3	83·1	91	61	76	76	2·8	● 3 h., then showers to 12 h.
13	1011·4	1013·9	1013·8	1013·0	86·0	89·8	88·0	90·8	85·0	87·9	81·4	82	63	71	72	1·5	●² 4 h. 45 m.
14	1010·2	1009·9	1009·7	1009·9	88·0	90·8	89·8	91·3	87·3	89·4	85·1	80	78	84	81	1·4	● 4 h. 45 m., 5 h. 15 m., 8 h. 10 m.
15	1009·7	1007·3	1003·5	1006·9	88·2	93·1	91·6	95·2	88·0	91·2	84·1	92	58	75	75	—	[d. 20 h. 30 m.
16	1002·9	1001·8	999·2	1001·3	88·9	91·1	89·7	91·8	87·9	89·9	80·3	90	85	92	79	1·3	● 5 h. 30 m.
17	999·7	1001·1	1002·6	1001·1	89·9	93·9	90·2	94·0	89·3	91·5	86·6	89	62	83	78	—	▥ 4 h. [21 h. 30 m.
18	1003·4	1003·1	999·3	1001·9	89·1	91·3	89·5	93·0	87·7	90·1	86·4	91	80	93	88	12·5	● 3 h., 6 h. p. during afternoon. ●²
19	1006·3	1011·7	1013·7	1010·5	85·7	88·0	86·7	89·2	84·2	86·8	83·3	78	49	62	63	0·7	● 4 h. ⊔ 20 h. 30 m. [▲ 8 h. 30 m.
20	1016·1	1015·8	1011·1	1014·3	85·5	88·5	87·7	89·5	84·0	87·0	79·1	71	57	65	64	2·9	● 0 h. 30 m., 1 h. 15 m., 5 h. 30 m., 13 h., 21 h.
21	1009·9	1009·3	1003·9	1007·7	86·3	89·7	88·1	90·8	86·0	88·3	83·0	80	68	74	74	1·0	● 3 h.–6 h. and 8 h. 10 m.
22	992·9	989·4	987·7	989·9	85·1	86·4	87·0	87·2	84·8	86·1	84·9	98	86	67	84	*x* 17·5	● 2 h. ● 15 h. 30 m., 16 h. 30 m. (showers).
23	989·8	993·5	1001·0	994·7	85·0	88·2	85·1	88·7	83·8	86·2	79·8	76	63	70	70	2·8	<●⁰ 4 h. ●² 14 h. 40 m.
24	1008·3	1010·9	1009·3	1009·4	84·8	86·7	85·9	88·5	84·3	86·0	80·0	72	60	80	71	2·7	● 20 h.
25	1008·9	1014·1	1017·3	1013·4	87·2	87·8	85·0	89·0	85·3	86·9	84·5	98	68	83	83	3·2	● 4 h.
26	1016·3	1013·8	1011·4	1013·8	85·7	89·4	87·2	90·0	83·5	87·2	75·9	79	66	95	80	0·6	Ci. radiating from W.S.W. 8 h. ●² 19 h.
27	1012·3	1012·9	1011·1	1012·1	85·2	87·7	86·1	88·7	84·4	86·4	80·6	80	59	68	69	0·6	● 13 h.
28	1005·7	1006·7	1008·3	1006·9	85·5	86·5	82·1	87·9	80·8	84·6	83·6	93	71	74	79	3·9	● 3 h. 30 m.–12 h. [W.S.W. during the night.
29	1005·5	995·9	990·8	997·4	82·3	86·6	83·8	88·3	80·3	84·3	74·7	73	93	84	83	9·1	● 8 h. 45 m., 11 h. 20 m., 14 h. 50 m. Gale from
30	1004·7	1009·3	1012·4	1008·7	81·7	83·6	83·1	*n* 85·8	*n* 80·2	82·9	78·5	81	67	57	68	3·0	● 6 h. 45 m. ▲ 17 h. 40 m. ◥●² 18 h. < in E. 20 h.
Means	1004·5	1005·3	1004·7	1004·9	86·8	89·9	87·5	91·0	85·4	88·1	82·1	83	64	77	75	100·2	
Normal	1011·4	1011·4	1011·7	1011·5	87·2	90·8	87·7	91·6	85·8	88·6	81·8	84	67	80	77	61·4	

JERSEY (ST LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0–12 on the Beaufort Scale).			Mean.	Sunshine.*		Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming.														Mean Amount.
					Total.	Percent. of Possible.	Tenths.	Upper.		Lower.		Tenths.	Upper.		Lower.		Tenths.	Upper.		Lower.		
								Type.	Direction.	Type.	Direction.		Type.	Direction.	Type.	Direction.		Type.	Direction.	Type.	Direction.	
	7 h.	14 h.	21 h.				7 h.	7 h.	7 h.	7 h.	7 h.	14 h.	14 h.	14 h.	14 h.	14 h.	21 h.	21 h.	21 h.	21 h.	21 h.	
	Dir. (0–12)	Dir. (0–12)	Dir. (0–12)		hr.	%																
1	NW 3	W 4	NW 2	3·0	9·0	67	6	A.-Cu.	SW	Cu.-Nb.	W	6	...	...	Cu.	NW	0	...	...	...	...	4·0
2	WSW 4	W 4	WNW 3	3·7	7·3	54	7	...	...	Cu.-Nb.	WNW	6	...	...	Cu.-Nb.	W	7	...	...	...	...	6·7
3	WNW 1	SSW 2	SW 1	1·3	8·4	63	6	Ci., A.-Cu.	W	Cu.-Nb.	W	4	Ci., Ci.-Cu.	WSW	...	...	10	...	...	...	...	6·7
4	SE 1	SSE 2	SSE 1	1·3	3·7	28	10	...	...	...	...	6	Ci.	SW	Cu.	SW	7	...	...	...	...	7·7
5	S 3	S 3	ENE 1	2·3	9·2	70	9	...	...	Nb.	SSW	4	A.-Cu.	SW	...	...	3	...	...	...	...	5·3
6	SSW 2	SSW 2	ENE 2	2·0	8·4	64	8	...	...	Nb.	WSW	4	Ci.	...	...	...	2	...	...	...	...	4·7
7	E 3	WSW 3	SW 4	3·3	4·7	35	3	Ci., A.-Cu.	SW	...	...	5	Ci.	SW	Cu.-Nb.	SW	0	...	...	...	...	2·7
8	SW 5	WSW 6	WSW 5	5·3	8·7	67	10	...	...	Nb.	SW	4	...	...	Cu.-Nb.	W	7	...	...	...	...	7·0
9	WSW 5	SW 5	SW 6	5·3	2·0	16	8	A.-Cu.	WSW	Nb.	WSW	10	...	...	Nb.	SW	10	...	...	Nb.	...	9·3
10	WSW 5	WSW 6	WSW 6	5·7	8·1	63	8	...	...	Cu.-Nb.	W	6	...	...	Cu.	W	8	...	...	...	...	7·3
11	WSW 4	WSW 5	WSW 4	4·3	8·8	69	7	A.-Cu.	W	Cu.-Nb., Nb.	W	4	...	...	Cu.	W	4	...	...	Cu.-Nb.	...	5·0
12	W 6	W 5	WNW 5	5·3	8·7	68	7	A.-Cu.	W	Cu.-Nb., Nb.	W	4	...	...	Cu.	W	4	...	...	...	...	5·0
13	WNW 2	WNW 3	WSW 2	2·3	7·9	62	4	...	...	Cu.	WNW	4	A.-Cu.	W	Cu.	W	10	...	...	...	...	6·0
14	SW 5	SW 5	SW 5	5·0	0·0	0	10	...	...	St., Fr.-Nb.	SW	10	...	...	Cu.-Nb.	WSW	10	...	...	...	...	10·0
15	SW 2	S 3	ENE 2	2·3	*x* 11·4	91	3	Ci.-Cu.	SW	...	...	1	Ci.	...	...	...	2	Ci.	...	...	...	2·0
16	SW 3	S 2	E 1	2·0	2·3	18	8	{ Ci.-Cu / A.-Cu.	WSW / SW	Cu.-Nb.	SW	10	...	...	Fr.-Nb.	SW	10	...	...	...	...	9·3
17	SSW 4	SW 5	SW 3	4·0	6·6	53	6	...	...	Cu.-Nb.	SW	4	Ci.	SW	...	...	3	Ci.	...	...	...	4·3
18	SSW 3	SSW 2	S 4	3·0	1·2	9	10	...	...	Nb.	SW	10	...	...	Nb.	...	9	A.-Cu.	...	Nb.	...	9·7
19	WNW 3	WSW 4	W 4	3·7	5·5	44	10	...	...	Nb.	WNW	7	Ci.	WSW	...	...	10	Ci.-St.	...	Cu.-Nb.	...	9·0
20	W 3	SW 3	SW 6	4·0	5·1	42	4	...	...	Cu.,Cu.-Nb.	W	8	A.-Cu.	SW	Nb.	SW	9	...	...	St.-Cu.	WSW	5·3
21	WSW 4	WSW 4	SW 5	4·3	5·9	48	7	Ci.	NW	Cu.-Nb.	WSW	10	...	...	Cu.-Nb.	SW	10	...	...	Cu.-Nb.	SW	9·0
22	W 4	SW 5	SW 6	5·0	0·9	8	10	...	...	Nb.	...	10	...	...	Nb.	SW	6	A.-Cu.	W	Cu.-Nb.	SW	8·7
23	W 3	WNW 4	NNW 4	3·7	6·9	57	4	...	...	Cu.-Nb.	W	6	...	...	Cu.-Nb.	W-WNW	4	...	...	Cu.-Nb.	WNW	4·7
24	NW 4	W 4	SW 5	4·3	2·9	24	7	Ci.	NW	Cu.-Nb.	NW	8	A.-Cu.	N	Cu.-Nb.	W	10	...	...	Nb.	...	8·3
25	WNW 4	NNW 3	WNW 2	3·0	7·7	64	10	...	...	Nb.	WNW	7	A.-Cu.	W	Cu.-Nb.	NW	3	...	...	...	...	6·7
26	WSW 2	SW 4	WSW 4	3·3	6·8	57	7	A.-Cu.	...	Cu.-Nb.	WSW	7	A.-Cu.	WSW	St.-Cu.	WSW	10	...	...	Nb.	...	8·0
27	NW 3	W 4	WSW 4	3·7	6·4	54	4	A.-Cu.	...	Cu.	WNW	8	...	...	Cu.-Nb.	W	10	...	...	...	...	7·3
28	WSW 4	NW 3	NW 2	3·0	0·3	3	10	...	...	Nb.	WSW	10	...	...	Cu.-Nb.	...	2	...	...	...	...	7·3
29	NW 1	S 5	WSW 7	4·3	0·7	6	10	...	...	{ St.-Cu. / Fr.-Nb.	W / N	10	...	...	Nb.	S	10	...	...	...	...	10·0
30	WNW 3	NW 3	N 3	3·0	4·8	40	7	...	...	{ Cu.-Nb. / Nb.	N / NW	6	...	...	Cu.,Cu.-Nb.	NW	4	...	...	...	...	5·7
Means	3·3	3·8	3·6	3·6	170·2	45·1	7·3	—	—	—	—	6·6	—	—	—	—	6·5	—	—	—	—	6·8
Normal	3·2	3·8	3·3	3·4	200·7	53·2	6·0	—	—	—	—	5·1	—	—	—	—	4·6	—	—	—	—	5·2

* Actinic rays by Jordan Recorder.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	..	7·0	10·4	...	...	7·5	11·1	...	...	2·7	13·3	...	...	5·1	12·4	..	21·1	15	10
2	...	4·9	11·8	...	...	2·2	11·3	...	...	2·0	10·0	...	...	2·8	6·7	...	16·3	2	30
3	...	3·8	5·7	...	...	2·8	2·8	...	...	0·5	2·6	...	1·8	...	1·8	...	10·0	3	40
4	...	Ca	lm	...	...	1·8	...	9·0	...	2·7	...	13·8	...	...	...	15·1	21·5	19	20
5	...	...	...	12·5	...	...	...	14·4	...	2·4	...	11·9	...	1·6	...	8·0	19·2	9	25
6	...	...	...	4·6	...	Ca	lm	...	...	0·4	...	2·3	1·6	...	...	1·6	7·8	0	5
7	...	Ca	lm	...	3·3	...	...	...	0·9	...	1·3	...	5·2	...	...	...	12·4	24	0
8	6·0	...	4·0	...	...	...	10·5	...	...	...	10·8	...	...	8·5	...		17·4	17	15
9	2·9	...	6·9	...	3·5	...	8·5	...	5·6	...	5·6	...	1·1	...	...	5·5	16·8	24	0
10	...	...	11·8	...	...	...	11·8	...	3·9	...	9·4	...	3·5	...	8·5	...	20·4	0	25
11	1·8	...	4·3	...	1·4	...	7·1	...	2·9	...	6·9	...	1·3	...	6·8	...	15·0	14	50
12	...	3·3	7·9	...	...	2·3	11·6	...	...	4·9	11·8	...	...	6·7	10·1	...	17·2	17	10
13	...	6·0	9·0	...	...	2·9	6·9	...	3·8	...	5·7	...	...	0·4	2·3	...	14·6	2	35
14	4·5	...	...	0·9	4·9	...	3·3	...	...	6·7	...	2·8	...	3·0	...	3·0	13·8	10	35
15	...	1·0	...	2·4	...	1·8	...	4·3	7·4	...	1·5	...	6·1	...	2·5	...	14·5	19	40
16	6·0	...	4·0	...	6·6	...	4·4	...	6·2	...	4·2	...	4·0	...	1·6	...	14·3	12	25
17	5·2	...	...	...	8·5	...	...	...	11·6	...	4·8	...	7·9	...	5·3	...	20·8	17	5
18	3·3	...	4·9	...	1·8	...	2·7	...	3·5	...	3·5	...	2·1	...	2·1	...	13·0	0	10
19	...	3·4	8·2	...	6·4	...	9·6	...	7·0	...	10·4	...	...	...	13·4	...	22·6	17	15
20	...	...	11·8	...	3·8	...	5·7	...	7·6	...	5·1	...	1·9	...	9·3	...	17·6	14	55
21	1·9	...	9·6	...	4·6	...	6·8	...	12·1	...	5·0	...	10·1	...	6·7	...	21·8	16	30
22	6·3	...	6·3	...	8·1	...	5·4	...	9·8	...	6·6	...	4·2	...	6·2	...	21·0	12	15
23	2·1	...	10·6	...	...	9·1	13·6	...	...	8·7	13·0	...	9·5	...	9·5	...	21·3	8	20
24	...	4·9	7·4	...	5·3	...	7·9	...	6·7	...	6·7	...	2·9	...	6·9	...	18·8	11	35
25	...	1·8	9·0	...	2·4	...	12·3	...	...	...	9·5	...	1·6	...	8·0	...	19·5	9	40
26	3·3	...	7·9	...	8·8	...	8·8	...	...	3·5	8·5	...	...	2·2	11·3	...	21·0	20	0
27	...	...	11·5	...	2·0	...	10·0	...	2·9	...	6·9	...	2·0	...	10·3	...	19·0	14	10
28	...	2·7	13·8	...	...	4·3	10·3	...	...	2·7	13·5	...	...	3·8	9·1	...	21·6	15	45
29	...	1·3	6·5	...	...	Ca	lm	...	...	4·9	...	4·9	...	7·1	...	1·4	14·8	21	20
30	...	7·3	...	3·0	...	11·1	...	...	...	9·6	1·9	...	...	10·0	4·1	...	18·9	14	45
S+N & W+E		90·7	206·7		117·2		210·1		143·6		214·7		109·5		198·0				
S−N & W−E		−4·1	159·9		25·6		154·7		40·2		143·3		24·1		128·8				

SCOTLAND N.:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	...	1·8	0·8	...	...	4·5	...	1·9	...	4·2	6·2	...	...	7·6	7·6	...	10·8	21
2	...	5·1	...	5·1	...	9·2	...	...	...	8·8	3·6	...	...	5·5	3·7	...	11·1	11
3	...	5·6	5·6	...	...	5·1	5·1	...	...	3·4	5·2	...	...	4·3	1·8	...	8·9	24
4	...	8·3	...	1·7	...	8·5	...	...	...	6·2	...	...	...	3·0	1·3	...	9·8	1
5	...	1·8	2·7	...	...	1·0	5·1	...	1·2	...	5·8	...	1·2	...	6·1	...	6·9	18
6	...	...	7·2	...	...	1·2	6·1	...	...	1·1	5·5	...	...	0·4	2·0	...	7·2	3
7	0·9	...	2·1	...	4·9	...	...	...	5·7	...	...	2·4	5·8	...	...	5·8	9·8	24
8	6·4	...	...	9·6	5·8	...	...	8·7	3·3	...	...	1·4	...	3·7	5·5	...	11·5	3
9	...	1·2	5·8	...	1·0	...	4·8	...	3·0	...	2·0	...	3·2	...	...	0·6	8·2	11
10	1·4	..	...	2·2	...	1·2	...	5·8	...	8·3	...	1·7	...	8·8	3·6	...	10·2	23
11	...	9·7	4·0	...	...	5·5	3·7	...	...	...	7·2	...	5·6	...	5·6	...	10·5	3
12	...	Ca	lm	...	...	6·6	...	...	...	8·7	5·8	...	...	5·3	5·3	...	10·5	15
13	...	4·7	7·1	...	...	5·6	5·6	...	...	5·6	5·6	...	...	6·7	2·8	...	8·9	10
14	...	2·8	6·7	...	...	2·9	6·9	...	...	5·1	5·1	...	...	2·0	4·8	...	10·5	11
15	...	3·5	3·5	...	...	3·0	1·3	...	...	3·5	...	0·7	...	2·8	...	2·8	5·2	12
16	...	4·7	...	4·7	...	5·6	...	5·6	...	3·3	...	7·9	...	2·8	...	6·7	8·9	18
17	...	1·6	...	8·0	...	1·5	...	7·7	...	1·1	...	5·5	...	...	...	6·9	9·8	11
18	...	Ca	lm	...	0·6	...	1·5	...	3·9	...	...	...	2·1	...	0·9	...	5·2	13
19	7·1	...	...	1·4	4·3	...	...	1·8	0·9	...	...	1·3	...	4·5	0·9	...	7·2	3
20	...	3·8	5·7	...	...	2·5	6·1	...	...	1·8	1·8	...	...	Ca	lm	...	9·2	5
21	...	Ca	lm	...	1·1	...	...	2·8	5·3	...	...	7·9	2·6	...	...	12·9	15·1	22
22	3·6	...	2·4	...	8·0	...	...	1·6	9·3	...	...	1·9	6·4	...	...	2·6	9·5	15
23	3·6	...	...	...	...	Ca	lm	...	...	4·5	1·9	...	...	4·2	4·2	...	6·9	22
24	...	1·3	3·0	...	4·5	...	1·9	...	6·3	...	6·3	...	2·8	...	6·7	...	11·1	12
25	5·3	...	7·9	...	7·6	...	5·1	...	...	...	10·8	...	...	...	8·5	...	11·1	16
26	1·6	...	8·0	...	4·7	...	4·7	...	0·8	...	4·2	...	...	0·9	4·5	...	9·5	1
27	...	...	4·9	...	3·3	...	3·3	...	5·6	...	5·6	...	...	...	2·3	...	7·9	15
28	...	...	3·6	...	1·3	...	3·0	...	...	3·0	1·3	...	...	1·7	2·5	...	4·3	22
29	...	1·6	1·6	...	...	0·6	1·5	...	...	5·5	2·3	...	...	7·9	3·3	...	9·5	23
30	...	7·6	3·1	...	...	6·9	2·9	...	...	2·3	5·5	...	...	4·5	1·9	...	9·5	6, 8
S+N & W+E		95·0	118·4		118·5		104·5		121·7		122·4		106·3		124·1			
S−N & W−E		−35·2	53·0		−24·3		32·7		−31·1		61·0		−46·9		47·5			

ENGLAND S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	5·4	2·2	...	...	6·6	2·7	...	...	4·5	4·5	...	...	4·2	6·2	...	13·4	0	15
2	...	3·8	3·8	...	...	5·0	5·0	...	...	2·1	2·1	...	...	0·4	0·7	...	10·4	8	50
3	...	0·2	0·3	...	3·0	...	...	3·0	6·2	...	...	4·2	5·8	...	...	2·4	9·7	23	45
4	7·1	...	...	...	3·8	...	...	...	4·1	...	...	0·8	2·7	...	...	2·7	9·8	0	10
5	5·0	...	...	5·0	4·1	...	...	0·8	3·9	...	...	1·6	5·8	...	...	2·4	11·7	3	35
6	2·1	...	...	0·4	3·2	...	...	0·6	3·9	...	...	1·6	2·7	...	...	2·7	9·4	0	35
7	3·5	...	...	3·5	...	...	0·4	...	1·5	...	3·5	...	...	...	5·4	...	12·7	22	55
8	2·3	...	11·5	...	...	7·9	11·8	...	...	4·9	11·9	...	...	2·3	11·5	...	18·3	6	30
9	...	2·9	6·9	...	3·4	...	8·1	...	9·7	...	6·5	...	...	5·7	13·8	...	24·8	19	0
10	...	2·1	10·2	...	...	6·0	14·6	...	...	2·4	11·9	...	...	...	8·3	...	29·9	5	25
11	...	3·7	8·9	...	...	4·3	10·4	...	...	...	8·3	...	...	...	10·8	...	24·0	2	10
12	...	6·4	15·4	...	...	7·7	7·7	...	...	5·4	13·1	...	...	4·6	11·1	...	19·9	1	25
13	...	4·6	6·9	...	...	0·7	3·7	...	1·3	...	3·1	...	8·1	...	1·6	...	12·3	1	5
14	9·7	...	6·5	...	5·1	...	7·7	...	3·5	...	5·2	...	4·5	...	4·5	...	15·4	4	30
15	5·4	...	2·2	...	7·0	...	...	1·4	6·7	...	...	...	7·0	...	...	1·4	10·9	10	20
16	8·3	...	...	...	4·3	...	1·8	...	5·4	...	...	...	8·1	...	...	3·4	10·8	2	30
17	9·2	...	...	...	No	re	cor	d	5·0	...	5·0	...	3·8	...	3·8	...	13·9	11	15
18	2·3	...	2·3	...	0·5	...	1·2	...	0·3	...	0·3	...	...	10·0	...	...	14·9	22	25
19	...	7·4	7·4	...	...	...	9·2	...	...	4·1	9·9	...	...	1·5	7·8	...	15·2	21.	0
20	...	2·9	6·9	...	...	...	7·5	...	7·0	...	10·4	...	...	4·6	11·1	...	18·9	16	25
21	...	4·6	11·1	...	2·4	...	5·8	...	7·4	...	7·4	...	8·3	...	8·3	...	16·3	3	20
22	...	...	11·7	...	2·4	...	5·8	...	3·5	...	8·5	...	...	8·2	12·1	...	20·0	6	25
23	...	10·6	10·6	...	...	12·4	12·4	...	...	12·1	8·2	...	...	10·1	6·8	...	21·7	10	30
24	...	8·0	5·3	...	...	...	7·1	...	4·9	...	7·3	...	...	...	8·3	...	16·4	0	40
25	...	5·2	7·7	...	...	5·6	5·6	...	...	3·2	4·8	...	...	2·1	5·0	...	15·5	4	40
26	2·9	...	6·9	...	3·5	...	8·5	...	...	...	9·6	...	...	8·3	8·3	...	13·9	23	35
27	...	5·1	7·7	...	...	2·9	6·9	...	...	...	9·2	...	...	...	10·8	...	15·0	18	25
28	...	4·0	9·6	...	...	4·5	3·0	...	...	3·9	1·6	...	...	0·8	1·9	...	15·2	0	35
29	4·2	...	...	...	10·4	...	...	10·4	...	13·5	5·6	...	...	13·1	5·4	...	25·6	15	15
30	...	10·4	7·0	...	.	9·9	4·1	...	...	9·6	...	...	...	7·2	3·0	...	17·8	0	20
S+N & W+E		149·3	177·9		126·6		167·2		140·0		166·1		139·9		181·5				
S−N & W−E		−25·3	160·1		−20·4		134·8		8·6		149·7		−26·3		151·5				

ENGLAND E.:—GREAT YARMOUTH.

Height of Head above—Roof 10·7 m., Ground 12·8 m., M.S.L. 15·9 m.
Height of Cups above—Roof 3·7 m., Ground 18·3 m., M.S.L. 22·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust (Gorleston).	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	1·0	4·8	...	...	1·5	7·7	...	...	...	9·8	...	...	...	5·9	...	15·8	15	0
2	...	...	4·9	...	...	...	7·9	...	...	1·9	4·5	...	...	...	5·6	...	12·2	12	20
3	...	...	3·6	...	...	...	4·3	...	...	0·9	4·5	...	...	Ca	lm	...	9·7	10	55
4	...	0·5	2·6	...	...	0·4	2·0	...	...	3·7	...	3·7	...	3·9	...	9·4	13·0	23	45
5	...	4·0	...	9·7	...	2·2	...	11·3	...	1·7	...	8·7	...	1·8	...	9·0	13·0	0	5
6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7·3	17	5
7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11·7	20	20
8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18·0	13	15
9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23·1	22	50
10																	19·9	2	20
11																	18·2	14	35
12																	13·6	13	0
13	The direction recorder was out of action after the 5th of the month.																11·6	13	35
14																	18·3	10	30
15																	10·5	11	20
16																	10·2	13	15
17																	16·0	14	30
18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12·5	23	55
19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15·4	16	20
20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14·0	23	55
21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16·8	21	45
22	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18·1	5	30
23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13·0	16	0
24	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14·7	21	50
25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13·5	12	25
26	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19·2	12	55
27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	12·4	15	45
28	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15·6	12	0
29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15·7	23	45
30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18·5	7	5
S+N & W+E		...		...		...		...		...		...		...		...			
S−N & W−E		...		...		...		...		...		...		...		...			

9. Seismological Diary.

Earthquakes:—Eskdalemuir.

Day.	Phase.	Time, G.M.T.	Period.	Amplitudes. A_N	Amplitudes. A_E	Amplitudes. A_Z	Δ.	Remarks.
		h m s	s	μ	μ	μ	km.	
2	L	15 12 to	...	...	...	...	...	
		15 50	...	...	...	...	...	
4		4 16 to	...	...	...	...	...	Faint disturbance.
		4 36	...	...	...	...	...	
5	P?	7 30 28	...	..	...	...	...	Preliminary phases very feebly marked.
	L	7 54	28	...	...	...	...	
	F	8 38	...	...	...	...	...	
6		3 14 to	...	...	...	...	...	Faint disturbance. P probably at 3 h. 8 m. 25 s.
		3 51	...	...	...	...	...	
7		7 40 to	...	...	...	...	...	Faint disturbance with long waves of 24 s. period.
		8 43	...	...	...	...	...	
7	P	17 28 11	...	...	...	...	...	Large disturbance. Record too difficult to read with accuracy owing to faintness of photographic trace.
	F	22 30	...	...	...	...	...	
8	L	0 8 to	18	...	...	...	...	
		0 39	...	...	...	...	...	
8	P	6 2 26	...	...	...	...	...	
	L	6 21	18	...	...	...	...	
	F	7 13	...	...	...	...	...	
8		23 27 to	...	...	...	...	...	Faint disturbance.
		24 0	...	...	...	...	...	
11	e	4 24 55	...	...	...	...	9550	
	e	4 35 33	...	...	...	...	...	
	L	4 53 30	...	...	...	...	...	
	M	5 6 36	24	15	...	...	...	
	F	5 35	...	...	...	...	...	
12	i	9 55 41	...	...	...	...	...	Slight disturbance.
	F	10 28	...	...	...	...	...	
12	L	13 56	...	...	...	...	...	Preliminary phases obscured by wind effects.
	F	14 27	...	...	...	...	...	
13	L	7 40 to	...	...	...	...	...	
		8 58	24	...	...	...	...	
13	L	11 47 to	28	...	...	...	..	
		12 13	...	...	...	...	...	
16	L	14 32 to	20	...	...	...	...	
		15 6	...	...	...	...	...	
24		0 49 to	...	...	...	...	...	Faint disturbance.
		1 3	...	...	...	...	...	
29	P	12 13 52	...	...	...	...	...	
	S	12 19 10	...	...	...	...	...	
	L	12 23	...	...	...	...	...	
	M	12 25 34	36	74	...	...	...	
	M	12 31 18	17	46	...	...	...	
	M	12 31 32	18	...	39	...	...	
	F	13 50	...	...	...	...	...	
30	P	13 46 5	...	...	...	...	8100	
	PR_1	13 49 19	...	...	...	...	...	
	S	13 55 30	...	...	...	...	...	
	SR_1	14 0 20	...	...	...	...	...	
	L	14 9 59	...	...	...	...	...	
	F	15 30	...	...	...	...	...	
30	L	16 50 to	...	...	...	...	...	
		17 30	...	...	...	...	...	
30	P	18 11 30	...	...	...	...	9100	
	S	18 21 46	...	...	...	...	...	
	L	18 40	...	...	...	...	...	
	F	21 26	...	...	...	...	...	

Microseisms of N. Component:—Eskdalemuir.

Day.	0 h. A_N	0 h. T.	6 h. A_N	6 h. T.	12 h. A_N	12 h. T.	18 h. A_N	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	0·9	4·5	1·1	4	1·2	4	1·0	4·5
2	1·1	4	1·1	4	0·6	4	0·5	4
3	0·8	4	0·5	4	0·8	4	0·8	4
4	1·0	4	1·0	4	1·1	4	1·1	4
5	1·1	4	1·1	4	1·1	4	0·9	4
6	1·0	4	0·6	4	0·7	4	0·6	3·5
7	0·6	4	0·5	4	0·1	4	...	...
8	0·5	4	1·0	4	1·2	4	1·4	6
9	1·7	4	1·4	5	1·2	5	0·9	5·5
10	1·2	4	1·1	4	1·3	3·5	1·2	4
11	1·2	4	1·1	4	1·2	4	1·1	4
12	1·1	4	1·1	4	1·2	4	0·9	5
13	1·1	4·5	1·0	4·5	1·0	4	1·0	4·5
14	1·2	4	...	...	...	...	...	...
15	...	...	...	...	1·0	6	1·1	4·5
16	1·2	4	...	...	1·0	4	1·0	3·5
17	1·0	4	0·9	5	1·4	5	1·6	4
18	...	...	...	...	1·8	4	...	...
19	...	...	...	...	1·7	4	1·1	4
20	0·9	4	1·1	4	1·1	4	1·1	4
21	1·2	4·5	1·4	4	1·2	5	2·0	4·5
22	2·7	6	3·6	5	4·6	4·5	3·2	6
23	3·0	6	1·7	6	1·8	5	1·6	6
24	1·0	6	1·2	4	1·8	5	2·0	4·5
25	2·1	4	1·3	6	1·6	6	3·1	6
26	2·2	6	1·6	6	1·5	5	1·5	4·5
27	1·1	4	1·0	4·5	1·2	4	1·2	4
28	0·9	4	1·3	4·5	1·4	5	0·8	4·5
29	1·1	4	0·9	4·5	0·6	3·5	0·6	4
30	0·9	4	0·6	4	0·6	4	0·6	3

Means for Month $\begin{cases} A_N = 1·2. \\ T = 4·4. \end{cases}$ Normals, 1911–17 $\begin{cases} A_N = 0·7. \\ T = 4·9. \end{cases}$

Earthquakes:—Richmond (Kew Observatory).

Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h m	h m	
2	...	15 47	Very small.
5	...	8 16	Very small.
7	...	8 19	Very small; doubtful.
7	17 30	18 10	Amplitude on trace > 17 mm.
		18 14	
8	...	0 25	Very small.
8	...	1 7	Very small.
8	...	6 34	Small.
11	...	5 21	Very small.
12	...	14 15	Very small.
13	...	8 4	Very small.
13	...	11 59	Small.
14	...	17 55	Small.
17	...	13 15	Succession of very small waves.
29	12 18	12 30	Amplitude on trace 1·9 mm.
30	...	14 30	Small.
30	19 10	19 35	

10. Soundings with Pilot Balloons.

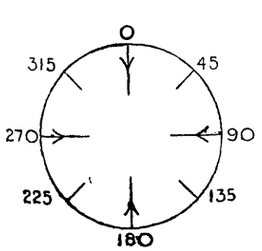
Day.	Station.	Time of Start, G.M.T.	Geostrophic.		By Anemometer.		Horizontal Velocity of Wind. At Heights above M.S.L.												Cloud Observations.		
							500 m.		1000 m.		2000 m.		3000 m.		4000 m.		5000 m.				
			From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	Type.	From N.	mr/s.
		h. m.	°		°		°		°		°		°		°		°			°	
1	Cahirciveen	7 20	315	12	360	5·5	355	8·0	350	10·5	345	12·5	...	...	...	...	...	...	Cu.	335	...
1	,,	8 10	315	12	350	5·0	350	8·0	345	13·5	340	11·0	355	12·5	...	...	...	...	Cu., St.-Cu.	335	...
2	,,	12 10	295	10	295	4·0	315	5·5	320	4·4	310	2·9	...	...	...	...	...	...	Ci., Ci.-Cu.	270	...
																			Cu., St.-Cu.	315	...
2	S. Farnboro'	6 55	295	14	265	6·5	275	15·0	290	14·0	275	10·5	270	15·0	280	20·5	280	19·0	Fr.-St.	...	...
																			A.-Cu., Ci.	...	...
3	Cahirciveen	7 20	?	?	95	6·0	140	6·0	145	5·0	165	5·5	165	3·5	230	2·4	245	2·2	Ci.-St.	270	...
																			A.-Cu.	180	...
																			St., St.-Cu.	155	...
3	S. Farnboro'	6 35	295	9	265	3·0	300	9·5	285	8·0	290	10·0	300	11·5	310	15·5	...	...	...	...	...
3	Eskdalemuir	7 30	315	8	calm		?	?	305	6·5	295	7·0	325	10·0	...	...	...	...	Cu.	315	...
																			Ci.	340	3·0
3	,,	12 5	315	8	300	6·5	295	8·5	290	8·5	285	6·5	280	10·5	300	14·5	...	...	Cu.	290	4·2
																			Ci.	305	2·9
4	,,	7 20	indefinite		40	1·7	40	7·0	45	8·5	20	2·1	320	5·0	300	6·0	270	17·0	Ci.	270	4·8
																			A.-St.	270	...
																			Ci.	245	...
4	Cahirciveen	14 40	90	15	65	7·0	90	5·5	145	5·5	130	6·0	170	6·0	180	6·5	180	8·0	Ci.-Cu.	205	...
																			A.-Cu.	135	...
																			Cu.	65	...
5	,,	7 20	90	12	65	10·5	90	18·0	95	9·5	125	4·0	...	...	...	...	...	...	A.-Cu.	...	...
																			Cu., St.	90	...
5	Eskdalemuir	7 20	90	10	calm		70	8·0	85	9·5	75	5·0	95	7·0	65	10·0	...	...	St.-Cu.	45?	...
6	,,	7 15	115	7	calm		235	2·0	170	5·5	190	2·5	35	4·5	75	4·0	50	4·2	Ci.	45?	0·7
6	,,	18 20	indefinite		calm		225	2·6	275	2·2	245	5·0	130	2·7	140	1·9	170	1·4	...	...	...
6	Aberdeen	7 30	115	7	calm		295	8·0	230	6·5	280	11·5	...	...	...	...	...	...	...	...	...
6	Cahirciveen	8 15	65	10	130	3·7	135	6·0	135	7·5	140	5·0	125	5·5	140	13·0	...	...	Cu.	135	...
6	,,	14 45	?	?	175	6·5	160	10·0	140	7·5	150	7·0	135	11·5	120	7·5	125	7·5	Cu.	155	...
7	Eskdalemuir	16 20	205	7	180	3·0	185	4·5	180	9·5	190	16·5	210	11·5	...	...	...	...	Ci.	280	1·4
7	S. Farnboro'	10 30	180	8	125	4·0	145	14·5	160	10·0	175	9·5	...	...	...	...	...	...	A.-Cu., Ci.-St.	...	...
8	Cahirciveen	16 20	295	14	275	8·5	275	15·5	275	17·5	285	20·5	...	...	...	...	...	...	A.-Cu.	270	...
																			Cu., St.-Cu.	270	...
9	Aberdeen	7 30	270	10	225	4·0	275	11·0	295	9·0	260	10·0	260	12·0	...	...	...	...	...	...	...
9	S. Farnboro'	6 15	270	14	245	6·5	270	14·0	260	17·0	260	14·0	265	17·0	...	...	...	...	Cu.	...	...
																			Ci., A.-Cu.	...	...
10	,,	6 30	270	18	235	10·0	260	17·5	265	19·5	250	23·0	...	...	...	...	...	...	A.-Cu.	225	...
																			A.-St., Cu.	...	...
10	Cahirciveen	17 0	270	14	250	8·0	250	11·5	260	16·0	255	15·0	...	...	...	...	...	...	Ci.-Cu.	270	...
11	,,	7 55	295	14	290	6·0	275	9·5	280	15·5	290	15·5	280	16·5	...	...	...	...	Cu.	245	...
																			Ci., Cu.	270	...
																			Ci.	90	1·7
11	Eskdalemuir	7 15	295	10	calm		290	5·0	265	8·0	275	7·5	270	7·0	240	4·2	200	3·8	A.-St.	...	...
																			Cu., Fr.-Cu.	270	6·1
																			Fr.-St.	295	...
13	,,	7 15	315	12	295	8·5	295	11·5	315	10·5	315	17·5	300	18·0	...	...	...	...	Cu.	315	...
																			A.-Cu.	300	8·5
13	S. Farnboro'	6 45	315	12	270	4·5	300	14·5	310	13·5	300	16·5	...	...	...	...	...	...	A.-St.	...	...
																			Ci.-St.	?	...
13	Cahirciveen	10 15	225	12	225	4·2	235	6·0	250	8·5	260	9·5	265	10·5	270	10·0	280	15·5	A.-St.	270	...
																			Cu.	245	...
14	Aberdeen	7 30	315	8	290	2·5	345	8·5	345	7·5	285	8·5	...	...	...	...	...	...	Ci., Ci.-Cu.	270	...

			6000 m.		7000 m.		8000 m.		9000 m.	
2	S. Farnboro'	6 55	275	22·0	270	22·0	...	...	...	...
3	Cahirciveen	7 20	245	7·5	...	...	...	...	...	...
4	Eskdalemuir	7 20	265	26·0	...	...	...	...	...	...
4	Cahirciveen	14 40	195	10·0	...	...	...	...	...	...
6	Eskdalemuir	7 15	40	5·0	65	8·5	...	...	...	...
6	,,	18 20	125	3·0	105	5·0	115	7·5	120	11·0
11	,,	7 15	210	4·4	...	...	...	...	...	...

(For observations at lower levels, see above.)

Height of Station above M.S.L. = H.
Height of Anemometer above ground = h.

	H.	h.
Aberdeen	14 m.	32 m.
Eskdalemuir	242 m.	15 m.
S. Farnborough	70 m.	31 m.
Cahirciveen	9 m.	13 m.



Wind Protractor.

Notes on Pressure Distribution.

September 1918.

1 7 h.–3 13 h. North-westerly type.
4 7 h.–6 18 h. Variable ridge of High over the British Isles; Low off the S. of Ireland; Low over Scandinavia.
7 7 h., 18 h. Low over Ireland; High over the Continent.
8 18 h. Deep depression centred over Scotland; High over the Azores.
9 7 h. ,, ,, near Shetland; ,, ,,
10 7 h., 18 h. Deep depression centred over Scotland; High over the Azores.
11 7 h. Deep depression centred near Skudesnaes; High over the Azores.
13 7 h. North-westerly type.
14 7 h. Low over Ireland; Low over Scandinavia, with a ridge of high pressure between.

Notes on Ascents.

2nd, 6 h. 50 m. Good visibility.
5th, 7 h. 20 m. Many stationary clouds.
6th, 7 h. 30 m. St.-Cu., dir. 220°, Rel. vel. 5·0 mr/s. at 9 h.
7th, 16 h. 20 m. Barometer falling quickly.
7th, 10 h. 30 m. Nb. appearing towards end of the ascent.
13th, 10 h. 15 m. ⊕

10. SOUNDINGS WITH PILOT BALLOONS—*continued.*

Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind.														Cloud Observations.		
			Geostrophic.		By Anemometer.		At Heights above M.S.L.												
							500 m.		1000 m.		2000 m.		3000 m.		4000 m.		5000 m.		
			From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	From N.	m/s.	Type.	From N.	mr/s.
		h. m.	°		°		°		°		°		°		°		°			°	
16	S. Farnboro'	6 40	225	12	210	2·5	240	14·5	235	15·0	225	11·0	...	...	...	...	...	...	A.-St., Ci.-St.	...	...
																			Nb.	...	...
17	Cahirciveen	7 25	205	18	170	4·9	195	7·5	190	10·5	240	3·7	...	...	...	...	...	...	A.-Cu., Cu.	225	...
																			Low St.	180	...
18	Eskdalemuir	7 15	225	18	225	6·5	235	10·5	225	14·5	230	25·0	...	...	...	...	...	...	Ci.-St.	...	...
																			Cu.-Nb.	225	...
18	Cahirciveen	7 15	225	15	200	1·6	265	5·0	260	7·5	240	10·5	...	...	...	...	...	...	A.-Cu.	225	...
																			Cu. & Fr.-Cu.	245	...
18	,,	9 15	225	15	255	4·8	260	5·0	265	9·5	245	10·0	...	...	...	...	...	...	A.-Cu	225	...
																			Cu., Fr.-Cu.	205	...
18	,,	11 45	225	10	230	4·2	260	7·0	245	11·0	240	7·0	240	13·0	...	...	...	...	Cu.	225	...
19	Aberdeen	7 30	225	16	190	3·0	220	12·0	210	11·0	215	10·0	...	...	...	...	...	...	A.-St.	200	...
20	,,	7 30	315	10	280	3·0	310	10·0	300	9·0	260	9·0	...	...	...	...	...	...	St.-Cu.	270	...
20	S. Farnboro'	6 45	270	10	250	7·5	265	12·0	275	16·5	265	13·0	270	16·0	280	18·0	...	...	A.-Cu., Cu.	...	...
22	Cahirciveen	8 5	245	30	230	12·0	235	20·5	240	17·0	240	22·5	...	...	...	...	...	...	Ci.	245	...
																			Cu.	225	...
23	S. Farnboro'	6 50	270	14	?	?	260	12·0	260	16·5	260	11·5	...	...	...	...	...	...	St.-Cu.	...	...
23	Aberdeen	7 30	indefinite		calm		245	4·0	230	5·5	225	2·0	...	...	...	...	...	...	St.-Cu.	295	...
26	S. Farnboro'	6 30	225	18	205	5·5	260	12·0	255	11·5	270	19·5	...	...	...	...	...	...	...	...	...
27	,,	6 30	295	14	255	4·0	300	12·0	290	12·0	280	12·5	290	21·0	280	29·0	...	...	...	...	...
27	Aberdeen	7 30	270	12	235	3·0	270	10·0	275	11·5	270	14·0	...	...	...	...	...	...	...	...	...
28	Cahirciveen	7 40	315	15	330	7·5	325	13·5	325	12·0	305	15·0	...	...	...	...	...	...	Cu.	315	...
28	,,	11 25	315	12	315	5·0	310	6·0	310	10·0	290	13·5	...	...	...	...	...	...	Ci.-Cu., Ci.	295	...
																			Cu.	315	...
28	,,	16 35	295	10	295	3·2	310	5·0	295	8·0	290	9·0	...	..	...	...	...	...	False Ci., A.-Cu.	270	...
																			Cu.	295	...
29	,,	16 45	65	15	355	8·5	350	13·5	350	13·0	350	15·5	345	15·0	325	20·0	...	...	Cu.	335	...
29	Eskdalemuir	10 50	indefinite		calm		300	2·7	315	1·6	215	2·6	245	4·2	255	11·0	250	18·0	A.-Cu.	270	4·2
																			Cu.	265	1·6
																			A.-St.	245	...
30	Cahirciveen	8 0	360	14	5	7·5	5	12·0	5	13·5	5	21·0	...	...	...	...	...	...	Ci., Ci.-Cu., Cu.	360	...
30	,,	17 5	315	10	355	6·5	345	10·0	340	11·5	340	18·5	...	...	...	...	...	...	A.-Cu., Cu.	335	...
30	Eskdalemuir	7 20	360	14	360	7·0	360	13·0	15	15·5	5	10·5	5	12·5	...	...	...	...	Ci., Ci.-St.	335	...
																			Cu., Fr.-Cu.	25	...

Notes on Pressure Distribution.

September 1918.

16 7 h.–17 7 h. Low over the British Isles, centred off the W. of Ireland.
18 7 h.–19 7 h. ,, ,, ,, ,, W. of Scotland.
20 7 h. Low centred over Scandinavia; High extending from the Azores to the British Isles.
22 7 h. Deep depression over the British Isles, centred off the N. of Ireland.
23 7 h. ,, ,, ,, ,, over Scotland.
26 7 h.–27 7 h. Westerly type.
28 7 h., 13 h., 18 h. North-westerly type.
29 7 h., 18 h. Low over Scandinavia; High S. of the British Isles.
30 7 h., 18 h. Northerly type; Low centred over Holland.

Notes on Ascents.

16th, 6 h. 40 m. Nb. coming up very rapidly from 225° towards the end of the ascent.
18th, 7 h. 15 m. Clouds near horizon.
23rd, 7 h. 30 m. St.-Cu. drifting very slowly, becoming motionless later.
27th, Aberdeen. Ci. to Ci.-Cu. advancing from 270° at 9 h.; rapidly increasing to dense A.-St. by 13 h.

11. Nephoscope Observations.

Aberdeen. Taken at 13 h. G.M.T.

Day.	Type of Cloud.	Degrees from N.	Velocity–height–ratio.			Remarks.
			Milliradians per Second.	Components.		
				W.–E.	S.–N.	
		°	mr/s.	mr/s.	mr/s.	
2	Fr.-Cu.	355	10·0	+ 0·9	− 10·0	
4	St.-Cu.	345	6·6	+ 6·4	− 1·7	
5	St.-Cu.	305	2·3	+ 1·9	− 1·3	
6	Cu.	285	5·0	+ 4·8	− 1·3	
7	St.-Cu.	203	8·2	+ 3·2	+ 7·5	Fused thin sheet of St.-Cu.
9	Cu.-Nb.	255	5·0	+ 4·8	+ 1·3	Basal portion of Cu.-Nb. measured.
11	Ci. to Ci.-St.	285	0·3	+ 0·3	− 0·1	Ci. changing into patches of Ci.-St.
12	Cu.-Nb.	329	12·0	+ 6·2	− 10·3	Small type of Cu.-Nb., central mass measured.
13	St.-Cu.	325	1·9	+ 1·1	− 1·6	Thin high St.-Cu.
14	Ci.	260	4·5	+ 4·4	+ 0·8	Ci. to Ci.-Cu., radiating point 260°, partial ⊕. Note high apparent velocity of Ci. as compared with that of the Cu.
	Cu.	300	3·4	+ 2·9	− 1·7	
19	Fr.-Cu.	218	13·0	+ 8·1	+ 10·3	Traces of Ci.-Cu. above, from about 270°.
20	St.-Cu.	256	3·8	+ 3·7	+ 0·9	
25	St.-Cu.	262	7·6	+ 7·5	+ 1·1	Slight high St.-Cu.
26	Cu.	280	4·4	+ 4·3	− 0·7	
28	Cu.	285	8·3	+ 8·1	− 2·2	Cu. inclined to Cu.-Nb. in places.
30	Ci.	310	3·2	+ 2·5	− 2·0	Ci. to Ci.-Cu., in sheets, showing much internal change.

12. Aurora.

Day.	a.m. or p.m.	Moon.	Magnetic Character.		Aurora Observations.	
			Eskdalemuir.	Richmond.	Station.	Remarks.
1	a.	...	2, 2	2, 2	Eskdalemuir	August 31st, 21 h. to September 1st, 1 h.
					Southport	Bright 0 h. 30 m.
	p.	...	2, 1	2, 1	Malin Head	
					Donaghadee	
5	...	●	...	...	...	
9	p.	...	0, 0	0, 1	Baltasound	
					Deerness	
					Wick	
13	...	☽	...	...	...	
17	p.	...	1, 1	1, 1	Malin Head	
18	p.	...	1, 2	1, 2	Wick	
20	...	○	...	...	...	
27	...	☾	...	...	...	
28	p.	...	1, 1	1, 1	Deerness	
					Gordon Castle	
					Aberdeen	Moderately bright, with arch and slight streamers, after 19 h. 30 m.
					Dundee	
					Ford	
					Edinburgh	
					Glasgow	
					Eskdalemuir	Commenced 20 h.; very intense 23 h. 30 m.; glow 1 h. on 29th.
					Donaghadee	
29	p.	...	1, 1	1, 1	Deerness	
					Wick	
					Ford	
					Glasgow	
					Eskdalemuir	Glow.
30	p.	...	1, 1	1, 1	Donaghadee	

Note.—The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at the midnight of the night in question.

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

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1. SUNSHINE AND SOLAR RADIATION.

Day.	WESTMINSTER. Bright Sunshine.* Total.	Per cent. of Possible.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W. Radiation received on Horizontal Surface by Callendar Radiograph. Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Time.	11.30 h. to 12.30 h.	RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation at Noon by Ångström Pyrheliometer. Intensity.	Vertical Component.	Sky.	ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation by Ångström Pyrheliometer. Time.	Sky.	$\frac{p}{p_0}$ sec Z.	Intensity.	CAHIRCIVEEN. Bright Sunshine.* Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	*x* 9·0	78	*x* 960	46	*x* 57	11 54	*x* 57	8·7	75	...	...	...	1·8	16	...	...	...	...	0·8	7
2	0·0	0	350	17	23	11 45	23	0·0	0	...	...	...	0·0	0	...	...	...	...	0·0	0
3	4·6	40	670	33	50	10 43	40	4·2	37	...	...	...	0·0	0	...	...	...	...	0·5	4
4	8·0	70	880	44	54	11 50	54	*x* 8·9	78	75	42	Clear	5·5	48	12 3	Clear	1·94	84	7·4	65
5	0·0	0	260	13	19	11 51	19	0·0	0	...	...	...	0·0	0	...	...	...	...	0·0	0
6	5·7	50	730	38	50	12 29	50	5·7	50	...	...	...	0·3	3	...	...	...	...	6·2	55
7	3·8	34	440	23	44	12 20	44	3·7	33	67	36	Ci.	0·2	2	...	...	...	...	3·9	35
8	5·0	45	740	40	48	11 0	38	5·9	53	...	...	...	0·2	2	...	...	...	...	3·8	34
9	0·0	0	180	10	15	10 49	14	0·0	0	...	...	...	0·0	0	...	...	...	...	0·0	0
10	0·2	2	250	14	19	8 49	11	0·0	0	...	...	...	0·0	0	...	...	...	...	1·7	15
11	0·6	6	310	17	28	12 55	24	0·1	1	..	...	...	4·2	39	...	...	...	...	7·7	71
12	0·5	5	360	20	27	14 11	18	1·1	10	...	...	...	5·2	49	...	...	...	...	8·3	76
13	7·5	69	691	40	? 40	10 30	32	8·2	76	63	32	Clear	6·9	64	...	...	...	...	0·0	0
14	0·0	0	410	24	23	12 50	21	0·0	0	...	...	...	0·2	2	...	...	...	...	1·1	10
15	1·3	12	500	30	39	10 55	21	1·0	9	...	...	...	0·8	8	...	...	...	...	3·1	29
16	0·0	0	330	20	28	11 52	28	0·0	0	...	...	...	4·7	45	...	...	...	...	1·2	11
17	0·5	5	340	21	25	10 50	17	2·6	25	31	15	Hazy	2·8	27	...	...	...	...	2·6	25
18	0·0	0	150	9	12	14 5	7	0·0	0	...	...	...	0·0	0	...	...	...	...	0·8	8
19	2·0	19	457	29	31	14 10	20	2·9	28	...	...	...	0·0	0	...	...	...	...	4·8	46
20	0·0	0	*n* 126	8	*n* 11	9 57	8	0·0	0	...	...	...	0·0	0	...	...	...	...	8·6	83
21	0·0	0	273	18	20	11 50	20	0·0	0	...	...	...	0·0	0	...	...	...	...	5·5	53
22	2·7	26	377	25	22	12 20	22	2·8	27	...	...	...	0·0	0	...	...	...	...	0·0	0
23	2·5	25	343	23	22	13 40	14	1·7	17	28	13	Ci.	7·5	76	12 4	Hazy	2·55	71	*x* 8·7	85
24	2·8	28	389	27	22	13 30	14	5·1	50	...	...	...	0·0	0	...	...	...	...	1·3	13
25	0·0	0	? 427	30	?	?	?	0·0	0	...	...	...	*x* 8·3	85	11 59	Clear	...	78	0·0	0
26	1·3	13	? 427	31	?	?	?	5·1	5	...	...	...	4·0	41	...	...	...	...	0·0	0
27	0·7	7	357	26	35	10 50	15	0·6	6	...	...	...	0·7	7	...	...	...	...	2·1	21
28	0·6	6	237	18	33	12 30	33	0·7	7	...	...	...	0·0	0	...	...	...	...	0·0	0
29	0·0	0	274	21	18	10 47	15	0·1	1	...	...	...	0·0	0	...	...	...	...	0·0	0
30	5·8	59	569	44	40	12 14	40	6·1	62	55	23	Ci.	2·9	31	...	...	...	...	0·4	4
31	0·0	0	303	24	22	10 1	21	0·1	1	...	...	...	0·9	10	...	...	...	...	2·7	28
Means	2·10	20	423	30	30†	—	26†	2·42	23	—	—	—	1·84	18	—	—	—	—	2·68	26
Normal	2·26	22	458	—	—	—	—	2·97	28	—	—	—	2·48	24	—	—	—	—	3·26	31
	←35 years→		3 years					←35 years→					←5 years→						←35 years→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M. S. L.:—H = 9·1 m. H_b = 13·7 m. H_a = 26·4 m. Above Ground: h_t = 1·3 m. h_r = 0·56 m. h_a = 13·9 m.

Day.	Air Pressure at Station Level. 9 h.	21 h.	Air Temperature in Degrees Absolute. 9 h.	21 h.	Max.	Min.	Humidity. Vapour Pressure. 9 h.	21 h.	Percentage. 9 h.	21 h.	Wind—Veer from North in degrees and Speed in metres per second. 9 h.		21 h.		Cloud Amount (0–10) and Weather. 9 h.	21 h.	Rain 0 h. to 24 h.	Min. Temp. on Grass.	REMARKS.	Magnetism. Horizontal Force. Declination West. and Inclination.
			a.	*a.*	*a.*	*a.*									Tenths of Sky covered.			*a.*		
	mb.	mb.	200+	200+	200+	200+	millibar.		%	%		m/s.		m/s.			mm.	200+		
1	1026·3	1024·1	83·8	84·4	86	80	10·2	12·0	79	90	295	3	240	4	10	10	0·2	76	Fair *n.* and *a.* o. to d. *p.*	
2	1018·9	1012·1	85·4	85·9	86	84	11·8	13·9	83	94	200	6	185	9	10	10●	3·5	83	o. *n.* and *a.* d. to ● *p.*	
3	1004·3	1009·1	86·4	81·9	87	81	15·0	9·8	98	87	195	9	280	10	10●	10●	25·3	85	● *a.* p. q. evening.	
4	1018·3	1011·2	83·1	84·6	86	81	9·0	12·2	73	90	270	8	195	11	4	10●	5·1	78	Fine day. ● evening.	
5	1008·8	995·6	86·0	86·4	87	*x* 85	13·2	15·0	89	98	220	10	185	12	10	10●	*x* 26·2	83	●^{0} *a.* ●^{2} during day.	
6	1004·2	1006·2	84·2	84·6	86	82	8·9	11·5	*n* 68	85	235	15	180	8	7	10	5·1	81	Fine to p. *a.* 7 h. c. to o. *p.*	
7	1001·9	1009·9	82·7	81·3	85	80	8·8	8·6	74	79	245	16	280	11	7	10	15·0	80	☾●^{0}△ q. *n.* q. p. *a.* ☾ evening.	
8	1014·4	1012·9	82·3	82·2	84	80	9·1	11·1	78	96	260	12	170	6	7	10●	14·4	76	△ and ⊕ *a.* o. to ● evening.	17818 γ
9	1005·3	1003·4	86·6	87·1	*x* 88	83	15·3	15·2	99	95	225	10	185	11	10	10	8·4	81	●^{2} *n.* Dull to d. during day.	19° 34′·8
10	1005·4	1011·1	83·9	83·3	87	83	12·0	11·4	93	92	205	6	250	5	10	2	7·6	83	●^{0} to d. *n.* and *a.* Finer *p.*	—
11	1015·9	1018·2	82·5	81·3	84	80	10·6	8·4	89	77	310	2	335	4	5	4	0·8	78	Fine day.	—
12	1020·0	1020·5	81·3	77·9	*n* 83	77	8·7	7·9	80	91	350	3	—	1	3	4	0·6	76	Fair to fine. 10th—	68° 6′·5
13	1013·8	1006·4	83·1	84·4	85	77	11·3	13·3	92	99	170	7	245	5	10	10	13·0	73	o. to ● *a.* d. later.	
14	1010·2	1011·9	83·6	83·6	85	83	10·4	11·2	82	88	295	7	265	7	10	10	0·7	82	o. to p. *n.* ⊕ o to c. during day.	
15	1013·9	1015·6	82·9	82·7	84	82	9·7	9·9	80	83	315	9	295	7	7	10	3·5	80	p. *n.* and *a.* ⊕ Fair day. ♅ *p.*	
16	1013·4	1011·7	83·2	83·6	85	82	10·9	12·2	88	96	360	3	—	0	10	10	1·7	81	Fair *n.* and *a.* Dull to ●^{0} *p.*	
17	1016·3	1019·4	82·3	82·8	84	82	8·1	8·3	69	69	5	9	10	8	3	8	0·1	80	o. *n.* Fair to fine *a.* o. *p.*	
18	1017·5	1014·5	81·8	84·4	85	80	9·3	11·1	82	83	5	8	20	7	9	9	0·2	78	Fair *n.* and *a.* d. during day.	
19	1016·2	1022·1	82·1	81·7	85	79	9·7	9·5	84	85	65	6	—	1	7	6∞	1·0	80	●^{0} *a.*, then fine, with ∞. ♅ *p.*	
20	1027·1	1028·3	78·2	83·7	85	76	8·3	11·5	94	90	—	1	—	1	3∞	9	—	73	Fine. ☊ *a.* ⊕	
21	1025·1	1019·6	83·3	82·7	86	82	10·0	11·0	80	92	70	6	—	0	2	10	—	79	Fair day.	
22	1014·9	1016·1	82·0	79·6	84	77	10·9	9·0	96	93	—	1	50	2	9∞	6☍	0·4	80	∞. d. *a.* Fine day.	19° 34′·7
23	1022·3	1024·2	77·2	80·8	85	76	7·9	8·4	97	80	—	0	—	1	0☍	0☍	0·2	73	☍ *n* Fine day.	
24	1022·5	1018·3	75·9	82·6	84	*n* 75	7·2	8·6	95	72	—	1	285	6	7	10	—	*n* 72	☍. Fair day.	
25	1014·0	1011·7	83·1	84·0	85	83	11·8	12·6	96	97	245	5	—	1	10	10	3·1	82	●^{0} *a.* and *p.* 23rd—	17814 γ
26	1011·1	1012·5	84·1	84·4	85	84	12·7	13·3	97	99	—	1	—	1	9	10	2·3	83	o. *n.* d. *a.* ● *p.*	—
27	1014·4	1014·3	82·6	84·9	85	82	11·2	13·3	94	96	—	0	175	6	8	5	0·3	79	o. d. *n.* Fine *a.* o. d. *p.*	68° 8′·8
28	1014·4	1016·2	85·3	85·4	87	83	13·1	14·2	92	99	170	8	185	6	9	10	2·8	84	Dull *n.* and *a* d. *p.*	
29	1018·3	1011·1	84·9	85·6	86	83	13·7	12·5	99	86	170	6	155	11	10	10	0·3	80	o. d. *n.* Dull *a.* and *p.*	
30	996·4	1003·3	86·3	84·2	86	82	14·4	11·5	95	87	170	12	180	7	10	10	14·3	85	● *n.* and *a.* Fair to dull *p.*	
31	998·7	1002·9	82·5	80·4	85	77	11·0	7·4	93	72	260	7	355	3	10●	2	13·0	81	● *a.* Fair day.	17816 γ
Means	1015·4	1015·1	83·0	83·3	85·2	80·6	10·8	11·2	87	88		6·4		5·5	7·6	8·2	169·1	79·5	Monthly Totals or Means.	19° 34′·7
Normal	1010·7	1010·9	83·7	83·6	86·6	81·1	11·1	11·0	86	86		5·2		5·1	—	—	144·5	—	Normals.	68° 7′·6
	←45 years→						←30 years→				←35 years→						45 yrs.			

* By Campbell-Stokes Sunshine Recorder. † Mean of 29 days. *x* denotes the maximum and *n* the minimum value in the column.

Wt. 37652/515—400—10/19.—N. & Co., Ltd. Gp. XV.

3. METEOROLOGY :—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 5·5 m. Barometer, H_b = 10·4 m. Cups of Anemometer, H_a = 25 m.
Heights above Ground :—Thermometers, h_t = 3·0 m. Rain-gauge, h_r = 0·53 m. Cups of Anemometer, h_a = 20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	Remarks.
							Vapour Pressure.		Percentage.										
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
			a.	*a.*	*a.*	*a.*									Tenths of Sky covered.			*a.*	
	mb.	mb.	200+	200+	200+	200+	millibar.		%	%	°	m/s.	°	m/s.			mm.	200+	
1	1021·6	1023·0	79·0	80·0	85	75	7·6	8·5	82	85	259	3	34	5	1 ∞ ⌓	1	—	*n* 70	⌓. Fine day.
2	1023·3	1021·6	82·4	83·8	86	78	10·1	11·6	86	90	236	3	225	4	10 ●	7	0·5	72	●⁰ 9 h.–11 h. 30 m. Dull.
3	1019·2	1014·6	85·4	83·3	88	82	10·7	10·6	75	85	225	6	191	3	10	0	—	82	Dull to fine.
4	1015·2	1020·5	83·6	79·8	87	77	8·9	8·4	*n* 70	85	281	5	—	1	3	0≡⁰	—	77	Fine day.
5	1016·8	1015·1	84·1	85·5	86	77	11·2	11·9	85	83	214	7	214	8	10	10	1·4	*n* 70	⌓. Dull. ● *p.*
6	1009·8	1017·7	86·4	83·6	*x* 89	83	12·8	9·4	84	74	225	7	214	5	7	0	0·9	83	p. early. Dull to fine.
7	1009·0	1009·5	85·4	81·8	87	81	11·8	8·3	83	74	203	7	225	6	9	0	3·6	79	Dull *a.* Fine *p.* q. 11 h.
8	1012·9	1017·6	80·9	79·2	85	77	8·9	8·2	84	87	236	3	259	2	4	0	—	72	⌓⌓. Fine to cloudy. q. 14 h. 48 m.
9	1017·8	1015·1	81·4	87·0	87	77	10·0	14·7	91	93	191	4	203	5	10 ●	10	2·6	71	⌓. Dull and wet.
10	1017·6	1016·0	88·1	87·7	*x* 89	*x* 87	14·1	15·2	83	92	214	6	203	2	10	10	0·1	84	Dull. ● d. 14 h. 40 m.–15 h. 12 m.
11	1013·1	1010·1	87·5	83·5	*x* 89	83	14·3	11·6	87	92	191	2	349	2	10	10 ●	*x* 4·7	82	c. 8 h. o. later. ● *p.* and *n.*
12	1009·9	1013·9	82·8	81·9	85	81	10·0	9·5	83	84	360	3	349	2	10	2	0·1	81	●⁰ o h. 15 m.–25 m. Dull to fine.
13	1018·1	1018·1	81·0	78·7	85	75	8·4	8·5	79	93	338	2	—	1	4	? o≡⁰ ⌓	—	77	Fine. ≡⁰ ⌓ *n.*
14	1012·8	1009·8	82·2	82·7	85	*n* 74	9·0	11·5	78	96	191	3	—	1	10	10 ● ≡⁰	2·1	*n* 70	⌓. Fair *a.*, then dull. ● *p.* and *n.*
15	1008·4	1008·1	83·0	82·1	86	80	10·6	9·5	87	82	259	2	338	2	8	6	1·2	79	● early. Fair to fine.
16	1006·2	1006·0	81·9	81·9	84	78	9·9	9·4	88	83	338	3	304	2	10	10	—	73	⌓. Dull day.
17	1006·5	1010·4	81·2	78·0	85	77	9·6	8·1	89	93	304	2	—	0	9≡⁰	? o≡ ⌓	0·4	78	● early. Dull to fine.
18	1012·1	1014·8	75·5	79·2	*n* 82	75	7·0	8·7	95	93	—	0	—	1	*10*≡	*10*≡	0·1	*n* 70	⌓. ≡² to 10 h. ≡ rest of day.
19	1016·4	1018·2	81·4	83·0	86	77	10·4	9·8	95	80	23	3	349	3	10≡⁰	10	3·5	72	● 3 h.–7 h. Dull *a.* Fine later.
20	1018·2	1020·2	85·1	84·5	85	83	12·3	12·1	88	90	11	5	23	5	10 ●	10 ●	4·6	78	Dull and wet all day.
21	1019·9	1018·4	84·4	83·7	85	83	11·2	11·5	84	90	11	4	—	1	9	10≡⁰	0·1	82	o. all day. ●⁰ d. 13 h. and 18 h.
22	1016·3	1017·6	84·8	79·8	88	78	12·7	9·3	93	94	101	3	—	0	6≡⁰	*10*≡ ⌓	0·4	78	●⁰ 8 h. ≡⁰ early. Dull to fine. ≡ *n.*
23	1020·8	1020·8	79·3	81·7	87	77	9·2	10·3	97	92	—	1	45	4	*10*≡	10	0·1	73	≡ to 13 h. 40 m. Fine to o. later.
24	1019·4	1016·0	80·1	78·3	84	77	9·0	8·4	89	94	23	3	—	1	2≡⁰	? o≡⁰	—	73	Mostly fine. ≡⁰ *n.*
25	1011·8	1011·2	79·8	82·4	84	76	9·0	10·9	91	93	—	1	—	1	9≡⁰ ⌓	10≡⁰	—	72	≡⁰⌓. o. all day.
26	1014·0	1016·4	80·9	77·5	84	77	8·8	7·9	83	94	—	1	—	0	! 4≡⁰	? o≡	—	79	≡⁰. Fine. ≡⁰ *p.* ≡ *n.*
27	1017·0	1020·6	83·0	84·0	87	80	11·7	12·5	96	96	169	2	—	1	9≡⁰	1≡⁰	0·6	72	● early. Dull to fine.
28	1022·7	1024·8	84·9	85·5	87	83	12·7	12·8	92	89	248	3	236	2	10≡⁰	10	—	80	Dull to fine.
29	1026·8	1025·1	84·9	83·8	88	83	11·6	11·9	84	93	—	1	—	1	9≡⁰	? 2≡⁰	—	80	Dull to fair.
30	1018·6	1012·0	84·1	84·5	87	82	10·9	11·2	83	83	158	5	180	4	2	10	0·1	77	⌓. Fine to fair.
31	1009·7	1006·5	84·6	85·9	87	83	11·9	13·6	88	92	214	2	180	3	10	10	1·5	80	Fair to dull. ● *p.*
Means	1016·8	1017·1	82·9	82·4	86·1	79·2	10·5	10·5	86	89		3·3		2·5	7·9	5·8	28·6	76·3	Monthly **Totals** or **Means.**
Normal	1012·9	1012·9	82·5	82·3	86·4	79·3	10·4	10·5	86	88		3·2		2·6	—	—	69·0	—	**Normals.**
			45 years				30 years				35 years						45 years		

4. METEOROLOGY :—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 242 m. Barometer, H_b = 237·3 m. Vane of Anemometer, H_a = 250 m.
Heights above Ground :—Thermometers, h_t = 0·9 m. Rain-gauge, h_r = 0·38 m. Vane of Anemometer, h_a = 15 m.

																			Remarks.
1	990·8	990·3	79·3	80·9	83	77	7·7	9·8	81	93	310	5	220	4	4	10≡⁰	0·5	69	c. y. *a.* o. *p.* ●⁰≡⁰ after 19 h.
2	986·6	982·7	82·2	83·5	84	81	10·7	12·2	93	97	220	7	220	12	10	10≡⁰	12·6	80	●⁰≡⁰ all day. ●² after 23 h. 30 m.
3	977·8	975·2	84·0	82·6	84	81	12·5	10·9	96	92	210	12	270	3	10 ●²≡⁰	10	*x* 52·1	82	Persistent ●²≡⁰ all day.
4	981·7	985·2	78·3	77·9	83	76	7·8	7·9	87	91	270	5	180	4	9	1	7·3	77	● till 9 h. Fine to p. *p.* Clear *n.*
5	975·1	970·4	81·5	83·4	84	80	8·9	12·0	81	96	240	11	210	17	10	10 ●≡⁰	39·2	74	●² early. o. *a.* ●²≡⁰ *p.* and *n.*
6	964·7	975·8	82·0	79·3	85	78	8·4	7·4	*n* 74	78	220	18	230	11	10	6	8·7	79	●²≡⁰. early. q. ▲●² *p.* ≤² *n.*
7	961·6	968·6	80·9	78·1	82	77	8·3	7·4	78	84	210	17	240	10	10	10	14·3	77	≡●²▲ 6 h. p. q. 9 h.–14 h.
8	974·6	980·8	78·3	79·9	81	77	7·2	8·8	81	89	230	10	220	6	9	10	4·8	75	●² early. c. to ●⁰ *a.* ●≡ *p.* ⌓●⁰ *n.*
9	976·5	973·3	78·6	84·9	*x* 86	78	8·5	13·7	94	99	160	6	210	12	10 ●≡⁰	10	17·8	77	●≡⁰ 5 h.–18 h. ≡⁰. ● after 22 h. 30 m.
10	975·8	979·8	84·8	81·6	85	81	13·7	10·2	100	92	210	16	220	8	10≡⁰	10≡⁰	21·8	84	≡⁰ 2 h.–6 h. ●≡⁰ *a.* and *p.*, then fair.
11	985·6	985·0	77·8	77·0	85	75	8·4	6·9	98	85	—	1	—	0	10≡	2⌓	—	74	≡, then fine *a.* v. ⌓ *p.* and *n.*
12	986·3	989·2	79·1	73·2	82	72	7·1	5·4	75	87	20	4	—	1	2	2	—	71	⌓ *a.* ∞ *p.* Fine *n.*
13	990·0	984·6	74·9	77·9	81	*n* 69	6·0	6·6	85	76	—	0	170	3	0	10	0·7	*n* 66	⌓² *a.* c. to o. ⊕ *p.* ● after 23 h.
14	977·5	977·7	79·0	80·9	83	77	9·2	9·2	99	87	170	4	210	6	10≡⁰	8	3·5	76	●⁰≡⁰ till 12 h. o. to c. *p.* and *n.*
15	979·2	981·0	79·9	79·4	83	78	8·6	8·8	87	92	210	5	280	3	10	3	0·4	77	Fine to o. *a.* d. *p.* o. to b. *n.*
16	980·2	978·9	80·0	78·0	83	74	9·2	7·3	92	84	310	4	340	2	2	7	—	71	⌓⁰∞² *a.* o. to c. later.
17	979·9	982·5	80·0	80·1	83	74	7·5	7·6	75	75	350	8	350	8	3	10	0·3	71	∞⁰ *a.* o. y. to o. v. p. *p.*
18	986·2	989·6	81·7	81·8	83	80	10·3	10·2	92	90	40	9	100	4	10≡⁰	10	7·3	78	o. early. ●⁰≡⁰ until 20 h. 30 m.
19	992·4	995·4	80 3	82·8	83	78	9·5	11·1	93	92	360	2	50	8	10	10≡⁰	12·9	77	o. till 10 h., then ●²≡⁰ *a.* and *p.*
20	999·9	1001·8	81·2	79·0	83	77	10·5	8·1	97	87	30	6	30	8	10≡⁰	10	0·8	81	d. ≡⁰ *a.* Dull day. ≡⁰ *p.*
21	998·6	992·5	79·6	79·3	81	77	8·3	8·9	85	94	40	6	—	1	10	10≡⁰	0·5	74	o. to b. c. *a.* e. *p.* ≡⁰ d. *n.*
22	987·2	989·6	78·8	77·0	*n* 80	73	8·7	7·6	95	94	—	1	—	0	10≡⁰	2≡⁰	1·6	77	●⁰≡⁰ early. o. e. ≡⁰ till 20 h. 30 m.
23	993·9	995·1	75·1	76·3	84	71	6·4	7·4	90	95	—	0	—	0	0∞	5≡⁰ ⌓	—	68	≡ 1 h. ⌓ b. ∞ *a.* Fine *p.* and *n.*
24	990·8	982·5	78·0	79·7	*n* 80	74	7·6	8·8	88	90	220	4	220	8	10≡⁰	10	0·9	72	⊎ 1 h. ⌓⁰ o. *a.* ≡⁰ *p.* ●⁰ *n.*
25	981·3	984·5	78·0	73·1	83	72	6·9	5·6	79	91	—	1	—	0	o⌓	0	2·4	73	●⁰≡⁰ till 4 h., then b. ∞ *n.*
26	985·5	985·0	78·2	78·4	81	74	7·3	8·5	83	96	—	0	—	0	3	10≡⁰	—	68	⌓² v. to b. *a.* ∞ *p.* d. *n.*
27	984·2	987·4	81·9	80·6	84	78	11·1	9·7	98	93	230	5	210	4	10≡⁰	10	1·9	78	●⁰≡⁰ till 7 h., then ≡ till 11 h. d. *n.*
28	987·5	990·3	83·1	83·2	84	81	12·2	12·0	99	97	200	9	200	11	10≡⁰	10≡⁰	2·7	80	●⁰≡ till 8 h., then ≡⁰. ● after 22 h.
29	993·3	993·4	83·3	82·5	84	*x* 82	12·3	11·0	99	93	210	8	180	4	10≡⁰	10	12·7	83	●≡⁰ until 17 h. 30 m. o. ≡⁰ *n.*
30	984·2	974·1	83·3	83·1	84	*x* 82	10·6	10·8	85	88	160	9	170	10	9	10≡⁰	4·1	81	≡⁰ at first, then b. ∞. ● after 21 h.
31	975·7	973·9	80·9	80·9	83	79	10·1	9·9	96	94	180	7	180	7	10≡⁰	10 ●	7·8	78	● till 1 h. d. *a.* and *p.* ●≡⁰ 18 h.–24 h.
Means	1012·2	1012·5	80·1	79·9	83·0	76·9	9·1	9·1	89	90		6·5		5·5	7·8	7·9	239·6	75·7	Monthly **Totals** or **Means.**
Normal 1911-15	985·6	985·6	80·4	79·3	83·7	76·4	9·2	8·7	88	90		4·5		3·5	—	—	100·4	—	**Normals.**

Temperatures at or below the normal freezing point of water are printed in small type.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Extremes.	Magnetic Force. Horizontal Comp't. Mean Time.		Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination. North.	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient,* Volts per metre. Factor {2·17 (1st and 2nd) / 2·48 (3rd to 31st)}. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +. About 15 h.	Charge per cc. ×10¹⁶. −. About 15 h.	Air-Earth Current. ×10¹⁶. About 15 h.
	a. 200+	*a.* 200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′			v/m.	v/m.	v/m.	v/m.	coulomb.		amp/cm².
1	83·0	86·3	206	205	...	...	...	...	...	...	I	0	435	495	330	495	0·58	0·24	1·30
2	82·9	86·1	209	...	...	...	...	...	...	...	I	0	270	250	185	330	0·32	0·22	0·65
3	83·6	85·9	212	...	11 9	18395	...	...	14 27	66 58·5	2	0	105	165	260	350	0·69	0·54	0·70
4	83·9	85·9	214	...	...	...	14 21	14 55·2	...	...	2	0	60	290	320	455	0·77	0·77	1·30
5	83·3	85·7	216	...	...	...	...	...	...	...	2	0	320	245	165	200	...	...	...
6	84·0	85·6	217	...	...	...	...	...	...	...	I	I	60	90	180	365	...	...	...
7	83·3	85·5	217	...	...	...	...	...	...	...	I	I	45	75	320	485	0·80	0·77	1·30
8	82·6	85·2	216	...	...	...	...	...	...	...	2	I	230	485	*z*±	515	0·82	0·22	...
9	83·8	85·1	215	...	...	...	...	...	...	...	I	0	380	275	230	275	...	...	...
10	84·7	85·0	215	...	11 17	18388	14 21	14 52·5	14 38	66 58·2	0	0	120	200	120	135	...	...	...
11	84·7	85·0	214	...	...	...	...	...	...	...	0	I	60	105	180	−120	1·31	0·50	...
12	84·0	85·0	213	...	...	...	...	...	...	...	0	0	75	230	245	165	...	...	...
13	84·0	85·0	215	...	...	...	...	...	...	...	0	0	135	245	215	335	...	...	...
14	83·0	85·0	216	...	...	...	...	...	...	...	0	I	365	380	260	230	...	...	...
15	83·3	84·9	215	...	...	...	...	...	...	...	I	I	30	245	230	275	0·41	0·11	0·70
16	83·1	84·9	213	...	...	...	...	...	...	...	2	0	180	165	305	230	0·26	0·21	0·25
17	82·9	84·9	212	...	11 7	18338	14 21	14 47·1	14 31	67 4·0	2	I	180	305	275	230	0·30	0·04	0·25
18	82·1	84·8	212	...	...	...	...	...	...	...	I	0	335	350	320	290	0·75	0·69	0·20
19	81·5	84·7	211	...	...	...	...	...	...	...	2	I	*z*±	215	215	180	...	...	...
20	82·4	84·6	212	...	...	...	...	...	...	...	I	I	...	...	...	...	...	...	...
21	83·0	84·4	213	...	...	...	...	...	...	...	I	?	...	...	...	305	0·41	0·28	...
22	83·1	84·3	215	...	...	...	...	...	...	...	0	I	290	350	335	245	0·30	0·04	1·25
23	82·9	84·3	217	...	...	...	...	...	...	...	I	0	700	625	580	380	0·41	0·32	0·80
24	82·7	84·3	217	...	11 9	18387	14 20	14 54·9	14 30	66 58·3	I	0	335	440	320	410	0·32	0·11	1·00
25	82·0	84·0	218	...	...	...	...	...	...	...	I	0	455	425	395	335	0·22	0·26	0·55
26	82·1	84·1	218	219	...	...	...	...	...	...	0	0	335	425	485	380	...	...	...
27	82·0	84·0	218	219	...	...	...	...	...	...	0	0	215	410	410	365	...	...	...
28	82·9	84·0	217	...	...	...	...	...	...	...	I	0	305	335	485	440	0·37	0·21	0 40
29	83·3	84·0	215	...	...	...	...	...	...	...	I	0	180	470	470	230	0·28	0·13	1·25
30	83·5	84·0	213	...	...	...	...	...	...	...	I	0	320	365	350	365	0·41	0·15	1·35
31	83·6	84·0	212	...	11 8	18385	14 25	14 54·4	14 31	67 2·3	I	I	180	290	275	45	...	...	...
M.	83·1	84·9	214	—	—	—	—	—	—	—	—	—	240†	305†	305†	293†	—	—	—
	84·0	85·6	←—12 years—→																

† Mean of 27 days. *z*± fluctuating; mean for hour indeterminate in magnitude and sign.

6. GEOPHYSICS :—ESKDALEMUIR.

Day.	Magnetic Force. North Component. Maximum. 15000 γ+.		Minimum. 15000 γ+.		West Component. Maximum. 4000 γ+.		Minimum. 4000 γ+.		Vertical Component. Maximum. 44000 γ+.		Minimum. 44000 γ+.		Magnetic Character of Day.	Electric Character of Day.	Potential Gradient,* Volts per metre. Factor 6·17. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +. About 15 h.	Charge per cc. ×10¹⁶. −. About 15 h.	Air-Earth Current. ×10¹⁶. About 15 h.
	h m	γ	γ	h m	h m	γ	γ	h m	h m	γ	γ	h m			v/m.	v/m.	v/m.	v/m.	coulomb.		amp/cm².
1	20 15	1083	872	9 16	14 55	954	835	20 2	19 40	1078	994	3 28	I	I *a*	135	200	180	145	...	...	...
2	23 40	1011	918	9 54	13 36	962	862	8 33	17 18	1101	1027	0 25	I	2 *b*	−625	180	145	145	...	...	...
3	20 47	1035	921	9 3	14 0	963	843	17 27	17 33	1117	1026	5 38	I	2 *b*	−660	−1220	−395	105	...	...	...
4	19 16	1094	917	10 19	13 23	969	873	20 41	16 15	1097	1034	3 57	I	2 *c*	−710	−575	250	220	...	...	...
5	21 12	1041	936	11 10	14 45	981	828	20 8	20 9	1102	1025	24 0	2	2 *c*	−1150	80	−45	−845	...	...	...
6	22 47	1118	932	12 48	22 51	975	876	0 43	19 40	1088	1016	1 17	I	1 *b*	−95	30	130	100	...	...	...
7	20 43	1015	928	12 24	14 41	950	862	20 33	16 32	1089	1031	0 35	I	2 *c*	*z*−	135	200	115	...	...	...
8	17 58	1080	*n*831	18 17	16 46	1033	803	21 51	18 1	1295	1057	24 0	2	2 *c*	70	95	*z*−	120	...	...	...
9	18 52	989	909	1 56	14 0	964	805	1 3	21 15	1092	*n*989	3 35	I	2 *a*	165	30	55	45	...	...	...
10	20 45	1001	926	11 36	13 46	937	884	8 50	19 33	1086	1070	1 35	0	0 *a*	45	80	**	**	...	...	...
11	21 15	1011	940	10 40	13 5	939	888	8 34	20 30	1084	1067	11 55	0	1 *a*	**	235	130	245	...	...	...
12	22 29	997	940	13 0	14 50	943	890	9 24	18 53	1084	1063	12 10	0	0 *a*	695	300	295	510	...	...	...
13	18 17	994	939	11 37	15 14	935	889	9 10	8 0	1081	1064	11 30	0	1 *a*	150	185	145	430	...	...	...
14	†	†	†	†	†	†	†	†	†	†	†	†	—	1 *b*	215	295	245	335	...	...	...
15	†	†	†	†	†	†	†	†	16 55	1129	†	†	I	1 *b*	150	170	105	220	...	...	...
16	? 15 5	*x*1135?	†	†	15 6	*x*1083	840	9 16	15 12	*x*1322?	†	†	2	1 *b*	105	155	210	575	...	...	...
17	20 11	1043	852	10 52	13 4	961	*n*784	19 47	16 28	1164	1016	5 34	2	2 *b*	415	−550	115	15	...	...	...
18	21 21	1029	899	14 10	6 30	941	863	0 10	14 30 / 19 5	1121	1055	0 30	I	2 *c*	70	130	−490	70	...	...	...
19	22 25	1033	906	14 46	13 14	985	804	23 45	15 42	1160	1028	23 55	I	2 *c*	145	0	−55	80	...	...	...
20	23 28	1003	874	10 10	13 23	937	843	0 10	16 20	1127	1025	0 31	I	0 *a*	95	100	145	50	...	...	...
21	19 54	1034	923	12 33	18 5	956	862	0 46	19 39	1121	1057	1 56	I	1 *a*	100	105	120	65	...	...	...
22	23 12	1035	883	11 26	13 28	954	879	3 42	16 20	1111	1070	23 55	0	1 *a*	30	70	115	575	...	...	...
23	22 1	1001	913	12 7	14 43	950	861	22 30	19 0	1123	1071	0 0	0	0 *a*	215	285	170	415	...	...	...
24	19 18	995	908	13 9	14 11	952	868	2 4	21 13	1107	1062	3 25	0	1 *a*	210	145	50	65	...	...	...
25	23 46 / 23 51	994	920	11 53	14 25	980	864	0 58	18 40	1100	1078	13 25	I	0 *b*	115	220	310	940	...	...	...
26	24 0	995	943	11 25 / 11 39	13 4	955	873	0 10	?18 25	1088	¶	¶	0	0 *a*	145	235	330	460	...	...	...
27	21 25	999	948	11 34	13 49	932	891	9 16	8 15 / 8 40	1087	1075	12 25	0	0 *a*	560	380	185	245	...	...	...
28	16 47	1027	922	13 1	15 58	970	826	16 34	16 34	1161	1071	11 3	I	1 *a*	70	80	100	135	...	...	...
29	21 20	1037	934	11 49	13 34	932	863	23 4	19 30	1091	1069	22 18	0	1 *a*	95	250	285	425	...	...	...
30	23 33	1035	948	12 47	12 32	959	857	23 23	15 50	1085	1067	24 0	0	1 *b*	285	325	325	150	...	...	...
31	5 45	1022	871	8 47	13 15	961	858	19 25	15 3	1135	1036	5 19	I	1 *a*	215	180	215	−180	...	...	...
M.	—	§ 1027	§ 912	—	—	‖ 963	‖ 854	—	—	‡ 1114	‡ 1046	—	—	—	‡ 42	‡ 66	‡ 120	‡ 204	—	—	—

The letters *x* and *n* denote the maximum and the minimum values in the column.
† Gas out—water in pipe. ‡ Mean of 27 days.
¶ Burner choked. ** Instrument earthed.
* The potential gradient is reckoned positive if the potential increases upwards.
§ Mean for 28 days. ‖ Mean for 29 days.
z− Indeterminate, negative value. *z* Indeterminate.

7. JERSEY (ST LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M.S.L.:—H = 54 m. H_b = 55 m. Above Ground:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level. 7 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in Degrees Absolute. 7 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 7 h.	14 h.	21 h.	Mean.	Rain 0 h. to 24 h.	REMARKS.
	mb.	mb.	mb.	mb.	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	%	%	%	%	mm.	
1	1017·4	1018·5	1020·1	1018·6	81·2	84·8	82·7	85·8	81·1	83·1	74·8	68	*n* 55	56	60	0·1	●⁰ 8 h.
2	1020·9	1021·1	1020·1	1020·7	82·9	85·9	85·9	87·1	81·3	84·6	74·7	76	67	72	72	—	⌒ 6 h. 30 m.
3	1016·6	1014·1	1010·5	1013·7	84·1	87·4	86·5	88·5	83·8	86·1	74·5	74	67	78	73	—	
4	1011·8	1015·3	1017·5	1014·9	84·4	85·5	82·5	87·3	82·3	84·4	75·8	70	59	69	66	0·2	●⁰ 4 h. 50 m.
5	1017·3	1016·6	1014·6	1016·2	84·5	88·1	86·4	88·9	81·2	85·8	72·7	81	65	75	74	—	[noon.
6	1010·2	1013·7	1016·1	1013·3	86·3	89·4	86·3	*x* 89·7	85·9	87·5	84·1	87	59	77	74	0·8	⁄ at night. ● 6 h. 30 m. and before
7	1009·9	1009·3	1009·5	1009·5	85·6	87·9	83·0	88·0	82·8	85·5	81·0	82	59	77	73	2·2	● 11 h. 15 m. q. ●². < 20 h. 30 m. ● 21 h. 30 m.
8	1009·8	1012·9	1015·5	1012·7	81·9	86·1	82·1	86·5	80·5	83·4	78·3	87	*n* 55	77	73	7·8	● 3 h. 30 m.–9 h. 15 m. q. ▲●. ▲ 15 h.
9	1015·2	1012·9	1013·9	1014·0	83·1	85·8	87·6	87·6	81·5	85·1	75·6	91	98	97	95	7·0	● from 5 h. 30 m. to noon. ● 15 h. 35 m.
10	1015·0	1013·9	1012·1	1013·7	87·3	89·3	87·8	*x* 89·7	*x* 87·0	88·2	83·6	97	89	92	93	—	[≡● 20 h.
11	1008·3	1007·3	1006·2	1007·3	86·8	84·7	84·2	87·0	83·5	85·2	85·0	97	95	89	94	4·8	● midn., 7 h. ≡● 10 h. ● 14 h. 15 m.
12	1005·0	1006·3	1009·2	1006·9	83·1	83·9	83·0	*n* 84·0	85·4	83·9	77·8	86	83	92	87	4·9	< N.E. and W. 4 h. 30 m. ● 9 h. 15 h.
13	1012·7	1013·8	1013·8	1013·4	82·0	84·4	81·1	86·0	79·5	82·6	76·9	80	67	73	73	—	[R● 20 h. 30 m.
14	1008·1	1003·9	1005·4	1005·8	83·2	83·9	85·1	85·3	83·0	84·1	*n* 71·7	75	96	86	86	6·8	● 7 h. 25 m.–9 h. (continuous).
15	1005·3	1004·2	1004·2	1004·6	83·0	84·1	82·8	86·7	82·5	83·8	80·3	85	85	93	88	3·5	● 5 h., 14 h., 15 h. (showers). [35 m.
16	1002·7	1002·7	1003·2	1002·9	83·4	84·1	81·8	85·3	81·0	83·1	76·4	81	78	83	81	7·2	▲ 4 h. ● 9 h. 40 m., 20 h. 30 m., 21 h.
17	1001·0	1001·3	1003·7	1001·9	80·1	83·0	81·4	*n* 84·0	*n* 79·3	81·6	75·8	94	77	86	86	*x* 10·4	T (one peal). ● 5 h. 20 m. ≡⁰ ●⁰ before
18	1004·6	1005·3	1006·6	1005·5	80·5	86·1	81·8	86·9	80·3	83·1	74·5	92	58	89	80	—	[noon. ● 15 h. 50 m.
19	1007·8	1009·0	1011·9	1009·6	81·3	86·3	83·1	86·9	80·0	83·5	74·3	93	66	91	83	0·4	⊔ 20 h. 30 m.
20	1011·5	1010·5	1011·0	1011·0	83·9	85·2	85·2	85·1	84·0	83·7	78·9	86	96	96	93	3·3	● 16 h. 25 m.
21	1010·3	1010·7	1010·7	1010·6	84·1	85·1	85·3	85·6	83·8	84·8	82·4	95	80	96	90	6·7	● 8 h. 15 m. (continuous).
22	1010·2	1009·3	1010·1	1009·9	83·8	86·1	84·8	87·2	83·7	85·1	80·4	92	76	90	86	—	● midnight 19 h. 20 m.
23	1011·3	1009·8	1010·1	1010·5	83·1	87·2	85·1	87·7	81·0	84·8	76·3	93	76	87	85	—	⊔ 4 h. 30 m. ⊕ 11 h. 30 m. and 15 h.
24	1009·9	1008·9	1009·8	1009·5	84·9	86·3	84·8	87·9	83·0	85·4	82·3	84	79	81	81	—	
25	1008·3	1007·7	1010·3	1008·7	82·2	85·2	83·9	85·5	81·5	83·7	74·3	85	68	78	77	0·2	
26	1007·7	1009·0	1011·0	1009·3	83·5	86·1	83·9	86·6	83·0	84·6	82·0	97	86	100	94	1·9	● 8 h., 14 h. 30 m., 20 h.
27	1012·3	1013·7	1015·7	1013·9	84·8	86·3	85·7	86·7	83·5	85·4	78·0	93	86	100	93	2·4	● 8 h. 40 m., 20 h.
28	1017·8	1019·0	1020·1	1019·0	85·4	86·9	85·9	87·8	85·1	86·2	83·9	97	83	97	93	0·1	
29	1020·5	1019·4	1017·5	1019·1	85·7	88·0	85·0	88·0	83·8	86·1	78·2	98	84	77	86	—	
30	1012·2	1009·1	1007·5	1009·7	81·8	87·0	85·9	87·1	81·5	84·7	76·9	81	76	94	84	1·5	● 15 h. 30 m.
31	1005·1	1002·7	1001·8	1003·5	85·4	86·4	86·6	87·0	84·9	86·1	82·0	94	95	87	92	1·8	● before noon.
Means	1010·9	1010·7	1011·3	1011·0	83·7	86·0	84·4	86·9	82·6	84·7	78·2	87	76	85	83	74·0	
Normal	1007·8	1007·7	1008·1	1007·9	84·4	86·9	85·1	87·7	83·2	85·5	79·7	83	73	80	79	93·9	

JERSEY (ST LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0–12 on the Beaufort Scale). 7 h. Dir.	(0–12)	14 h. Dir.	(0–12)	21 h. Dir.	(0–12)	Mean.	Sunshine.* Total.	Per cent. of Possible.	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. 7 h. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	14 h. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	21 h. Tenths.	Upper. Type.	Direction.	Lower. Type.	Direction.	Mean Amount.
								hr.	%																
1	N	2	NNW	3	NNW	2	2·3	7·2	61	4	A.-Cu.	NW	Cu.	NW	6	...	...	Cu.	NW	5	...	...	Cu.-Nb.	...	5·0
2	N	1	WSW	3	WSW	2	2·0	1·1	94	9	...	...	Cu.-Nb., Nb.	W	10	...	...	St.-Cu., Fr.-Nb.	W	10	...	...	...	...	9·7
3	SW	4	S	3	SW	4	3·7	10·2	88	5	Ci.-Cu.	...	Cu.-Nb.	SW	4	Ci.	...	Cu.	SW	0	...	...	...	...	3·0
4	NW	3	NW	3	NW	2	2·7	6·8	59	7	Ci.-Cu.	SW	Cu.-Nb.	NW	5	...	...	Cu.	NW	4	...	...	...	...	5·3
5	WSW	4	WSW	4	WSW	6	4·7	6·9	61	5	Ci.	NW	Cu.-Nb.	WSW	7	...	...	Cu.-Nb.	WSW	10	...	...	...	...	7·3
6	SW	6	WSW	5	W	3	4·7	4·3	38	10	...	...	Nb.	SW	0	...	...	...	...	4	...	...	Cu.-Nb.	...	4·7
7	SW	6	WSW	5	W	5	5·3	3·4	30	8	A.-Cu.	...	Nb.	WSW	3	Ci.-Cu.	SW	Cu.-Nb.	WSW	3	...	...	...	...	4·7
8	NW	4	W	5	NNW	4	4·3	6·8	61	3	...	...	Cu., Fr.-Cu.	NW	6	...	...	Cu., Cu.-Nb.	W, WNW	7	...	...	...	...	5·3
9	SW	4	SW	5	SW	4	4·3	0·0	0	10	...	...	Nb.	SW	10	...	...	Nb.	SW	10	...	...	≡Nb.	...	10·0
10	SW	3	S	3	SW	2	2·7	0·2	1	10	...	...	Nb.	SW	8	...	...	St.-Cu.	SW	10	...	...	...	...	9·3
11	SW	3	NW	2	NW	2	2·3	0·1	1	10	...	...	Nb.	...	10	...	...	Nb.	W	8	...	...	...	...	9·3
12	NW	2	NNW	3	NNW	2	2·3	1·7	15	4	...	...	Cu.-Nb.	NW	10	...	...	...	...	10	...	...	Nb.	...	8·0
13	NNW	2	NW	3	WNW	1	2·0	7·5	68	4	...	...	Cu.-Nb.	N	4	...	...	Cu.-Nb.	NW	2	...	...	...	...	3·3
14	SSW	4	SSW	4	NW	3	3·7	0·0	0	8	A.-Cu.	SW	...	...	10	...	...	Nb.	SW	10	...	...	...	...	9·3
15	NW	2	WNW	3	NW	2	2·3	3·5	32	7	Ci.-Cu.	WSW	Nb.	NW	10	A.-Cu.	NW	Nb.	NW	9	...	...	Nb.	...	8·7
16	NNW	4	NW	3	N	1	2·7	1·1	10	7	A.-Cu.	N	Cu.-Nb.	N	7	A.-Cu.	WNW	Cu.-Nb.	WNW	10	...	...	Nb.	...	8·0
17	NNE	1	N	2	N	2	1·7	0·9	8	8	A.-Cu.	NW	Nb.	N	8	A.-Cu.	SW	Nb.	NE	7	...	...	St.-Cu.	NE	7·7
18	E	2	NE	2	ENE	2	2·0	9·8	92	3	A.-Cu.	E	Cu.	E	4	A.-Cu.	...	Cu.	...	7	Ci.-St.	...	...	...	4·7
19	NE	3	NE	3	NE	2	2·7	4·2	40	0	...	...	...	...	5	A.-Cu.	NNE	...	...	3	A.-Cu.	NE	...	...	2·7
20	NNW	4	NNE	5	NE	4	4·3	0·0	0	10	...	...	...	...	10	...	...	Nb.	...	10	...	...	Nb.	...	10·0
21	NE	3	E	3	S	3	3·0	3·0	29	8	A.-Cu.	NE	Nb.	NE	10	...	...	Nb.	NE	10	...	...	Nb.	...	9·3
22	S	2	ESE	2	ENE	2	2·0	2·5	24	6	Ci., A.-Cu.	S, SW	...	...	7	A.-Cu.	SW	...	...	6	A.-Cu.	SW	...	...	6·3
23	ENE	3	NE	4	NE	4	3·7	7·0	67	4	Ci.	SW	...	...	4	Ci., A.-Cu.	S, SE	...	...	7	A.-Cu.	...	...	...	5·0
24	ENE	4	ENE	4	NE	2	3·3	3·8	37	6	A.-Cu.	NE	Fr.-Cu.	NE	7	...	...	Cu.-Nb.	NE	10	...	...	...	...	7·7
25	NNW	2	NNW	3	NNW	2	2·3	1·8	18	6	Ci.-Cu., Ci.	SW, NW	...	...	6	A.-Cu.	NNE	Cu.-Nb.	NW	10	...	...	...	...	7·3
26	NW	1	WNW	2	—	0	1·0	0·3	3	10	A.-Cu.	...	Nb.	NW	8	A.-Cu.	...	Cu.-Nb.	NW	10	...	...	Nb.	...	9·3
27	SW	3	SW	3	SSW	3	3·0	0·4	4	8	A.-Cu.	...	Cu.-Nb.	NW	9	...	...	St.-Cu.	SW	10	...	...	Nb.	...	9·0
28	SSW	2	SW	1	W	1	1·3	0·6	6	8	...	...	Nb.	SW	7	A.-Cu.	SW	Cu.-Nb.	SSW	10	...	...	...	...	8·3
29	SSW	2	SSW	2	E	2	2·0	3·3	32	9	A.-Cu.	SW	Nb.	SW	6	A.-Cu.	S	Cu.-Nb.	S	0	...	...	...	...	5·0
30	S	3	S	3	SSW	3	3·0	7·7	77	3	Ci.	SE	...	...	3	Ci., A.-Cu.	SW	...	...	10	...	...	Nb.	...	5·3
31	SSW	3	SSW	3	SSW	3	3·0	3·1	31	7	...	...	Nb.	SW	10	...	...	...	...	10	...	...	...	...	9·0
Means		3·0		3·2		2·6	2·9	109·2	32·7	6·7	—	—	—	—	6·9	—	—	—	—	7·5	—	—	—	—	7·0
Normal		3·5		3·8		3·5	3·6	128·8	38·6	6·7	—	—	—	—	6·5	—	—	—	—	6·2	—	—	—	—	6·5

* Actinic rays by Jordan Recorder.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	..	7·4	7·4	...	...	6·2	9·2	...	...	3·3	7·9	...	...	...	6·9	...	13·6	1	50
2	1·4	...	7·1	...	2·6	...	6·4	...	5·4	...	8·1	...	5·4	...	8·1	...	19·3	23	15
3	8·8	...	8·8	...	10·6	...	7·1	...	10·6	...	7·1	...	9·7	...	4·0	...	22·6	13	15
4	...	2·5	12·6	...	...	2·2	10·9	...	1·3	...	6·8	...	6·5	...	6·5	...	20·8	24	0
5	11·1	...	7·5	...	4·2	...	6·2	...	7·4	...	7·4	...	12·3	...	8·2	...	24·6	22	35
6	8·6	...	8·6	...	8·7	...	13·0	...	5·7	...	13·7	...	5·8	...	8·7	...	26·3	10	25
7	13·3	...	5·5	...	9·8	...	14·7	...	5·4	...	13·0	...	2·2	...	10·9	...	27·8	5	0
8	2·4	...	12·3	...	2·3	...	11·6	...	2·0	...	10·0	...	1·7	...	8·3	...	20·0	0	55
9	7·9	...	3·3	...	9·0	...	1·8	...	6·5	...	6·5	...	7·8	...	7·8	...	21·0	23	40
10	9·6	...	6·4	...	10·9	...	7·3	...	8·8	...	3·6	...	3·3	...	4·9	...	20·9	8	50
11	1·3	...	1·9	...	...	2·0	3·0	...	...	2·5	2·5	...	...	3·2	2·2	...	9·8	23	55
12	...	9·6	...	1·9	...	9·8	...	...	...	5·7	2·4	...	...	7·5	...	...	13·4	7	55
13	...	4·0	1·6	...	...	1·6	...	0·3	6·8	...	1·3	...	8·5	...	...	...	17·8	22	25
14	10·5	...	...	...	...	1·5	7·7	...	...	...	4·9	...	...	...	7·9	...	18·3	1	55
15	...	...	6·2	...	...	...	6·9	...	...	5·9	...	7·6	...	5·1	...		13·0	19	15
16	...	5·8	5·8	...	...	5·7	3·8	...	...	8·5	5·7	...	...	9·1	3·8	...	14·8	23	30
17	...	9·8	6·6	...	...	8·3	...	1·7	...	8·7	...	1·7	...	9·2	...	...	16·7	4	45
18	...	8·5	...	...	...	10·2	...	...	...	3·6	...	8·8	...	2·6	...	6·4	14·0	4	45
19	...	2·9	...	6·9	...	2·3	...	5·5	...	2·5	...	2·5	...	2·1	...	2·1	10·1	7	0
20	...	5·5	...	1·1	...	5·8	...	3·9	...	6·9	...	6·9	...	2·7	...	4·1	12·8	15	10
21	...	2·4	...	5·7	...	1·9	...	4·5	...	2·0	...	4·8	...	1·1	...	2·8	9·4	11	55
22	...	Ca	lm	...	...	Ca	lm	...	...	1·6	...	...	...	2·5	...	1·7	5·0	23	45
23	...	3·0	...	2·0	...	3·8	...	2·6	...	3·0	...	2·0	...	5·5	...	2·3	8·2	20	5
24	...	Ca	lm	...	...	3·2	0·6	...	...	1·7	2·5	...	2·0	...	4·8	...	13·0	23	5
25	...	...	8·5	...	...	1·9	9·3	...	...	4·3	...	...	...	4·2	...	0·3	13·3	4	25
26	...	Ca	lm	...	...	0·9	...	1·3	4·2	...	...	0·8	4·0	...	1·6	...	8·7	22	15
27	3·0	...	3·0	...	3·0	...	3·0	...	3·2	...	2·2	...	5·5	...	3·7	...	11·0	21	20
28	6·8	...	4·6	...	7·1	...	4·7	...	8·5	...	5·7	...	7·6	...	5·1	...	15·8	15	45
29	6·9	...	2·9	...	4·8	...	2·0	...	4·8	...	2·0	...	4·8	...	1·0	...	13·0	5	25
30	6·1	...	...	1·2	9·6	...	...	1·9	12·9	...	...	2·6	9·0	...	1·8	...	20·8	15	50
31	6·2	...	4·2	...	8·3	...	1·7	...	9·7	...	4·0	...	4·2	...	4·2	...	16·9	14	10
S+N & W+E	165·3		143·6		158·2		152·6		157·5		153·3		157·6		135·7				
S−N & W−E	42·5		106·0		23·6		109·2		48·9		93·1		58·2		95·3				

SCOTLAND N.:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	...	3·8	2·6	...	...	3·0	3·0	...	0·4	...	2·3	...	5·1	...	1·0	...	7·5	24
2	6·4	...	2·6	...	5·6	...	5·6	...	3·8	...	2·6	...	1·7	...	1·1	...	9·2	1
3	5·2	...	...	...	7·1	...	1·4	...	2·3	...	5·5	...	2·6	...	0·5	...	9·2	12
4	0·4	...	2·3	...	0·7	...	3·5	...	2·6	...	6·4	...	7·5	...	...	...	10·2	23, 24
5	12·5	..	...	8·4	9·2	...	...	...	6·3	...	6·3	...	8·2	...	3·4	...	15·4	4
6	12·4	...	...	5·1	15·1	...	...	3·0	13·9	...	9·3	...	10·2	...	10·2	...	17·4	14
7	10·9	...	2·2	...	12·3	...	...	2·4	6·1	...	1·2	...	6·8	...	4·6	...	16·1	7
8	6·7	...	10·1	...	2·6	...	6·4	...	1·9	...	9·6	...	...	...	6·6	...	14·8	4
9	1·0	...	4·8	...	6·9	...	...	...	9·6	...	...	1·9	10·9	...	...	2·2	13·4	13
10	1·3	...	1·9	...	5·7	...	2·4	...	10·2	...	...	...	7·9	...	3·3	...	11·8	16
11	3·5	...	8·5	...	0·7	...	3·5	...	1·7	...	2·5	...	0·9	...	2·1	...	9·5	1
12	...	...	1·6	...	0·9	...	2·1	...	...	2·3	5·5	...	...	1·3	3·0	...	6·9	13, 15
13	...	1·6	1·6	...	...	Ca	lm	...	3·5	...	...	3·5	8·5	...	...	5·7	11·8	24
14	11·2	...	...	4·6	10·3	...	...	4·3	7·6	...	...	3·1	6·7	...	...	2·8	12·8	3
15	6·9	...	...	...	6·2	...	...	...	5·8	...	1·2	...	2·8	...	2·8	...	7·5	1, 2
16	2·1	...	2·1	...	...	...	5·2	...	...	4·0	9·7	...	...	0·8	1·8	...	10·5	15
17	...	6·1	2·5	...	...	9·6	1·9	...	...	10·3	2·0	...	...	9·7	...	4·0	13·4	17
18	...	5·6	...	5·6	...	4·9	...	4·9	...	6·6	...	4·4	...	4·7	...	4·7	10·2	5
19	...	2·6	...	3·8	...	4·2	...	4·2	...	2·5	...	2·5	...	3·3	...	3·3	6·6	8
20	...	4·0	...	1·6	...	3·8	...	0·8	...	4·3	...	...	...	4·6	...	...	5·6	18, 19
21	...	2·1	...	0·9	...	Ca	lm	...	1·0	...	...	2·4	3·5	...	...	3·5	5·6	19, 22, 23
22	4·0	...	...	4·0	...	Ca	lm	...	0·3	...	1·6	...	0·7	...	3·3	...	5·6	3
23	1·3	...	3·0	...	...	1·5	3·6	...	...	0·8	4·2	...	...	0·8	3·8	...	7·9	6
24	3·7	...	5·5	...	5·6	...	5·6	...	5·6	...	5·6	...	...	...	10·8	...	13·1	22
25	5·1	...	12·4	...	...	7·8	7·8	...	...	8·7	1·7	...	...	4·6	...	...	14·4	2
26	...	Ca	lm	...	0·9	...	...	4·5	6·1	...	...	1·2	1·3	...	0·3	...	7·9	9
27	...	Ca	lm	...	...	Ca	lm	...	1·3	...	1·9	...	4·9	...	...	...	10·8	24
28	9·3	...	...	1·9	11·1	...	...	...	8·0	...	1·6	...	2·5	...	6·1	...	12·1	10
29	1·4	...	2·2	...	1·4	...	2·2	...	1·8	...	1·8	...	3·6	...	...	...	9·2	24
30	8·5	...	...	3·5	11·6	...	...	2·3	10·4	...	...	7·0	13·9	...	...	9·3	18·0	23
31	10·2	...	...	...	4·3	...	...	...	13·0	...	...	5·4	1·9	...	4·5	...	14·8	1
S+N & W+E	149·8		105·3		153·0		80·6		162·7		113·9		141·9		104·7			
S−N & W−E	98·2		26·5		83·4		27·8		83·7		51·1		82·3		33·7			

ENGLAND S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	7·8	1·5	...	...	4·9	1·0	...	...	3·8	3·8	...	...	4·5	4·5	...	11·8	9	40
2	...	1·1	5·3	...	...	...	6·3	...	2·6	...	6·2	...	4·7	...	4·7	...	9·9	23	40
3	6·2	...	6·2	...	6·2	...	4·2	...	6·6	...	2·7	...	...	...	10·8	...	16·9	23	40
4	...	8·2	12·1	...	...	7·4	7·4	...	...	3·7	5·6	...	1·9	...	4·6	...	18·7	3	55
5	3·8	...	9·2	...	3·8	...	9·2	...	5·8	...	8·6	...	9·4	...	9·4	...	18·0	23	35
6	10·6	...	10·6	...	...	...	12·5	...	...	...	10·8	...	4·2	...	6·2	...	20·2	3	20
7	9·4	...	6·3	...	...	3·2	15·6	...	...	3·1	15·1	...	...	5·4	13·1	...	24·2	16	45
8	...	4·6	11·1	...	...	8·2	12·1	...	...	4·1	9·9	...	...	1·4	7·0	...	22·8	5	0
9	7·3	...	4·9	...	1·8	...	9·0	...	1·9	...	9·4	...	4·4	...	6·6	...	14·5	5	25
10	5·9	...	5·9	...	8·5	...	3·5	...	8·6	...	1·7	...	...	1·3	3·1	...	14·1	12	50
11	...	2·1	5·0	...	...	3·5	3·5	...	...	5·0	2·1	...	...	6·2	4·2	...	13·5	23	55
12	...	11·1	2·3	...	...	9·2	...	...	...	8·6	1·7	...	...	5·8	...	...	17·0	4	50
13	...	4·6	...	...	...	1·2	1·2	...	3·8	...	3·8	...	8·6	...	1·7	...	?	?	
14	6·9	...	2·9	...	...	7·4	7·4	...	...	6·2	6·2	...	...	5·8	8·6	...	14·1	7	55
15	...	4·0	9·6	...	...	7·1	7·1	...	...	9·4	6·3	...	...	10·4	7·0	...	17·0	5	25
16	...	7·7	5·1	...	...	5·0	2·1	...	...	5·9	3·9	...	...	4·3	1·8	...	15·9	1	50
17	...	4·2	...	...	...	10·0	...	...	...	10·8	...	...	...	7·1	...	...	15·8	15	0
18	...	7·5	...	...	...	8·3	...	...	...	3·8	...	...	...	1·8	1·8	...	13·9	8	20
19	3·9	...	...	1·6	2·1	...	...	5·0	2·1	...	...	5·0	1·1	...	...	2·7	9·4	12	0
20	...	0·7	...	1·6	...	6·9	...	2·9	...	5·0	...	2·1	...	5·3	...	5·3	12·4	10	25
21	...	5·3	...	5·3	.	3·9	...	5·9	...	3·5	...	3·5	...	1·3	...	3·1	12·3	3	10
22	...	1·2	...	1·8	...	0·5	...	1·2	...	0·4	...	0·2	...	0·3	...	0·3	5·5	1	0
23	0·3	...	...	0·7	...	2·3	...	2·3	...	3·5	...	3·5	...	5·0	...	5·0	9·6	19	25
24	...	3·8	...	3·8	...	1·6	...	3·9	...	3·8	...	...	...	4·3	...	1·8	8·2	0	45
25	...	4·2	2·8	...	...	4·7	4·7	...	...	4·7	4·7	...	...	3·5	5·2	...	8·7	22	0
26	...	3·5	3·5	...	0·8	...	1·9	...	2·7	...	2·7	...	...	1·8	2·7	...	6·3	14	40
27	...	...	2·5	...	1·9	...	0·8	...	No re	cor	d		No re	cor	d		5·1	2	25
28	No re	cor	d		No re	cor	d		3·5	...	1·5	...	3·8	...	...	...	6·5	20	10
29	3·3	...	...	...	6·2	...	...	1·2	4·8	...	...	3·2	7·3	...	...	4·9	12·5	22	25
30	3·6	...	...	5·8	No re	cor	d		7·0	...	10·4	...	...	...	7·5	...	17·6	11	5
31	3·8	...	2·6	...	5·4	...	...	...	6·7	...	...	...	0·2	...	...	...	11·7	21	45
S+N & W+E	151·6		130·0		132·0		131·9		141·4		134·6		130·1		133·6				
S−N & W−E	−11·6		88·8		−58·6		87·1		−29·2		99·6		−20·9		87·4				

ENGLAND E.:—GREAT YARMOUTH.

Height of Head above—Roof 10·7 m., Ground 12·8 m., M.S.L. 15·9 m.
Height of Cups above—Roof 3·7 m., Ground 18·3 m., M.S.L. 22·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust (Gorleston).	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11·4	12	20
2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9·1	11	55
3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13·0	14	0
4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11·3	14	10
5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	15·5	8	55
6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17·3	7	15
7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18·5	9	5
8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10·8	11	0
9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	18·9	15	55
10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	14·5	10	5
11																	10·3	1	15
12																	12·8	5	10
13																	14·3	5	10
14																	12·2	13	30
15	The direction recorder was out of action until the 20th.																6·0	8	0
16																	8·8	9	0
17																	6·0	14	20
18																	7·5	22	20
19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10·3	14	15
20	...	6·9	...	...	...	9·5	...	...	...	9·3	...	...	...	10·0	...	2·0	14·4	6	10
21	...	8·3	...	1·7	...	5·5	...	2·3	...	6·2	...	4·2	..	Ca	lm	...	14·0	0	20
22	...	Ca	lm	...	...	Ca	lm	...	2·7	...	...	1·8	1·9	...	...	1·3	7·0	13	45
23	...	Ca	lm	...	...	Ca	lm	...	...	1·8	1·8	...	...	2·5	2·5	...	8·0	19	20
24	...	3·3	1·4	...	...	3·3	1·4	...	...	3·3	...	...	...	1·6	...	...	7·2	1	45
25	...	...	2·3	...	1·1	...	2·8	...	0·7	...	3·5	...	...	2·8	1·1	...	7·4	9	5
26	...	1·8	0·8	...	...	1·9	1·3	...	..	Ca	lm	...	..	Ca	lm	...	6·0		!
27	...	0·6	1·5	...	3·3	...	1·4	...	1·7	...	0·3	...	2·0	...	0·4	...	10·4	10	5
28	2·0	...	0·4	...	2·2	...	1·4	...	3·2	...	0·6	...	2·3	...	...	...	8·4	4	35
29	...	Ca	lm	...	...	Ca	lm	...	1·6	...	0·3	...	1·5	...	0·6	...	6·2	16	30
30	3·3	...	...	1·4	5·5	...	...	3·7	6·0	...	...	6·0	4·3	...	...	2·9	15·0	17	25
31	2·7	...	...	1·8	...	Ca	lm	...	3·0	...	...	...	2·4	...	...	1·0	15·9	0	15
S+N & W+E	...		...		...		...		...		...		...		...				
S−N & W−E	...		...		...		...		...		...		...		...				

9. Seismological Diary.

Earthquakes:—Eskdalemuir.

Day.	Phase.	Time, G.M.T.	Period.	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	Δ.	Remarks.
		h m s	s	μ	μ	μ	km.	
2	L	1 18 to	...	...	...	...	...	
		1 35	...	...	...	...	...	
4	S?	1 56 41	...	...	...	...	...	Faint disturbance.
	L	2 30	...	...	...	...	...	
9		9 44 to	...	..	...	...	...	Slight disturbance; initial phases obscured by microseisms.
		10 40	...	...	...	...	...	
10	L	16 28 to	...	...	...	...	...	
		16 32	...	...	...	...	...	
11	P	14 24 51	...	...	...	...	6560	Porto Rico earthquake. Time at epicentre 14 h. 14 m. 48 s. Larger displacements indistinctly photographed.
	PR_1	14 27 41	...	...	...	...	...	
	PR_2	14 28 32	...	...	...	...	...	
	S	14 32 57	...	...	...	...	...	
	F	18 20	...	...	...	...	...	
12		8 37 to	...	...	...	...	...	Slight disturbance; no well-marked initial phases. Long waves of 20 s. period on E.-W. record at 8 h. 52 m.
		9 20	...	...	...	...	...	
12		13 2 to	...	...	...	...	...	Slight disturbance.
		13 42	...	...	...	...	...	
13		3 32 to	...	...	...	...	...	Faint disturbance.
		3 45	...	...	...	...	...	
14		0 41 to	...	...	...	...	...	Slight disturbance, with long waves of 17 s. period at 1 h. 3 m.
		1 20	...	...	...	...	...	
14	i	12 18 16	...	...	...	...	...	Two disturbances.
	i	12 21 47	...	...	...	...	...	
	i	12 53 31	...	...	...	...	...	
	L	13 8	...	...	...	...	...	
	F	14 32	...	...	...	...	...	
15	L	18 23 to	...	...	...	...	...	
		18 32	...	...	...	...	...	
15	L	22 56 to	...	...	...	...	...	
		23 7	...	...	...	...	...	
16	L	0 16	...	...	...	...	...	
16	P	20 24 43	...	...	...	...	...	
	S	20 35 41	...	...	...	...	...	
	L	20 59	22	...	...	...	...	
	F	22 35	...	...	...	...	...	
18	P	21 52 3	...	...	...	...	4800	
	L	22 4 30	...	...	...	...	...	
	F	22 35	...	...	...	...	...	
19	P	2 23 13	...	...	...	...	5800	
	L	2 38 30	...	...	...	...	...	
	F	3 0	...	...	...	...	...	
19	P	3 34 50	...	...	...	...	8500	
	S	3 44 35	...	..	...	...	..	
	SR_1	3 50 7	...	...	...	...	...	
	L	3 59 30	...	...	...	...	...	
	M	4 9 49	19	...	14	...	...	
	F	6 15	...	...	...	...	...	
20	P	5 48 47	...	...	...	...	2160	
	S	5 52 24	...	...	...	...	...	
	L	5 53	15	...	...	...	...	
	F	6 0	...	...	...	...	...	
20	L	15 16	16	...	...	...	...	
21	L	18 34	16	...	...	...	...	
25	P	3 53 10	...	...	...	...	6600	
	S	4 1 18	...	...	...	...	...	
	L	4 11	...	...	...	...	...	
	M	4 15 32	19	.	22	...	...	
	F	5 10	...	...	...	...	...	
25		19 54 to	...	...	...	...	...	Slight disturbance.
		20 21	...	...	...	...	...	
26		2 19 30 to	...	...	...	...	...	Slight disturbance.
		2 40	...	...	...	...	...	
26	L	17 22 to	...	...	...	...	...	
		18 10	...	...	...	...	...	
29		13 0 to	...	...	...	...	...	Slight disturbance.
		13 30	...	...	...	...	...	

Note.—Time marker out of action on 27th: hence no details given of two disturbances between 15 h. 49 m. and 20 h.

Microseisms of N. Component:—Eskdalemuir.

Day.	0 h. A_N.	0 h. T.	6 h. A_N.	6 h. T.	12 h. A_N.	12 h. T.	18 h. A_N.	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	0·2	4	0·2	4	0·1	4	0·3	3·5
2	0·4	3·5	0·7	4	0·6	5	0·9	4
3	1·2	5·5	0·9	6	1·4	6	1·2	4·5
4	1·1	5	1·1	5·5	1·2	4·5	1·1	6
5	1·6	6	1·7	6	1·6	6	1·6	6
6	2·1	6·5	2·0	7	4·9	7	4·8	6
7	2·7	8	3·2	6	3·9	6	...	...
8	3·9	6	2·8	7	3·2	6	3·1	6
9	2·5	6	2·1	6	2·3	6	2·4	6
10	3·7	6	2·2	6·5	3·5	6	3·0	6
11	2·7	6	1·9	6	2·1	5·5	1·7	4·5
12	1·2	6	0·9	6	0·9	5	0·5	5
13	0·6	4·5	0·8	4	1·1	4	1·6	6
14	2·6	5·5	1·9	5	2·1	5·5	2·3	6
15	1·9	4	1·2	4	1·5	4·5	1·1	4
16	1·1	4	0·9	4	0·6	4	0·6	4
17	0·6	4	1·1	4	1·1	4	1·1	4
18	1·6	4	1·1	4	0·9	4	0·7	4
19	0·5	4	0·2	4	0·3	3·5	0·2	4
20	0·3	4	0·4	3	0·2	4·5	0·2	4
21	0·2	4·5	0·6	4	0·3	4	0·3	4
22	0·3	4·5	0·6	5	0·5	5	0·9	4
23	0·8	6	0·9	4	0·7	4·5	0·7	4
24	0·5	5	0·1	5	0·3	4	0·6	4
25	1·0	4	1·1	4	1·4	4	1·1	4
26	1·5	4·5	1·4	4	1·1	4·5	1·4	4
27	1·1	4	0·9	4	0·7	5	...	...
28	1·2	6	1·3	5	1·2	6	1·2	5·5
29	1·5	5	2·0	4	1·6	6	1·6	6
30	1·8	5	1·6	5	2·1	4·5	2·5	5
31	2·5	4·5	1·7	6	1·8	5	1·4	5

Means for Month $\begin{cases} A_N = 1·4. \\ T = 4·9. \end{cases}$ Normals, 1911–17 $\begin{cases} A_N = 1·3. \\ T = 5·3. \end{cases}$

Earthquakes:—Richmond (Kew Observatory).

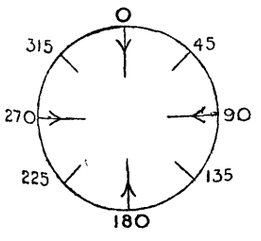
Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h m	h m	
4	...	2 13	Very small.
10	...	16 33	Very small.
11	14 24	14 54	Amplitude on trace > 17 mm.
12	...	9 4	Small.
12	...	13 13	Very small.
14	...	1 11	Small.
14	...	13 30	Small.
16	...	20 36	Very small.
18	...	22 14	Very small.
19	...	4 19	Small.
20	...	5 56	Very small.
20	...	15 20	Small.
21	...	18 39	Very small.
25	4 2	4 23	Succession of small waves to 5 h.
26	...	2 24	Very small.
27	16 39?	17 4	Succession of small waves.
27	18 12?	18 28	Amplitude on trace 1·3 mm.
29	...	12 55	Very small.

10. Soundings with Pilot Balloons.

Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	m/s.	By Anemometer. From N.	m/s.	At Heights above M.S.L. 500 m. From N.	m/s.	1000 m. From N.	m/s.	2000 m. From N.	m/s.	3000 m. From N.	m/s.	4000 m. From N.	m/s.	5000 m. From N.	m/s.	Cloud Observations. Type.	From N.	mr/s.
		h. m.	°		°		°		°		°		°		°		°			°	
1	S. Farnboro'	7 35	315	9	290	4·0	330	9·5	335	9·0	325	7·5	315	10·0	345	14·5	355	20·5	...	...	...
2	Aberdeen	7 30	225	14	215	3·0	245	8·5	260	13·0	275	12·5	...	...	...	...	...	...	A.-St.	...	...
4	S. Farnboro'	7 35	295	13	235	5·0	305	13·0	300	14·5	270	11·5	250	19·5	...	...	...	...	St.-Cu., A.-Cu.	...	...
4	Cahirciveen	7 20	295	14	310	5·0	290	10·5	290	19·5	295	20·5	...	...	...	...	...	...	Ci., Ci.-Cu.	...	...
4	,,	11 20	270	15	260	8·0	255	18·0	255	12·5	260	14·0	...	...	...	...	...	...	Ci., Cu.	295	...
6	,,	15 55	245	25	255	11·0	260	15·0	265	21·0	265	22·0	...	...	...	...	...	...	Ci.-St.	270	...
7	,,	15 50	245	30	275	8·0	290	12·0	305	17·0	300	15·5	...	...	...	...	...	...	Cu.	245	...
8	S. Farnboro'	7 30	270	12	225	1·0	275	11·5	275	13·0	260	7·0	255	11·5	255	12·5	...	...	Cu.	270	...
11	Aberdeen	7 30	?	?	calm		275	7·5	270	4·0	295	4·0	240	11·0	...	...	...	...	A.-Cu.	270	...
11	Cahirciveen	10 55	335	8	340	4·5	325	10·0	315	10·5	310	11·0	260	5·0	...	...	...	...	Cu. and St.	295	...
12	,,	8 55	335	10	350	3·0	355	7·0	355	12·0	330	9·0	...	...	...	...	...	...	Ci.-St., St.-Cu.	...	...
12	,,	15 45	360	8	?	5·3	335	6·5	350	7·0	355	12·0	330	10·0	...	...	...	...	Ci., Ci.-Cu.	225	...
12	Eskdalemuir	7 10	360	5	360	2·3	5	6·5	360	3·5	315	4·2	125	0·5	165	3·4	165	8·0	Ci., Ci.-Cu.	205	...
13	,,	7 10	?	?	calm		140	0·8	225	3·0	295	3·1	300	3·8	305	3·4	295	4·6	Cu.	315	...
13	,,	17 10	205	15	180	3·0	205	10·0	200	9·5	225	8·0	225	10·0	...	...	...	...	Cu.	335	...
15	S. Farnboro'	7 40	295	10	250	1·5	335	8·5	335	6·5	300	2·0	...	...	...	...	...	...	Ci., Ci.-St.	160	4·0
16	Eskdalemuir	7 40	335	5	calm		325	5·5	355	8·0	340	5·0	255	1·2	220	4·1	185	9·5	A.-Cu.	175	2·1
17	,,	16 15	360	10	360	5·5	350	9·5	360	14·5	10	9·0	...	...	...	...	...	...	Ci.	320	3·4
19	Cahirciveen	16 45	65	5	light		70	7·0	80	6·0	95	10·0	80	8·5	60	13·5	55	11·0	Ci., A.-St.	...	...
20	,,	7 30	65	5	calm		50	4·5	45	5·5	50	5·5	65	6·5	85	8·0	...	...	St.-Cu.	225	...
20	,,	16 15	45	8	20	3·2	25	5·5	25	8·0	25	9·5	35	13·5	30	8·5	...	...	A.-St.	...	...
21	,,	7 30	90	10	55	3·4	30	10·0	50	9·5	50	2·4	45	12·5	45	12·5	40	11·0	Nb., Ci., Ci.-St.	...	...
22	,,	7 25	?	?	50	1·0	?	?	280	3·5	275	6·0	...	...	...	...	...	...	Cu., Fr.-Cu.	335	...
22	,,	16 45	?	?	calm		350	1·0	300	1·8	330	2·3	130	0·4	345	6·0	...	...	A.-St.	...	...
22	S. Farnboro'	8 5	?	?	115	1·5	185	9·0	185	9·5	185	11·5	...	...	...	...	...	...	Fr.-Nb.	360	...
22	Aberdeen	7 30	360	4	calm		255	1·5	285	1·0	215	3·0	...	...	...	...	...	...	St.	...	...
23	Eskdalemuir	7 15	270	5	calm		315	3·5	360	5·5	350	8·0	290	9·0	260	7·0	285	4·0	A.-Cu.	25	...
23	Cahirciveen	7 25	65	5	calm		55	2·7	5	2·2	355	4·5	5	5·0	30	7·5	25	8·5	Ci.-St.	...	...
23	,,	15 30	65	8	40	?	70	4·3	80	1·7	40	5·5	40	6·0	5	7·5	20	10·0	A.-St., Fr.-St.	...	...
24	,,	7 20	?	?	calm		?	?	?	?	300	4·7	280	5·5	305	6·5	310	7·0	Ci.	340	1·5
									6000 m.		7000 m.		8000 m.		9000 m.		10,000 m.		Cu.	...	...
12	Eskdalemuir	7 10							170	19·0	...	...	...	...	...	...	...	...	Ci.-Cu.	45	...
16	,,	7 40							180	7·5	...	...	...	...	...	...	...	...	Ci.-Cu.	335	...
19	Cahirciveen	16 45	(For observations at lower levels, see above.)						40	14·5	...	...	...	...	...	...	...	...			
23	Eskdalemuir	7 15							340	9·5	...	...	...	...	...	...	...	...			
23	Cahirciveen	15 30							45	10·5	45	23·0	...	...	...	...	...	...			
24	,,	7 20							305	7·0	325	5·5	325	10·0	320	11·0	320	10·5			

Height of Station above M.S.L. = H.
Height of Anemometer above ground = h.

	H.	h.
Aberdeen	14 m.	32 m.
Eskdalemuir	242 m.	15 m.
S. Farnborough	70 m.	31 m.
Cahirciveen	9 m.	13 m.



Wind Protractor.

Notes on Pressure Distribution.

October 1918.
1 7 h. High over the British Isles; Low over the Baltic and Iceland.
2 7 h. Deep depression centred over Iceland; anticyclonic ridge from the Azores to England.
4 7 h. "V" shaped isobars over the British Isles.
13 h. Low to the north and High to the south of the British Isles; south-westerly gradient.
6 18 h., 7 18 h., 8 7 h. } Westerly type.
11 7 h., 13 h. Shallow Low between Iceland and Norway; shallow secondary over England.
12 7 h., 18 h. High to the W. of the British Isles; depression over the Channel; northerly gradient.
13 7 h. Anticyclonic ridge extending from the Azores to S.W. England; slight gradient.
18 h. Shallow Low over N.W. of Ireland.
15 7 h. Low centred between Scotland and Iceland; secondary over the Channel.
16 7 h. Lows centred over the Faroe Islands and Holland; an anticyclone to the W. of the British Isles.
17 18 h. Low centred over the North Sea.
19 18 h., 20 7 h., 18 h., 21 7 h., 22 7 h., 18 h. } Variable anticyclonic type; slight gradient.
23 7 h., 18 h., 24 7 h. } Anticyclonic ridge across the British Isles.

Notes on Ascents.

2nd, 7 h. 30 m. Dense A.-St.
4th, 7 h. 35 m. Cloud amount decreasing.
6th, 15 h. 55 m. Sky clearing during ascent.
8th, 7 h. 30 m. Overcast.
13th, 7 h. 10 m. Barometer falling.
16th, 7 h. 40 m. Barometer unsteady.
17th, 16 h. 15 m. Overcast; barometer rising; drops of rain falling during ascent.
19th, 16 h. 45 m. Thick surface haze.
21st, 7 h. 30 m. Tendency to stationary clouds.
22nd, 8 h. 5 m. Dense surface mist.
22nd, 7 h. 30 m. Dense A.-St.
24th, 7 h. 20 m. Clouded over rapidly.

10. Soundings with Pilot Balloons—*continued.*

Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	m/s.	By Anemometer. From N.	m/s.	At Heights above M.S.L. 500 m. From N.	m/s.	1000 m. From N.	m/s.	2000 m. From N.	m/s.	3000 m. From N.	m/s.	4000 m. From N.	m/s.	5000 m. From N.	m/s.	Cloud Observations. Type.	From N.	mr/s.
		h. m.	°		°		°		°		°		°		°		°			°	
24	Aberdeen	7 30	270	13	250	2·0	245	6·5	280	7·5	300	10·5	280	15·0	...	...	...	...	A.-St.	270	...
25	S. Farnboro'	8 0	315	8	240	0·0	295	7·0	315	7·5	320	7·0	...	...	...	...	...	...	Nimbiform A.-St.	...	...
25	Eskdalemuir	7 10	315	10	calm		?	?	340	8·5	320	9·5	305	20·5	300	20·0	...	...	Ci.-St. Cu.	2 315	... ...
26	Aberdeen	7 30	?	?	245	1·5	95	0·5	175	1·0	270	0·5	355	3·0	30	4·0	...	...	...	...	...
27	Cahirciveen	7 25	270	5	calm		330	3·7	285	6·0	255	9·5	...	...	...	...	...	...	Cu. A.-Cu. Ci., Ci.-Cu.	360 ... 270	... ...
31	,,	15 40	295	12	?	5·0	320	8·0	315	8·0	270	6·5	230	13·5	...	...	...	...	Cu. Ci., Ci.-Cu., A.-Cu.	335 205	... ...

Notes on Pressure Distribution.

October 1918.

25 7 h. Deep depression centred near Skudesnaes.

26 7 h. } Lows over the Baltic and Iceland; slight gradient.

27 7 h. }

31 18 h. Low over the British Isles, centred off S.W. of Iceland.

Notes on Ascents.

25th, 8 h. 0 m. Overcast.

25th, 7 h. 10 m. Barometer unsteady; inclined to rise.

11. Nephoscope Observations.

Aberdeen. Taken at 13 h. G.M.T.

Day.	Type of Cloud.	Degrees from N.	Velocity-height-ratio. Milliradians per Second.	Components. W.-E.	S.-N.	Remarks.
		°	mr/s.	mr/s.	mr/s.	
1	Cu.	330	10·0	+ 5·0	− 8·7	[A.-St. Observation at 12 h.
4	A.-Cu.	235	2·1	+ 1·7	+ 1·2	Thin, partially formed A.-Cu., apparently developed from Ci.-Cu. in dense sheets.
5	Ci.-Cu.	269	5·0	+ 5·0	+ 0·1	
7	Nb.	214	18·0	+10·0	+15·0	Broken "Scud" below Cu.-Nb.
10	St.	216	20·0	+12·0	+16·0	Really "Scud" cloud.
12	Ci.-St.	179	3·1	− 0·1	+ 3·1	Ci. to Ci.-St., with ⊕.
15	Cu.	210	10·0	+ 5·0	+ 8·7	Low Fr.-Cu. type.
23	Ci.	300	3·0	+ 2·6	− 1·5	Sheets of "false" Cirrus.
26	Ci.	286	2·0	+ 1·9	− 0·6	Ci. to transitional type between Ci. and Ci.-Cu.
29	St.-Cu.	260	4·0	+ 3·9	+ 0·7	Measurements approximate.
30	Ci.-Cu.	192	2·0	+ 0·4	+ 2·0	Ci.-Cu. in lenticular sheets; much internal change.
31	Ci.	203	2·4	+ 0·9	+ 2·2	Areas and patches of "False" Ci.

The interval from 16th to 22nd was characterised by cloud of St. or Nb. type, without detail.

12. Aurora.

Day.	a.m. or p.m.	Moon.	Magnetic Character. Eskdalemuir.	Richmond.	Aurora Observations. Station.	Remarks.
4	p.	...	1, 2	2, 2	Baltasound	
5	...	●	...	...	...	
6	p.	...	1, 1	1, 1	Malin Head Donaghadee Meltham	23 h. slight.
8	p.	...	2, 1	2, 1	...	Aurora was observed over Scotland generally, in N.E. Ireland, and in the N.W. of England during the night of the 8th.
9	a.	...	2, 1	2, 1	Bidston	Fine auroral streamers 1 h. 15 m.–1 h. 25 m.
11	p.	...	0, 0	0, 0	Deerness	
13	...	☽	...	...	...	
15	p.	...	1, 2	1, 2	Deerness	
16	p.	...	2, 2	2, 2	Baltasound Deerness	
17	p.	...	2, 1	2, 1	Edinburgh	
19	...	○	...	...	...	
26	...	☾	...	...	...	

Note.—The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at the midnight of the night in question.

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*

Eighth Year.—No. 11. NOVEMBER 1918.] Units based on the C.G.S. System. [*Price* 1*s.*

1. SUNSHINE AND SOLAR RADIATION.

Day.	WESTMINSTER. Bright Sunshine.* Total.	Per cent. of Possible.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W. Radiation received on Horizontal Surface by Callendar Radiograph. Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Time.	11.30 h. to 12.30 h.	RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation at Noon by Ångström Pyrheliometer. Intensity.	Vertical Component.	Sky.	ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation by Ångström Pyrheliometer. Time.	Sky.	$\frac{p}{p_0}$ sec Z.	Intensity.	CAHIRCIVEEN. Bright Sunshine.* Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	0·0	0	123	10	13	10 45	7	0·4	4	…	…	…	0·0	0	…	…	…	…	2·8	29
2	0·0	0	307	25	22	14 35	16	0·7	7	…	…	…	0·0	0	…	…	…	…	0·2	2
3	0·0	0	75	63	5	11 44	5	0·0	0	…	…	…	0·0	0	…	…	…	…	5·1	54
4	1·9	20	323	27	32	10 45	17	2·1	22	…	…	…	0·0	0	…	…	…	…	0·2	2
5	3·1	33	389	34	*x* 37	11 25	*x* 26	3·8	40	…	…	…	3·0	33	…	…	…	…	6·0	65
6	0·0	0	248	22	19	10 10	14	0·0	0	…	…	…	*x* 7·4	82	11 58	Fr.-Cu.	3·08	72	*x* 7·6	82
7	0·2	2	192	17	15	10 35	11	3·4	37	27	10	Hazy	0·0	0	…	…	…	…	0·0	0
8	1·9	21	251	23	24	13 15	13	2·3	25	…	…	…	0·6	7	…	…	…	…	5·6	61
9	*x* 6·0	65	*x* 438	41	24	11 29	24	*x* 6·6	72	52	19	Hazy	0·1	1	…	…	…	…	0·5	5
10	1·0	11	314	30	22	10 45	17	1·4	15	…	…	…	0·0	0	…	…	…	…	0·0	0
11	0·0	0	95	9	12	12 55	4	0·0	0	…	…	…	6·2	72	…	…	…	…	0·0	0
12	0·7	8	249	25	17	12 35	17	0·4	4	…	…	…	6·4	75	…	…	…	…	0·0	0
13	0·7	8	169	17	19	11 46	19	3·3	37	…	…	…	0·0	0	…	…	…	…	3·8	43
14	0·8	9	221	23	22	12 25	22	2·9	33	40	14	Hazy	3·9	46	…	…	…	…	1·3	15
15	4·3	49	305	32	22	13 23	20	4·4	50	…	…	…	4·0	48	12 4	Clear	3·88	57	5·4	61
16	3·0	34	296	32	21	12 30	21	3·4	39	…	…	…	6·1	73	12 2	Clear	4·54	61	0·3	3
17	0·0	0	129	14	9	11 27	8	0·0	0	…	…	…	6·4	78	…	…	…	…	0·0	0
18	0·0	0	179	20	10	11 4	9	0·3	3	…	…	…	6·6	80	11 57	Hazy	3·70	54	5·9	69
19	0·0	0	212	24	17	12 0	17	0·4	5	…	…	…	0·0	0	…	…	…	…	1·2	14
20	0·0	0	41	47	5	12 5	5	0·0	0	…	…	…	0·0	0	…	…	…	…	0·0	0
21	3·0	35	244	28	17	12 50	15	4·1	48	39	12	Hazy	4·8	60	11 59	Misty	3·86	50	0·6	7
22	4·8	56	265	31	17	11 5	16	6·1	72	51	16	Hazy	6·7	85	11 59	Clear	3·87	51	0·0	0
23	3·2	38	318	37	25	11 55	25	4·5	53	40	13	Hazy	0·1	1	…	…	…	…	0·8	10
24	0·0	0	109	13	10	14 10	3	0·0	0	…	…	…	0·5	6	…	…	…	…	1·6	19
25	0·0	0	187	23	18	9 20	15	0·4	5	…	…	…	2·1	27	…	…	…	…	0·0	0
26	0·0	0	133	16	7	10 0	6	0·0	0	…	…	…	0·0	0	…	…	…	…	3·8	46
27	0·8	10	203	25	20	11 35	20	1·2	14	39	12	Hazy	1·9	25	…	…	…	…	1·0	12
28	0·0	0	86	11	5	11 55	5	0·0	0	…	…	…	0·0	0	…	…	…	…	0·1	1
29	0·0	0	*n* 22	29	*n* 4	11 25	3	0·0	0	…	…	…	1·9	25	…	…	…	…	0·4	5
30	2·1	26	240	32	19	10 50	16	1·8	22	40	12	Hazy	0·2	3	…	…	…	…	0·0	0
Means	1·25	15	212	22	17	—	14	1·80	21	—	—	—	2·30	28	—	—	—	—	1·80	21
Normal	1·00	12	254	—	—	—	—	1·73	20	—	—	—	1·83	23	—	—	—	—	2·17	25
	←35 years→		3 years					←35 years→					←5 years→						←35 years→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M. S. L.:—H = 9·1 m. H_b = 13·7 m. H_a = 26·4 m. Above Ground: h_t = 1·3 m. h_r = 0·56 m. h_a = 13·9 m.

Day.	Air Pressure at Station Level. 9 h.	21 h.	Air Temperature in Degrees Absolute. 9 h.	21 h.	Max.	Min.	Humidity. Vapour Pressure. 9 h.	21 h.	Percentage. 9 h.	21 h.	Wind—Veer from North in degrees and Speed in metres per second. 9 h.		21 h.		Cloud Amount (0–10) and Weather. 9 h.	21 h.	Rain 0 h. to 24 h.	Min. Temp. on Grass.	REMARKS.	Magnetism. Horizontal Force. Declination West. and Inclination.
	mb.	mb.	*a.* 200+	*a.* 200+	*a.* 200+	*a.* 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	*a.* 200+		
1	998·7	978·9	77·6	80·7	83	74	6·8	9·8	81	94	55	3	70	5	3⌴	10●	12·7	72	Fine. ⌴ *n.* and *a.* c. to o. g. *p.*	
2	982·3	998·0	81·4	80·1	83	78	8·7	8·0	80	79	300	13	285	3	10●	2	9·0	79	● *n.* and *a.* 🌂 6 h. o. p. to fine *p.*	
3	1002·5	997·2	75·4	80·4	81	75	6·6	9·1	91	89	85	2	165	6	0	10●	5·8	73	☂² *n.* Fine *a.* c. to o. ● *p.*	
4	991·1	985·0	83·1	81·5	85	81	11·8	9·9	96	89	195	3	300	10	9	10	*x* 21·4	78	●⁰ *n.* and *a.* Dull day. ● *p.*	
5	1001·5	1013·2	80·9	79·8	83	78	8·4	7·5	79	76	245	10	300	6	4	3	1·5	79	o. *n.* Fine day.	
6	1020·8	1020·2	76·4	80·9	83	76	7·4	8·5	95	80	75	2	175	6	5	2	0·7	74	Fine.	
7	1013·4	989·2	83·6	83·3	84	80	11·4	12·0	90	97	175	10	180	15	10	10●	20·7	78	o. p. *n.* ● *a.* ☾●² 🌂 *p.*	— — 68° 5′·5
8	1010·7	1020·3	80·8	79·9	82	79	6·7	8·5	*n* 64	86	285	12	245	6	6	2	0·7	77	c. q. *n.* Fair day. p. evening.	—
9	1025·4	1027·9	82·0	83·2	84	80	9·9	11·4	87	92	240	7	215	5	10	10	2·0	78	Fine to c. *p.*	
10	1021·6	1021·5	83·8	84·3	85	83	11·2	12·9	87	97	185	10	225	8	10	10	7·0	82	d. to ●⁰.	17824 γ
11	1023·0	1024·8	84·6	84·1	85	83	13·4	11·7	99	89	—	0	100	4	10≡⁰	10	3·6	84	●⁰ *n.* d. to ●⁰ *a.* o. ≡⁰ *p.*	9th— 19° 32′·0 —
12	1026·0	1027·5	83·8	84·0	85	83	11·0	11·7	85	90	50	2	165	3	10	10	—	83	o. to c.	
13	1028·0	1024·7	83·9	81·8	85	81	11·1	8·1	86	72	155	7	140	7	7	8	—	81	o. to c. *n.* and *a.* Fine day.	
14	1019·8	1017·7	82·1	82·2	83	81	8·7	8·5	75	74	145	8	135	6	7	7	—	79	Fine day.	
15	1017·1	1018·7	83·3	81·8	84	81	9·0	8·3	72	74	120	8	100	6	8	1	—	80	Fine day.	
16	1020·8	1020·3	81·4	77·8	82	77	7·9	6·8	72	80	100	3	75	4	6	4∞	—	77	c. to o. *n.* Fine day. ∞	
17	1020·6	1022·5	78·8	79·3	*n* 80	77	7·2	7·1	79	74	80	2	—	1	10∞	10∞	—	73	o. with ∞.	
18	1024·8	1026·2	77·1	74·3	*n* 80	74	6·9	6·1	84	91	50	2	70	2	8	0	—	75	o. *n.* and *a.* Fine day. ∞	
19	1025·8	1020·2	78·7	81·3	82	*n* 73	7·1	8·3	77	76	145	3	155	10	10	10	—	*n* 70	Fine. ⌴ *n.* c. to o. ∞	
20	1016·8	1013·9	83·2	82·8	84	82	9·7	8·8	79	73	170	11	150	12	9	7	—	80	o. *n.* and *a.* Fair day.	
21	1010·7	1003·9	81·9	81·9	83	81	8·4	8·2	74	72	130	7	140	12	8	9	—	81	Fair day.	
22	998·4	998·6	83·4	83·6	84	82	9·4	12·3	75	97	125	9	175	2	9	10●	20·6	80	o. *n.* and *a.* ●² later.	—
23	1008·8	1009·1	82·0	80·5	83	79	9·5	9·2	83	89	360	6	160	3	6	8	3·0	—	● *n.* p. *a.* Fine day.	— 19° 36′·6
24	1002·5	1008·5	82·7	81·7	84	81	11·5	9·7	96	87	250	6	270	8	4	5	9·6	77	● *n.* and *a.* Fair day.	—
25	1006·3	1001·8	81·2	83·7	85	81	9·8	11·5	91	90	150	4	150	7	10	10	10·4	80	o. to ● *a.* Dull day. ●² *p.*	
26	1005·2	1004·9	82·5	81·9	85	81	11·1	10·2	94	90	240	4	215	4	10	3	2·8	81	o. *n.* and *a.* ⊕. Fine day.	
27	1008·7	1011·0	81·9	83·9	84	81	9·1	12·5	81	97	250	9	220	8	4	10●	1·6	79	Fair to p. *n.* and *a.* o. to ● *p.*	17846 γ 19° 32′·3
28	1012·3	1015·9	84·3	84·3	85	*x* 84	12·2	13·2	92	99	220	6	250	2	10	10	5·6	83	● *n.* and *a.* Damp day.	68° 6′·6
29	1015·5	1014·2	83·5	81·3	84	80	12·4	10·3	98	95	—	1	—	1	10	1♇	3·4	82	●⁰ *a.* Fine. ♌ and ♅ *p.*	
30	1012·7	1013·4	84·1	85·2	*x* 86	81	11·9	14·0	91	99	10	2	175	4	10	10	2·4	78	Fine. ♌ *n.* o. to d. later.	17835 γ
Means	1012·4	1011·6	81·6	81·7	83·5	79·6	9·5	9·8	84	86		5·7		5·9	7·8	7·1	144·5	78·4†	Monthly Totals or Means.	19° 33′·6
Normal	1011·3	1011·4	81·3	81·4	84·1	79·0	9·6	9·6	87	86		5·8		5·9	—	—	138·6	—	Normals.	68° 6′·1
	←45 years→						←30 years→				←35 years→						45 yrs.			

* By Campbell-Stokes Sunshine Recorder. † Mean for 29 days only. *x* denotes the maximum and *n* the minimum value in the column.

Wt. 37652/515—400—12/19.—N. & Co., Ltd. Gp. XV.

3. METEOROLOGY :—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 5·5 m. Barometer, H_b = 10·4 m. Cups of Anemometer, H_a = 25 m.
Heights above Ground :—Thermometers, h_t = 3·0 m. Rain-gauge, h_r = 0·53 m. Cups of Anemometer, h_a = 20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity.				Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	Remarks.
							Vapour Pressure.		Percentage.										
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
			a.	*a.*	*a.*	*a.*									Tenths of Sky covered.				
	mb.	mb.	200+	200+	200+	200+	millibar.		%	%	°	m/s.	°	m/s.			mm.	*a.* 200+	
1	1005·6	999·2	85·6	85·1	*x* 88	*x* 84	12·9	11·8	89	84	146	2	146	4	9	10	—	82	o. to 13 h. Fair later.
2	993·5	1001·9	86·9	82·2	87	82	11·3	9·6	*n* 72	83	203	9	214	2	8	4	4·1	81	● early. Dull to fine.
3	1001·9	1002·8	80·5	78·0	82	76	9·3	8·1	92	93	349	3	270	2	10 ● ≡⁰	1 ≡⁰	*x* 17·0	77	o. ● to 15 h. Fair to fine later.
4	1004·9	997·9	79·9	84·2	85	75	8·8	12·2	89	92	180	4	191	10	4 ☽	10 ●	6·1	69	⌙. Fine to dull. ● *p.* 🌈 at *n.*
5	1005·0	1013·8	83·4	81·4	86	80	10·2	9·8	81	89	236	4	214	2	2	? o ≡⁰	5·1	80	●² 2 h. 20 m. Fine to dull.
6	1021·2	1022·6	78·7	79·2	82	78	8·6	7·8	94	83	—	0	360	2	*10* ≡	? 9 ≡	—	74	☽. ≡ 9 h. Dull.
7	1024·1	1017·5	75·9	73·1	82	73	6·8	5·8	90	95	—	1	—	0	3 ≡⁰ ⌙	*10* ≡ ⌙	—	68	⌙. Fine *a.* ≡ *p.* ≡² at *n.*
8	1006·6	1022·5	82·5	76·6	83	75	10·9	6·4	92	82	203	8	281	2	10 ●	o ≡⁰	3·6	70	● 6 h.–10 h. 30 m. Dull *a.* Fine *p.*
9	1030·2	1032·1	74·4	79·0	83	72	5·1	8·3	76	89	—	1	225	2	o ≡⁰ ⌙	o ≡⁰	—	*n* 65	⌙. ≡⁰ early. Fine.
10	1031·7	1027·0	77·1	83·2	84	76	7·8	10·3	95	84	—	1	225	7	1 ≡	9	0·1	70	≡ 9 h. Fine to fair *a.* Dull *p.*
11	1024·7	1027·5	83·1	81·1	85	81	11·2	10·4	91	97	236	4	—	0	10	10 ≡⁰	3·9	81	● early. Dull. ● *p.*
12	1031·3	1033·2	76·8	78·8	82	76	6·8	7·1	85	78	—	1	—	1	? o ≡⁰	? o ≡⁰	—	69	⌙. Fine most of day. ≡⁰ *n.*
13	1034·2	1031·7	75·5	76·3	83	72	6·7	6·9	91	89	—	1	158	2	*10* ≡	? o ≡⁰ ⌙	0·1	67	⌙. ≡ *a.* Fine *p.* ≡⁰ ⌙ *n.*
14	1029·0	1027·7	72·3	75·7	82	*n* 70	5·3	6·7	92	90	—	1	—	1	*10* ≡ ⌙	*10* ≡	—	67	≡² to 11 h., then fine. ≡ *n.*
15	1026·5	1024·9	73·4	78·0	81	72	5·7	7·3	91	84	—	1	101	6	*10* ≡ ⌙	? o ≡⁰	—	66	⌙≡ to 9 h. 30 m. Fine later.
16	1024·9	1022·0	76·2	77·6	79	75	6·0	6·2	79	74	101	4	90	7	8 ≡⁰	10 ≡⁰	0·3	68	⌙. Fine after 9 h. 30 m.
17	1020·4	1021·6	76·9	77·6	78	76	5·9	6·2	73	74	34	3	68	5	10 ≡⁰	10	—	73	≡⁰ *a.* Dull.
18	1024·3	1025·9	76·2	77·0	80	76	6·6	6·6	86	81	—	1	326	2	3 ≡⁰	10	—	69	Dull after 9 h. 45 m.
19	1028·6	1029·2	77·2	75·7	79	75	7·3	7·1	89	95	—	1	—	1	10 ≡⁰	*10* ≡	—	68	Dull *a.* Fine *p.* ≡ *n.*
20	1028·9	1026·9	73·6	76·1	*n* 77	73	6·3	7·7	100	100	—	1	—	0	*10* ≡	*10* ≡ ⋮	0·1	70	≡☽. ≡² most of day.
21	1024·4	1018·5	74·9	75·7	81	75	6·9	6·3	98	85	—	1	124	3	*10* ≡ ⋮	? 1 ≡⁰ ⌙	0·2	73	≡² to 10 h. Fine after. ⌙⁰ *n.*
22	1013·2	1010·3	76·0	75·0	81	71	6·8	7·0	90	99	101	3	—	1	? 1 ≡⁰	*10* ≡	0·2	66	≡⌙. Fine. ≡² *n.*
23	1012·7	1014·2	73·2	80·8	83	71	6·1	9·7	98	92	113	2	236	2	? 5 ≡ ⌙	10 ≡⁰	—	67	≡²⌙ to 10 h. Fine later.
24	1010·7	1006·6	81·4	81·7	84	81	10·4	10·4	95	93	203	2	—	1	10 ≡⁰	4 ≡⁰	0·4	75	Dull, with ≡⁰. *p. n.*
25	1006·3	1008·5	80·7	79·3	82	77	9·7	8·3	93	87	225	2	293	2	5 ≡⁰	4	1·2	76	Fine to o. ● early and in *p.*
26	1009·3	1004·8	74·4	81·8	82	74	6·3	10·9	93	97	—	1	203	2	*10* ≡	10 ● ≡⁰	5·5	68	⌙. ≡ *a.* o. with ≡⁰ *p.* ● *p.*
27	1007·1	1012·9	78·0	77·2	83	76	8·3	7·5	96	92	270	2	248	2	9 ≡⁰	o ≡⁰	—	72	o. to fine.
28	1011·7	1012·1	80·7	83·6	84	76	10·0	12·2	96	96	236	4	270	3	10 ● ≡⁰	10	5·1	69	Dull, with ● most of day.
29	1013·8	1015·7	82·4	79·5	85	78	11·4	9·0	97	93	—	1	—	1	*10* ≡	? o ≡⁰	0·3	77	≡ to 9 h. 30 m. o. later.
30	1019·7	1022·9	80·2	76·1	81	76	9·0	6·6	89	87	113	3	—	1	9 ≡⁰	o ≡⁰	—	72	Dull to fine.
Means	1017·5	1017·8	78·3	78·9	82·4	75·7	8·2	8·3	90	89		2·4		2·5	7·2	5·7	53·3	71·6	Monthly **Totals or Means.**
Normal	1013·3	1013·2	79·1	79·3	82·3	76·6	8·4	8·5	88	87		3·3		3·2	—	—	56·5	—	**Normals.**
	45 years						30 years				35 years						45 years		

4. METEOROLOGY :—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level :—Rain-gauge Site, H = 242 m. Barometer, H_b = 237·3 m. Vane of Anemometer, H_a = 250 m.
Heights above Ground :—Thermometers, h_t = 0·9 m. Rain-gauge, h_r = 0·38 m. Vane of Anemometer, h_a = 15 m.

																			Remarks.
1	976·1	969·8	77·7	83·2	84	77	7·8	10·5	92	85	50	6	130	10	10	10 ≡⁰	8·6	76	● ≡⁰ till 18 h., then o.
2	953·6	963·1	84·8	79·8	*x* 85	*x* 79	11·2	8·6	81	87	140	17	210	14	10 ● ≡⁰	10 ●	16·8	81	●² 1 h.–6 h. o. q. *p.* ● 🌈 *n.*
3	975·4	972·5	74·4	74·5	80	73	6·5	6·2	96	91	—	0	—	0	7 ≡⁰	2 ☽	—	72	c. ≡⊕ *a.* o. *p.* ☾≡ in valley *n.*
4	967·2	955·8	76·1	81·3	83	72	7·2	10·0	94	92	160	6	140	8	10	10 ●	17·1	71	≡: early. Sleet 7 h. ● later.
5	966·0	979·6	76·9	74·3	84	74	6·9	6·1	85	91	230	10	200	3	10	3	7·0	76	●² till 1 h. 🌈 1 h.–4 h. ▲² 16 h. Fine *n.*
6	990·1	994·0	75·3	72·8	80	70	6·6	5·4	91	90	190	4	—	0	o ⌙	o ⌙	—	70	⌙². Very fine and sunny. ⌙⁰ *n.*
7	989·9	980·1	77·6	76·7	80	70	7·5	6·1	89	77	180	9	170	5	10 ≡⁰	10	0·8	67	⌙² 1 h. p. ≡⁰ *a.* ≡⁰ *p.* o. to c. *n.*
8	969·2	985·8	77·0	75·0	80	74	6·5	5·9	80	84	220	12	220	7	10	1	11·8	74	q. 🌈 2 h. ●² till 5 h. 30 m. ✻△ q. *a.* and *p.*
9	989·1	994·3	78·8	79·6	80	74	8·4	8·8	91	90	230	11	210	7	10 ●	9	6·5	72	Fine early. ●⁰ *a.* ●²≡⁰ *p.* Dull *n.*
10	988·8	983·1	80·9	80·3	83	*x* 79	9·8	7·6	93	74	210	14	260	16	10 ● ≡⁰	1	*x* 28·8	77	●²≡⁰ 9 h.–18 h. 🌈 at times *p.* Ψ²
11	993·7	1001·0	77·3	71·0	80	71	6·7	4·4	81	83	280	3	—	0	5	o ⌙	—	75	Ψ 1 h. y. *a.* and *p.* Ψ⌙⁰ *n.*
12	1004·6	1004·3	70·2	70·0	78	68	4·9	4·5	98	92	—	0	—	0	8 ⌙²	o ⌙	—	65	⌙²⊕ 9 h. Fine day. ⌙ *n.*
13	1002·7	1001·6	74·7	78·4	79	67	6·1	8·9	88	100	—	2	—	0	7 ≡⁰	10 ≡ ⋮	—	64	⌙²≡⁰ o. *a.* ≡: *p.* and *n.*
14	999·4	998·7	78·0	72·9	81	72	8·6	5·1	99	84	—	1	—	0	10 ≡ ⋮	o ⌙	0·2	76	≡: at first. Clear after 12 h. ∞
15	999·5	999·6	72·0	78·1	79	71	5·0	7·4	89	84	—	0	—	0	5 ≡⁰ ⌙	10 ≡⁰	0·1	66	⌙²≡⁰ *a.* ∞ *p.* o. ≡⁰ *n.*
16	999·0	997·1	72·0	69·3	78	68	5·5	4·0	98	87	—	1	—	1	1 ≡⁰ ⌙	o ⌙	0·1	67	⌙²≡⁰ early. Very fine. ∞ *a.* and *p.*
17	995·8	995·2	68·6	69·2	78	66	3·3	4·2	76	90	—	0	—	0	o ⌙²	o ⌙	—	*n* 62	⌙². Fine day. y. *a.* ⌙ *n.*
18	996·0	997·8	66·6	69·1	76	64	3·2	4·6	88	100	—	0	—	0	o ⌙	10 ≡ ⌙	—	*n* 62	V²⌙²≡⁰. Fine day. ≡: V *n.*
19	999·4	999·0	65·6	72·6	*n* 75	*n* 63	3·2	5·9	94	100	—	0	—	0	5 ≡⁰ ⌙	10 ≡⁰	0·2	*n* 62	≡V² at first. p.⁰≡⁰ *p.* o. ≡ *n.*
20	995·9	993·9	73·7	77·5	78	71	5·8	7·3	90	87	—	1	200	3	10 ≡⁰	10 ≡⁰	0·1	67	V early. Dull, with ≡⁰.
21	991·5	988·2	74·2	71·3	78	70	6·2	4·7	93	85	190	6	—	1	8 ≡⁰	o ≡⁰ ⌙	—	74	o. ≡⁰ at first. Clear after 10 h. ⌙ *n.*
22	981·9	979·2	71·5	68·7	77	67	4·3	3·1	78	*n* 72	—	1	—	1	o	o ∞	—	66	≡⁰⌙². y. v. 7 h. Cloudless. ∞
23	981·5	983·2	75·0	77·7	80	68	6·8	8·2	97	97	—	0	—	0	10 ≡⁰	10 ≡ ⋮	0·8	64	⌙≡⁰ early. o. ≡⁰ *a.* ●⁰ 15 h. ≡: *n.*
24	978·2	976·5	79·3	77·4	81	77	9·2	8·0	97	97	150	4	—	0	10 ≡⁰	9 ≡⁰ ⋮	1·7	76	≡⁰●⁰ *a.* ●⁰ 16 h. ≡: *n.*
25	977·3	980·1	77·4	72·2	81	72	8·2	5·6	99	98	—	1	—	0	8 ≡⁰	10 ≡⁰ ⋮	1·7	74	●⁰≡⁰ 2 h.–6 h. ∞. ≡: *n.*
26	976·7	974·9	76·0	77·6	78	74	7·0	8·2	92	97	170	2	—	1	10	8 ≡⁰	3·9	70	≡: early. o. *a.* ●⁰≡⁰ *p.* ≡⁰ *n.*
27	975·2	978·1	78·0	78·8	79	74	8·6	8·3	99	90	220	4	210	4	10 ≡⁰	9	0·4	73	≡: 1 h. Fair *a.* o. d. *p.* and *n.*
28	978·9	983·5	77·1	76·4	79	76	7·9	7·5	97	97	—	2	—	1	5	10 ●	0·3	76	o. to b. c. ≡: 9 h. 30 m.–21 h., then o.
29	985·3	988·3	79·1	74·8	81	75	9·0	6·3	96	91	180	2	—	0	10	10	0·8	75	●≡⁰ till 7 h., then fine. Ψ *n.*
30	990·6	987·4	73·8	76·0	77	73	5·9	6·8	92	90	—	0	200	6	3 ☽	7 ≡⁰	0·8	72	o. ≡⁰ *a.* and *p.* ●⁰≡⁰ after 22 h. 30 m.
Means	985·6	986·2	75·3	75·2	79·6	71·7	6·8	6·6	91	89		4·0		2·9	7·1	6·0	108·5	70·6	Monthly **Totals or Means.**
Normal 1911-15	980·5	980·7	76·6	76·4	79·7	73·7	7·1	7·0	86	86		5·7		5·6	—	—	165·0	—	**Normals.**

Temperatures at or below the normal freezing point of water are printed in small type.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Magnetic Force. Horizontal Comp't. Mean Time.	Horizontal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination. North.	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient,* Volts per metre. Factor {3·58 to 16 h. 23rd. {2·04 from 16 h. 23rd. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. + About 15 h.	Charge per cc. ×10¹⁶. − About 15 h.	Air-Earth Current. ×10¹⁶. About 15 h.
	a. 200+	*a*. 200+	cm.	cm.	h m	γ	h m	°	h m	° ′			v/m.	v/m.	v/m.	v/m.	coulomb.		amp/cm².
1	83·9	83·9	210	...	...	...	...	...	...	...	0	0	90	195	350	525	0·17	0·21	1·10
2	84·0	84·0	209	...	...	...	...	...	...	...	0	1	45	305	590	790	...	...	...
3	83·4	84·0	208	208	...	...	...	...	...	...	0	2	460	−615	−680	855	...	...	...
4	81·9	84·0	210	208	...	...	...	...	...	...	0	1	830	700	305	0	...	...	...
5	82·6	84·0	212	...	...	...	...	...	...	...	0	1	−110	370	745	700	0·52	0·28	1·25
6	82·0	83·9	217	...	...	...	...	...	...	...	0	1	480	220	615	415	0·19	0·24	...
7	81·0	83·8	225	...	11 10	18412	...	...	...	...	0	0	330	240	350	635	...	...	...
8	80·3	83·8	234	...	...	...	14 23	14 50·7	14 30	66 57·1	0	1	175	−20	195	480	0·32	0·13	0·25
9	79·6	83·7	239	...	...	...	...	...	...	...	0	0	480	440	350	460	...	...	...
10	79·1	83·6	242	...	...	...	...	...	...	...	1	0	330	265	285	240	...	...	...
11	80·1	83·1	245	246	...	...	...	...	...	...	2	1	110	175	110	285	1·31†	0·43†	0·35
12	80·6	83·1	246	...	...	...	...	...	...	...	2	0	415	810	725	590	...	...	...
13	79·3	82·9	245	...	...	...	...	...	...	...	2	0	350	330	330	550	0·41	0·09	0·80
14	78·6	82·9	244	...	11 38	18371	14 22	14 50·1	14 34	66 58·7	1	0	550	590	195	655	0·13	0·19	0·25
15	77·9	82·9	242	...	...	...	...	...	...	...	2	0	615	505	460	505	0·34	0·15	0·65
16	77·4	82·7	241	...	...	...	...	...	...	...	2	0	415	765	655	570	...	...	...
17	77·4	82·3	240	...	...	...	...	...	...	...	1	0	550	550	505	525	...	...	...
18	77·8	82·1	240	...	...	...	...	...	...	...	0	0	305	655	395	220	0·24	0·30	0·70
19	77·9	81·9	239	...	...	...	...	...	...	...	1	1	220	330	480	220	0·54	0·32	0·40
20	77·7	81·9	242	...	11 30	18398	...	...	14 12	66 57·9	0	1	305	680	350	655	...	...	0·10
21	77·8	81·7	244	...	...	...	...	...	...	...	0	0	525	590	220	525	0·11	0·32	0·55
22	77·1	81·6	246	...	...	...	14 41	14 49·6	...	...	0	0	415	570	395	370	...	...	...
23	76·7	81·5	245	...	...	...	...	...	...	...	2	0	350	350	...	440	...	...	...
24	77·5	81·4	243	...	...	...	...	...	...	...	2	1	300	375	325	300	...	...	...
25	78·7	81·1	241	...	...	...	...	...	...	...	0	1	65	390	265	400	0·39	0·26	0·30
26	78·1	81·0	239	...	...	...	...	...	...	...	0	1	250	425	365	265	...	...	...
27	78·6	81·0	237	...	...	...	...	...	...	...	0	0	365	365	400	400	0·15	0·32	0·20
28	78·2	81·0	234	...	11 12	18402	14 20	14 50·2	14 16	66 59·3	0	1	375	390	290	315	...	...	...
29	79·2	81·0	233	...	...	...	...	...	...	...	2	0	275	...	300	365	0·82	0·30	0·25
30	79·6	80·9	231	...	...	...	...	...	...	...	2	0	425	525	500	450	...	...	...
M.	79·5	82·6	234	—	—	—	—	—	—	—	—	—	345‡	397‡	360‡	461‡	—	—	—
	79·8	83·0																	
	←—12 years—→																		

† Insulation very poor: somewhat doubtful.

‡ Mean for 28 days.

6. GEOPHYSICS :—ESKDALEMUIR.

Day.	Magnetic Force. North Component. Maximum. 15000 γ+. h m	γ	Minimum. 15000 γ+. γ	h m	West Component. Maximum. 4000 γ+. h m	γ	Minimum. 4000 γ+. γ	h m	Vertical Component. Maximum. 44000 γ+. h m	γ	Minimum. 44000 γ+. γ	h m	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient,* Volts per metre. Factor 6·17. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. + About 15 h.	Charge per cc. ×10¹⁶. − About 15 h.	Air-Earth Current. ×10¹⁶. About 15 h.
															v/m.	v/m.	v/m.	v/m.	coulomb.		amp/cm².
1	20 48	1022	934	9 55	13 3	947	879	{9 20 / 21 30}	14 31	1086	1040	0 0	0	1 *b*	70	−70	80	320	...	...	...
2	23 57	996	937	16 30	15 43	939	881	24 0	16 40	1095	1068	23 50	0	2 *c*	−1285	−280	200	−285	...	...	...
3	0 24	997	942	11 47	15 9	928	881	0 0	15 15	1081	1068	0 0	0	0 *a*	115	265	145	555	...	...	...
4	22 22	997	948	11 25	13 44	932	874	23 29	21 50	1083	1065	23 0	0	2 *c*	120	305	250	70	...	...	...
5	21 56	1004	956	11 12	12 20	939	885	0 0	22 19	1075	1064	10 10	0	2 *c*	−215	150	145	430	...	...	...
6	20 31	991	964	10 49	13 57	935	898	8 42	15 42	1075	1067	12 0	0	0 *a*	395	500	255	730	...	...	...
7	3 44	992	956	{11 34 / 11 37}	12 11	937	903	8 55	15 20	1072	1064	10 15	0	1 *b*	−15	500	330	455	...	...	...
8	22 26	995	961	12 1	{13 34 / 13 37}	947	892	23 32	14 50	1071	1060	11 43	0	2 *c*	−1270	135	*z*+	205	...	...	...
9	22 0	997	955	11 19	{15 5 / 15 10}	937	882	22 29	21 50	1075	1059	10 59	0	2 *c*	465	−465	*z*−	195	...	...	...
10	7 33	999	938	22 17	17 17	952	862	22 21	20 43	1111	1055	23 33	1	2 *c*	100	−70	−695	135	...	...	...
11	19 22	1048	908	8 39	13 4	955	*n*766	19 19	18 57	1181	971	23 37	2	1 *a*	90	145	150	555	...	...	...
12	17 13	1069	878	9 34	5 11	1013	826	17 7	17 6	1129	*n*967	1 52	2	0 *a*	155	230	150	350	...	...	...
13	21 52	1045	907	12 40	11 32	948	825	18 15	16 20	1103	1021	0 22	2	0 *a*	170	355	145	280	...	...	...
14	19 15	1078	899	10 33	19 17	941	804	18 54	19 8	1098	1040	2 11	2	0 *a*	330	470	305	380	...	...	...
15	20 51	1035	916	16 52	5 34	986	782	17 6	17 23	1131	1023	22 2	2	0 *a*	385	405	180	405	...	...	...
16	21 10	1042	910	10 16	14 5	946	844	17 43	15 17	1118	1030	3 16	1	0 *a*	150	555	350	450	...	...	...
17	18 2	1017	902	14 56	0 31	941	876	18 56	15 9	1098	1041	1 3	1	0 *a*	270	405	235	285	...	...	...
18	20 16	986	924	13 54	13 12	939	889	20 5	14 22	1087	1061	8 0	0	0 *a*	380	215	255	795	...	...	...
19	20 0	1055	924	14 16	13 28	940	845	19 33	19 28	1100	1056	20 6	1	0 *a*	685	415	265	435	...	...	...
20	§	§	§	§	§	§	883	8 55	§	§	§	§	0	?0 *a*	320	435	**	**	...	...	...
21	5 26	995	926	13 12	11 41	934	891	20 3	16 55	1079	1055	5 49	0	?0 *a*	**	**	420	535	...	...	...
22	19 58	1000	941	10 55	13 50	931	851	22 1	22 0	1068	1047	24 0	0	0 *a*	330	330	600	605	...	...	...
23	7 12	1012	868	9 5	15 40	1004	826	2 54	16 30	1151	988	7 7	2	1 *a*	455	615	335	200	...	...	...
24	18 59	1010	910	12 29	12 16	976	797	19 19	17 37	1106	1057	11 13	1	1 *b*	530	250	500	570	...	...	...
25	17 29	981	939	10 43	16 50	925	880	17 22	17 22	1072	1050	1 25	0	1 *b*	−90	620	370	755	...	...	...
26	23 30	984	948	11 8	12 57	923	874	24 0	0 10	1064	1050	23 56	0	1 *b*	595	250	235	985	...	...	...
27	22 40	982	948	12 36	14 14	917	869	0 12	14 55	1063	1050	0 0	0	?1 *b*	680	195	**	**	...	...	...
28	22 52	1012	938	14 50	14 46	931	839	22 49	22 43	1068	1048	11 8	1	?0 *a*	**	**	665	455	...	...	...
29	22 31	*x*1135	*n*798	22 45	18 33	*x*1028	972	22 22	20 33	*x*1258	1042	13 29	2	?0 *a*	205	385	430	860	...	...	...
30	20 27	1005	844	1 34	17 53	953	798	1 0	18 5	1096	1030	2 24	1	0 *a*	315	585	430	415	...	...	...
M.	—	†1017	†921	—	—	†949	†858	—	—	†1100	†1043	—	—	—	‡177	‡314	‡235	‡447	—	—	—

The letters *x* and *n* denote the maximum and the minimum values in the column.

† Mean for 29 days.

‡ Mean for 24 days.

z− Indeterminate, negative value.

* The potential gradient is reckoned positive if the potential increases upwards.

§ Clock stopped.

z+ Indeterminate, positive value.

** No trace, clamp loose.

: Indeterminate.

7. Jersey (St Louis Observatory).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M.S.L.:—H = 54 m. H_b = 55 m. Above Ground:—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level.				Air Temperature in Degrees Absolute.						Min. Temp. on Grass.	Percentage of Humidity.				Rain 0 h. to 24 h.	REMARKS.
	7 h.	14 h.	21 h.	Mean of 3 Readings.	7 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.		7 h.	14 h.	21 h.	Mean.		
	mb.	mb.	mb.	mb.	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	a. 200+	%	%	%	%	mm.	
1	998·3	995·0	990·2	994·4	85·0	86·5	86·4	87·0	x 84·4	86·3	80·6	95	86	94	92	0·7	● 11 h. 30 m. (continuous).
2	989·0	994·6	996·6	993·4	86·0	86·7	83·1	x 88·4	82·0	85·2	82·4	68	60	79	69	—	↙ at night.
3	995·7	997·5	1000·0	997·8	81·0	85·1	81·1	85·5	80·7	82·8	79·6	98	70	84	84	12·0	● n. showers before noon and in the
4	1001·0	999·0	997·1	998·6	82·7	86·1	85·4	86·9	81·0	84·4	73·7	92	68	92	84	—	◮ 4 h. [evening.
5	1000·7	1006·2	1009·5	1005·5	86·0	85·6	83·5	87·0	83·4	85·1	83·3	89	71	85	82	x 13·8	● 2 h. 45 m. to 7 h.
6	1013·3	1014·2	1015·8	1014·5	83·0	84·1	82·5	84·2	82·4	83·2	79·7	73	66	65	68	—	
7	1017·1	1015·8	1011·9	1015·0	80·4	84·2	83·4	85·0	79·3	82·5	75·2	75	73	87	78	—	
8	1004·7	1010·6	1018·2	1011·1	83·0	83·9	80·9	84·0	80·0	82·4	79·9	91	n 55	59	68	2·3	● 6 h.
9	1024·8	1026·9	1029·1	1026·9	80·2	84·8	80·3	86·0	78·4	81·9	71·1	61	56	82	66	—	◮ 4 h. 15 m. ●0 13 h.
10	1028·2	1027·1	1025·8	1027·0	83·1	84·8	81·7	85·0	80·2	83·0	72·3	81	68	78	76	—	
11	1022·7	1021·6	1021·8	1022·1	82·6	85·0	82·9	86·0	81·3	83·4	74·2	90	95	88	91	—	
12	1022·1	1021·9	1023·7	1022·5	83·9	84·1	81·7	85·2	81·0	83·2	77·7	93	94	77	88	5·0	≡0 9 h. ● 9 h. 30 m.
13	1024·7	1023·0	1022·1	1024·2	77·5	82·0	80·1	82·2	77·3	79·8	73·6	77	59	68	68	—	◮ 4 h. 30 m.
14	1020·1	1017·2	1017·5	1018·3	77·1	83·2	79·1	83·5	77·1	80·0	73·0	82	60	70	71	—	◮ 4 h. 30 m.
15	1015·9	1013·5	1013·8	1014·4	81·9	82·0	79·5	82·0	76·6	80·4	73·6	85	62	68	72	—	◮ 4 h. 30 m.
16	1014·1	1012·1	1013·0	1013·0	74·3	79·1	76·0	79·5	74·0	76·8	71·0	85	68	74	76	—	◮ 4 h. 30 m.
17	1012·1	1011·8	1013·3	1012·4	74·7	76·7	77·7	n 78·0	n 73·0	76·0	n 66·4	85	74	74	78	—	
18	1016·8	1018·6	1021·0	1018·7	75·7	80·3	77·1	80·7	75·2	77·8	73·0	80	69	91	80	—	
19	1022·3	1022·7	1022·5	1022·5	78·6	81·1	79·8	81·8	76·0	79·7	71·1	94	65	74	78	0·3	u. 9 h. 30 m.
20	1021·8	1024·1	1019·0	1021·6	78·5	81·3	79·4	82·0	78·0	79·8	71·0	86	69	88	81	—	
21	1015·0	1010·3	1009·0	1011·5	75·3	80·1	78·6	80·6	74·5	77·8	72·0	93	66	70	76	—	
22	1004·6	1002·2	1002·1	1002·7	78·2	83·1	82·8	83·2	77·5	81·0	71·7	81	59	69	70	—	
23	1004·7	1007·0	1009·5	1007·0	80·9	82·4	82·8	82·8	80·4	81·9	79·6	94	82	86	87	0·6	● 7 h.
24	1006·6	1002·5	1002·5	1003·8	81·9	81·8	83·0	83·4	80·2	82·1	72·7	95	93	93	94	5·9	≡0 7 h. ●0 9 h. 40 m. ●≡0 13 h.
25	1004·3	1004·3	1004·3	1004·3	82·4	82·2	81·7	82·9	81·5	81·9	78·6	84	88	98	90	5·0	● n., 13 h. 40 m., 14 h. 40 m. (continuous).
26	1003·3	1001·4	1002·1	1002·2	81·6	84·7	84·0	85·0	81·4	83·3	80·8	100	100	98	99	6·1	● n., and at 5 h. ≡2 from 11 h. 30 m. till
27	1004·7	1007·5	1009·5	1007·3	81·6	84·1	82·4	85·0	81·3	82·9	77·5	97	69	79	82	8·6	Squally before 12 h. ●2. [night.
28	1011·4	1011·0	1012·1	1011·5	83·2	84·8	84·9	84·8	81·7	83·9	78·1	90	93	90	91	10·6	● until 12 h. ●2 23 h. (continuous).
29	1011·3	1010·5	1010·3	1010·7	84·8	85·0	83·5	85·0	82·3	84·1	83·5	100	100	97	99	7·6	≡2●2 5 h. ≡2 from 12 h. till night.
30	1011·4	1013·4	1016·2	1013·7	80·3	82·0	81·5	82·3	80·1	81·2	76·2	97	97	97	97	—	≡2 from 14 h.–15 h., and from 16 h.–16 h. 30 m.
Means	1011·4	1011·4	1011·9	1011·6	80·8	83·3	81·6	83·8	79·1	81·7	75·8	87	75	82	81	78·5	
Normal	1009·0	1008·6	1009·4	1009·0	81·4	83·2	82·0	84·2	80·2	82·2	76·3	83	76	80	80	89·9	

Jersey (St Louis Observatory).

Day.	Wind Direction and Force (0–12 on the Beaufort Scale).			Mean.	Sunshine.*		Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming.														Mean Amount.
					Total.	Percent. of Possible.	Tenths.	Upper.		Lower.		Tenths.	Upper.		Lower.		Tenths.	Upper.		Lower.		
								Type.	Direction.	Type.	Direction.		Type.	Direction.	Type.	Direction.		Type.	Direction.	Type.	Direction.	
	7 h.	14 h.	21 h.				7 h.	7 h.	7 h.	7 h.	7 h.	14 h.	14 h.	14 h.	14 h.	14 h.	21 h.	21 h.	21 h.	21 h.	21 h.	
	Dir. (0–12)	Dir. (0–12)	Dir. (0–12)		hr.	%																
1	SSE 3	S 3	S 5	3·7	1·1	11	7	…	…	St.-Cu.	S	10	…	…	…	…	10	…	…	…	…	9·0
2	SW 6	SW 4	W 1	3·7	3·9	40	6	Ci.	SW	Cu.-Nb.	WSW	4	…	…	Fr.-Cu.	SW	10	…	…	…	…	6·7
3	NNE 2	W 2	W 1	1·7	2·4	25	10	…	…	Nb.	…	6	Ci.	…	Cu.-Nb.	NW	3	…	…	Cu.-Nb.	…	6·3
4	SSW 4	SW 5	SSW 5	4·7	4·1	42	5	A.-Cu.	WSW	…	…	10	St.	…	Cu.-Nb.	SSW	10	…	…	…	…	8·3
5	W 4	WSW 3	WNW 2	3·0	0·2	2	10	..	…	Nb.	WSW	10	…	…	…	…	10	…	…	…	…	10·0
6	N 2	NNE 4	NE 4	3·3	0·6	6	8	St.	…	Fr.-Cu.	SW	7	A.-Cu.	SSW	Cu.-Nb.	NNE	10	…	…	…	…	8·3
7	NE 3	NE 3	SE 2	2·7	8·5	90	0	…	…	…	…	6	A.-Cu.	ESE	Cu.	…	10	…	…	…	…	5·3
8	SW 6	NW 4	NNW 2	4·0	1·9	20	10	…	…	Nb.	SW	5	Ci., A.-Cu.	WSW	Cu.-Nb.	…	2	…	…	…	…	5·7
9	NW 1	W 3	W 2	2·0	7·6	80	4	A.-Cu.	W	…	…	3	…	…	Fr.-Cu.	W	2	…	…	…	…	3·0
10	SW 3	SW 4	SW 3	3·3	7·2	75	8	…	…	…	…	5	Ci.	NW	…	…	5	Ci., A.-Cu.	…	…	…	6·0
11	WSW 1	WSW 2	— 0	1·0	1·5	16	7	Ci.	…	Fr.-Cu.	W	7	A.-Cu.	NW	…	…	8	A.-Cu.	NW	…	…	7·3
12	NNW 1	E 3	ENE 3	2·3	0·0	0	10	A.-Cu.	…	Cu.-Nb.	NNW	10	A.-Cu.	…	Cu.-Nb.	E	3	…	…	Fr.-Cu.	ENE	7·7
13	ENE 3	ENE 4	ENE 5	4·0	9·2	100	0	…	…	…	…	0	…	…	…	…	0	…	…	…	…	0·0
14	E 4	E 3	E 4	3·7	9·2	100	0	…	…	…	…	0	…	…	…	…	0	…	…	…	…	0·0
15	E 4	E 5	E 6	5·0	9·1	100	0	…	…	…	…	0	…	…	…	…	0	…	…	…	…	0·0
16	E 4	ENE 4	E 3	3·7	9·1	100	0	…	…	…	…	0	…	…	…	…	0	…	…	…	…	0·0
17	ENE 2	ENE 2	ENE 3	2·3	9·0	100	8	…	…	Cu.	NE	10	…	…	Cu.-Nb.	NE	10	…	…	Cu.-Nb.	ENE	9·3
18	ENE 3	S 2	— 0	1·7	7·6	84	9	…	…	Cu.	NE	0	…	…	…	…	3	St.	…	…	…	4·0
19	N 3	ENE 3	NE 2	2·7	5·0	56	9	…	…	Cu.-Nb.	NW	5	A.-Cu.	NNW	Cu.	N	10	…	…	…	…	8·0
20	SE 2	SE 2	E 2	2·0	8·4	95	4	…	…	Cu.	SSE	0	…	…	…	…	0	…	…	…	…	1·3
21	E 3	E 4	SE 4	3·7	7·5	85	3	…	…	Cu.	ESE	0	…	…	…	…	0	…	…	…	…	1·0
22	SSE 3	SE 3	SSE 4	3·3	8·4	95	0	…	…	…	…	0	…	…	…	…	8	…	…	…	…	2·7
23	S 3	S 3	SSW 3	3·0	0·4	5	10	…	…	Nb.	…	8	…	…	St.-Cu.	SW	9	…	…	…	…	9·0
24	SSW 2	SSW 3	WNW 2	2·3	0·2	2	10	…	…	Nb.	SW	10	…	…	Nb.	SSW	5	…	…	…	…	8·3
25	NW 3	WSW 2	W 1	2·0	0·4	5	7	…	…	{ Cu. Nb.	WNW NW	10	…	…	Nb.	WSW	10	…	…	Nb.	…	9·0
26	S 3	WSW 2	WNW 3	2·7	0·0	0	10	…	…	Nb.	…	10	…	…	≡2Nb.	…	10	…	…	…	…	10·0
27	W 3	NW 4	W 3	3·3	3·9	45	8	…	…	Nb.	WSW	4	…	…	Cu.-Nb.	NW	5	…	…	…	…	5·7
28	W 3	W 4	W 4	3·7	0·0	0	10	…	…	Nb.	…	10	…	…	Nb.	W	10	…	…	…	…	10·0
29	WNW 4	W 4	N 2	3·3	0·0	0	10	…	…	≡Nb.	…	10	…	…	≡2Nb.	…	8	…	…	…	…	9·3
30	NE 3	SE 2	SE 2	2·3	3·0	35	3	…	…	…	…	10	…	…	≡2	…	5	…	…	…	…	6·0
Means	3·0	3·2	2·8	3·0	129·5	47·2	6·2	—	—	—	—	5·7	—	—	—	—	5·9	—	—	—	—	5·9
Normal	3·6	4·1	3·7	3·8	86·4	31·5	7·3	—	—	—	—	7·0	—	—	—	—	6·4	—	—	—	—	6·9

* Actinic rays by Jordan Recorder.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	6·1	...	2·5	4·4	...	...	6·6	3·8	...	...	2·6	7·2	...	...	7·2	16·9	23	50
2	10·9	...	...	7·3	15·1	...	...	...	9·3	...	...	9·3	5·1	...	7·6	...	26·9	5	50
3	1·1	...	2·8	...	0·8	...	1·8	...	1·1	...	1·7	...	1·7	...	2·5	...	8·6	0	25
4	5·2	...	2·1	...	9·5	...	...	...	6·6	...	4·4	...	13·1	...	...	...	22·9	22	20
5	...	3·5	17·4	...	4·0	...	9·7	...	3·4	...	8·2	...	1·3	...	6·5	...	27·2	1	25
6	1·1	...	5·5	...	...	...	3·9	...	1·7	...	2·5	...	2·0	...	3·0	...	9·8	3	15
7	4·4	...	4·4	...	8·2	...	3·4	...	10·3	...	2·0	...	14·8	...	...	...	29·4	23	15
8	13·7	...	5·7	...	2·4	...	11·9	...	...	5·0	12·1	...	1·8	...	9·0	...	28·2	2	5
9	3·4	...	8·2	...	6·4	...	9·6	...	3·9	...	9·4	...	2·9	...	6·9	...	17·4	8	55
10	4·2	...	6·2	...	7·2	...	7·2	...	12·3	...	8·2	...	6·0	...	9·0	...	24·5	15	5
11	...	3·7	5·5	...	...	5·5	2·3	...	...	5·6	...	...	...	2·1	...	2·1	12·2	0	20
12	...	...	...	3·9	0·4	...	...	2·0	...	Calm		...	1·6	...	...	1·6	7·4	1	5
13	...	Calm		...	5·6	...	...	...	3·5	...	0·7	...	2·0	...	...	0·4	11·0	10	35
14	...	Calm		...	...	Calm		...	...	...	...	3·6	...	Calm		...	7·0	17	10
15	3·8	...	0·8	...	1·1	...	...	1·7	1·7	...	...	1·1	1·3	...	...	3·0	6·9	17	50
16	...	...	...	4·6	1·3	...	...	3·0	...	...	...	3·9	1·8	...	...	1·8	8·7	16	45
17	...	Calm		...	...	Calm		...	0·5	...	...	2·6	...	Calm		...	5·0	5	40
18	4·3	...	...	1·8	3·6	...	1·5	...	1·8	...	0·8	...	...	4·0	4·0	...	8·7	20	20
19	...	...	3·6	...	0·4	...	2·3	...	1·7	...	2·5	...	2·0	...	...	3·0	8·2	23	50
20	5·5	...	...	1·1	7·1	...	...	1·4	5·8	...	...	1·2	5·9	...	...	...	12·8	8	50
21	7·3	...	...	3·0	6·1	...	...	1·2	3·0	...	...	1·3	...	...	...	3·0	14·0	10	15
22	1·4	...	2·2	...	...	Calm		...	5·2	...	...	...	7·3	...	...	3·0	13·0	20	15
23	2·8	...	...	2·8	3·9	...	...	...	4·5	...	...	0·9	5·2	...	...	...	10·4	23	30
24	5·2	...	...	...	3·8	...	2·6	...	4·3	...	...	...	...	Calm		...	11·4	1	40
25	...	4·0	9·7	...	...	1·3	6·5	...	...	0·4	2·0	...	3·0	...	...	1·3	13·5	2	0
26	6·8	...	...	1·3	7·7	...	...	1·5	...	1·3	6·8	...	1·8	...	4·3	...	13·5	8	5
27	2·2	...	3·2	...	...	...	9·2	...	3·1	...	7·6	...	3·0	...	7·3	...	15·6	17	40
28	4·4	...	4·4	...	3·8	...	9·1	...	...	...	8·2	...	1·8	...	4·3	...	15·2	8	40
29	...	2·8	6·7	...	...	4·7	3·1	...	...	4·0	1·6	...	...	Calm		...	11·4	1	50
30	2·1	...	...	0·9	...	Calm		...	4·9	...	...	...	8·2	...	...	...	15·1	22	20
S+N & W+E	109·9		117·6		114·3		101·5		108·7		105·2		106·9		90·8				
S−N & W−E	69·7		59·2		91·3		66·7		76·1		52·2		94·7		38·0				

SCOTLAND N.:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	1·6	...	1·6	...	...	Calm		...	3·9	...	...	...	5·1	...	...	5·1	9·2	24
2	7·0	...	...	10·4	10·4	...	...	15·5	10·7	...	...	16·0	13·9	...	...	13·9	20·7	11
3	15·1	...	...	...	4·3	...	1·8	...	3·6	...	...	...	2·6	...	...	0·5	15·1	3
4	2·3	...	...	0·4	5·2	...	2·1	...	13·5	...	...	2·7	7·4	...	...	1·5	13·8	15
5	3·6	...	...	2·4	2·9	...	14·8	...	8·1	...	8·1	...	8·8	...	3·6	...	19·7	7
6	7·9	...	5·3	...	7·9	...	5·3	...	6·1	...	2·5	...	8·9	...	...	...	11·8	2, 11
7	10·9	...	...	2·2	13·1	...	...	2·6	13·3	...	...	5·5	13·4	...	...	9·0	18·4	22, 24
8	15·3	...	...	10·2	19·4	...	...	13·0	13·9	...	13·9	...	...	...	9·8	...	25·2	10
9	7·9	...	3·3	...	6·3	...	6·3	...	...	...	6·9	...	4·3	...	1·8	...	10·5	24
10	10·0	...	2·0	...	10·9	...	2·2	...	11·8	...	4·9	...	3·1	...	15·5	...	15·8	21
11	...	...	12·5	...	...	7·5	11·1	...	...	5·8	8·7	...	...	1·0	2·4	...	14·4	11
12	...	0·4	2·3	...	...	Calm		...	0·8	...	4·2	...	1·7	...	2·5	...	4·3	15
13	1·1	...	1·7	...	2·5	...	1·7	...	2·9	...	0·6	...	2·3	...	0·4	...	3·3	11, 16
14	...	Calm		...	3·2	...	...	2·2	4·1	...	...	2·7	7·4	...	...	4·9	8·9	21
15	6·5	...	...	1·3	3·8	...	...	0·8	5·5	...	...	2·3	9·1	...	...	3·8	10·5	23
16	6·2	...	...	...	2·0	...	0·4	...	2·9	...	0·6	...	...	Calm		...	8·9	1
17	...	Calm		...	...	Calm		...	...	Calm		...	1·3	...	6·8	...	3·3	22
18	...	Calm		...	...	...	1·6	...	...	1·9	4·5	...	...	Calm		...	5·6	13, 16
19	0·8	...	1·8	...	0·6	...	3·2	...	...	1·4	1·4	...	...	1·4	...	1·4	5·6	2
20	3·7	...	...	3·7	5·5	...	...	1·1	6·1	...	1·2	...	5·1	...	1·0	...	6·9	13, 19, 20, 22
21	3·2	...	0·6	...	9·8	...	...	...	6·6	...	...	...	6·5	...	1·3	...	9·8	9
22	8·5	...	3·5	...	9·0	...	6·0	...	5·1	...	1·0	...	6·1	...	1·2	...	11·5	11
23	2·9	...	...	0·6	1·8	...	...	0·8	...	Calm		...	...	3·3	...	1·4	3·9	2
24	0·7	...	...	3·5	5·5	...	...	1·1	4·8	...	...	2·0	5·8	...	...	1·2	7·2	22
25	6·1	...	...	1·2	5·5	...	...	1·1	3·6	...	...	...	2·4	...	1·0	...	7·9	5
26	6·4	...	...	2·6	12·0	...	...	8·0	12·3	...	...	2·4	3·3	...	...	...	16·7	11
27	...	Calm		...	2·3	...	...	...	3·0	...	...	...	7·2	...	...	...	7·5	20
28	2·0	...	0·4	...	1·3	...	0·9	...	0·9	...	1·3	...	0·9	...	1·3	...	3·6	1, 11
29	2·4	...	1·0	...	3·0	...	...	...	...	Calm		...	...	...	2·4	...	3·9	6
30	1·8	...	1·8	...	2·8	...	1·1	...	4·5	...	...	0·9	10·0	...	...	2·0	10·8	21, 22
S+N & W+E	134·3		76·3		158·5		104·7		157·1		94·3		142·3		95·7			
S−N & W−E	133·5		−0·7		143·5		12·3		138·9		25·3		130·9		6·3			

ENGLAND S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	...	0·8	...	6·9	...	...	4·6	11·5	...	...	2·3	15·4	...	...	6·4	23·5	23	55
2	6·5	...	15·8	...	...	...	15·9	...	...	...	7·5	...	...	1·0	2·3	...	24·1	15	50
3	...	2·3	2·3	...	...	2·3	2·3	...	...	...	2·5	...	1·6	...	2·4	...	10·5	20	0
4	8·6	...	1·7	...	6·8	...	6·8	...	9·8	...	2·0	...	5·9	...	14·2	...	23·4	23	30
5	...	...	10·4	...	...	...	5·8	...	...	3·2	7·7	...	...	3·8	3·8	...	23·1	0	15
6	...	2·7	1·1	...	...	3·3	...	...	...	2·3	...	1·0	...	2·5	0·5	...	10·0	0	25
7	...	0·9	1·4	...	3·5	...	1·5	...	10·0	...	...	...	15·1	...	...	3·1	20·7	23	20
8	...	7·2	10·7	...	...	8·3	8·3	...	...	7·1	7·1	...	...	2·6	6·2	...	21·3	0	35
9	...	...	6·3	...	...	...	6·3	...	...	2·7	6·6	...	...	...	5·4	...	11·1	7	15
10	2·3	...	3·5	...	5·0	...	5·0	...	4·2	...	6·2	...	4·2	...	6·2	...	11·6	12	10
11	2·6	...	6·2	...	2·1	...	5·0	...	1·8	...	4·3	...	1·1	...	2·7	...	9·6	0	5
12	...	...	1·3	...	0·3	...	0·7	...	2·1	...	...	5·0	3·2	...	...	7·7	11·6	21	0
13	3·4	...	...	8·1	4·2	...	...	6·2	No record				No record				14·4	19	0
14	No record				No record				2·4	...	...	5·8	6·1	...	...	14·7	18·0	22	35
15	3·8	...	...	9·2	4·1	...	...	9·9	4·9	...	...	11·9	5·3	...	...	12·7	20·9	17	40
16	4·0	...	...	9·6	4·0	...	...	9·6	1·7	...	...	8·6	No record				16·4	1	35
17	No record				No record				...	3·6	...	2·4	No record				10·4	0	10
18	...	1·2	...	1·2	...	0·9	...	0·9	...	1·7	...	...	...	0·4	...	...	4·4	1	25
19	...	Calm		...	1·6	...	...	2·4	5·4	...	...	2·2	6·2	...	...	2·6	10·5	21	20
20	5·8	...	...	2·4	10·8	...	...	4·5	8·9	...	...	3·7	10·4	...	...	7·0	16·9	23	35
21	9·8	...	...	9·8	8·9	...	...	8·9	9·8	...	...	9·8	10·1	...	...	6·8	18·0	4	15
22	8·3	...	...	8·3	11·5	...	...	7·7	9·4	...	...	6·3	7·7	...	...	3·2	17·2	10	5
23	4·2	...	...	...	2·3	...	1·0	...	1·9	...	4·6	...	...	...	5·8	...	8·9	23	15
24	4·2	...	2·8	...	7·5	...	...	...	...	4·0	9·6	...	...	7·7	11·5	...	17·1	20	0
25	...	3·4	8·1	...	...	1·0	4·9	...	4·6	...	...	1·9	3·5	...	...	1·5	15·5	0	50
26	5·4	...	2·2	...	...	2·7	6·6	...	...	4·4	6·6	...	...	1·4	7·0	...	11·0	4	5
27	No record				...	3·4	8·1	...	...	2·0	9·8	...	...	...	8·3	...	14·6	5	25
28	...	...	10·8	...	No record				...	...	10·4	...	...	...	6·7	...	14·0	12	10
29	No record				No record				...	1·6	8·1	...	...	...	2·1	...	11·6	9	10
30	2·1	...	...	1·4	3·3	...	...	3·3	4·5	...	...	3·0	2·3	...	1·0	...	6·6	15	5
S+N & W+E	88·7		135·4		104·7		136·2		125·5		156·9		117·5		151·8				
S−N & W−E	53·3		35·4		60·9		20·2		60·3		29·1		78·7		20·4				

ENGLAND E.:—GREAT YARMOUTH.

Height of Head above—Roof 10·7 m., Ground 12·8 m., M.S.L. 15·9 m.
Height of Cups above—Roof 3·7 m., Ground 18·3 m., M.S.L. 22·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust (Gorleston).	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	3·3	...	...	1·4	3·0	...	...	1·3	7·4	...	...	...	7·8	...	...	7·8	13·7	19	20
2	13·3	...	...	...	13·9	...	...	5·7	4·3	...	...	1·8	4·2	...	...	0·8	18·6	8	35
3	...	Calm		...	3·2	...	...	0·6	...	5·1	...	7·6	...	...	7·5	...	?	?	
4	2·5	...	2·5	...	3·8	...	0·8	...	4·9	...	...	3·3	8·7	...	...	5·8	26·8	22	50
5	10·3	...	...	4·3	3·5	...	3·5	...	2·2	...	1·4	...	2·0	...	...	...	25·3	2	35
6	...	Calm		...	1·1	...	1·7	...	...	2·5	1·7	...	...	6·2	...	...	?	?	
7	...	3·8	0·8	...	...	Calm		...	...	1·9	1·3	...	...	1·1	...	2·8	12·6	?	
8	4·1	...	...	2·7	3·8	...	...	0·8	2·6	...	3·8	...	1·4	...	3·3	...	...	...	
9	1·0	...	2·4	...	1·9	...	1·3	...	3·5	...	0·7	...	2·4	...	1·0	...	...	...	
10	3·6	...	2·4	...	2·5	...	1·7	...	4·8	...	1·0	...	5·7	...	3·8	...	...	...	
11	5·2	...	3·4	...	1·6	...	1·6	...	...	0·6	1·5	...	...	1·6	1·6	...	...	...	
12	...	4·5	...	0·9	...	3·8	...	0·8	...	3·0	...	1·3	...	1·5	...	0·6	No record.		
13	...	1·5	...	0·6	...	Calm		...	...	Calm		...	...	Calm		...			
14	...	1·8	...	0·7	...	1·8	...	0·8	...	1·6	...	0·3	...	3·2	...	0·6			
15	...	2·0	...	3·0	...	2·8	...	6·7	...	1·7	...	8·3	...	2·3	...	11·6			
16	...	1·9	...	9·6	...	1·9	...	9·3	...	3·9	...	9·4	...	5·7	...	8·5			
17	...	4·9	...	4·9	...	4·4	...	4·4	...	7·2	...	7·2	...	4·7	...	4·7			
18	...	1·6	...	1·6	...	0·4	2·3	...	...	...	3·9	...	...	...	3·6	...			
19	0·5	...	2·6	...	0·5	...	2·6	...	...	1·6	1·6	...	...	0·9	2·1	...			
20	...	1·0	2·4	...	...	...	2·0	...	...	Calm		...	...	...	2·0	...			
21	...	...	2·0	...	...	Calm		...	3·5	...	...	8·5	4·5	...	...	10·9			
22	3·0	...	...	7·3	5·1	...	...	7·6	5·1	...	...	7·6	1·8	...	...	1·8	...	...	
23	1·6	...	...	1·6	1·1	...	...	1·1	1·6	...	...	1·6	1·8	...	...	1·8	...	...	
24	...	Calm		...	...	Calm		...	1·1	...	...	1·1	...	Calm		...	...	...	
25	...	Calm		...	...	Calm		...	...	Calm		...	...	Calm		...	...	...	
26	...	2·6	...	3·8	...	Calm		...	1·6	...	0·3	...	2·5	...	...	1·7	...	...	
27	1·7	...	...	1·1	0·6	...	3·2	...	1·1	...	2·8	...	1·1	...	2·8	...	...	...	
28	1·4	...	2·2	...	2·5	...	2·5	...	...	Calm		...	...	...	2·3	...	...	...	
29	...	Calm		...	...	2·6	...	...	1·0	...	2·4	...	1·4	...	...	1·4	...	...	
30	1·8	...	...	1·8	4·0	...	...	4·0	3·5	...	...	3·5	4·2	...	...	4·2	...	...	
S+N & W+E	78·9		66·0		69·8		66·3		77·3		83·9		76·7		95·0				
S−N & W−E	27·7		−24·6		34·4		−19·9		19·1		−39·1		22·3		−35·0				

9. Seismological Diary.

Earthquakes:—Eskdalemuir.

Day.	Phase.	Time, G.M.T.	Period.	Amplitudes. A_N.	Amplitudes. A_E.	Amplitudes. A_Z.	Δ.	Remarks.
		h m s	s	μ	μ	μ	km.	
3	i	11 32 52	...	...	...	...	...	Prominent i on vertical record at 11 h. 33 m. 44 s. and 11 h. 38 m. 53 s.
	i	11 34 3	...	...	...	...	...	
	i	11 35 24	...	...	...	...	...	
	i	11 39 12	...	...	...	...	...	
	i	11 43	...	...	...	...	...	
	i	11 49 42	...	...	...	...	...	
	L	12 0	...	...	...	...	...	
	F	13 30	...	...	...	...	...	
5	L_e	23 17 to	20	...	5	...	...	
		23 29	...	...	...	...	...	
8	P	4 44 42	...	..	...	...	...	Large earthquake. Seismogram exceedingly difficult to read owing to exceptionally large microseisms and heavy wind effects.
	S	4 50 4	...	...	...	...	...	
10	L	15 19 to	...	...	...	...	...	Earlier phases confused with microseisms and wind effects.
		15 35	...	...	...	...	...	
11	L	7 47 to	...	...	...	...	...	
		8 9	...	...	...	...	...	
12	P	21 54 53	...	...	...	...	6550	
	S	22 2 59	...	...	...	...	...	
	M_e	22 17 45	20	...	22	...	...	
	F	23 30	...	...	...	...	...	
13		10 23 to	...	...	...	...	...	Slight disturbance.
		10 44	...	...	...	...	...	
14		14 14 to	...	...	...	...	...	
		15 0	...	...	...	...	...	
		16 42 to	...	.	...	...	...	Slight disturbance. P probably at 16 h. 28 m. 33 s.
		17 30	...	...	...	...	...	
16		6 35 to	...	...	...	...	...	Long waves.
		6 48	...	...	...	...	...	
18	P	18 56 49	...	...	...	...	13000?	
	PR	19 1 45	...	...	...	...	...	
	PR	19 7 17	...	...	...	...	...	
	S	19 11 34	...	...	...	...	...	
	F	23 0	...	...	...	...	...	
21		1 22 to	...	...	...	...	...	Long waves.
		1 36	...	...	...	...	...	
22	P	16 0 33	...	...	...	...	8500	
	S	16 10 17	...	...	...	...	..	
	L	16 26	...	...	...	...	...	
	F	17 45	...	...	...	...	...	
23	P	23 17 52	...	...	...	...	9500	Well-marked anti-epicentral waves of 19 s. period from 1 h. 11 m. to 1 h. 16 m. on 24th.
	S	23 28 28	...	...	...	...	...	
	L	23 47	...	...	...	...	...	
	M	23 58 50	27	24	...	...	...	
	M	23 59 10	27	...	26	...	...	
24	F	2 0	...	...	...	...	...	
24		11 21 to	...	...	...	...	...	Faint disturbance.
		11 37	...	...	...	...	...	
2[illegible]	P	2 18 22	...	...	...	...	2000	
	S	2 21 45	...	...	...	...	...	
	L	2 22 45	...	...	...	...	...	
	F	2 45	...	..	...	...	...	
28		5 52 to	...	...	...	...	...	Faint disturbance.
		6 30	...	...	...	...	...	
29		11 5 to	...	...	...	...	...	Long waves.
		11 25	...	...	...	...	...	
30		7 5 to	...	...	...	...	...	Slight disturbance.
		7 40	...	...	...	...	...	

Microseisms of N. Component:—Eskdalemuir.

Day.	0 h. A_N.	0 h. T.	6 h. A_N.	6 h. T.	12 h. A_N.	12 h. T.	18 h. A_N.	18 h. T.
	μ	s	μ	s	μ	s	μ	s
1	1·9	4·5	2·1	4·5	2·1	4·5	1·6	6
2	2·2	5·5	2·6	6	2·8	5	2·6	5·5
3	2·1	6	2·3	4	1·1	5·5	2·0	4
4	1·2	4·5	1·4	4	1·7	4	1·3	5·5
5	2·4	4	1·8	4	3·2	5	2·7	5
6	1·5	4·5	1·6	6	1·7	5·5	1·8	5
7	1·8	5	1·2	4	2·5	5	1·8	6
8	4·0	6	?	?	4·0	6	3·6	5
9	4·9	6	3·9	6	3·1	4·5	1·8	6
10	1·9	5	1·2	6	1·8	6	2·5	5·5
11	3·0	6	2·8	6	4·0	6	2·7	6
12	2·6	6	2·3	6	1·7	5·5	1·2	6
13	0·9	5	1·1	4	0·9	5	1·1	4·5
14	0·8	6	0·9	4·5	1·2	4	0·9	5
15	1·1	4	0·9	5	0·9	5	0·8	6
16	1·0	5	1·1	4	1·0	4	0·9	5
17	1·0	4·5	1·0	4·5	0·7	4	0·6	4
18	0·5	4·5	0·5	4·5	0·4	4·5	0·5	5
19	0·8	4·5	0·9	5	...	..	...	...
20	1·1	4	1·2	4	1·9	6	1·8	6
21	1·6	6	1·0	5	1·6	6	1·3	5
22	1·2	4	1·5	4·5	1·5	5	1·2	6
23	1·5	4	1·2	4	1·1	4	1·0	4
24	?	?	1·0	4	0·9	5	0·9	5·5
25	1·2	6	1·6	6	1·6	6	2·3	6
26	1·6	6	1·4	6	1·2	6	1·0	4·5
27	1·0	6	1·0	5	1·4	7	1·7	6
28	1·6	6	1·2	5·5	0·9	5	1·3	6
29	1·3	7	0·8	6	1·6	6	3·3	8
30	3·2	8	4·4	8	2·2	8	1·4	7

Means for Month $\begin{cases} A_N = 1·7. \\ T = 5·3. \end{cases}$ Normals, 1911–17 $\begin{cases} A_N = 1·8. \\ T = 5·7. \end{cases}$

Earthquakes:—Richmond (Kew Observatory).

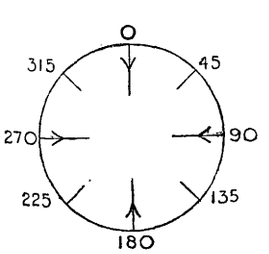
Day.	Times, G.M.T. of Commencement.	Times, G.M.T. of Max. Phase.	Remarks.
	h m	h m	
3	...	13 5	Very small.
5	...	23 30	Very small.
8	4 50	5 0	Amplitude on trace = 7·4 mm. Succession of small waves to 8 h.
10	...	15 20	Amplitude on trace = 2·0 mm.
11	...	7 56	Small.
12	...	22 26	
14	...	14 45	Very small.
18	19 1	19 18	Amplitude on trace = 2·2 mm. Succession of small waves to 22 h.
22	...	16 38	Small.
24	...	0 6	Small.
25	...	2 26	Small.
28	...	6 6	Very small.
29	...	11 10	Small.
30	...	7 25	Small.

10. Soundings with Pilot Balloons.

Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	m/s.	By Anemometer. From N.	m/s.	At Heights above M.S.L. 500 m. From N.	m/s.	1000 m. From N.	m/s.	2000 m. From N.	m/s.	3000 m. From N.	m/s.	4000 m. From N.	m/s.	5000 m. From N.	m/s.	Cloud Observations. Type.	From N.	mr/s.
		h. m.	°	?	°		°		°		°		°		°		°			°	
1	Cahirciveen .	7 35	?	?	45	6·0	40	7·5	50	7·5	120	4·6	185	4·7	...	...	...	...	Ci., Cu. and St.	...	...
1	,,	10 30	?	?	50	5·0	50	7·5	100	5·5	120	5·0	150	6·5	160	10·0	170	9·5	A.-Cu.	65	...
																			St. / St.-Cu.	45	...
2	S. Farnboro' .	8 5	200	30	160	13·5	205	25·5	205	26·5	200	29·5	...	...	...	...	...	...	...	...	...
3	Cahirciveen .	7 35	?	?	?	1·5	260	4·5	280	5·5	280	3·4	270	4·9	300	9·5	310	19·0	Ci.	315	...
																			Cu.	270	...
3	,,	15 55	?	?	195	5·0	190	9·0	190	12·0	225	7·0	...	...	...	...	...	...	A.-Cu.	247	...
																			Cu.	180	...
5	,,	7 40	270	12	290	5·0	270	13·5	275	14·0	265	17·0	...	...	...	...	...	...	A.-Cu.	245	...
																			Cu., Fr.-Cu.	270	...
5	,,	15 35	270	10	?	?	275	11·0	280	16·0	275	15·0	270	12·0	265	18·5	...	...	A.-St., A.-Cu., Cu., St.-Cu.	270	...
5	S. Farnboro' .	7 35	270	12	210	8·0	265	12·0	270	16·0	255	19·5	240	29·0	...	...	...	...	St.-Cu.	...	...
6	Eskdalemuir .	7 15	270	15	225	7·5	245	8·5	245	13·0	255	13·0	270	14·0	...	...	...	...	Fr.-St.	245	...
6	Falmouth . .	7 45	?	?	320	1·6	330	9·5	335	5·5	325	4·5	285	5·0	260	7·5	220	15·0	Cu.	315	...
6	Cahirciveen .	8 0	225	10	90	2·5	245	8·0	250	9·0	255	8·0	270	11·0	...	...	...	...	A.-Cu.	...	...
																			Cu.	225	...
6	,,	10 25	225	10	calm		235	8·0	240	8·0	250	9·0	240	10·5	...	...	...	...	Ci.-Cu., A.-Cu., Cu.	225	...
6	,,	16 45	200	15	205	6·5	215	11·0	220	11·0	225	18·5	...	...	...	...	...	...	A.-Cu., Cu.	205	...
6	S. Farnboro' .	7 35	?	?	250	?	360	7·0	350	6·0	330	6·0	265	3·2	240	14·5	225	21·5	Ci., Ci.-St.	...	...
7	,,	7 30	?	?	245	?	40	6·0	25	6·0	350	3·5	335	6·0	300	6·5	245	10·0	...	...	...
7	Falmouth . .	7 50	?	?	calm		175	2·9	215	2·4	200	3·3	...	...	...	...	...	...	...	...	...
8	,,	15 0	315	10	315	4·5	320	14·0	320	14·5	300	12·0	305	16·0	...	...	...	...	Cu.	315	...
8	Cahirciveen .	8 20	315	25	295	8·5	300	14·5	305	17·5	300	18·5	...	...	...	...	...	...	Cu., Fr.-Cu.	315	...
8	,,	15 10	270	10	260	4·6	270	9·5	285	13·0	290	16·5	290	21·0	...	...	...	...	Cu., St.-Cu.	270	...
9	S. Farnboro' .	7 35	225	14	180	?	250	10·0	245	9·0	270	10·0	280	11·0	...	...	...	...	...	...	...
11	Falmouth . .	8 0	270	8	250	3·0	255	12·5	280	11·5	265	16·0	...	...	...	...	...	...	St.	...	...
12	Eskdalemuir .	7 40	?	?	calm		180	3·8	180	4·4	340	6·0	310	10·0	325	11·5	...	...	Ci.	330	2·9
																			Ci.-St.	315	...
12	S. Farnboro' .	7 45	?	?	15	0·4	80	8·0	80	5·5	315	6·0	350	7·5	345	10·0	345	14·0	Ci., Ci.-St., St.-Cu.	...	...
13	Aberdeen . .	7 30	225	8	280	1·0	50	1·0	260	3·5	270	12·0	...	...	...	...	...	...	...	...	...
14	S. Farnboro' .	8 5	135	10	calm		155	7·5	90	4·2	45	3·2	30	1·6	340	7·0	...	...	...	...	...
15	,,	7 35	135	10	40	0·9	115	14·5	125	14·0	85	13·0	85	7·0	...	...	...	...	...	...	...
15	Eskdalemuir .	12 10	160	10	160	3·6	155	6·0	160	9·0	145	10·5	140	9·0	...	...	...	...	Cu.	...	...
15	Cahirciveen .	14 50	135	10	70	9·5	130	6·0	165	17·0	150	20·0	...	...	...	...	...	...	Cu.	90	...
16	,,	16 15	110	8	170	3·9	100	4·5	90	6·0	115	5·5	120	6·5	95	8·0	75	4·4	St., Fr.-St.	135	...
16	Eskdalemuir .	7 40	180	7	360	0·5	95	1·4	165	6·5	170	6·0	150	3·8	170	3·6	...	...	...	...	...
16	,,	11 30	135	6	360	1·6	110	1·7	170	3·9	165	4·0	160	3·7	120	2·9	100	7·5	St.-Cu.	...	...
					6000 m.		7000 m.		8000 m.		9000 m.		10,000 m.		11,000 m.		12,000 m.				
3	Cahirciveen .	7 35	(For observations at lower levels, see above.)		305	23·0	...	...	...	...	...	...	...	...	...	...	...	...			
6	Falmouth . .	7 45			220	21·5	...	...	...	...	...	...	...	...	...	...	...	...			
7	S. Farnboro' .	7 30			220	22·5	...	...	...	...	...	...	...	...	...	...	...	...			
12	,,	7 45			360	13·0	...	...	...	...	...	...	...	...	...	...	...	...			
16	Eskdalemuir .	11 30			105	8·0	90	8·0	80	9·5	85	11·0	95	13·0	100	12·0	75	10·5			

Height of Station above M.S.L. = H.
Height of Anemometer above ground = h.

	H.	h.
Aberdeen .	14 m.	32 m.
Eskdalemuir .	242 m.	15 m.
S. Farnborough .	70 m.	31 m.
Cahirciveen .	9 m.	13 m.
Falmouth .	51 m.	12 m.



Wind Protractor.

Notes on Pressure Distribution.

November 1918.

1 7 h. Deep depression centred over Iceland, secondary over the Irish Channel.
2 7 h. Deep depression centred over Ireland.
3 7 h., 18 h. Low centred over Iceland; slight gradient over the British Isles.
5 7 h., 18 h. Deep depreasion centred near the Orkneys.
6 7 h. Westerly type.
18 h., 7 h. Ridge, S.W. to N.E., across the British Isles.
8 7 h. Deep depression centred near Stornoway.
18 h. Depression moved northwards to the Orkneys.
9 7 h. Westerly type.
11 7 h. Deep depression centred near Bodö.
12 7 h., 13 7 h. Anticyclone centred over the British Isles.
14 7 h., 15 13 h., 16 7 h., 13 h., 18 h. Anticyclone centred over the North Sea.

Notes on Ascents.

2nd, 8 h. 5 m. Misty.
6th, 7 h. 35 m. Misty at surface clear above.
7th, 7 h. 30 m. Dense mist at surface, clear above.
7th, 7 h. 50 m. Misty on ground, clear above.
8th, 15 h. 0 m. Barometer rising briskly.
9th, 7 h. 35 m. Ground mist rising.
11th, 8 h. 0 m. Slight haze, overcast.
12th, 7 h. 45 m. Misty.
14th, 8 h. 5 m. Dense fog below, clear above.
15th, 7 h. 35 m. Misty near surface.

10. Soundings with Pilot Balloons—*continued.*

Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	m/s.	By Anemometer. From N.	m/s.	At Heights above M.S.L. 500 m. From N.	m/s.	1000 m. From N.	m/s.	2000 m. From N.	m/s.	3000 m. From N.	m/s.	4000 m. From N.	m/s.	5000 m. From N.	m/s.	Cloud Observations. Type.	From N.	mr/s.
		h. m.	°		°		°		°		°		°		°		°			°	
18	S. Farnboro'	8 45	45	6	ca	lm	345	2·0	120	6·0	40	1·7	355	10·0	...	...	...	...	St.-Cu.	...	...
18	Eskdalemuir	11 50	?	?	ca	lm	280	0·6	140	2·8	350	4·6	340	0·6	330	10·0	325	8·5	Ci.	320	1·1
18	Cahirciveen	11 20	?	?	130	?	115	3·1	40	2·9	210	4·3	260	6·5	270	6·0	290	8·5	Ci.-St. / Ci.-Cu.	335	...
19	,,	10 25	?	?	150	6·5	170	9·0	170	8·5	200	9·0	...	...	...	...	...	...	Ci.-St.	245	...
19	Falmouth	12 5	?	?	25	2·3	90	0·2	205	2·3	20	1·9	15	4·5	20	5·5	15	10·5	A.-Cu., St.-Cu.	...	...
19	Aberdeen	7 30	?	?	250	1·0	285	4·0	195	2·0	245	3·0	...	...	...	...	...	...	...	...	...
19	Eskdalemuir	7 55	—	—	ca	lm	190	7·5	310	3·7	300	6·5	300	11·0	...	...	...	...	Ci. / Ci.-St. / A.-Cu.	320 / 335 / ...	3·0 / ... / ...
22	,,	7 35	180	12	ca	lm	170	7·5	185	17·0	165	16·5	...	...	...	...	...	...	...	...	...
23	S. Farnboro'	8 20	180	10	85	6·5	170	8·5	170	11·0	215	10·5	...	...	...	...	...	...	A.-Cu.	225	...
23	Cahirciveen	15 45	?	?	290	9·0	330	3·0	310	2·1	290	6·5	...	...	...	...	...	...	St. / Ci., Ci.-Cu., A.-Cu.	... / 295	... / ...
26	,,	15 40	270	10	220	6·0	245	12·0	255	12·0	250	13·5	255	19·5	...	...	...	...	Cu., St.-Cu.	225	...
26	S. Farnboro'	7 55	225	10	120	2·2	195	6·5	215	5·0	305	6·5	300	10·0	...	...	...	...	...	...	...
27	,,	7 50	290	10	240	1·1	290	9·5	295	9·5	290	12·0	300	14·5	...	...	...	...	A.-Cu.	...	...
27	Aberdeen	7 30	225	6	ca	lm	260	6·5	210	3·0	280	5·5	...	...	...	...	...	...	Ci.-St.	290	...
27	Falmouth	15 30	290	12	270	5·5	285	17·5	295	18·5	290	16·0	295	26·0	...	...	...	...	Ci. / Cu.-Nb.	295 / 280	4·8 / 9·6
27	Cahirciveen	8 0	270	12	260	7·0	275	13·5	275	17·0	275	22·0	...	...	...	...	...	...	Cu.	270	...
29	,,	12 30	?	?	ca	lm	120	3·3	130	8·5	35	3·1	305	1·6	...	...	...	...	A.-Cu., Ci.-Cu. / Cu.	270 / 295	... / ...
29	,,	15 40	?	?	ca	lm	95	2·7	110	3·2	110	4·6	275	5·5	...	...	...	...	Ci.-Cu. / A.-Cu.	295 / 270	... / ...
29	Eskdalemuir	12 40	340	5	290	2·5	320	5·5	355	6·0	325	12·5	325	17·0	325	22·0	320	17·5	Ci. / Ci.-St. / St.	315 / 315 / ...	3·5 / ... / ...
30	,,	8 5	180	8	ca	lm	175	3·8	210	7·0	245	4·8	280	7·0	300	6·0	...	...	Ci.	270	...

Day.	Station.	Time of Start, G.M.T.	6000 m. From N.	m/s.	7000 m. From N.	m/s.	8000 m. From N.	m/s.	9000 m. From N.	m/s.
18	Eskdalemuir	11 50	335	5·0	325	7·0	310	9·0	320	10·0
18	Cahirciveen	11 20	330	10·0	...	...	...	...	...	...
19	Falmouth	12 5	5	15·5	5	24·5	...	...	...	...

(For observations at lower levels, see above.)

Notes on Pressure Distribution.

November 1918.

18 7 h., 13 h. Anticyclone centred over Ireland.

19 7 h., 13 h. Extensive anticyclone covering the British Isles.

22 7 h. Southerly type.

23 7 h., 18 h. / 26 7 h., 18 h. / 27 7 h., 18 h. — High over the Continent: Low centred near Iceland, with extension over the British Isles.

29 13 h., 18 h. Shallow V over the British Isles.

30 7 h. Anticyclone extending from Archangel to Madeira.

Notes on Ascents.

18th, 8 h. 45 m. Misty.

18th, 11 h. 50 m. Barometer steady.

19th, 12 h. 5 m. Hazy on ground, clear above.

19th, 7 h. 55 m. Fairly clear to N., misty to S. Fog banks in valley.

22nd, 7 h. 35 m. Cloudless, barometer falling.

23rd, 8 h. 20 h. Misty.

26th, 15 h. 40 m. Slight haze.

29th, 12 h. 30 m. Misty at surface, clear above.

29th, 15 h. 40 m. Misty over valley.

11. Nephoscope Observations.

Aberdeen. Taken at 13 h. G.M.T.

Day.	Type of Cloud.	Degrees from N.	Velocity-height-ratio. Milliradians per Second.	Components. W.-E.	S.-N.	Remarks.
			mr/s.	mr/s.	mr/s.	
5	Ci.	236	3·0	+ 2·5	+ 1·7	Ci. to Ci.-Cu., floccular patches and threads.
7	Fr.-St.	202	28·0	+10·0	+26·0	
9	A.-St.	265	4·2	+ 4·2	+ 0·4	A.-St. formed by fusion of Ci.-Cu. waves.
12	Ci.	350	3·6	+ 0·6	− 3·5	Ci. changing into Ci.-Cu.
16	Fr.-St.	190	20·0	+ 3·4	+19·6	Broken St.-Cuf.
18	St.-Cu.	340	1·5	+ 0·5	− 1·4	Fused thin St.-Cu., rather hazy and indefinite.
23	St.-Cu.	220	4·2	+ 2·7	+ 3·2	St.-Cu. of diffuse, hazy type.
30	St.-Cu.	205	12·5	+ 5·3	+11·3	St.-Cu., very low; possibly fairly high St.-Cuf.

Note.—Very few observations could be made during this month, on account of the cloud being usually of an indefinite, low Stratus type, accompanied always by much mist.

12. Aurora.

The data for this month will be published in the December number.

METEOROLOGICAL OFFICE OBSERVATORIES—GEOPHYSICAL JOURNAL.

DAILY VALUES.—*Solar Radiation, Meteorology, Atmospheric Electricity, Terrestrial Magnetism, and Seismology.*

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1. SUNSHINE AND SOLAR RADIATION.

Day.	WESTMINSTER. Bright Sunshine.* Total.	Per cent. of Possible.	SOUTH KENSINGTON.—Lat. 51° 30′ N. Long. 0° 10′ W. Radiation received on Horizontal Surface by Callendar Radiograph. Daily Total.	Per cent. of Planetary.	Maximum. For Day. Amount.	Time.	11.30 h. to 12.30 h.	RICHMOND.—Lat. 51° 28′ N. Long. 0° 19′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation at Noon by Ångström Pyrheliometer. Intensity.	Vertical Component.	Sky.	ESKDALEMUIR.—Lat. 55° 19′ N. Long. 3° 12′ W. Bright Sunshine.* Total.	Per cent. of Possible.	Radiation by Ångström Pyrheliometer. Time.	Sky.	$\frac{p}{p_0}$ sec Z.	Intensity.	CAHIRCIVEEN. Bright Sunshine.* Total.	Per cent. of Possible.
	hr.	%	j/cm².	%	mw/cm².	h. m.	mw/cm².	hr.	%	mw/cm².	mw/cm².		hr.	%	h. m.			mw/cm².	hr.	%
1	0·0	0	61	8	8	13 10	4	0·0	0	...	...	...	0·0	0	...	...	...	...	0·0	0
2	0·0	0	97	13	11	13 5	9	0·0	0	...	...	...	0·0	0	...	...	...	...	0·0	0
3	0·6	7	167	23	21	13 0	10	1·3	16	...	...	...	0·0	0	...	...	...	...	0·2	3
4	0·0	0	63	9	9	12 30	9	0·0	0	...	...	...	0·0	0	...	...	...	...	2·5	31
5	0·0	0	97	14	13	13 47	3	0·0	0	...	...	...	0·0	0	...	...	...	...	0·4	5
6	0·0	0	66	9	7	11 20	5	0·0	0	...	...	...	0·0	0	...	...	...	...	1·6	20
7	1·6	20	*x* 244	35	20	11 59	*x* 20	1·8	22	...	...	...	0·0	0	...	...	...	...	0·0	0
8	0·0	0	56	8	6	11 30	6	0·0	0	...	...	...	1·1	15	...	...	...	...	2·8	36
9	0·3	4	231	33	18	13 20	16	0·3	4	...	...	...	0·0	0	...	...	...	...	2·3	29
10	0·8	10	147	22	21	13 45	8	0·5	6	...	...	...	0·0	0	...	...	...	...	3·1	40
11	0·3	4	144	21	17	11 20	16	0·2	3	...	...	...	2·4	34	12 11	Clear	...	55	0·0	0
12	0·0	0	77	11	9	13 20	6	0·3	4	...	...	...	0·5	7	...	...	...	...	1·5	19
13	0·0	0	131	19	12	12 45	10	0·0	0	...	...	...	0·0	0	...	...	...	...	0·2	3
14	0·0	0	61	9	7	12 20	7	0·0	0	...	...	...	4·7	66	...	...	...	...	2·9	38
15	0·0	0	83	13	7	11 20	6	0·0	0	...	...	...	0·0	0	...	...	...	...	0·1	1
16	2·8	36	228	35	20	11 40	*x* 20	3·4	44	52	14	Clear	0·3	4	...	...	...	...	1·7	22
17	*x* 3·5	45	183	28	*x* 22	11 20	14	*x* 5·7	73	46	12	Clear	3·9	56	...	...	...	...	0·2	3
18	0·0	0	133	21	18	12 20	18	0·0	0	...	...	...	0·9	13	...	...	...	...	0·3	4
19	3·2	41	210	32	17	13 10	16	4·0	51	42	11	Ci.	0·0	0	...	...	...	...	1·0	13
20	0·5	6	111	17	18	13 45	4	1·1	14	...	...	...	5·6	89	12 10	Clear	5·00	59	2·8	36
21	0·0	0	163	25	13	11 38	13	0·2	3	...	...	...	0·0	0	...	...	...	...	0·0	0
22	0·0	0	*n* 38	6	*n* 4	9 23	3	0·0	0	...	...	...	0·0	0	...	...	...	...	0·8	10
23	0·9	12	154	24	19	12 35	16	0·8	10	...	...	...	5·4	77	12 12	...	4·93	63	3·6	47
24	0·4	5	204	31	14	12 10	14	3·6	46	37	10	Misty	3·5	50	...	...	...	...	3·6	47
25	0·7	9	162	25	16	11 39	16	1·9	24	...	...	...	4·7	67	...	...	...	...	0·5	7
26	0·2	3	210	32	15	12 35	14	3·6	46	...	...	...	0·0	0	...	...	...	...	0·0	0
27	0·0	0	95	14	8	11 20	6	0·0	0	...	...	...	0·4	6	...	...	...	...	0·0	0
28	0·0	0	50	8	6	11 30	6	0·0	0	...	...	...	1·9	27	...	...	...	...	0·0	0
29	0·0	0	102	15	8	10 15	6	0·0	0	...	...	...	0·0	0	...	...	...	...	2·1	27
30	0·0	0	213	32	15	10 50	13	0·1	1	...	...	...	0·0	0	...	...	...	...	3·3	43
31	0·0	0	74	11	9	12 5	9	0·0	0	...	...	...	*x* 5·8	82	...	...	...	...	*x* 3·7	47
Means	0·52	7	131	19	13	—	10	0·94	12	—	—	—	1·32	19	—	—	—	—	1·32	17
Normal	0·52	7	147	—	—	—	—	1·19	16	—	—	—	0·68	10	—	—	—	—	1·32	17
	←—35 years—→		3 years					←—35 years—→					←— 5 years —→						←—35 years—→	

2. METEOROLOGY AND MAGNETISM:—CAHIRCIVEEN (VALENCIA OBSERVATORY).—Lat. 51° 56′ N. Long. 10° 15′ W.

Heights above M. S. L.:—H = 9·1 m. H_b = 13·7 m. H_a = 26·4 m. Above Ground: h_t = 1·3 m. h_r = 0·56 m. h_a = 13·9 m.

Day.	Air Pressure at Station Level. 9 h.	21 h.	Air Temperature in Degrees Absolute. 9 h.	21 h.	Max.	Min.	Humidity. Vapour Pressure. 9 h.	21 h.	Percentage. 9 h.	21 h.	Wind—Veer from North in degrees and Speed in metres per second. 9h. °	m/s.	21 h. °	m/s.	Cloud Amount (0–10) and Weather. 9 h.	21 h.	Rain 0 h. to 24 h.	Min. Temp. on Grass.	REMARKS.	Magnetism. Horizontal Force, Declination West, and Inclination.
	mb.	mb.	*a.* 200+	*a.* 200+	*a.* 200+	*a.* 200+	millibar.		%	%					Tenths of Sky covered.		mm.	*a.* 200+		
1	1014·6	1014·2	85·5	85·1	*x* 86	*x* 85	14·0	14·0	97	100	180	8	170	5	10	10	3·2	84	o. *n.* and *a.* o. ●⁰ *p.*	
2	1007·4	996·7	84·8	85·3	*x* 86	84	13·7	13·9	99	98	170	6	160	10	10	10●	16·8	84	● *a.* o. d. *p.*	
3	1005·7	1002·9	84·2	86·0	*x* 86	84	12·7	14·9	96	100	185	4	170	10	8	10	6·3	82	Fair *n.* and *a.* ●⁰ *p.*	
4	1003·3	1006·3	84·7	83·9	*x* 86	83	12·6	11·9	92	92	185	7	160	9	10	8	3·8	85	● *a.* Fair day.	
5	1003·3	994·2	83·8	85·6	*x* 86	83	11·9	13·7	93	95	190	4	165	11	8	10●	9·2	82	● *n.* and *a.* Fair day. ● *p.*	
6	992·2	1003·0	83·8	81·8	85	81	11·0	9·3	85	82	180	9	235	5	9	3	3·1	83	o. p. *n.* and *a.*, then fair to fine.	—
7	993·4	990·0	83·6	83·1	84	82	12·1	11·9	95	97	165	11	250	4	10●	10●	23·4	80	b. to o. *n.* ●² during day.	19° 31′·7
8	1004·2	1007·8	82·1	81·5	83	80	9·7	9·1	84	82	235	7	170	7	6	7	0·6	80	o. to c. *n.* Fine day.	—
9	1004·7	1004·0	82·1	82·2	84	80	10·1	10·6	88	92	180	5	175	7	3	10●	17·1	85	● *n.* ⌐ *a.* Fine to dull *p.*	
10	1009·6	997·3	80·6	83·1	83	79	8·4	11·2	81	91	255	6	160	13	4	9	*x* 28·4	76	p. *n.* ▲ p. to fine *a.* ⌐●² *p.*	17854 γ
11	1008·8	1009·6	82·4	85·4	*x* 86	82	9·8	14·2	84	99	240	10	220	9	10	10	6·8	—	p. *n.* ● to o. d. *p.*	19° 33′·2
12	1011·7	1012·0	84·3	85·7	*x* 86	84	12·6	14·1	95	97	230	7	210	10	8	10	2·4	87	●⁰ *n.* Fine to o. *a.* p. to d. *p.*	68° 7′·5
13	1011·3	1015·5	85·5	84·0	*x* 86	83	13·9	11·8	96	91	190	9	220	6	10	8	0·1	85	o. *n.* o. d. *a.* Fine *p.*	
14	1021·4	1021·8	81·3	80·3	83	79	9·6	9·0	88	88	250	4	—	1	4	9	—	78	Fine *n.* and *a.* c. to o. *p.*	
15	1011·5	1017·6	81·2	81·3	82	80	9·8	8·2	91	75	60	11	290	5	10●	8	20·8	78	● *n.* and *a.* o. to fine during day.	
16	1018·3	1019·5	81·2	80·9	82	80	8·0	8·5	74	80	260	12	270	11	8	10	2·8	77	p. *n.* ▲ q. during day. ⋃ and ⋃ *p.*	
17	1020·6	1003·3	80·6	83·0	83	80	8·9	9·9	85	81	265	5	275	9	8	9	10·6	78	o. to c. *n.* g. during day. ● *p.*	—
18	997·0	993·7	81·7	79·5	82	77	9·5	7·2	85	74	230	10	275	16	10	7	5·8	80	o. p. *a.* q. p. during day.	19° 33′·4
19	994·2	1004·8	81·1	81·2	83	78	8·2	7·2	76	*n* 67	255	18	310	9	10	4	1·2	76	q. p. *n.* and *a.* ⁄ 1 h., 2 h., and 6 h.–11 h.	—
20	1013·3	1018·5	79·2	76·4	81	76	7·6	6·8	81	87	310	9	55	2	7	8	1·4	76	Fine *n.* ▲⁰ p. *a.* Fine day.	17858 γ
21	1002·4	1001·7	79·3	82·7	83	76	8·1	11·6	85	97	135	14	245	9	10●	9	11·1	74	c. *n.* o. q. ● *a.* d. *p.*	19° 34′·0
22	999·3	996·4	84·4	83·1	85	82	13·3	9·2	99	75	220	9	235	17	10●	8	6·9	81	● *n.* and *a.* ⁄ 21 h., 23 h., and 24 h.	68° 5′·8
23	1002·1	1007·2	80·5	79·7	83	77	8·7	7·0	84	71	340	5	285	9	6	4	5·4	78	c. p. *n.* ⁄ 1 h.–3 h. c. p. *a.* ● q. *p.*	
24	1010·2	1014·2	78·5	78·3	*n* 80	78	6·8	6·9	75	78	295	7	320	9	5	5	3·9	74	q. ▲ p. during day.	
25	1020·9	1024·1	78·3	75·9	*n* 80	*n* 75	6·8	6·8	76	90	5	6	—	1	8	5	2·5	75	p. *n.* c. p. *a.* Fine *p.*	
26	1016·9	1009·4	81·4	83·9	84	76	10·5	12·5	96	97	180	6	235	11	10	10●	4·8	*n* 73	c. to o. *n.* o. to d. *a.* and *p.*	
27	1011·7	1007·3	82·3	83·8	84	82	9·6	12·4	82	97	285	5	225	10	9	10	0·2	80	o. d.	
28	1006·9	1003·4	83·5	84·1	85	83	12·4	12·7	98	97	240	12	225	9	10	10	0·6	82	Air very humid.	
29	1001·1	999·3	82·4	80·3	85	80	9·4	8·3	80	81	250	11	230	12	7	7	4·8	81	●⁰ early. q. ▲ p. *a.* and *p.*	
30	995·5	1007·2	81·5	79·6	82	79	9·4	7·5	85	77	300	8	355	10	8	3	4·8	78	p. *n.* and *a.* p. to fair later.	
31	1014·5	1014·9	77·7	78·8	*n* 80	77	7·4	6·5	87	71	65	2	155	8	4	6	0·8	74	Fine *n.* and *a.* Fair to o. d. *p.*	17856 γ
Means	1007·4	1007·0	82·0	82·1	83·7	80·2	10·2	10·3	87	87		8·0		8·5	8·1	8·0	209·6	79·5†	Monthly **Totals or Means.**	19° 33′·1
Normal	1009·5	1009·7	80·2	80·4	82·9	77·9	9·1	9·2	88	88		6·3		6·5	—	—	165·1	—	**Normals.**	68° 6′·6
	←— 45 years —→						←— 30 years —→				←— 35 years —→						45 yrs.			

* By Campbell-Stokes Sunshine Recorder. † Mean for 30 days. *x* denotes the maximum and *n* the minimum value in the column.

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3. METEOROLOGY:—RICHMOND, SURREY (KEW OBSERVATORY).—Lat. 51° 28′ N. Long. 0° 19′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H = 5·5 m. Barometer, H_b = 10·4 m. Cups of Anemometer, H_a = 25 m.
Heights above Ground:—Thermometers, h_t = 3·0 m. Rain-gauge, h_r = 0·53 m. Cups of Anemometer, h_a = 20 m.

Day.	Air Pressure at Station Level.		Air Temperature in Degrees Absolute.				Humidity. Vapour Pressure.		Humidity. Percentage.		Wind—Veer from North in degrees and Speed in metres per second.				Cloud Amount and Weather.		Rain 0 h. to 24 h.	Min. Temp. on Grass.	Remarks.
	9 h.	21 h.	9 h.	21 h.	Max.	Min.	9 h.	21 h.	9 h.	21 h.	9 h.		21 h.		9 h.	21 h.			
	mb.	mb.	*a.* 200+	*a.* 200+	*a.* 200+	*a.* 200+	millibar.		%	%	°	m/s.	°	m/s.	Tenths of Sky covered.		mm.	*a.* 200+	
1	1021·9	1021·4	80·3	83·1	83	77	9·5	11·9	93	97	203	4	236	4	10●≡⁰	10≡⁰	2·1	69	● *a.* Dull.
2	1020·2	1014·6	83·8	84·3	85	83	11·3	12·5	88	94	225	2	214	6	10≡⁰	10●	1·0	81	Dull. ● *n.*
3	1009·1	1014·8	85·5	82·3	88	82	13·6	11·1	94	96	225	6	—	1	10	9≡⁰	1·7	83	● early. Dull to fine.
4	1016·8	1018·6	85·4	84·5	86	*x* 84	13·5	12·3	94	91	236	5	236	3	10	10	0·8	76	●⁰ early. Dull. d. 18 h.
5	1015·7	1013·9	84·1	84·4	86	*x* 84	11·2	11·5	85	86	203	6	203	3	10	10	—	81	Dull to fair. d. 11 h. 50 m.
6	1007·0	1006·6	83·0	83·3	84	82	11·1	11·4	91	92	169	5	203	3	10	10	—	74	Dull. d. at times.
7	1010·6	1007·7	80·0	80·4	84	80	9·4	9·5	94	93	281	2	191	3	0≡⁰	0	1·5	73	● early. Fine to dull. ≡ *a.*
8	1008·5	1012·8	82·3	82·9	84	81	10·6	11·7	91	97	191	3	—	1	10≡⁰	10≡⁰	0·4	73	Dull. ● *n.*
9	1017·7	1014·3	77·1	82·7	83	77	8·1	10·9	99	91	—	1	191	6	*10*≡	10●	1·8	73	≡ *a.* Fine to o. p. ● *n.*
10	1010·4	1015·3	82·9	79·0	84	79	11·4	8·3	94	89	203	6	248	3	10●	3	*x* 9·3	80	Dull to fine. Frequent p.
11	1009·0	1014·7	82·0	82·0	83	78	10·9	10·4	96	91	214	3	270	2	8	10	6·4	73	● *a.* Dull to fair. ⊔ 20 h.
12	1012·6	1014·8	84·6	83·2	*x* 87	81	13·0	10·6	96	86	225	6	259	5	10●≡⁰	2	2·8	77	● 1 h.–2 h. and 7 h.–9 h. 30 m. Dull to fine. ⊍
13	1018·5	1020·5	86·4	86·0	*x* 87	*x* 84	13·1	13·1	86	88	259	5	236	6	9	10	—	80	o. Cloudy.
14	1022·3	1026·6	85·6	82·0	86	82	13·6	11·3	94	99	225	5	—	1	10≡⁰	*10*≡	3·7	84	● 9 h.–14 h. 30 m. Dull. ≡ *n.*
15	1023·2	1015·2	84·1	84·1	85	82	12·6	11·3	96	86	214	4	203	6	10≡⁰	10	2·1	78	● early. Dull. p. 21 h.
16	1015·2	1014·0	81·4	79·3	84	79	7·7	7·9	70	83	281	5	236	6	8	3	0·5	78	p. 0 h. 30 m. and 11 h. 20 m. Fine to fair.
17	1015·0	1015·3	78·6	77·4	81	77	7·5	7·6	83	91	281	3	225	3	3	10≡⁰	—	74	Fine. ⊔ 20 h.–21 h.
18	999·4	988·6	79·3	78·9	82	79	8·1	8·0	85	86	248	4	259	5	6	2	4·1	69	Fine to dull. p.
19	990·9	988·9	76·8	79·4	81	77	6·2	6·5	78	68	259	4	281	9	1	9	0·1	74	Fine to fair.
20	1000·4	1011·6	77·0	78·1	79	75	7·0	7·4	87	84	270	4	315	3	9●≡⁰	10	0·8	70	Dull *a.* Finer later.
21	1016·5	1008·4	74·2	77·5	*n* 78	74	6·1	6·9	91	82	—	1	180	2	4	10≡⁰	0·2	70	⌙. Dull to fair. ≡⁰.
22	1006·5	995·6	78·0	84·0	85	78	8·1	9·4	93	72	124	3	259	9	10≡⁰	7	2·9	75	Dull and wet.
23	990·0	1004·0	80·8	76·2	82	75	8·4	5·9	80	77	248	9	270	4	4	0	2·4	78	Dull to fine. p. Line q. ▲ 12 h.
24	1004·3	1006·7	73·7	74·3	*n* 78	73	5·8	5·8	90	87	—	1	304	2	? 6≡⌙	0⌙	—	68	⌙. ≡ 8 h.–9 h. 30 m. Fine. — *n.*
25	1009·9	1016·5	72·6	75·6	*n* 78	72	5·1	5·9	86	81	270	3	349	4	3≡⁰⌙	1	—	67	⌙ *a.* Fine to o.
26	1023·7	1019·6	72·0	76·1	79	*n* 71	5·2	6·3	92	83	—	1	214	4	0≡⁰⌙	4	0·3	*n* 66	⌙ *a.* Fine. ≡⁰ *a.*
27	1008·8	1010·4	82·1	79·8	84	79	11·4	8·6	99	87	225	5	248	3	10	10	2·8	68	Dull. p. *a.*
28	1002·8	1004·6	84·3	83·1	85	80	11·3	11·9	85	97	248	7	248	3	10	10	3·5	76	Dull. ● *n.*
29	1000·3	1001·5	85·0	80·8	86	80	12·1	8·8	87	84	248	6	248	5	10	0	0·1	82	Mostly dull and cloudy.
30	998·7	992·6	79·6	80·0	82	79	8·1	8·6	83	86	225	4	214	4	8	2	—	76	o. to c. Fine to o. *n.*
31	1000·3	1014·8	78·1	76·9	79	75	7·7	7·0	88	86	360	7	11	3	10	0	2·2	76	● early. Mostly dull.
Means	1009·9	1010·5	80·7	80·7	83·2	78·6	9·6	9·4	89	87		4·2		3·9	7·7	6·5	53·5	74·9	Monthly **Totals** or **Means.**
Normal	1012·9	1012·9	77·2	77·5	79·9	75·1	7·4	7·5	87	87		3·7		3·7	—	—	56·8	—	**Normals.**
			45 years				30 years				35 years						45 years		

4. METEOROLOGY:—ESKDALEMUIR, DUMFRIESSHIRE.—Lat. 55° 19′ N. Long. 3° 12′ W.

Heights above Mean Sea Level:—Rain-gauge Site, H = 242 m. Barometer, H_b = 237·3 m. Vane of Anemometer, H_a = 250 m.
Heights above Ground:—Thermometers, h_t = 0·9 m. Rain-gauge, h_r = 0·38 m. Vane of Anemometer, h_a = 15 m.

																			Remarks.
1	984·7	985·9	81·1	82·9	*x* 84	77	10·7	11·7	99	97	190	5	200	6	10●≡⁰	10	9·9	72	●≡⁰ till 11 h. ≡ *n.*
2	984·0	977·0	82·0	81·4	83	*x* 81	11·1	11·0	97	100	190	7	190	6	10●≡⁰	10≡⁰	14·7	81	●≡⁰ throughout day.
3	973·2	982·2	82·0	81·8	*x* 84	*x* 81	11·4	10·8	100	96	170	2	180	3	10≡⁰	10	6·1	81	●⁰≡⁰ *a.* c. to b. c. v. *p.* e. *n.*
4	980·9	983·8	83·0	81·9	*x* 84	*x* 81	12·1	10·8	99	96	210	14	200	8	10≡⁰	10	10·3	80	●≡⁰ *a.* and *p.* Dull *n.*
5	978·5	980·2	81·8	81·2	83	80	11·0	10·5	98	97	170	5	190	6	10●≡⁰	10	9·2	80	d. early. ●≡⁰ *a.* d. ≡⁰ *p.*
6	974·0	972·2	81·5	81·5	82	80	10·4	10·6	94	96	160	4	200	11	10	10	5·4	78	d. to ●≡⁰. Dull *n.*
7	975·7	972·8	78·7	79·6	81	78	8·6	8·4	95	86	180	5	160	7	10≡⁰	10	—	78	o. to b. early. ≡ to o. *a.* and *p.*
8	974·9	982·6	80·7	79·5	82	79	10·1	9·1	97	94	170	4	200	4	10≡⁰	10	4·0	78	●⁰≡⁰ 3 h.–11 h., then fine.
9	982·8	980·1	78·7	79·6	81	78	8·2	9·1	90	94	170	4	170	6	10≡⁰	9	3·4	78	o. to ●≡⁰. o. *n.*
10	979·4	981·7	75·7	75·8	80	74	7·2	6·3	96	85	—	1	250	3	10≡⁰	1	0·7	75	o. ≡⁰ *a.* ●⁰≡⁰ *p.* Fine. ⩊ *n.*
11	981·0	981·5	72·8	77·3	79	72	5·5	8·2	92	99	360	2	—	0	1⌙	10≡⁰	1·1	70	≡⁰⌙⁰ b.c. *a.* o. *p.* ≡⁰ d. after 20 h.
12	973·4	976·9	83·3	80·3	*x* 84	79	11·3	8·3	91	81	230	12	260	13	9	3	12·2	76	≡⁰●² *a.* p. q. *p.* Fine to o. *n.*
13	980·0	983·6	83·9	80·9	*x* 84	80	12·4	8·6	96	81	230	12	240	7	10●≡⁰	7	4·9	79	●≡⁰ *a.*, then o. to c. Fine *n.*
14	988·7	993·0	79·0	77·6	80	76	8·1	6·8	87	81	230	8	220	9	6	2	—	78	Fair *a.* p. ⌒ 10 h., then very fine.
15	989·5	983·7	76·0	76·4	77	75	6·5	6·9	86	89	—	0	—	1	10	10	0·6	72	d. at times, with d.⁰ *a.* and *p.* ●⁰ 20 h. o. *n.*
16	981·3	977·6	74·8	73·9	77	72	6·8	6·2	98	94	190	4	—	0	10≡⁰	10	5·9	69	⊔⌙⁰ 1 h. ≡ to c. *a* ●² q. ✲≺⊔ *n.*
17	987·1	977·0	72·2	74·0	75	71	4·7	5·6	81	85	—	1	150	7	6⌙	10●	5·2	70	Fine ⊔ 1 h. ⌙⁰ *a.* and *p.* ● and sleet *n.*
18	963·0	956·0	75·4	74·0	76	72	6·7	5·6	93	85	220	9	220	3	7●✲	4	13·6	71	⊠✲ 1 h. Dull with p. all day. ⊠ *n.*
19	957·4	965·1	70·1	71·4	74	68	4·7	4·9	97	90	—	0	—	0	7≡⁰	0	0·1	68	⊔ 1 h. ⌙≡⁰ *a.* o. *p.* b. ⊠ *n.*
20	972·7	982·8	66·9	69·6	74	*n* 66	3·4	4·4	90	91	—	1	—	1	1⌙²	0⌙	—	63	Fine with ⌙ and ⊠.
21	985·3	980·8	69·0	70·7	*n* 73	67	3·5	4·1	77	80	—	0	—	0	9⌙	10⌙	—	64	⌙²⊔ early. ⊕ 9 h. 15 m. o. *a.* and *p.* ⊠
22	974·4	956·4	71·7	76·4	78	69	4·5	7·5	81	97	—	1	220	8	10⌙	10≡⁰	*x* 17·0	66	⊔ 7 h. ✲ *a.* and *p.* ●²≡⁰ *n.* ⊠ 2 cms.
23	957·6	967·8	74·8	74·0	78	72	5·7	5·4	82	82	300	11	290	8	6	4	4·8	72	●⁰ 1 h. Fine *a.* y. *p.* ✲ and sleet *n.*
24	972·7	974·4	73·2	73·0	75	70	5·2	5·5	83	91	200	2	280	8	6⌙	1	—	66	⌙². Fair to fine *a.* *p.* and *n.*
25	979·7	990·0	75·0	73·2	76	70	5·0	4·2	71	*n* 68	340	11	120	2	5	0	—	70	q 1 h. ⌙⁰. Fine *a.* b. v. *p.* b. ⩊ *n.*
26	988·3	974·4	69·8	79·5	81	*n* 66	4·4	9·2	92	95	—	1	220	14	10≡⁰⌙	10●≡⁰	14·5	*n* 62	⩊ 1 h. ⌙. o. p. ✲⁰ *a.* ≡⁰● after 14 h. 30 m.
27	971·4	971·6	77·0	77·1	81	77	7·0	7·2	87	88	270	13	240	12	8	10●	8·2	75	o. 1 h. Fair. p. *a.* and *p.* ● after 19 h. 30 m.
28	967·8	972·1	78·0	75·9	79	75	7·2	6·8	83	90	280	8	200	2	8	10	2·0	74	● till 3 h. Fair *a.* p. *p.* Dull *n.*
29	965·5	963·8	74·1	78·3	79	74	6·4	7·8	96	88	40	5	220	8	10●≡⁰	10●	9·3	73	e. ●≡⁰ 5 h. 30 m.–16 h. 30 m. ●⁰ *n.*
30	962·8	970·2	75·9	75·2	77	74	7·0	6·5	93	91	130	2	20	10	10●²≡⁰	4	8·7	74	c. 1 h. ●²≡⁰ 6 h.–11 h. 30 m. ≡⁰ *p.* Fair *n.*
31	981·3	988·0	73·5	67·4	76	67	5·1	3·4	81	85	360	7	—	1	6⌙	0	—	71	⌙⁰. Cloudless day.
Means	976·4	976·9	76·5	76·8	79·3	74·2	7·5	7·5	90	89		5·2		5·6	8·2	6·9	171·8	73·0	Monthly **Totals** or **Means.**
Normal 1911-15	975·1	975·1	75·8	76·1	78·4	73·4	6·8	6·9	89	89		6·3		6·5	—	—	217·8	—	**Normals.**

Temperatures at or below the normal freezing point of water are printed in small type.

5. GEOPHYSICS :—RICHMOND (KEW OBSERVATORY).

Day.	Earth Temperature at 9 h. 0·3 m.	Earth Temperature at 9 h. 1·2 m.	Height above M.S.L. of Surface of Underground Water. Daily Mean.	Height above M.S.L. of Surface of Underground Water. Extremes.	Magnetic Force. Horizontal Comp't. Mean Time.	Horizontal Comp't.	Declination. Mean Time.	Declination. West.	Inclination. Mean Time.	Inclination. North.	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre.* Factor 2·18. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +.	Charge per cc. ×10¹⁶. −.	Air-Earth Current ×10¹⁶.
	a.	a.															About 15 h.		About 15 h.
	200+	200+	cm.	cm.	h m	γ	h m	° ′	h m	° ′			v/m.	v/m.	v/m.	v/m.	Coulomb.		Amp/cm².
1	79·1	81·0	229	...	...	...	...	...	...	...	2	0	320	295	295	535	...	...	...
2	80·0	80·9	228	228	...	...	...	...	...	...	1	0	255	590	390	160	...	...	0·60
3	81·0	81·0	229	...	...	...	...	...	...	...	1	0	80	310	495	480	0·58	0·30	1·15
4	81·5	81·0	229	...	...	...	...	...	...	...	0	1	145	190	415	160	0·39	0·11	0·65
5	81·9	81·1	230	...	11 18	18422	14 32	14 47·1	14 11	66 58·0	0	0	80	270	390	430	0·69	0·34	0·40
6	82·0	81·2	232	...	...	...	...	...	...	...	0	0	—	—	—	—	...	...	...
7	82·0	81·5	234	...	...	...	...	...	...	...	2	0 ?	—	—	—	—	...	...	...
8	81·1	81·6	235	...	...	...	...	...	...	...	2	0 ?	—	—	335	280	...	...	..
9	81·0	81·7	234	...	...	...	...	...	...	...	2	1	270	940	430	190	0·58	0·15	0·40
10	81·1	81·8	236	...	...	...	...	...	...	...	2	2	145	145	−40	605	...	...	...
11	80·8	81·7	236	...	...	...	...	...	...	...	2	2	455	470	310	630	0·58	0·41	0·45
12	81·0	81·8	237	...	11 17	18412	14 21	14 46·7	14 22	66 59·2	1	1	240	55	255	480	0·41	0·22	0·60
13	81·7	81·8	240	...	...	...	...	...	...	...	1	0	105	280	230	280	0·39	0·26	0·70
14	82·5	81·8	242	...	...	...	...	...	...	...	1	0	40	350	270	430	...	...	...
15	82·4	81·8	247	...	...	...	...	...	...	...	0	1	430	230	200	15	...	...	...
16	82·4	81·9	251	...	...	...	...	...	...	...	0	1	65	270	335	360	0·34	0·07	0·70
17	81·2	81·9	254	...	...	...	...	...	...	...	1	0	135	480	350	605	0·30	0·24	0·30
18	80·3	81·9	258	...	...	...	...	...	...	...	1	1	25	525	270	430	0·43	0·19	0·50
19	80·0	82·0	261	...	11 0	18391	14 23	14 53·0	14 10	67 0·3	2	1	120	360	310	215	0·32	0·26	0·95
20	79·2	81·9	263	...	...	...	...	...	...	...	1	1	320	535	350	375	0·34	0·07	0·55
21	78·9	81·9	265	...	...	...	...	...	...	...	1	0	215	725	750	765	...	...	...
22	78·5	81·8	268	...	...	...	...	...	...	...	1	0	240	175	390	200	...	...	...
23	79·1	81·7	269	270	...	...	...	...	...	...	1	1	65	295	280	480	0·26	0·34	0·75
24	78·1	81·5	269	...	...	...	...	...	...	...	1	0	270	725	400	535	0·26	0·15	0·50
25	78·0	81·6	269	...	...	...	...	...	...	...	2	0	415	565	270	320	...	...	...
26	76·3	81·1	268	...	...	...	...	...	...	...	2	0	400	605	685	550	...	...	...
27	76·5	81·0	267	...	11 36	18388	14 23	14 45·7	14 16	66 58·7	0	1	40	230	320	535	...	...	...
28	77·9	80·9	265	...	...	...	...	...	...	...	0	1	135	135	200	470	...	...	...
29	79·4	80·8	263	...	...	...	...	...	...	...	0	0	55	145	200	320	0·43	0·37	...
30	79·3	80·8	263	...	...	...	...	...	...	...	0	0	145	480	510	510	...	...	...
31	79·0	80·8	262	...	...	...	...	...	...	...	1	2	−40	−160	320	605	...	...	...
M.	80·1	81·5	249	—	—	—	—	—	—	—	—	—	185†	365†	342†	417†	—	—	—
	78·4	80·9																	
	←12 years→																		

6. GEOPHYSICS :—ESKDALEMUIR.

Day.	Magnetic Force. North Component. Maximum. 15000 γ+. h m	N. Max. γ	N. Min. 15000 γ+. γ	N. Min. h m	West Component. Maximum. 4000 γ+. h m	W. Max. γ	W. Min. 4000 γ+. γ	W. Min. h m	Vertical Component. Maximum. 44000 γ+. h m	V. Max. γ	V. Min. 44000 γ+. γ	V. Min. h m	Magnetic Character of Day.	Electric Character of Day.	Potential Gradient, Volts per metre.* Factor 6·13. 3 h.	9 h.	15 h.	21 h.	Charge per cc. ×10¹⁶. +.	Charge per cc. ×10¹⁶. −.	Air-Earth Current ×10¹⁶.
															About 15 h.				About 15 h.		
															v/m.	v/m.	v/m.	v/m.	Coulomb.		Amp/cm².
1	16 22	1036	896	19 16	17 15	963	711	21 5	16 28 / 16 33	1179	1028	23 57	2	1 *b*	350	−155	155	340	...	...	...
2	22 3	1002	933	0 56	22 7	918	832	0 3	15 50 / 20 55	1062	1030	0 0	0	2 *c*	180	−790	−430	455	...	...	...
3	21 27	990	880	10 57	15 13	942	832	21 10	17 2	1105	1044	6 50	1	0 *a*	240	380	315	415			
4	22 18	994	925	15 27	13 52	928	879	20 57	0 0	1068	1045	11 6	0	1 *a*	35	305	185	215	...	...	...
5	20 43	986	962	††	12 21	919	895	2 11	2 10	1054	1046	10 0	0	1 *b*	290	:+	135	485	...	...	...
6	17 43	985	969	10 9	12 40	918	902	22 27	2 5	1048	1043	10 55	0	1 *b*	330	330	65	190	...	...	...
7	19 18	1050	897	22 0	17 31	940	789	18 53	19 2	1090	1005	24 0	2	1 *a*	140	450	165	380	...	...	...
8	22 10	1059	820	2 27	13 33	1068	752	22 3	13 51	1276	*n* 881	2 24	2	?	165	80	‖	‖	...	...	...
9	20 4	1004	860	13 50	12 36	945	822	19 6	14 6	1117	972	24 0	2	? 1 *b*	‖	‖	−105	155	...	...	...
10	19 27	1069	878	9 53	19 30	950	810	15 57	15 57	1112	966	0 14	1	1 *b*	450	415	105	335	...	...	...
11	19 39	1016	933	20 26	13 25	928	783	19 24	19 20	1084	1022	0 57	1	1 *b*	615	320	350	90	...	...	...
12	20 13	1023	912	14 13	13 20	922	854	18 6	18 8	1071	1042	0 0	1	? 2 *b*	140	105	¶	¶	...	...	...
13	23 7	1037	927	13 13	12 36	937	803	22 21 / 17 6	17 17	1094	1035	5 37	1	?	¶	¶	135	140	...	...	...
14	21 42	997	932	15 47	15 21	926	864	22 20	13 45 / 14 13	1074	1043	0 0	0	0 *a*	130	130	140	185	...	...	...
15	5 43	982	934	13 17	12 54	922	885	1 30	15 20	1068	1050	2 41	0	1 *b*	165	120	315	130	...	...	...
16	5 45	986	934	17 21	16 26	932	867	20 45	19 28	1101	1057	2 30	0	1 *c*	100	285	70	235	...	...	...
17	3 42	1001	944	9 45	12 54	930	860	18 8	18 25	1076	1052	3 59	0	2 *b*	485	255	380	220	...	...	...
18	21 53	1015	959	23 47	11 26 / 13 2	922	858	23 45	21 40	1075	1058	23 5	0	2 *c*	−140	170	−300	320	...	...	...
19	6 36	1003	898	12 11	14 5	961	841	20 35	20 34	1130	1050	6 40	1	0 *b*	120	315	250	665	...	...	...
20	22 48 / 22 53	984	887	17 0	13 1	929	851	23 59	18 24	1138	1064	3 39	1	0 *a*	305	355	355	785	...	...	...
21	18 40	1005	929	6 14	16 57	936	841	18 38	18 32	1106	1075	8 9	1	0 *a*	490	355	690	355	...	...	...
22	21 29	1050	949	22 20	11 31	920	843	20 45	0 45 / 22 51	1095	1067	4 27	1	2 *c*	120	70	:−	−170	...	...	...
23	**	**	**	**	**	**	?834	2 27	**	**	**	**	1	2 *b*	−355	200	205	230	...	...	...
24	**	**	**	**	12 35	?933	**	**	**	**	**	**	1	0 *a*	240	200	255	150	...	...	...
25	17 40	*x* 1253	*n* 742	20 12	15 48	*x* 1094	*n* 690	19 18	17 18 / 17 42	> 1369	1022	23 24	2	0 *a*	90	215	265	555	...	...	...
26	21 4	1076	833	0 7	13 1	927	750	20 38	20 37	1142	1027	0 0	2	2 *b*	320	630	−90	35	...	...	...
27	0 52 / 20 36	960	921	0 1	13 6	901	851	1 8	15 41	1100	1058	0 30	0	2 *c*	−70	−230	135	−2235	...	...	...
28	22 56	976	933	12 55	12 18	920	889	23 9	16 0	1100	1092	23 0	0	2 *b*	115	105	140	190	...	...	...
29	22 3	974	941	15 40	13 39	914	891	16 38	15 37	1104	1091	4 15	0	2 *b*	80	−85	−155	−140	...	...	...
30	19 0 / 19 10	975	962	0 29	12 40 / 13 3	910	894	20 9	23 0	1095	1089	13 1	0	2 *b*	115	−215	−140	130	...	...	...
31	19 27	999	930	13 32	13 10	953	866	19 21	19 21	1105	1087	12 50	0	0 *a*	85	130	205	285	...	...	...
M.	—	1017§	911§	—	—	941§	835§	—	—	1102†	1040†	—	—	—	‡185	‡168	‡145	‡181	—	—	—

* The potential gradient is reckoned positive if the potential increases upwards.
† Mean for 28 days. ‡ Mean for 25 days. § Mean for 29 days.
†† 0 h. 9 m., 0 h. 32 m., and 12 h. 13 m. :+ Indeterminate, positive value.
x denotes the maximum and *n* the minimum value in the column.
‖ Insulation bad. ¶ No trace. ** Clock stopped.
:− Indeterminate, negative value.

7. JERSEY (ST LOUIS OBSERVATORY).—Lat. 49° 12′ N. Long. 2° 6′ W.

Heights above M. S. L. :—H = 54 m. H_b = 55 m. Above Ground :—h_t = 1·48 m. h_r = 1·72 m. h_a = 8 m.

Day.	Air Pressure at Station Level. 7 h.	14 h.	21 h.	Mean of 3 Readings.	Air Temperature in Degrees Absolute. 7 h.	14 h.	21 h.	Max.	Min.	Mean of 5 Readings.	Min. Temp. on Grass.	Percentage of Humidity. 7 h.	14 h.	21 h.	Mean.	Rain 0 h. to 24 h.	REMARKS.
	a. 200+	*a.* 200+	*a.* 200+	*a.* 200+	*a.* 200+	*a.* 200+	*a.* 200+	*a.* 200+	*a.* 200+	*a.* 200+	*a.* 200+	%	%	%	%	mm.	
	mb.	mb.	mb.	mb.													
1	1017·3	1017·8	1018·6	1017·9	80·1	81·9	82·9	83·6	80·0	81·7	74·6	94	100	100	98	3·2	●⁰ 6 h. ≡²● 8 h. ≡² all day.
2	1016·6	1014·6	1012·2	1014·5	82·6	83·7	83·7	83·8	82·4	83·2	82·4	100	98	98	99	0·8	≡² 5 h. 30 m. ≡⁰ from 7 h. till night. ●
3	1008·7	1010·6	1012·1	1010·5	84·6	85·4	85·6	86·0	83·8	85·1	82·6	98	100	100	99	3·0	≡² ● all day. [13 h. 40 m.
4	1013·1	1013·9	1014·2	1013·8	84·0	84·7	84·0	84·7	83·5	84·2	83·3	98	92	92	94	0·5	● during the night.
5	1012·2	1011·0	1007·9	1010·3	83·1	83·4	82·0	84·0	81·8	82·9	80·7	96	95	98	96	0·3	● 15 h. 45 m.
6	1001·3	1000·7	1002·6	1001·5	81·9	83·0	83·4	84·1	81·6	82·8	79·9	100	92	100	97	0·4	●⁰ 13 h. ●² 20 h.
7	1007·0	1005·1	1001·8	1004·6	82·9	83·9	82·8	84·8	82·0	83·3	75·0	96	85	91	91	—	5 h.
8	1001·3	1005·3	1010·2	1005·7	82·5	84·6	82·4	84·6	82·2	83·3	80·0	96	90	90	92	0·5	● 5 h. 45 m. ●⁰ 18 h.
9	1012·2	1012·5	1011·0	1011·9	81·9	83·2	82·7	83·2	80·3	82·3	71·3	89	83	96	89	3·2	5 h. ●² 18 h.
10	1007·4	1010·7	1013·9	1010·7	83·1	84·3	82·8	84·3	82·5	83·4	80·5	93	66	73	77	3·4	●⁰ 4 h. 5 h. 30 m. q. 18 h. 30 m.
11	1007·2	1010·2	1012·9	1010·1	85·3	83·9	84·7	85·4	82·3	84·3	80·0	90	97	100	96	6·4	● early and at 12 h. 30 m. ≡⁰.
12	1013·7	1013·1	1015·5	1014·2	85·1	85·2	85·4	85·7	84·8	85·2	84·4	98	98	100	99	4·2	≡⁰ 4 h. 30 m. ≡²●² 10 h. ≡² 21 h.
13	1018·2	1019·4	1020·6	1019·5	85·4	86·4	85·3	86·5	*x* 85·0	85·7	84·9	98	98	93	96	0·2	●⁰ 21 h.
14	1021·0	1022·1	1023·1	1022·1	85·1	86·0	84·6	*x* 86·9	84·3	85·3	82·1	89	93	93	92	—	
15	1020·2	1016·6	1011·7	1016·2	84·1	85·2	83·0	85·5	83·0	84·2	82·7	91	82	96	90	1·5	● 20 h. ▲● during the night.
16	1015·0	1015·7	1014·9	1015·1	82·9	83·4	81·4	84·1	81·0	82·6	79·7	75	58	72	68	1·7	● 10 h. 35 m. q. afternoon.
17	1012·9	1014·9	1013·4	1013·7	82·3	82·6	81·7	82·6	77·8	81·4	74·5	71	67	72	70	7·2	< *n.* ▲ 4 h. 45 m.–7 h. 25 m. 20 h.
18	1000·3	995·4	991·0	995·5	83·9	83·4	83·1	84·9	80·4	83·1	71·2	95	93	68	85	2·6	● 4 h. ●⁄ 15 h. ⁄ *n.* [30 m.
19	992·3	992·9	993·3	992·9	79·0	82·1	82·8	83·0	78·1	81·0	75·0	70	60	68	66	2·1	q. all day.
20	999·1	1004·9	1010·3	1004·7	80·8	81·1	80·1	82·5	79·5	80·8	76·0	72	*n* 48	57	59	0·2	● shower 6 h.
21	1013·0	1007·8	998·6	1006·5	78·8	80·0	80·8	82·0	77·7	79·9	*n* 70·0	61	81	98	80	9·5	6 h. ●² from 13 h. 40 m. to 22 h.
22	1001·7	1001·5	999·1	1000·7	83·1	84·0	84·8	84·9	82·0	83·8	75·8	98	100	100	99	*x* 11·5	● 4 h. ≡²●² 11 h. 30 m. ≡² from 14 h.
23	995·8	997·0	1002·3	998·3	84·0	82·1	80·1	84·4	79·0	82·9	81·0	84	85	71	80	4·3	4 h. ●² showers. [to night.
24	1000·3	1001·5	1005·0	1002·2	80·3	79·9	78·0	80·4	77·2	79·2	71·5	73	72	74	73	2·1	4 h. 55 m. ● showers from 7 h.
25	1007·1	1009·8	1012·7	1009·4	78·5	79·4	79·7	*n* 79·8	76·3	78·7	71·6	75	53	62	63	6·4	▲● 0 h.–2 h. and 6 h.
26	1018·5	1019·0	1017·7	1018·3	77·1	81·7	80·4	81·7	*n* 76·0	79·4	70·6	75	53	71	66	—	
27	1010·9	1009·1	1009·4	1009·8	82·5	83·9	83·6	84·0	80·0	82·8	75·4	99	100	100	100	10·8	●² night and day, with ≡².
28	1005·8	1005·5	1006·1	1005·8	84·1	84·1	84·1	84·1	82·8	83·0	82·5	98	98	98	98	0·3	≡⁰●⁰ 4 h. ≡² 6 h. ≡⁰ 11 h. ●⁰ 15 h.
29	1003·1	1001·3	1002·6	1002·3	84·4	84·8	83·0	85·0	82·6	84·0	82·5	100	100	81	94	3·0	● *a.* ●² 13 h. ≡² 15 h.
30	998·5	993·5	992·1	994·7	82·4	82·9	81·0	82·8	80·4	81·9	78·0	70	74	90	78	2·2	● showers night and day.
31	995·0	1001·7	1009·1	1002·1	81·0	80·0	80·1	81·0	79·9	80·4	75·3	77	70	69	72	0·4	● early. ●⁰ 6 h.
Means	1007·9	1008·2	1008·6	1008·2	82·5	83·2	82·6	83·9	81·0	82·6	77·9	89	83	86	86	91·9	
Normal	1006·7	1006·9	1007·5	1007·0	80·0	81·1	80·3	82·0	78·6	80·4	75·3	84	80	82	82	98·4	

JERSEY (ST LOUIS OBSERVATORY).

Day.	Wind Direction and Force (0–12 on the Beaufort Scale). 7 h. Dir.	(0–12)	14 h. Dir.	(0–12)	21 h. Dir.	(0–12)	Mean.	Sunshine.* Total. hr.	Per cent. of Possible. %	Cloud Amount (tenths of Sky covered), Type of Cloud, and Direction whence coming. Tenths. 7 h.	Upper. Type. 7 h.	Direction. 7 h.	Lower. Type. 7 h.	Direction. 7 h.	Tenths. 14 h.	Upper. Type. 14 h.	Direction. 14 h.	Lower. Type. 14 h.	Direction. 14 h.	Tenths. 21 h.	Upper. Type. 21 h.	Direction. 21 h.	Lower. Type. 21 h.	Direction. 21 h.	Mean Amount.
1	S	3	SSW	3	SSW	3	3·0	0·0	0	10	…	…	…	…	10	…	…	≡Nb.	…	10	…	…	≡	…	10·0
2	S	2	SW	3	SSW	4	3·0	0·0	0	10	…	…	…	…	10	…	…	Nb.	…	10	…	…	Nb.	…	10·0
3	SW	4	WSW	3	SW	4	3·7	0·0	0	10	…	…	Nb.	…	10	…	…	≡Nb.	…	10	…	…	≡Nb.	…	10·0
4	SW	4	SW	3	S	2	3·0	0·0	0	10	…	…	Nb.	…	10	…	…	…	…	10	…	…	…	…	10·0
5	S	4	S	3	SSE	2	3·0	0·2	2	10	…	…	…	…	10	…	…	…	…	10	…	…	…	…	10·0
6	SE	3	S	3	SSW	3	3·0	0·0	0	10	…	…	…	…	10	…	…	…	…	10	…	…	Nb.	…	10·0
7	WSW	3	SSW	4	SSW	5	4·0	*x* 7·3	87	3	…	…	Cu.	…	3	Ci.	…	Cu.	…	3	…	…	…	…	3·0
8	S	4	WSW	3	NW	2	3·0	0·1	1	10	…	…	Nb.	…	10	A.-Cu.	…	…	…	7	…	…	…	…	9·0
9	SW	3	SSW	4	SSW	3	3·3	1·7	20	8	A.-Cu.	WSW	…	…	10	…	…	…	…	10	…	…	Nb.	…	9·3
10	SW	4	WSW	5	WSW	4	4·3	4·6	56	3	…	…	Cu.-Nb.	SW	8	…	…	Cu.-Nb.	WSW	7	…	…	…	…	6·0
11	WSW	5	W	4	W	4	4·3	0·1	1	10	…	…	Nb.	WSW	10	…	…	Nb.	…	10	…	…	Nb.	…	10·0
12	WSW	5	WSW	6	W	5	5·3	0·0	0	10	…	…	…	…	10	…	…	≡Nb.	…	10	…	…	≡Nb.	…	10·0
13	W	5	W	4	SW	4	4·3	1·2	14	10	…	…	…	…	10	…	…	Cu.	W	10	…	…	…	…	10·0
14	SW	4	SW	5	S	2	3·7	1·5	18	8	A.-Cu.	WSW	…	…	10	…	…	St.-Cu.	WSW	10	…	…	St.-Cu.	…	9·3
15	SSW	4	SSW	4	SSW	5	4·3	1·3	16	10	…	…	St.-Cu.	SW	6	A.-Cu.	…	Fr.-Cu.	SW	10	…	…	Nb.	WSW	8·7
16	WNW	5	W	4	WNW	4	4·3	3·2	39	10	A.-Cu.	…	Nb.	NW	5	…	…	Cu.-Nb.	W	5	…	…	Cu.-Nb.	W	6·7
17	WSW	3	WNW	3	SW	4	3·3	3·3	41	8	A.-Cu.	…	…	…	4	…	…	Cu.-Nb.	NW	7	…	…	Cu.-Nb., Nb.	WSW	6·3
18	WSW	4	WSW	4	W	6	4·7	0·0	0	10	A.-Cu.	SW	…	…	10	…	…	Nb.	SW	7	…	…	Cu.-Nb.	W	9·0
19	WNW	6	W	5	WNW	6	5·7	4·7	57	3	…	…	Cu.-Nb.	…	4	…	…	Cu.	W	4	…	…	Cu.-Nb.	WNW	3·7
20	NNW	5	NW	6	NW	4	5·0	4·9	60	4	…	…	Cu.-Nb.	NW	6	…	…	Cu.-Nb.	NW	5	…	…	Cu.-Nb.	NW	5·0
21	NW	1	SW	3	SSW	2	2·0	0·2	2	5	A.-Cu.	…	Cu.	…	10	…	…	Nb.	…	10	…	…	Nb.	…	8·3
22	WNW	4	WSW	4	W	4	4·0	0·0	0	10	…	…	Nb.	WNW	10	…	…	≡Nb.	…	10	…	…	Nb.	…	10·0
23	W	6	WNW	4	NW	2	4·0	1·8	22	8	…	…	Cu.-Nb.	W	8	A.-Cu.	NW	Nb.	NW	5	…	…	…	…	7·0
24	—	0	NNW	3	NW	3	2·0	2·8	34	10	…	…	Nb.	…	5	Ci.	…	Cu.	NNW	5	…	…	…	…	6·7
25	NNW	3	N	3	N	4	3·3	4·3	52	10	…	…	Cu.-Nb.	…	3	…	…	Cu.-Nb.	N	6	…	…	Cu.-Nb.	…	6·3
26	N	1	SW	3	WSW	5	3·0	5·9	73	3	…	…	Cu.	NW	4	Ci.	…	Cu.	W	10	…	…	…	…	5·7
27	WSW	6	W	4	W	3	4·3	0·0	0	10	…	…	≡Nb.	…	10	…	…	≡Nb.	…	10	…	…	≡Nb.	…	10·0
28	W	5	WNW	6	W	5	5·3	0·0	0	10	…	…	≡Nb.	…	10	…	…	Nb.	…	10	…	…	Nb.	…	10·0
29	W	5	W	5	W	4	4·7	0·0	0	10	…	…	Nb.	…	10	…	…	Nb.	…	7	…	…	Cu.-Nb.	…	9·0
30	W	4	W	4	W	3	3·7	0·8	11	6	A.-Cu.	SW	…	…	6	…	…	Cu.-Nb.	W	5	…	…	…	…	5·7
31	N	4	NNE	5	NNE	4	4·3	0·0	0	10	…	…	Nb.	…	10	…	…	Cu.-Nb.	N	10	…	…	…	…	10·0
Means		3·8		4·0		3·7	3·8	49·7	19·5	8·4	—	—	—	—	8·1	—	—	—	—	8·2	—	—	—	—	8·2
Normal		3·9		4·0		3·9	3·9	62·3	24·4	7·8	—	—	—	—	7·3	—	—	—	—	7·2	—	—	—	—	7·4

* Actinic rays by Jordan Recorder.

8. WIND COMPONENTS: Metres per second at fixed hours, together with the greatest mean hourly velocity, or the greatest velocity attained in a gust, and the time of its occurrence.

NORTH WALES:—HOLYHEAD.

Height of Head above—Roof 8·8 m., Ground 13·7 m., M.S.L. 19·2 m.
Height of Cups above—Roof 4·6 m., Ground 7·6 m., M.S.L. 15·2 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	7·4	...	1·5	...	6·9	...	2·9	...	5·5	...	3·7	...	6·8	...	4·6	...	15·3	1	55
2	7·6	...	3·1	...	8·3	...	1·7	...	7·1	...	1·4	...	6·8	...	1·3	...	14·4	11	5
3	7·9	...	5·3	...	6·9	...	6·9	...	4·3	...	1·8	...	6·9	...	...	...	15·9	9	0
4	8·0	...	1·6	...	9·0	...	1·8	...	7·9	...	3·3	...	6·4	...	2·6	...	17·1	10	0
5	7·5	...	...	...	8·5	...	3·5	...	5·7	...	3·8	...	7·5	...	...	...	16·5	23	50
6	8·3	...	...	1·7	10·6	...	...	2·1	5·5	...	1·1	...	4·5	...	4·5	...	17·7	0	40
7	3·1	...	4·7	...	7·4	...	1·5	...	9·5	...	...	...	10·9	...	...	2·2	19·0	21	10
8	10·9	...	...	2·2	2·5	...	2·5	...	1·8	...	4·3	...	1·3	...	3·0	...	17·8	0	5
9	5·7	...	3·8	...	8·5	...	...	...	6·8	...	1·3	...	4·9	...	3·3	...	15·1	9	10
10	5·6	...	...	...	3·6	...	2·4	...	...	3·5	8·5	...	1·4	...	3·3	...	14·8	11	55
11	9·4	...	...	3·9	2·6	...	0·5	...	...	...	7·2	...	6·0	...	4·0	...	14·2	3	5
12	5·1	...	5·1	...	4·9	...	4·9	...	3·6	...	8·8	...	2·8	...	6·7	...	16·5	14	35
13	5·3	...	5·3	...	7·2	...	7·2	...	6·9	...	6·9	...	3·5	...	3·5	...	17·7	12	10
14	3·3	...	4·9	...	1·9	...	4·5	...	2·4	...	3·6	...	1·3	...	1·9	...	11·2	4	25
15	2·3	...	...	...	...	0·6	...	2·9	...	Ca	lm	...	...	9·1	...	3·8	12·7	18	25
16	...	5·6	5·6	...	...	...	9·8	...	...	...	12·8	...	...	3·0	15·1	...	20·5	19	15
17	...	2·9	6·9	...	...	4·7	7·1	...	...	...	3·3	...	9·7	...	4·0	...	24·9	22	5
18	...	...	10·8	...	3·4	...	8·2	...	...	...	8·5	...	1·0	...	5·1	...	19·2	0	20
19	...	5·9	14·2	...	3·5	...	8·2	...	...	8·0	19·4	...	...	6·9	6·9	...	27·0	15	55
20	...	8·8	13·1	...	...	11·4	11·4	...	...	9·5	9·5	...	...	6·7	6·7	...	22·8	5	40
21	...	4·7	4·7	...	0·3	...	1·6	...	4·9	...	...	3·3	0·9	...	...	2·1	11·4	0	55
22	...	...	...	3·3	6·7	...	...	2·8	4·4	...	6·6	...	2·2	...	11·3	...	21·9	16	30
23	3·1	...	15·4	...	...	13·0	8·7	...	...	7·0	10·4	...	...	2·3	11·6	...	24·8	3	50
24	...	4·0	9·7	...	...	4·5	10·9	...	...	5·6	5·6	...	...	6·5	6·5	...	17·2	7	0
25	...	7·5	11·1	...	...	11·1	11·1	...	...	12·6	2·5	...	...	6·8	1·3	...	21·5	9	50
26	...	3·7	5·5	...	2·1	...	5·2	...	8·5	...	5·7	...	9·8	...	6·6	...	20·2	21	5
27	6·3	...	6·3	...	...	2·5	12·6	...	...	...	9·2	...	4·6	...	6·8	...	20·2	22	55
28	6·2	...	9·2	...	2·1	...	10·6	...	1·1	...	5·5	...	3·1	...	4·7	...	19·2	0	50
29	4·4	...	6·6	...	5·6	...	5·6	...	2·3	...	11·6	...	2·0	...	10·3	...	24·3	12	5
30	4·9	...	7·4	...	6·7	...	6·7	...	...	11·1	...	...	...	16·9	...	...	20·9	20	20
31	...	10·6	...	10·6	...	12·5	...	5·2	...	6·0	...	4·0	...	Ca	lm	...	19·9	0	20
S+N & W+E	176·0		183·5		179·5		171·0		151·5		173·6		162·5		143·7				
S−N & W−E	68·6		140·1		58·9		145·0		24·9		159·0		46·1		127·5				

SCOTLAND N.:—DEERNESS.

Height of Cups above—Roof 1·5 m., Ground 4·9 m., M.S.L. 57·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Vel. in Max. Hourly Run.	Time of Max.
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.		
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	hrs.
1	6·1	...	2·5	...	1·6	...	1·6	...	4·5	...	0·9	...	5·1	...	7·6	...	12·1	17, 18
2	4·3	...	2·9	...	...	Ca	lm	...	4·8	...	...	2·0	4·3	...	1·8	...	5·2	1, 3, 5, 15
3	2·8	...	1·1	...	1·5	...	0·6	...	...	Ca	lm	...	...	Ca	lm	...	3·6	24
4	4·7	...	...	4·7	9·1	...	...	3·8	6·2	...	...	...	2·5	...	1·7	...	10·5	8, 11
5	5·6	...	...	...	5·2	...	...	2·1	4·6	...	...	...	3·3	...	...	...	6·6	5
6	3·0	...	...	...	8·8	...	...	3·6	9·6	...	...	6·4	12·1	...	...	5·0	14·1	20
7	8·9	...	...	...	4·5	...	1·9	...	6·8	...	...	1·3	10·3	...	...	4·3	12·1	23
8	10·9	...	...	4·5	10·3	...	...	4·3	8·0	...	...	1·6	9·3	...	1·9	...	12·1	4, 8
9	4·8	...	1·0	...	7·9	...	...	...	6·8	...	...	1·3	8·5	...	...	3·5	10·2	12, 13, 22
10	6·2	...	...	...	3·6	...	...	...	2·2	...	...	1·4	2·7	...	...	1·8	7·9	1
11	...	Ca	lm	...	1·3	...	...	0·9	...	Ca	lm	...	8·2	...	...	3·4	13·1	24
12	9·7	...	...	4·0	6·2	...	...	...	5·7	...	3·8	...	...	1·5	7·4	...	13·4	17
13	0·4	...	2·3	...	9·2	...	...	...	8·2	...	...	...	8·3	...	8·3	...	13·8	11
14	8·1	...	8·1	...	6·2	...	4·2	...	8·2	...	3·4	...	4·2	...	6·2	...	12·1	17
15	7·6	...	5·1	...	7·1	...	4·7	...	3·0	...	7·3	...	3·4	...	5·2	...	13·8	11
16	...	...	3·3	...	...	2·6	...	6·4	...	5·3	...	5·3	...	6·1	...	2·5	9·5	11
17	...	4·8	1·0	...	...	Ca	lm	...	0·9	...	2·1	...	10·6	...	...	4·4	14·1	23
18	12·0	...	...	8·0	6·5	...	...	1·3	...	Ca	lm	...	2·7	...	4·1	...	15·4	1
19	1·3	...	1·9	...	...	Ca	lm	...	...	3·8	...	2·6	...	4·4	...	6·6	8·9	23
20	...	1·9	...	4·5	...	3·3	...	3·3	...	Ca	lm	...	...	1·3	0·9	...	7·5	1
21	1·4	...	1·4	...	...	Ca	lm	...	...	Ca	lm	...	1·4	...	2·2	...	4·3	6
22	...	Ca	lm	...	4·2	...	0·8	...	10·3	...	...	4·3	5·3	...	...	12·8	14·8	24
23	...	4·5	...	10·9	...	11·4	11·4	...	...	6·3	6·3	...	...	1·9	4·5	...	18·7	11
24	...	1·7	8·3	...	...	2·6	12·9	...	...	...	5·2	...	...	8·0	1·6	...	13·1	9, 10, 11
25	...	8·2	3·4	...	...	6·8	...	1·3	...	5·8	1·2	...	...	Ca	lm	...	9·8	4
26	3·6	...	2·4	...	11·1	...	...	...	14·8	...	...	...	7·9	...	3·3	...	15·4	18
27	4·8	...	11·6	...	4·5	...	10·9	...	...	...	14·1	...	...	...	9·2	...	15·8	12
28	...	...	6·9	...	...	1·5	7·4	...	...	2·4	12·3	...	...	1·5	7·4	...	12·5	14, 15
29	...	1·8	4·3	...	...	Ca	lm	...	...	2·3	...	...	...	2·3	...	2·3	4·9	1, 2
30	...	2·5	...	2·5	...	4·0	...	1·6	...	6·2	...	...	...	8·2	...	...	11·8	24
31	...	11·6	...	2·3	...	6·0	4·0	...	...	4·3	2·9	...	...	Ca	lm	...	12·8	2
S+N & W+E	143·2		108·9		147·0		89·0		141·0		85·7		145·3		119·9			
S−N & W−E	69·2		26·1		70·6		31·8		68·2		33·3		74·9		26·7			

ENGLAND S.W.:—SCILLY.

Height of Head above—Ground 9·8 m., M.S.L. 49·7 m.
Height of Cups above—Ground 5·8 m., M.S.L. 45·7 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust.	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	...	...	4·6	...	...	...	4·5	...	1·8	...	4·3	...	3·8	...	3·8	...	9·3	4	50
2	4·6	...	1·9	...	5·8	...	2·4	...	8·5	...	3·5	...	9·6	...	4·0	...	16·0	23	55
3	4·3	...	10·4	...	1·9	...	4·6	...	5·0	...	2·1	...	7·7	...	5·1	...	15·6	1	20
4	9·0	...	6·0	...	7·7	...	3·2	...	6·6	...	2·7	...	6·3	...	...	...	15·0	3	10
5	7·8	...	1·5	...	5·2	...	3·5	...	6·3	...	...	...	12·3	...	...	2·5	17·5	22	0
6	13·0	...	...	2·6	8·3	...	...	...	...	...	4·6	...	...	2·6	6·3	...	17·0	0	40
7	3·0	...	4·5	...	7·4	...	1·5	...	12·6	...	...	2·6	16·4	...	...	3·3	20·0	19	40
8	...	2·9	6·9	...	...	5·3	5·3	...	...	2·6	6·2	...	1·8	...	2·7	...	12·0	2	15
9	6·2	...	2·6	...	8·5	...	3·5	...	1·8	...	4·3	...	2·7	...	2·7	...	13·7	11	15
10	8·6	...	1·7	...	...	5·4	13·1	...	...	...	7·1	...	10·2	...	2·1	...	22·0	4	45
11	...	...	14·6	...	...	...	9·3	...	...	...	7·5	...	...	...	8·8	...	20·3	3	20
12	1·7	...	8·6	...	...	...	11·7	...	...	...	10·4	...	1·8	...	9·0	...	14·3	11	45
13	3·7	...	8·9	...	3·2	...	7·7	...	5·1	...	7·7	...	5·3	...	8·0	...	12·9	2	25
14	5·6	...	8·3	...	...	1·3	...	...	0·7	...	1·1	...	6·6	...	2·7	...	13·8	4	55
15	8·1	...	3·4	...	10·0	...	...	...	8·9	...	3·7	...	...	3·5	8·5	...	20·8	23	35
16	...	6·8	10·1	...	...	5·4	13·1	...	...	5·6	13·5	...	...	5·6	13·5	...	24·8	17	40
17	...	8·6	12·8	...	...	8·9	8·9	...	...	...	7·1	...	6·5	...	9·7	...	20·3	2	50
18	...	4·0	9·6	...	...	...	10·4	...	...	3·5	17·2	...	...	7·5	18·1	...	30·6	18	45
19	...	7·2	17·3	...	...	6·7	16·1	...	...	8·3	20·0	...	...	8·6	12·8	...	32·6	0	15
20	...	11·0	7·4	...	...	11·0	7·4	...	...	9·4	9·4	...	...	5·6	5·6	...	20·0	6	0
21	...	0·4	0·2	...	8·9	...	...	3·7	...	...	11·3	...	...	5·6	13·5	...	20·8	11	35
22	...	4·5	10·8	...	...	...	11·7	...	...	...	18·4	...	...	3·4	16·8	...	21·6	21	20
23	...	...	17·1	...	...	7·9	19·2	...	...	4·5	4·5	...	...	4·2	6·2	...	26·6	8	40
24	...	7·0	10·4	...	...	10·4	10·4	...	...	10·4	7·0	...	...	5·9	5·9	...	21·8	6	50
25	...	11·5	4·8	...	...	6·9	2·9	...	...	11·5	2·3	...	...	6·9	2·9	...	19·5	0	55
26	...	3·3	3·3	...	1·5	...	3·5	...	5·6	...	8·3	...	4·6	...	11·1	...	14·6	18	5
27	...	...	10·8	...	...	...	11·7	...	...	3·5	5·2	...	1·8	...	9·0	...	16·5	6	50
28	...	...	13·8	...	...	...	12·5	...	...	2·6	13·0	...	...	...	14·2	...	18·9	3	20
29	...	...	12·9	...	...	...	11·3	...	...	2·6	12·6	...	...	...	13·8	...	22·5	23	55
30	...	...	13·3	...	...	...	12·5	...	...	4·1	9·9	...	...	13·1	5·4	...	21·2	0	45
31	...	13·1	5·4	...	...	10·8	...	...	...	6·3	...	...	...	2·1	...	2·1	20·4	0	40
S+N & W+E	155·9		246·5		148·4		225·6		137·8		227·5		172·0		230·1				
S−N & W−E	−4·7		241·3		−11·6		218·2		−12·0		222·3		22·8		214·3				

ENGLAND E.:—GREAT YARMOUTH.

Height of Head above—Roof 10·7 m., Ground 12·8 m., M.S.L. 15·9 m.
Height of Cups above—Roof 3·7 m., Ground 18·3 m., M.S.L. 22·3 m.

Day.	3 h.				9 h.				15 h.				21 h.				Max. in a Gust. (Gorleston.)	Time of Gust.	
	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.	S.	N.	W.	E.			
	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	m/s.	h	m
1	3·6	...	...	1·5	4·5	...	...	1·9	5·2	...	...	...	3·6	...	2·4	...			
2	3·3	...	3·3	...	1·8	...	1·8	...	3·3	...	1·4	...	3·6	...	...	1·5			
3	5·5	...	...	1·1	3·8	...	0·8	...	4·0	...	4·0	...	1·8	...	2·7	...			
4	1·4	...	1·4	...	2·2	...	1·4	...	4·0	...	4·0	...	1·9	...	1·3	...			
5	2·6	...	0·5	...	3·0	...	...	1·3	5·1	...	1·0	...	3·3	...	...	...			
6	2·3	...	...	...	4·9	...	...	4·9	3·1	...	...	4·7	1·6	...	...	0·3			
7	1·6	...	...	...	...	Ca	lm	...	1·4	...	1·4	...	2·9	...	0·6	...			
8	2·6	...	0·5	...	2·3	...	0·4	...	3·6	...	...	2·4	2·1	...	...	0·9			
9	...	Ca	lm	...	0·6	...	2·9	...	1·1	...	1·7	...	4·3	...	...	...			
10	3·2	...	...	0·6	4·3	...	...	1·8	2·5	...	...	2·5	3·1	...	4·7	...			
11	2·1	...	2·1	...	2·6	...	...	...	...	Ca	lm	...	...	Ca	lm	...			
12	...	Ca	lm	...	3·2	...	...	0·6	4·4	...	4·4	...	4·0	...	4·0	...			
13	2·1	...	2·1	...	2·0	...	4·8	...	3·1	...	4·7	...	3·3	...	3·3	...			
14	2·7	...	1·8	...	1·8	...	1·8	...	...	Ca	lm	...	1·4	...	1·4	...			
15	...	Ca	lm	...	2·6	...	...	0·5	3·2	...	0·6	...	6·2	...	...	...	No record.		
16	4·3	...	...	...	1·2	...	6·1	...	2·2	...	3·2	...	3·8	...	2·6	...			
17	4·1	...	2·7	...	1·0	...	5·1	...	0·6	...	2·9	...	0·3	...	1·6	...			
18	4·2	...	...	0·8	2·5	...	2·5	...	4·2	...	0·8	...	...	...	4·9	...			
19	1·8	...	2·7	...	2·6	...	6·4	...	1·1	...	2·8	...	...	...	4·9	...			
20	...	2·1	2·1	...	...	0·9	4·5	...	...	1·3	3·0	...	...	1·4	3·3	...			
21	...	1·0	4·8	...	...	...	2·0	...	0·9	...	2·1	...	0·8	...	1·8	...			
22	0·9	...	2·1	...	1·5	...	...	0·6	5·6	...	...	5·6	3·8	...	...	0·8			
23	4·7	...	4·7	...	4·2	...	4·2	...	...	...	8·9	...	2·4	...	5·7	...			
24	3·3	...	4·9	...	1·8	...	2·7	...	1·1	...	1·7	...	2·0	...	3·0	...			
25	1·1	...	2·8	...	2·4	...	3·6	...	2·0	...	4·8	...	...	4·7	3·1	...			
26	...	1·1	2·8	...	...	...	3·6	...	1·3	...	1·9	...	5·2	...	...	...			
27	8·3	...	...	1·7	7·9	...	...	...	0·8	...	3·8	...	1·8	...	1·8	...			
28	3·5	...	0·7	...	4·6	...	6·8	...	...	...	7·2	...	...	...	2·3	...			
29	...	Ca	lm	...	3·0	...	3·0	...	5·3	...	5·3	...	2·6	...	3·8	...			
30	4·1	...	2·7	...	2·8	...	1·1	...	2·9	...	0·6	...	2·9	...	...	0·6			
31	...	Ca	lm	...	...	3·3	...	1·4	...	6·4	2·6	...	...	5·2	...	...			
S+N & W+E	77·5		50·4		79·3		78·5		79·7		90·0		80·0		63·3				
S−N & W−E	69·1		39·0		70·9		52·5		64·3		59·6		57·4		55·1				

*

9. Seismological Diary.

Earthquakes:—Eskdalemuir.

Day.	Phase.	Time, G.M.T.	Period.	Amplitudes.			Δ.	Remarks.
				A_N.	A_E.	A_Z.		
		h m s	s	μ	μ	μ	km.	
1	i_e	2 44 28	...	...	...	...	...	
	i_n	2 44 33	...	...	...	...	...	
	i_n	2 51 41	...	...	...	...	...	
	i_e	2 51 42	...	...	...	...	...	
	L	2 59 6	...	...	...	...	...	
	M	3 4 44	28	105	...	...	...	
	F	4 30	...	...	...	...	...	
2	P	9 56 57	...	...	...	...	6000	
	PR_1	9 59 13	...	...	...	...	...	
	PR_2	10 0 3	...	...	...	...	...	
	S	10 4 35	...	...	...	...	...	
	L	10 14	...	...	...	...	...	
	F	12 30	...	...	...	...	...	
4	P	12 2 1	...	...	...	...	11600	Santiago, Chili, according to press reports. Further details difficult to obtain, owing to faintness of photographic trace.
	PR	12 6 19	...	...	...	...	...	
	S	12 14 6	...	...	...	...	...	
	F	15 0	...	...	...	...	...	
6	P	8 51 58	...	...	...	...	7200	P and S somewhat uncertain, owing to presence of large microseisms and wind effects.
	S	9 0 32	...	...	...	...	...	
	L	9 12 30	...	...	...	...	...	
	M	9 16 50	28	56	...	...	...	
	M	9 17 34	24	...	60	...	...	
	F	11 30	...	...	...	...	...	
8		1 24 to	...	...	...	...	...	Faint disturbance.
		1 40	...	...	...	...	...	
9		5 14 to	...	...	...	...	...	Faint disturbance.
		5 34	...	...	...	...	...	
	i	18 24 41	...	...	...	...	...	Disturbance of low amplitude. L not well defined. The occurrence of a better defined group of long waves at 19 h. 48 m. indicates a second disturbance overlapped by the first.
	i	18 27 36	...	...	...	...	...	
	i	18 29 31	...	...	...	...	...	
	L	18 50	...	...	...	...	...	
16	L	10 30	...	...	...	...	...	Earlier phases faint and doubtful.
	F	10 47	...	...	...	...	...	
		20 34 to	...	...	...	...	...	Slight disturbance.
		20 49	...	...	...	...	...	
21		9 46 to	...	...	...	...	...	Slight disturbance.
		10 14	...	...	...	...	...	
28	i	18 21 22	...	...	...	...	...	Slight disturbance.
	L	18 27	...	...	...	...	...	
	F	19 0	...	...	...	...	...	

Microseisms of N. Component:—Eskdalemuir.

Day.	0 h.		6 h.		12 h.		18 h.	
	A_N.	T.	A_N.	T.	A_N.	T.	A_N.	T.
	μ	s	μ	s	μ	s	μ	s
1	1·0	5·5	1·5	6·5	0·9	6	1·1	4
2	1·1	4	0·8	5	1·0	4	1·0	4·5
3	1·2	6	2·3	6	2·2	6	1·7	7
4	1·4	8	1·6	6	?	?	1·5	6·5
5	2·0	7·5	1·5	6	1·6	6	1·8	6
6	1·6	6	2·2	6·5	1·6	6	1·6	6
7	1·9	6	1·2	4	1·0	5	1·1	5
8	1·6	6	1·2	6	1·5	6	1·9	8
9	2·0	6	1·9	7	2·0	8	2·5	7
10	2·4	8	3·1	8	3·1	7·5	3·2	6
11	3·2	6	2·3	6	2·3	6	1·8	5
12	1·6	6	0·9	6	2·3	6	2·3	4
13	1·8	5·5	2·0	4·5	2·3	6	2·8	5
14	2·5	6	3·3	6	...	...	...	...
15	3·5	7	3·1	6	2·5	7	2·4	6
16	2·2	6	2·3	4	1·6	6	2·1	4·5
17	1·6	6	1·9	6	1·6	6	2·0	4·5
18	2·5	4	3·1	6	4·2	5	4·2	6
19	3·6	6	3·4	6	3·9	6	2·9	5
20	3·1	6	1·6	6	1·4	6	1·0	5
21	...	...	...	...	1·2	5	2·0	4
22	2·0	4	2·3	4	2·1	5	1·9	5
23	1·9	5	2·7	5	3·3	4	3·4	6
24	3·0	6	3·2	5·5	2·5	5	1·8	5
25	2·0	4	1·1	4	1·5	4	1·1	4
26	1·1	4	1·0	4	1·1	4	1·0	4·5
27	1·6	5	1·9	6	3·0	6	3·1	8
28	3·2	6	1·9	6	1·6	6	1·6	5·5
29	1·6	4	1·7	5	1·9	4	2·7	6
30	2·7	6	2·7	6	3·0	6	1·8	6
31	2·1	4	1·2	4·5	1·5	4	1·1	4

Means for Month $\begin{cases} A_N = 2·1. \\ T = 5·6. \end{cases}$ Normals, 1911–17 $\begin{cases} A_N = 2·1. \\ T = 5·8. \end{cases}$

Earthquakes:—Richmond (Kew Observatory).

Day.	Times, G.M.T. of		Remarks.
	Commencement.	Max. Phase.	
	h m	h m	
1	2 54	3 10	Amplitude on trace = 4·2 mm.
2	10 5	10 20	Amplitude on trace > 17 mm.
4	12 13	12 50	Amplitude on trace > 17 mm.
6	...	9 25	Amplitude on trace = 1·3 mm.
9	...	19 46	Small.
21	...	9 48	Very small.
28	...	18 35	Very small.

10. Soundings with Pilot Balloons.

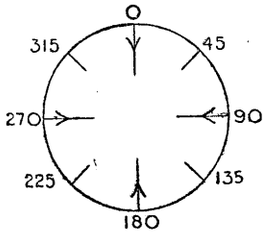
Day.	Station.	Time of Start, G.M.T.	Horizontal Velocity of Wind. Geostrophic. From N.	Geostrophic. m/s.	By Anemometer. From N.	By Anemometer. m/s.	At Heights above M.S.L. 500 m. From N.	500 m. m/s.	1000 m. From N.	1000 m. m/s.	2000 m. From N.	2000 m. m/s.	3000 m. From N.	3000 m. m/s.	4000 m. From N.	4000 m. m/s.	5000 m. From N.	5000 m. m/s.	Cloud Observations. Type.	From N.	m/s.
		h. m.	°		°		°		°		°		°		°		°			°	
3	Cahirciveen .	8 25	250	20	195	5·5	245	7·5	250	10·5	235	18·5	...	...	...	...	...	...	St.	245	...
																			Cu., St.-Cu.	180	...
8	Falmouth . .	13 25	320	8	295	3·9	310	8·0	305	8·5	265	9·0	270	8·5	235	11·0	240	11·5	Ci.	225	...
																			Cu.	315	...
8	Cahirciveen .	16 5	250	16	230	6·0	230	9·0	240	11·0	230	13·5	...	...	...	...	...	...	A.-St., St.	225	...
9	,, .	8 20	230	18	195	7·0	225	12·5	225	12·5	230	27·0	230	23·0	...	...	...	...	A.-St.	225	...
																			St.-Cu.	205	...
9	S. Farnboro' .	8 50	230	10	calm		245	10·0	250	11·0	255	9·0	255	7·0	...	...	...	...	Ci., A.-Cu.	...	...
10	Cahirciveen .	8 20	290	14	280	5·0	280	9·0	285	12·0	275	12·5	270	14·0	...	...	...	...	St., Cu.	295	...
10	,, .	15 15	250	12	180	4·9	190	10·0	200	14·5	225	15·0	...	...	...	...	...	...	A.-St.	...	...
10	Falmouth . .	14 35	290	18	275	4·4	285	10·0	280	11·0	280	11·0	275	13·0	...	...	...	...	Fr.-St., Cu.	205	...
																			Cu.	...	...
11	Eskdalemuir .	11 50	140	8	20	2·0	110	6·5	130	8·5	170	6·0	...	...	...	...	...	...	Fr.-St.	...	...
																			A.-Cu.	135	7·1
14	Cahirciveen .	8 40	250	14	265	3·0	270	8·0	275	11·5	255	17·0	260	20·0	...	...	...	...	Cu., St.-Cu.	45	...
																			Cu., St.-Cu.	225	...
14	,, .	16 0	250	12	calm		230	2·9	220	7·0	240	11·0	235	12·0	240	18·0	...	...	A.-St., A.-Cu.	225	...
																			St., St.-Cu.	225	...
16	Falmouth . .	8 55	290	16	285	4·3	295	17·5	295	31·5	285	15·5	...	...	...	...	...	...	Ci.-St.	...	...
16	,, .	12 15	290	18	275	5·5	280	14·0	285	12·5	280	15·0	...	...	...	...	...	...	Cu., Fr.-Cu.	...	...
16	S. Farnboro' .	9 50	320	16	240	7·5	290	19·5	285	22·0	280	16·5	255	21·5	...	...	...	...	Cu.	...	...
17	,, .	10 40	290	10	230	5·0	315	11·0	320	11·5	305	11·5	315	14·0	315	11·0	315	12·5	Ci.-Cu.,-A.Cu.	...	...
																			Ci., Cu.	315	...
17	Falmouth . .	14 25	270	12	290	2·8	285	9·0	290	8·5	290	10·5	305	8·0	...	...	...	...	A.-St., Cu.-Nb.	270	...
17	Eskdalemuir .	8 5	360	15	calm		10	7·0	40	10·0	310	7·5	305	8·0	310	10·5	...	...	A.-Cu.	315	3·4
17	Cahirciveen .	8 35	290	8	280	4·0	290	7·0	290	13·0	285	17·0	...	...	...	...	...	...	Cu., St.-Cu.	295	...
18	S. Farnboro' .	8 10	270	16	225	4·0	290	18·5	285	18·5	280	22·5	270	31·0	...	...	...	...	Ci.-Cu.	...	...
19	,, .	8 0	270	18	240	7·0	285	16·5	305	24·0	300	11·0	300	22·0	...	...	...	...	St.-Cu., Ci.	...	...
20	Cahirciveen .	9 5	320	12	335	5·5	320	12·5	315	16·5	310	16·0	315	31·0	...	...	...	...	A.-Cu., Cu.-St.	315	...
21	S. Farnboro' .	8 15	290	6	245	0·4	315	7·0	295	4·5	265	6·5	295	8·0	315	9·5	320	23·0	...	...	...
23	Cahirciveen .	8 30	320	16	360	7·5	335	13·5	330	20·5	315	15·0	...	...	...	...	...	...	Cu., Fr.-Cu.	315	...
24	,, .	8 35	320	12	320	8·0	325	13·5	330	13·5	325	13·5	...	...	...	...	...	...	Cu.	315	...
24	S. Farnboro' .	8 10	290	10	calm		315	9·0	305	6·5	275	9·5	...	...	...	...	...	...	A.-St., A.-Cu.	...	...
25	,, .	7 40	320	15	230	3·1	315	16·0	320	14·0	320	13·5	310	11·5	305	16·0	310	16·0	...	...	...
25	Cahirciveen .	8 45	320	15	10	6·0	350	7·5	350	14·0	340	12·0	345	27·0	...	...	...	...	Ci.-Cu.-St.-Cu.,Cu.	360	...
26	S. Farnboro' .	7 35	320	6	245	0·4	315	7·5	320	6·5	325	6·5	345	7·5	...	...	...	...	Ci.	...	...
30	,, .	8 5	250	20	215	7·0	255	14·5	260	16·5	250	18·5	...	...	...	...	...	...	Ci.-St., A.-St	...	...
31	Cahirciveen .	12 0	20	8	45	4·4	40	5·0	350	3·7	15	4·5	335	7·0	...	...	...	...	Ci.-St., A.-Cu.	295	...

(For observations at lower levels, see above.)

Day.	Station.	Time of Start, G.M.T.	6000 m. From N.	6000 m. m/s.
		h. m.	°	
8	Falmouth . .	13 25	190	22·5
17	S. Farnboro' .	10 40	325	14·0
21	,, .	8 15	315	35·0

Height of Station above M.S.L. = H.
Height of Anemometer above ground = h.

	H.	h.
Eskdalemuir . .	242 m.	15 m.
S. Farnborough . .	70 m.	31 m.
Cahirciveen . .	9 m.	13 m.
Falmouth . . .	51 m.	12 m.



Wind Protractor.

Notes on Pressure Distribution.

December 1918.

3 7 h. South-westerly type.
8 13 h., 18 h. V pointing nearly south-eastwards.
9 7 h. South-westerly type.
10 7 h., 18 h. V over the British Isles.
11 13 h. V pointing south-eastwards.
14 7 h., 18 h. } Westerly type.
16 7 h., 13 h. }
17 7 h. High over the Atlantic; Low over Scandinavia.
17 13 h. Wedge over the British Isles.
18 7 h. } Westerly type.
19 7 h. }
20 7 h. North-westerly type.
21 7 h. Wedge over the British Isles.
23 7 h. Deep depression centred near Peterhead.
24 7 h. North-westerly type.
25 7 h. Depression centred near The Skaw; High over the Atlantic.
26 7 h. S.W. to N.E. anticyclonic ridge across British Isles.
30 7 h. Westerly type.
31 13 h. Northerly type.

Notes on Ascents.

8th, 13 h. 25 m. Barometer rising briskly.

9th, 8 h. 50 m. Dense fog, beginning to clear.

10th, 14 h. 35 m. Barometer rising briskly.

11th, 11 h. 50 m, Misty to S., visibility to N.

16th, 12 h. 15 m. Cu. at start, Cu.-Nb. at end of ascent.

16th. Falmouth. *Nephoscope Obsns.*

Time.	Cloud.	From N.	m/s.
h m			
11 30	Cu.	280	16·4
11 35	Cu.	280	14·2
12 35	Cu.-Nb.	270	9·4
12 40	Cu.-Nb.	270	9·1

25th, 8 h. 45 m. St.-Cu. at about 1000 m., dissolving away rapidly during the first six minutes of ascent.

11. Nephoscope Observations.

Aberdeen. Taken at 13 h. G.M.T.

Day.	Type of Cloud.	Degrees from N.	Velocity-height-ratio.			Remarks.
			Milliradians per Second.	Components.		
				W.–E.	S.–N.	
		°	mr/s.	mr/s.	mr/s.	
11	St.-Cu.	150	2·8	− 1·4	+ 2·4	
21	St.-Cu.	303	2·8	+ 2·4	− 1·5	Faint Cirro-nebula above, with partial ⊕.
23	Ci.-St.	295	1·0	+ 0·9	− 0·4	Floccular Ci.-St., with some A.-St. below at various levels.
25	Cu.-Nb.	360	25·0	0·0	−25·0	Fr.-Nb. base of Cu.-Nb. measured.
27	Ci.-Cu.	269	7·0	+ 7·0	+ 0·1	Sheet of Ci.-Cu. very finely "webbed." Parhelion visible.
28	St.-Cu.	300	7·1	+ 6·2	− 3·6	
30	St.-Cu.	5	6·0	− 0·5	− 6·0	St.-Cu. formed from upper portions of Cu.-Nb.
31	St.-Cu.	10	4·5	− 0·8	− 4·4	St.-Cu. formed from upper parts of Cu.-Nb.

Note.—During the first 10 days of the month the sky was covered mainly by Stratus cloud, or else obscured by mist, so that no observations were possible.

12. Aurora.—November.

Day.	a.m. or p.m.	Moon.	Magnetic Character.		Aurora Observations.	
			Eskdalemuir.	Richmond.	Station.	Remarks.
3	...	●	...	...	...	
5	p.	...	0, 0	0, 0	Baltasound	
					Gordon Castle	
					Aberdeen	Faint after 21 h.
					Wick	
10	p.	...	1, 2	1, 2	Gordon Castle	
					Aberdeen	19 h. onwards.
					Glasgow	
					Paisley	
					Eskdalemuir	Bright glow. Well-defined arch 22 h.
11	...	☽	...	...	...	
11	p.	...	2, 2	2, 2	Fort William	
					Paisley	
					Rothesay	
12	p.	...	2, 2	2, 2	Banff	
15	p.	...	2, 1	2, 2	Banff	
18	...	○	...	...	...	
21	p.	...	0, 0	0, 0	Balmoral	
					Paisley	
23	p.	...	2, 1	2, 2	Baltasound	
25	...	☾	...	...	...	
28	p.	...	1, 2	0, 2	Baltasound	
					Gordon Castle	
					Aberdeen	22 h. Extensive, but rather faint. Streamer type.
					Rothesay	Very fine, with beautiful pink colouring.
					Eskdalemuir	Glow, 22 h. 30 m.
					(Many other Scottish stations)	
					Armagh	Bright.
					Blacksod Point	Very vivid, 21 h. 15 m.–22 h.
					Seskin (Carrick-on-Suir)	19 h.–22 h. At 19 h. brightness and light without streamers; 21 h., white streamers appeared; 22 h., coloured streamers were added, rising 25° or 35° or so.
29	p.	...	2, 1	2, 2	Tenbury	Plain white arch of about 35° in North, 19 h.–21 h.
					Haverfordwest	
					Valencia Observatory	17 h. 45 m.–22 h. 45 m. Brilliant. Arch like a very flat colourless rainbow at 20 h. 45 m., greatest altitude 10°, with streamers of about 36°. A red tint appeared later, but white arch still visible. Faint glow, 22 h. 45 m.
					Hartland Quay	18 h.–22 h.
					Rousdon	Bright, 22 h.
					Sheepstor	Brilliant display, with fine streamers, 21 h.–21 h. 30 m.
					Tavistock	Rose-red colour, 21 h.–24 h.
30	a.	...	2, 1	2, 2	Donaghadee	2 h.
					Tavistock	1 h.–2 h.

Note.—The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at midnight of the night in question.

12. AURORA.—DECEMBER.

Day.	a.m. or p.m.	Moon.	Magnetic Character.		Aurora Observations.	
			Eskdalemuir.	Richmond.	Station.	Remarks.
1	p.	...	2, 0	2, 1	Aberdeen	18 h.–20 h. Fairly bright, probably rather extensive display, as luminosity was seen above cloud in zenith.
3	...	●	...	...	...	
3	p.	...	1, 0	1, 0	Aberdeen	20 h. Faint glow.
					Edinburgh	
					Baltasound	
7	p.	...	2, 2	2, 2	Armagh	
					Shoeburyness	
					Gordon Castle	
					Aberdeen	18 h.–23 h. Dull red suffusion and moderate faint arch, glow and streamers, white colour.
8	p.	...	2, 2	2, 2		
					Paisley	
					Sheepstor	
					Malin Head	
10	p.	...	1, 1	2, 2	Fort William	
					Eskdalemuir	18 h. Glow.
11	...	☽	...	...	...	
17	...	○	...	...	...	
					Baltasound	
19	p.	...	1, 1	2, 1	Aberdeen	18 h.–20 h. Glow type, faint.
					Fort William	
					Baltasound	
					Lerwick	18 h. Faint.
20	p.	...	1, 1	1, 1	Deerness	
					Wick	
					Aberdeen	18 h.–20 h. Glow and arch, moderately faint.
23	p.	...	1, 1	1, 1	Aberdeen	Glow, cloud-like, faint but extensive all the evening. (See M. O. Circular, No. 32.)
					Dublin (City)	21 h. Faint.
25	...	☾	...	...	...	
					Aberdeen	Bright and extensive, red and green, curtain and glow, 17 h. onwards all night.
					Eskdalemuir	All the evening, streamers 18 h.
					Southport	18 h. and all the evening.
					Meltham	17 h. 30 m.–22 h. Very fine about 18 h. 15 m.
					Geldeston	Faint.
					Seskin (Carrick-on-Suir)	18 h.–22 h. Considerable and extensive glow, one streamer.
					Tenbury	17 h. 45 m. Brilliant red and yellow streamers. (See M. O. Circular, No. 32.)
					Cahirciveen	Glow in N.N.W. through the evening.
25	p.	...	2, 2	2, 2	Roches Point	Brilliant, streamers to zenith, 18 h.
					Stonehenge	18 h.
					Sheepstor	Fine in evening.
					Redruth	White arch in N., broad milky streamers turning pink, 18 h. 30 m.
					(Also seen at numerous Scottish stations and at Holyhead and Haverfordwest)	
26	a.	...	2, 2	2, 2	Eskdalemuir	Slight glow, 1 h.

Note.—The two magnetic "characters" entered in each case refer to the two periods of 24 hours ending and beginning at the midnight of the night in question.

BRITISH METEOROLOGICAL AND MAGNETIC YEAR BOOK, 1918.

GEOPHYSICAL JOURNAL, 1918.

ANNUAL SUPPLEMENT.

CONTENTS.

Wt. 37652/515—400—3/20 —N. & Co., Ltd. Gp. XV.

Upper Air Temperatures.

(a) *Soundings with Registering Balloons.*

There are six soundings to be recorded for the year 1918. These ascents were made from Benson, Oxfordshire. The station is close to the River Thames and at the foot of the Chiltern Hills.

(b) *Aeroplane Ascents.*

(i) *Temperatures recorded at Martlesham Heath.*—The observations utilised in preparing the Tables on pp. 108 and 109 were made in aeroplanes by the Testing Squadron, R.F.C., stationed at Martlesham Heath, Ipswich, and were supplied to the Meteorological Office by the Controller of the Technical Department of the Air Ministry.*

(ii) *Temperatures recorded at South Farnborough.*—The observations utilised in preparing the Tables on pp. 110 and 111 were made by the Experimental Pilots of the Royal Aircraft Establishment at South Farnborough.

Temperature is measured with an open scale "spiral bulb" spirit thermometer, mounted on wood, with a bright brass screen shielding the front of the bulb from direct radiation. The thermometer, which is mounted so as to ensure good ventilation, is supported on a wing strut about 6 ft. from the body of the machine. Temperature observations are made when the aeroplane is climbing or flying level to avoid the temperature-lag, which would be serious in a rapid descent.

A uniform scheme of reduction has been adopted for both the stations. Corrections are applied to the altimeter readings on account of zero-setting and air-temperature.† The reported temperatures are converted to the absolute scale and plotted against corrected heights in feet. Temperatures corresponding with steps of half a kilometre are then obtained by interpolation from a smooth curve through the plotted points. All the temperatures are given to the nearest half degree.

The mean surface temperature at South Farnborough for each month has been quoted for purposes of comparison. The corresponding data for Martlesham Heath are not available, and so the data for Copdock, a neighbouring station, have been used instead. As might be expected, the aeroplane ascents being in the day time, the temperature at the time of the ascent was generally above the mean for the day at ground level.

The monthly and yearly averages and the annual ranges at the several heights are set out on p. 112 in a form designed to facilitate comparison between the results obtained at the two stations. The averages found by combining all the observations recorded each month are also tabulated. These may be regarded as the most satisfactory data available for the period for England S.E.

The number of observations on which the mean temperature at any height is based is quoted in each case. It will be noticed that the number of readings at the higher levels is very small. The difference between successive mean temperatures (based on different numbers of readings) are in some instances actually greater than 5 a, the maximum possible for steps of 500 metres in individual ascents.

The "Yearly Averages" are the means of the values tabulated for the several months, no attention being paid to the number of observations in each month. The total number of observations at any level throughout the whole year has, however, been quoted.

It may be useful to students of the tables to know that maps showing the distribution of wind at certain levels were printed in *The Daily Weather Report*, Section B.

* Temperatures from Martlesham Heath were published in the *Supplement* for 1917. See also Stacey, "Upper Air Temp. at Martlesham Heath," Feb. 1917 to Jan. 1918, *Prof. Notes*, No. 4.

† See M.O., 228, "The Estimation of Height from Readings of an Altimeter."

Upper Air Temperatures.

Soundings with Registering Balloons, 1918.

Benson.—Lat. 51° 37′ N. Long. 1° 7′ W.

Height above Mean Sea Level :—57 m.

No.	330.	332.	333.	334.	336.	337.
Day.	Jan. 3.	Mar. 7.	May 2.	July 4.	Oct. 3.	Oct. 24.
Start G.M.T.	15 h. 10 m.	16 h. 30 m.	18 h. 20 m.	20 h. 1 m.	16 h. 26 m.	15 h. 15 m.
H_t = Greatest Height	8·3 km.	11·2 km.	14·8 km.	12·7 km.	12·8 km.	13·0 km.
T_t = Corresponding Temp.	222 a.	221 a.	218 a.	222 a.	211 a.	215 a.
P_t = Corresponding Pressure	332 mb.	212 mb.	124 mb.	180 mb.	173 mb.	166 mb.
Place of Fall	Romsey	Brooms-grove	East Hyde, Luton	Horsham	Swaffham	Farnboro'
Distance	73 km.	95 km.	56 km.	81 km.	170 km.	43 km.
Bearing	200°	310°	59°	137°	44°	123°
Geostrophic Wind— Time G.M.T.	18 h.	18 h.	18 h.	18 h.	18 h.	18 h.
Speed	Indeter-minate	9 m/s.	Indeter-minate	Indeter-minate	13 m/s.	Indeter-minate
Veer from N.	...	120°	...	...	225	...
Wind (Anemometer)— Speed	3 m/s.	4 m/s.	6 m/s.	3 m/s.	7 m/s.	2 m/s.
Veer from N.	20°	45°	90°	45°	225°	22°
Upper Wind (*vide Geophysical Journal*)	p. 7. S. Farn.	...	...	...	...	...
Tropopause Type *	...	I.	I.	Indefinite	I.	I.
H_c = Height	...	9·0 km.	10·3 km.	11·3 km.	12·3 km.	11·8 km.
P_c = Pressure	...	297 mb.	251 mb.	222 mb.	185 mb.	201 mb.
T_c = Temp.	...	220 a.	214 a.	221 a.	210 a.	212 a.
(P_9) Pressure at 9 km.	...	297 mb.	306 mb.	315 mb.	311 mb.	308 mb.
(P_s) Pressure at M.S.L.	1032 mb.	1018 mb.	1024 mb.	1027 mb.	1016 mb.	1018 mb.
(T_m) Mean Temp. 1 to 9 km.	...	247 a.	252 a	258 a.	259 a.	256 a.

NOTES.

330. Inversion 260 a. at 1·6 km. to 264 a. at 2·4 km. Light N.N.E. wind, nearly clear, a few cumulus clouds.
Screen temperature 273·5 a. Humdity 80 per cent.
Pressure Distribution. (18 h.) Anticyclone centered over Ireland.

332. The balloon entered clouds in two minutes going slowly W.
Screen temperature 279·5 a. Humidity 90 per cent.
Pressure Distribution. (18 h.) Anticyclone centered over Scandinavia. Shallow "low" over the Bay of Biscay.

333. Isothermal layer from 1·5 km. to 1·8 km. The balloon entered clouds at 1 km., bearing W.N.W.
Screen temperature 284·5 a. Humidity 88 per cent.
Pressure Distribution. (18 h.) "High" extending from the British Isles to Scandinavia. Shallow "low" over the Atlantic.

334. Isothermal at 263 a. from 4·2 to 4·4 km. Remarkable development of upper cloud about 19 h. in the N.W.
Pressure Distribution. (18 h.) Anticyclone over the British Isles.

336. Inversion 276 a. to 280 a. at 1·1 km. on one trace and 277 a. to 280 a. at 1 km. on another trace. Isothermal at 250 a. from 6·6 to 6·8 km. Low cloud from W.S.W. about 1 km. Cirrus moving slowly from W.S.W.
Screen temperature 285·5 a. Humidity 80 per cent.
Pressure Distribution. (18 h.) South-westerly type.

337. Isothermal at 275° from ·7 km. to 1·5 km. Hazy, much low cloud, cirrus seen through the gaps.
Screen temperature 282 a. Humidity 85 per cent. [Isles.
Pressure Distribution. (18 h.) Wedge extending from the Azores to the British

HEIGHTS AND TEMPERATURES CORRESPONDING WITH ISOBARIC SURFACES.

Pressure.	330. H.	330. T.	332. H.	332. T.	333. H.	333. T.	334. H.	334. T.	336. H.	336. T.	337. H.	337. T.
Millibars.	km.	a.	km.	a.	km.	a.	km.	a.	km.	a.	km.	a.
100	—	—	—	—	—	—	—	—	—	—	—	—
200	—	—	11·60	21	11·72	16	11·98	23	11·90	13	11·82	12
300	—	—	8·97	20	9·12	21	9·32	28	9·25	32	9·18	28
400	7·08	31	7·05	33	7·19	37	7·33	44	7·25	46	7·20	43
500	5·52	45	5·48	44	5·60	49	5·71	56	5·60	57	5·58	55
600	4·17	55	4·14	54	4·24	57	4·33	63	4·21	64	4·20	63
700	3·01	62	2·98	61	3·07	67	3·13	68	3·01	71	3·11	70
800	1·98	62	1·93	67	2·00	74	2·08	76	1·94	77	1·94	74
900	1·08	65	1·01	73	1·06	78	1·11	84	1·01	76	1·00	75
1000	0·27	70	0·15	78	0·20	84	0·23	90	0·13	85	0·14	82

T = Temperature in Degrees Absolute above 200 a.
P = Pressure in millibars.
H = Height in kilometres above M.S.L.

PRESSURES AND TEMPERATURES AT GIVEN HEIGHTS.

Heights.	330. P.	330. T.	332. P.	332. T.	333. P.	333. T.	334. P.	334. T.	336. P.	336. T.	337. P.	337. T.
Kilometres.	mb.	a.	mb.	a.	mb.	a.	mb.	a	mb.	a.	mb.	a.
14·0	—	—	—	—	140	?	—	—	—	—	—	—
13·0	—	—	—	—	164	18	—	—	—	—	166	15
12·0	—	—	—	—	192	17	199	23	197	12	195	12
11·0	—	—	219	21	224	16	232	22	230	18	228	16
10·0	—	—	255	20	262	16	271	24	269	24	266	21
9·0	—	—	297	20	306	22	315	30	311	34	308	29
8·0	348	24	346	26	356	30	364	38	359	41	357	37
7·0	393	32	402	33	411	39	418	46	414	48	412	44
6·0	458	41	464	41	474	46	481	53	474	54	473	51
5·0	537	50	534	48	543	52	549	59	542	59	541	58
4·0	613	56	611	55	620	59	626	64	617	65	617	64
3·0	700	62	698	61	706	68	712	68	701	71	701	70
2·5	748	64	744	64	752	72	758	73	747	74	746	72
2·0	798	62	794	67	800	74	807	77	795	77	795	74
1·5	852	61	846	70	852	75	858	80	845	79	846	75
1·0	909	65	900	73	907	79	912	85	899	76	900	75
0·5	969	69	958	76	964	81	969	88	957	81	957	75
G.L. 0·057	1026	73	1011	79	1017	84	1020	91	1009	86	1011	82

LAPSE RATE OF TEMPERATURE BETWEEN GIVEN HEIGHTS.

Degrees Absolute per kilometre.

Kilometres.	330.	332.	333.	334.	336.	337.
13 to 14	—	—	—	—	—	—
12 to 13	—	—	− 1	—	—	− 3
11 to 12	—	—	− 1	− 1	+ 6	+ 4
10 to 11	—	− 1	0	+ 2	+ 6	+ 5
9 to 10	—	0	+6	+ 6	+10	+ 8
8 to 9	—	+6	+8	+ 8	+ 7	+ 8
7 to 8	+ 8	+7	+9	+ 8	+ 7	+ 7
6 to 7	+ 9	+8	+7	+ 7	+ 6	+ 7
5 to 6	+ 9	+7	+6	+ 6	+ 5	+ 7
4 to 5	+ 6	+7	+7	+ 5	+ 6	+ 6
3 to 4	+ 6	+6	+9	+ 4	+ 6	+ 6
2·5 to 3	+ 4	+6	+8	+10	+ 6	+ 4
2 to 2·5	− 4	+6	+4	+ 8	+ 6	+ 4
1·5 to 2	− 2	+6	+2	+ 6	+ 4	+ 2
1 to 1·5	+ 8	+6	+8	+10	− 6	0
·5 to 1	+ 8	+6	+4	+ 6	+10	0
·057 to ·5	+ 8	+6	+6	+ 6	+10	+10

* For the definition of the Types of Tropopause, see *Annual Supplement, 1913*, p. 92; or "The Characteristics of Free Atmosphere," M.O., 220, c. *Geophysical Memoirs*, No. 13, p. 59.

Upper Air Temperatures—Aeroplane Ascents, 1918.

MARTLESHAM HEATH.—Lat. 52° 1′ N. Long. 1° 5′ E.

Height above Mean Sea Level:—24·5 m.

Date.	Time of Start. G.M.T.	Ground.	Heights in Kilometres above M.S.L. 0·5.	1·0.	1·5.	2·0.	2·5.	3·0.	3·5.	4·0.	4·5.	5·0.	5·5.
	h. m.	Temperatures in Degrees Absolute above 200 a.											
Jan. 3	9 30	72·5	70·5	67·5	63·5	60·5	58·5	61·0	59·5	58·5	56·5	...	...
7	9 0	74·0	73·0	68·0	65·5	61·5	59·5	59·5	56·5	55·0	...	...	...
7	14 30	74·0	71·5	67·5	63·5	60·0	55·0	52·0	50·5	48·5	...	...	...
8	12 0	69·0	66·0	63·0	59·0	55·0	51·0	47·5	44·0	40·0	...	...	...
10	12 0	78·5	76·0	73·5	71·0	69·5	67·0	64·0	61·0	56·0	53·0	...	..
11	9 15	74·5	71·5	68·5	67·5	64·5	62·5	60·5	57·5	56·5	...	...	...
12	8 45	75·0	74·0	72·5	69·5	67·5	66·5	65·0	63·5	61·0	57·0	...	...
13	9 40	73·5	74·0	71·5	68·5	65·0	60·5	57·0	55·5	53·0	52·5	...	...
14	10 0	71·5	69·0	68·0	67·0	65·5	61·5	57·0	53·0	51·5	49·0	...	..
24	15 0	86·0	83·5	81·5	80·5	81·5	77·5	74·5	69·0?	65·5	62·5	...	...
25	14 45	82·5	82·0	82·0	81·0	79·0	75·0	73·0	69·5	65·5	62·5	...	...
29	14 15	79·5	79·0	78·0	75·5	73·5	72·0	69·5	67·0	64·5	60·0	...	...
30	15 15	82·0	80·0	78·5	77·5	76·5	72·0	68·5	65·0	61·0	58·0	...	...
Feb. 6	9 30	79·0	78·5	76·5	73·5	70·0	67·0	63·0	60·5	56·0	52·0	...	...
8	14 40	84·0	80·0	76·0	72·5	70·0	67·0	63·0	57·0?	56·0	53·5	...	...
9	10 30	83·0	81·0	78·5	75·0	72·0	69·5	66·0	63·5	58·5	57·0	...	...
15	12 0	76·5	74·0	72·0	72·5	73·0	70·5	67·0	65·0	62·5	59·5	...	...
16	9 30	74·0	70·5	69·0	72·0	71·0	70·0	67·5	64·5	...	...	...	...
17	9 30	73·5	71·5	71·0	72·0	70·5	69·0	65·5	62·0	60·0	57·5	...	...
18	12 0	77·5	75·5	75·0	73·5	72·5	72·0	69·5	66·0	61·5	...	...	...
19	9 30	73·0	73·0	75·0	74·0	72·0	69·5	65·5	63·0	60·0	...	...	...
21	14 30	81·5	76·0?	71·5	68·0	64·5	61·5	58·0	55·5	53·0	...	...	...
23	9 30	86·0	82·0	80·0	79·5	75·0	74·5	71·5	68·5	65·0	...	...	...
24	10 45	83·0	81·0	76·0	73·5	74·0	74·0	72·0	71·0	67·5	...	...	...
25	16 0	79·5	76·0	72·5	69·5	67·0	63·5	62·0	62·5	60·0	58·5	...	...
26	7 30	74·0	74·5	75·5	77·5	78·0	74·0	69·0	68·5	65·5	61·5	...	...
27	7 0	77·5	75·5	73·5	71·5	71·5	71·0	68·0	66·5	62·5	60·0	...	...
27	10 30	81·0	76·5	73·0	69·5	69·0	68·0	65·0	63·5	60·0	57·5	53·5	49·0
28	11 0	77·5	75·0	71·5	66·5	62·0	57·5	54·0	49·0	...	...	...	...
28	15 15	77·5	75·0	71·0	66·5	62·0	58·0	55·0	49·5?	45·0	41·0	36·0	...
													6·0km
		(For observations at lower levels, see above.)											
27	10 30												46.0
Mar. 2	7 30	74·0	72·0	68·5	63·5	59·5	56·5	54·5	53·5	52·0	47·5	...	...
5	15 15	78·0	76·5	72·0	68·0	66·5	64·5	59·5	56·0	52·5	49·0	45·5	41·5
7	14 0	79·5	78·5	77·0	74·5	72·0	69·5	65·5	62·5	59·0	...	...	...
8	15 0	77·5	74·5	70·0	66·0	63·5	63·0	61·5	58·0	55·5	51·5	...	...
9	10 0	78·0	76·0	73·5	72·0	70·5	67·0	63·0	60·5	56·5	53·5	...	...
11	9 33	83·0	81·0	78·5	74·5	71·5	69·0	66·5	63·0	60·0	57·5	...	...
13	9 15	81·5	79·0	77·5	75·5	71·5	69·0	67·0	64·0	61·0	58·5	56·0	...
15	10 30	78·5	81·0	80·0	75·0	70·0	67·0	63·0	60·0	57·5	57·0	...	...
20	9 43	82·0	78·5	75·5	74·0	72·5	69·0	66·0	63·0	59·0	57·0	...	...
21	9 30	81·5	78·5	77·5	79·5	77·0	74·0	71·0	67·5	64·0	61·0	56·5	...
22	13 30	91·5	87·0	83·5	81·0	79·5	76·0	73·0	70·5	67·5	64·0	...	...
23	10 0	87·5	86·0	85·0	83·0	80·0	77·0	73·0	71·5	69·0	65·5	59·5?	...
25	14 50	81·5	77·0	72·5	70·5	69·0	67·0	66·5	63·5	59·5	57·0	...	...
Apr. 3	14 30	83·0	80·0	76·5	71·5	68·0	65·5	65·0	61·0	59·0	...	...	...
7	8 55	79·5	76·0	72·0	68·5	65·5	62·0	58·5	55·5	52·5	50·0	...	...
12	14 0	84·0	81·0	78·0	75·5	72·5	68·5	65·0	61·0	...	...	...	...
14	14 0	79·5	76·0	73·5	72·5	72·0	68·0	64·5	61·0	58·5	...	...	...
18	13 45	78·5	74·0	70·0	65·0	62·5	61·0	58·5	55·5	54·0	...	...	...
19	18 0	77·5	75·5	72·0	67·0	63·0	59·5	56·0	52·5	50·0	47·0	...	...
24	13 30	86·0	83·5	81·5	78·5	74·5	71·0	68·0	64·5	62·5	...	...	...
25	6 0	81·0	85·0	83·0	79·0	74·5	70·0	66·0	63·0	59·5	...	...	...
29	14 30	84·0	82·0	80·5	77·5	74·5	72·5	70·0	66·5	63·0	60·0	...	...
May 2	18 0	83·0	82·0	80·0	78·0	76·5	75·0	73·5	70·0	65·5	61·5	56·0	...
3	6 15	78·5	78·5	79·0	79·0	76·0	75·0	73·5	69·5	65·5	...	...	...
8	10 30	87·5	86·0	83·5	79·5	78·5	76·5	73·0	69·0	66·0	...	...	...
9	14 30	89·5	86·0	82·5	79·0	77·5	75·5	73·0	69·5	66·5	...	...	...
12	9 15	86·0	80·5?	77·0	72·5	69·0	66·0	62·5	60·0	...	...	...	...
14	6 0	79·5	81·5	79·5	75·5	72·5	69·0	68·5	64·5	61·0	...	...	...
14	18 15	87·5	87·0	79·0?	76·0	74·0	71·5	71·0	69·0	66·0	60·0?	56·0	...
15	14 30	92·0	87·0	83·0	79·5	77·0	75·0	73·5	71·0	67·5	63·5	58·5	53·5
16	6 15	82·0	77·5	77·0	77·0	76·5	74·5	71·5	70·5	66·5	62·5	59·0	55·5
17	6 30	86·5	89·5	90·5	86·0	81·5	77·5	75·0	72·0	68·0	65·0	63·0	...

Date.	Time of Start. G.M.T.	Ground.	Heights in Kilometres above M.S.L. 0·5.	1·0.	1·5.	2·0.	2·5.	3·0.	3·5.	4·0.	4·5.	5·0.	5·5.
	h. m.	Temperatures in Degrees Absolute above 200 a.											
May 17	13 45	97·5	95·0	91·5	86·5	82·0	78·0	76·0	73·0	68·5	65·0	61·0	...
18	7 0	88·5	91·0	89·0	85·5	82·0	78·5	74·0	71·0	67·0	64·0	62·5	...
20	10 0	92·0	89·5	86·0	82·5	82·0	78·0	74·0	71·5	70·0	67·5	65·0	...
21	8 30	91·0	91·5	89·5	85·0	82·0	78·0	75·5	72·5	69·0	66·5	...	...
21	16 45	94·0	93·0	91·5	88·0	83·5	79·5	76·5	73·0	70·0	67·0	65·0	...
23	6 15	90·0	90·5	89·0	85·5	82·5	79·5	75·0	71·5	67·5	64·0	62·0	...
23	9 45	96·5	93·0	89·5	85·0	81·0	79·5	76·5	70·5?	66·0	62·5	59·0	...
25	6 0	78·5	86·0	85·5	83·0	80·0	77·5	72·0	68·5	65·5	62·5	60·0	...
27	9 30	89·5	85·5	82·0	78·0	75·5	74·5	72·0	68·5	66·0	61·0	56·0	55·5
27	17 0	88·5	86·0	83·0	79·0	75·0	74·0	71·0	69·5	66·5	63·0	58·5	...
28	12 0	89·5	84·5	82·5	79·5	75·5	72·5	69·0	66·0	61·0	58·0	56·5	...
29	7 45	83·0	81·5	79·5	77·5	75·5	74·5	72·5	70·0	66·0	63·0	59·0	...
31	6 0	85·0	85·5	84·5	82·5	81·0	78·0	74·5	70·5	66·5	64·0	60·5	58·0
													6·0km
		(For observations at lower levels, see above.)											
16	6 15												51·5
27	9 50												52·5
June 2	6 35	83·5	85·5	85·0	81·5	77·5	75·5	74·0	70·0	66·5	64·5	61·0	...
3	7 0	86·5	85·0	82·5	80·0	77·5	76·0	73·5	69·0	66·5	64·0	60·0	...
4	10 0	88·5	84·0	80·0	75·0	71·5	72·5	72·0	70·0	67·0	63·5	58·0?	...
5	15 0	91·0	84·5?	79·5	76·0	74·0	73·0	71·5	68·0	64·5	61·0	56·0	...
6	6 20	86·5	82·5	80·5	79·5	76·0	71·0	68·5	66·0	...	...	...	...
6	14 0	92·0	86·0?	81·0	77·5	76·5	74·5	71·0	68·0	65·5	63·0	59·0	...
8	11 0	90·0	86·0	81·5	77·0	76·0	74·5	71·5	68·5	67·0	65·0	62·0	...
9	7 0	88·5	85·5	82·5	80·5	79·5	77·5	76·0	72·0	68·5	65·0	60·5	...
9	10 15	89·5	86·0	83·0	79·5	77·0	75·0	73·0	71·0	67·0	63·5	60·5	58·0
10	6 45	83.0	79·5	77·5	74·0	71·0	68·5	65·0	62·5	59·5	57·0	...	...
11	10 0	91·0	87·0	83·5	80·0	77·5	76·0	72·5	69·5	67·0	65·0	61·0	...
12	17 30	92·0	88·0	84·5	83·0	82·5	79·5	74·5	71·0	69·0	67·0	64·5	...
13	17 0	94·0	89·5	85·0	82·5	84·0	82·0	79·0	76·5	72·0	68·0	65·0	...
14	6 15	86·5	84·5	83·0	82·0	80·0	78·0	70·5?	73·0	68·0	65·5	...	...
15	6 0	82·5	79·5	76·5	72·0	69·0	67·0	63·5	61·0	57·0	54·0	...	...
15	17 0	88·5	84·0	79·5	75·5	70·5	66·5	62·5	59·0	56·0	52·0	...	...
17	8 20	86·0	83·0	78·0	74·5	71·5	68·5	65·5	63·0	58·5	54·5	...	...
19	13 30	90·0	85·0	81·5	78·0	74·0	71·5	70·0	65·5	62·0	59·5	...	...
20	8 30	87·5	84·0	80·5	77·5	74·0	71·5	70·0	68·0	65·5	63·0	...	...
21	9 0	88·5	85·0	81·0	77·5	74·5	73·0	72·0	69·5	66·5	63·0	...	...
22	6 0	85·0	82·5	80·0	78·0	78·0	75·0	73·0	70·5	67·5	65·0	...	...
23	9 0	86·5	82·5	79·0	75·0	71·0	69·0	66·0	62·5	58·5	56·0	...	...
24	14 30	88·5	84·0	80·0	76·0	71·0	67·5	65·0	63·0	60·5	57·0	...	...
25	6 15	81·0	81·0	79·0	76·0	71·5	67·5	68·0	65·5	61·5	59·0	56·5	53·0
26	7 0	82·0	80·0	77·0	73·0	71·0	74·0	70·5	66·0	61·5	59·0	...	...
28	6 30	86·5	86·0	82·0	78·0	75·0	73·0	70·5	66·5	61·5	59·5	...	...
29	11 15	89·5	85·0	81·5	78·5	78·0	76·0	74·0	71·5	67·5	64·0	...	...
										6·0km	6·5km	7·0km	7·5km
		(For observations at lower levels, see above.)											
9	10 15									54·5	51·0	48·0	...
25	6 15									49·5	47·5	44·5	39·5
July 1	8 30	90·0	88·0	85·5	83·0	80·0	76·0	74·0	72·0	68·5	65·5	61·5	...
3	10 15	87·5	82·5	78·5	78·0	79·0	77·5	75·0	72·0	68·5	66·0	62·5	...
4	10 0	92·0	85·0?	81·0	81·0	80·0	77·5	75·0	72·0	67·5	65·0	...	...
5	10 30	91·0	87·0	84·0	81·0	79·0	76·5	74·0	71·5	69·0	...	...	...
7	9 45	92·0	87·0	83·0	80·0	79·0	77·0	75·0	73·0	70·0	68·5	64·5	...
7	15 0	96·0	92·0	88·0	83·0	79·0	77·0	77·5	74·5	71·5	68·0	64·0	60·5
8	6 0	88·5	88·5	86·5	82·5	78·0	75·5	74·0	71·5	67·0	64·0	59·5	...
12	6 45	86·5	83·5	80·0	76·0	73·0	69·0	66·5	65·5	62·0	58·0	...	...
13	6 0	83·5	83·5	81·5	78·0	74·0	71·5	70·0	64·5?	63·0	...	...	...
14	6 0	85·0	85·5	83·0	78·0	75·0	74·0	72·0	68·5	65·5	...	...	...
15	5 0	86·5	85·5	84·0	82·0	80·0	78·5	76·5	73·0	69·5	66·5	...	...
16	7 0	91·5	91·0	90·0	87·0	83·0	83·0	77·5?	74·0	71·0	67·0	62·0	...
24	5 30	87·0	85·0	83·0	80·0	76·5	72·5	72·0	69·5	66·0	...	...	...
25	6 0	87·5	82·0?	80·5	78·5	74·5	71·5	68·0	65·0	62·5	58·0	53·5	...
28	16 0	91·0	86·5	83·0	79·5	77·5	76·0	73·5	70·5	66·5	64·5	61·5	57·5
												6·0km	6·5km
		(For observations at lower levels, see above.)											
7	15 0											55·5	...
28	16 0											53·5	48·0?

Upper Air Temperatures. Martlesham Heath, 1918.

Date.	Time of Start. G.M.T.	Ground.	Heights in Kilometres above M.S.L. 0·5.	1·0.	1·5.	2·0.	2·5.	3·0.	3·5.	4·0.	4·5.	5·0.	5·5.
	h. m.	Temperatures in Degrees Absolute above 200 a.											
Aug. 1	9 30	91·5	88·5	86·5	85·0	82·5	81·0	76·5	73·5	71·0	68·0	64·5	...
2	6 0	88·5	88·0	86·5	84·0	83·5	80·0	76·0?	72·5?	70·0?	67·0?	...	...
3	13 30	91·5	88·5	84·5	81·0	77·5	74·5	70·5	67·5	65·0	61·0	...	...
4	6 0	86·5	89·5	87·0	83·0	79·5	76·5	73·0	71·0	69·0	65·5	...	...
5	15 30	91·5	88·5	85·5	82·0	79·5	78·0	76·0	72·5	69·0	...	...	...
6	6 45	86·5	84·5	81·0	78·0	76·0	73·0	70·0	68·0	64·5	60·5	...	...
7	19 0	89·5	88·5	86·0	82·5	80·5	78·0	74·5	72·5	70·5	...	...	...
11	14 0	93·0	88·5	85·0	82·0	82·0	80·5	79·5	77·5	74·5	72·0	67·0	...
11	18 0	91·0	89·0	86·0	83·0	80·5	80·0	79·0	76·5	73·5	71·0	...	...
12	6 30	87·0	88·0	86·0	82·0	80·0	78·5	76·0	...	...	...	...	...
12	14 0	97·0	90·5?	85·5	81·5	77·5	74·0	72·5	69·5	67·0	64·5	..	...
13	6 0	86·5	86·0	83·5	80·0	79·0	78·0	75·0	72·0	69·0	...	...	...
13	17 0	91·0	88·5	86·0	83·5	80·5	80·5	78·0	76·5	74·0	70·0	69·0	65·5
15	17 30	94·5	91·0	86·0	82·0	80·0	80·0	77·5	75·5	73·5	69·5	66·0	...
16	10 0	91·5	88·0	84·5	81·0	81·0	80·0	77·5	74·5	72·5	68·5	64·0	...
17	6 15	86·5	85·0	84·0	80·5	78·5	76·0	75·5	73·5	70·5	67·5	63·5	...
18	16 0	94·0	90·0?	86·0	82·0	77·5	78·0	77·0	74·0	71·0	68·0	65·0	...
19	16 30	94·0	89·5	85·5	82·0	81·0	79·5	76·0	74·0	73·0	71·0	68·0	...
20	13 30	98·0	94·0	90·5	87·5	87·0	84·5	81·5	77·5	73·0	69·5	67·0	...
21	10 15	95·0	92·5	91·0	89·5	87·0	84·5	81·5	77·0	72·5	70·0	67·5	65·5
22	17 15	101·5	98·0	95·0	92·0	90·0	85·5	82·5	79·0	74·5	71·0	67·5	...
23	7 30	87·0	83·5	82·0	81·0	77·5	74·0	72·0	70·0	67·5	65·5	63·5	...
25	6 30	84·5	86·5	84·0	80·0	77·0	74·5	71·0	68·5	66·0	62·0	59·0	57·5
25	14 20	92·5	85·5?	81·5	79·5	77·0	73·5	70·5	69·5	62·5	61·0	...	...
27	8 30	88·0	85·0	82·0	79·0	76·5	75·0	72·5	69·0	66·0	64·0	...	...
29	6 0	83·0	82·0	80·5	78·5	76·0	73·0	70·0	67·0	66·0	64·0	60·0	...
31	8 30	87·0	84·0	81·0	76·5	73·5	74·0	73·0	70·5	67·5	65·0	...	...
													6·0km
		(For observations at lower levels, see above.)											
21	10 15												60·0?
Sept. 1	6 0	81·0	80·0	76·5	72·5	70·0	67·0	63·5	60·0	57·0	...	...	...
1	11 0	87·0	81·0?	76·5	73·5	71·0	67·5	65·0	61·5	57·0	54·0	49·5	...
2	5 45	83·0	81·0	79·5	76·5	72·5	69·0	66·5	64·5	61·0	57·5	53·5	...
3	13 0	92·5	86·5?	82·0	78·5	74·5	73·5	70·5	66·5	63·0	...	...	...
6	18 30	91·0	88·5	85·5	82·5	79·5	76·0	72·5	69·0	66·5	64·5	61·0	...
8	9 5	91·0	88·0	85·5	83·0	79·5	75·5	71·5	69·5	67·0	64·0	60·0	56·0
8	17 40	87·5	86·0	81·0	77·5	74·0	69·0	68·0	63·0	59·0	56·0	...	...
9	8 0	84·0	82·0	79·5	76·5	72·0	68·0	65·5	61·5	57·0	53·5	...	...
10	18 0	86·0	85·0	81·5	77·0	73·5	70·5	67·0	63·5	59·0	56·5	...	...
11	6 0	83·0	83·0	79·0	76·0	73·0	68·5	65·0	61·5	58·0	54·5	...	...
12	17 0	87·0	83·5	80·0	75·5	72·0	69·0	65·5	61·0	58·0	55·5	...	...
13	9 0	86·5	81·0?	78·0	76·0	73·0	69·5	68·0	64·5	61·5	58·5	...	...
15	16 15	91·5	89·0	87·0	84·0	82·5	80·0	77·0	73·5	70·5	67·5	64·0	...
16	8 0	91·5	90·5	88·5	86·0	83·5	80·5	76·0	72·5	69·0	65·0	...	...
17	8 30	91·5	88·5	86·0	84·0	80·5	77·5	75·0	71·0	66·5	63·0	...	...
18	16 0	90·0	87·5	84·5	81·5	79·0	75·5	72·5	69·5	65·5	...	...	...
19	17 15	87·0	83·0?	80·0	76·5	73·0	69·5	66·0	62·0	59·0	55·5	...	...
20	6 0	81·5	80·5	78·0	74·0	71·0	67·5	65·0	62·5	60·5	58·5	55·0	...
21	8 40	86·5	79·5?	74·0?	71·5	71·5	69·0	66·5	63·0	59·5	...	...	...
23	6 30	83·0	82·0	80·5	77·0	73·0	70·0	67·0	63·5	61·5	57·0	...	...
24	6 30	79·0	81·0	80·0	77·0	74·0	71·5	69·0	66·0	62·0	59·0	...	...
25	10 0	87·0	82·5	78·5	76·0	75·5	73·5	72·5	69·5	66·0	62·5	...	...
26	6 40	80·0	77·5	76·5	75·5	75·0	74·0	73·0	71·5	67·5	63·5	...	...

Date.	Time of Start. G.M.T.	Ground.	Heights in Kilometres above M.S.L. 0·5.	1·0.	1·5.	2·0.	2·5.	3·0.	3·5.	4·0.	4·5.	5·0.	5·5.
	h. m.	Temperatures in Degrees Absolute above 200 a.											
Sept. 27	6 30	85·0	81·5	78·0	75·0	72·5	69·5	65·0	64·0	61·5	58·0	54·5	50·0
28	6 45	83·0	81·0	78·0	74·0	70·5	66·0	62·5	59·0	56·5	52·5	...	...
													6·0km
8	9 5	(For observations at lower levels, see above.)											56·5
27	6 30												45·0
Oct. 1	7 30	78·0	77·0	75·5	73·0	70·0	66·0	61·0	57·0	54·0	51·5	...	...
1	10 15	83·5	78·5	75·5	72·0	68·0	65·5	60·5	56·0	54·0	52·0	49·0	47·0
3	6 45	82·0	82·0	81·5	80·5	80·0	77·0	72·5	69·5	67·0	63·5	60·5	...
4	10 15	83·0	82·0	80·0	76·5	74·0	70·0	69·0	68·5	65·5	62·5	...	...
6	11 30	88·5	86·0	83·0	79·5	77·5	74·0	73·0	72·0	69·0	65·5	...	...
7	15 30	85·0	83·5	80·0	75·0	71·5	69·0	65·5	64·0	59·0	55·5	...	...
8	7 10	77·0	79·5	78·0	74·0	70·0	65·0	61·5	58·5	53·0?	48·5	...	...
10	9 45	89·5	86·0	84·0	83·0	82·0	82·0	79·5	75·5	71·5	68·5	66·5	...
13	16 30	83·0	80·0	76·5	74·0	73·0	70·5	68·0	66·5	64·0	60·5	...	...
17	7 45	79·5	78·0	76·5	73·0	69·0	65·5	61·5	60·0	57·0	54·5	...	...
18	9 0	79·0	79·5	77·5	74·0	71·0	67·5	64·0	60·5	56·5	...	...	...
23	9 30	90·0	85·0	81·0	77·0	74·5	73·0	72·5	69·5	65·0	61·5	58·5	...
23	15 0	87·0	82·5	79·0	77·5	75·5	74·0	71·0	68·0	...	...	...	...
24	9 50	85·0	81·0	78·0	77·0	76·5	76·0	74·5	72·5	69·0	66·0	62·0	...
Nov. 4	9 45	84·0	81·5	78·0	74·5	71·5	69·0	66·0	63·5	60·5	58·0	...	...
4	11 0	84·0	79·5	77·0	74·5	72·0	69·5	67·5	64·0	60·5	56·5	52·5	48·5
5	10 0	87·0	80·5?	78·0	76·0	74·0	71·0	69·0	65·0	62·5	60·5	57·5	...
6	11 0	81·0	79·0	76·5	74·0	70·5	67·0	64·5	62·5	61·5	...	...	...
7	11 0	82·0	80·0	77·5	74·0	72·5	70·5	68·0	65·5	62·5	...	...	...
9	10 30	79·5	74·5	71·0	70·5	69·0	65·0	61·0	59·5	57·5	...	...	...
12	11 10	81·5	79·5	75·5	71·0	71·0	71·5	71·0	69·5	66·5	64·0	61·5	57·5
15	10 0	82·0	77·5	75·0	74·0	74·0	74·0	72·5	69·0	65·5	63·5	...	...
20	14 20	80·0	79·0	77·0	75·0	74·0	73·0	72·0	70·0	67·5	64·5	...	...
21	12 15	80·0	76·0	74·0	77·0	78·0	76·0	73·0	70·5	67·0	63·5	...	...
22	10 15	79·0	79·0	79·5	80·0	79·0	78·0	75·5	72·0	69·0	65·5	61·0	57·5
23	10 20	79·5	81·0	81·0	79·5	77·5	75·0	72·5	69·0	65·0	61·0	...	...
27	13 55	81·5	79·5	77·0	74·0	70·5	67·5	64·0	61·0	57·0	...	...	...
												6·0km	6·5km 7·0km
4	11 0	(For observations at lower levels, see above.)										45·0	... ...
12	11 10											54·0	50·5 46·5
22	10 15											53·5	47·5? 46·0
Dec. 2	10 0	83·5	83·5	81·0	78·0	78·0	78·0	75·0	71·0	67·0	63·5	59·5	55·5
3	13 30	87·5	85·5	82·0	80·0	80·0	...	...	...	...	...	...	...
5	10 0	84·0	81·5	80·0	80·0	78·5	74·5	71·5	...	...	...	...	...
7	9 30	81·5	78·5	76·0	74·0	72·0	69·5	67·5	63·5	60·5	57·5	...	...
9	10 15	79·5	79·5	77·0	75·0	74·5	71·5	69·0	64·5	61·0	57·5	54·5	52·0
12	14 50	86·0	84·0	82·0	81·0	81·0	77·5	72·5	69·0	...	...	...	...
13	10 50	86·5	85·5	84·5	82·5	80·0	80·0	77·5	73·0	69·5	66·0	63·0	...
16	10 40	81·0	78·5	75·0	72·5	71·5	68·5	63·5	59·5	56·0	52·5	49·0	...
17	14 30	78·0	76·5	74·0	70·0	66·5	62·5	60·5	56·0	51·5	47·5	...	...
28	10 30	84·5	81·5	80·0	77·0	75·0	73·0	70·5	...	...	...	...	...
30	11 0	79·5	76·5	73·0	69·5	67·0	65·5	63·5	...	...	...	...	...
													6·0km
2	10 0	(For observations at lower levels, see above.)											52·5
9	10 15												48·0

Upper Air Temperatures—Aeroplane Ascents, 1918.

SOUTH FARNBOROUGH.—Lat. 51° 15′ N. Long. 0° 45′ W.

Height above Mean Sea Level:—71·5 m.

Date.	Time of Start. G.M.T.	Ground.	Heights in Kilometres above M.S.L. 0·5.	1·0.	1·5.	2·0.	2·5.	3·0.	3·5.	4·0.	4·5.	5·0.	5·5.
	h. m.	Temperatures in Degrees Absolute above 200 a.											
Jan. 2	15 0	75·0	75·0	73·0	69·5	68·0	68·0	65·5	63·0	60·5	...	...	...
3	10 30	72·5	70·5	68·0	64·0	62·0	67·0	67·5	64·5	...	...	...	...
4	10 0	69·0	69·5	70·0	70·5	72·0	70·0	68·0	64·0	...	...	...	...
7	14 20	70·5	68·5?	66·5?	64·0?	60·5	57·0	52·0	47·5	...	...	...	...
8	11 15	69·5	67·5	64·0	61·0	56·5	53·0	..	...	...	...	...	...
9	12 15	72·5	70·0	70·0	68·0	64·5	62·0	57·5	53·5	...	...	...	...
10	10 10	77·0	76·5	74·5	73·5	72·0	69·0	66·0	60·0?	56·5	54·5	...	...
16	15 30	74·0	72·0	69·5	66·0	62·0	60·5	58·0	56·5	54·0	52·0	...	...
19	10 0	81·5	82·5	81·5	79·0	76·5	76·0	73·5	71·5	...	...	...	...
21	11 0	82·5	79·5	78·5	76·0	72·0	69·0	65·0	61·5	58·0	54·5	...	...
22	16 0	82·5	80·5	79·0	76·5	73·0	70·0	66·0	62·0	58·0	55·5	...	...
24	12 30	84·5	83·0	81·5	78·5	78·5	77·0	72·0	68·5	...	...	...	...
28	10 45	80·0	77·5	76·5	76·5	75·0	74·5	73·0	71·0	67·0	63·0	58·5	56·5
29	15 0	82·0	80·0	79·0	75·5	72·5	71·0	69·0	67·5	65·0	62·0	...	...
30	16 0	80·0	79·5	77·5	76·0	73·5	71·0	68·0	65·0	...	...	...	...
31	15 0	80·0	79·0	77·5	75·5	73·5	70·5	...	...	...	...	...	...
Feb. 1	17 0	76·0	81·0	80·0	81·0	77·5	74·0	...	...	...	...	...	...
5	10 15	81·0	80·5	78·5	75·5	72·0	69·0	66·0	64·5	61·0	57·5	...	...
11	11 0	83·5	81·5	81·0	81·0	79·0	...	...	...	...	...	...	...
16	9 50	74·5	74·0?	73·5	73·0	73·5	70·5	67·0	66·0	63·0	59·5	...	...
18	10 0	72·5	74·0	73·0	71·0	75·5	70·0	...	...	...	..	...	...
18	16 30	75·5	75·0	72·0	71·0	72·0	71·0	69·5	65·5	62·0	57·0	55·0	...
21	9 45	77·0	75·5?	73·5?	70·0?	55·0	62·5	61·0	58·5	56·0	54·5	...	...
21	16 0	80·5	78·0	73·0	69·0	67·0	64·5	...	...	...	...	...	...
23	11 0	86·0	82·0	83·0	81·0	78·5	76·5	...	...	...	...	...	...
24	10 0	82·5	81·0	80·0	74·0?	72·5	75·0	75·0	72·0	68·5	65·0	...	...
25	12 0	80·5	74·0?	70·5	68·5	64·5	62·5	59·5	59·0	60·0	58·5	54·0	51·5
25	15 0	77·0	73·0?	70·5	68·0	65·0	62·0	59·5	59·0	60·0	58·5	57·5	54·5
26	15 0	82·0	78·5	75·5	74·0	73·0	71·0	69·0	66·5	63·0	59·0	55·0	...
27	10 15	81·0	77·5	73·5	73·0	72·0	...	...	...	...	...	...	...
28	10 30	77·5	75·5	71·5	66·0	62·5	57·5	...	...	...	...	...	...
Mar. 1	11 0	76·5	74·0	69·5	65·5	62·5	61·5	58·0	...	...	...	...	...
6	9 30	79·0	79·5	80·0	78·5	75·0	73·0	71·5	69·5	67·5	66·0	...	...
11	16 0	85·5	83·5	80·0	77·0	72·5	...	...	...	...	...	...	...
12	11 0	81·5	79·5	77·5	74·5	73·0	...	...	...	...	...	...	...
12	14 50	87·5	84·0	79·5	75·0	72·5	69·0	65·5	62·3	60·5	59·0	...	...
15	12 0	82·0	78·5	73·5	70·0	68·0	...	...	...	...	...	...	...
16	15 0	81·0	78·0	74·0	71·0	69·5	67·5	65·0	60·0	57·5	53·0	47·0?	43·5
18	11 30	84·0	81·0	77·5	74·0	70·5	67·0	...	...	...	...	...	...
20	11 35	85·0	82·0	79·0	76·0	74·5	72·0	69·5	65·0	60·5	57·0	...	...
22	11 30	88·0	85·0	83·5	81·0	79·0	...	...	...	...	...	...	...
25	13 55	83·5	80·0	78·0	74·5	72·0	72·0	70·5	68·5	65·0	60·0	...	...
29	11 0	82·5	80·5	76·0	71·0	67·5	...	...	...	...	...	...	...
30	19 0	82·0	83·0	81·0	77·5	75·5	73·0	69·5	65·5	62·0	57·5	56·0	...
31	11 0	83·0	81·0	77·0	72·0	70·0	69·0	65·0	61·0	57·5	54·0	49·5	...
												6·0km	6·5km
		(For observations at lower levels, see above.)											
16	15 0											42·0	38·5
Apr. 3	11 30	82·5	78·5	74·0	70·5	67·5	...	...	...	...	...	...	...
7	12 0	82·0	79·0	74·5	70·5	66·5	64·0	60·5	57·0	54·0	51·5	48·0	...
8	10 30	81·0	78·0	74·5	70·5	67·5	...	...	...	...	...	...	...
8	13 50	85·0	80·0	75·5	72·0	69·5	68·0	66·0	62·0	58·0	54·5	...	...
12	11 0	86·0	82·0	79·0	75·5	70·5	69·0	65·5	61·5	57·5	54·5	...	...
12	16 45	90·0	85·0	80·0	75·0	70·5	69·0	65·0	61·5	58·0	54·5	...	...
19	9 25	75·0	71·5	69·0	65·0	61·0	57·5	55·0	52·5	50·5	...	...	...
22	10 30	80·5	77·0	74·5	71·5	66·5	...	...	...	...	...	...	...
22	15 30	85·0	81·0	76·0	71·5	69·0	...	...	...	...	...	...	...
22	19 30	83·0	81·0	76·5	72·5	68·0	...	...	...	...	...	...	...
24	11 30	86·0	79·5?	77·0	76·0	75·5	71·0	69·0	67·5	63·5	60·0	...	...
25	17 40	91·5	88·0	84·0	79·0	76·0	72·5	68·0	64·5	61·0	57·5	...	...
May 1	12 25	83·0	78·0	73·5	71·0	71·5	70·0	66·5	62·5	59·5	56·0	...	...
3	11 30	90·0	86·0	83·0	79·0	74·5	...	...	...	...	...	...	...
4	11 0	87·5	84·5?	81·5?	78·5	76·5	74·0	70·5	66·0	64·0	...	...	...

Date.	Time of Start. G.M.T.	Ground.	Heights in Kilometres above M.S.L. 0·5.	1·0.	1·5.	2·0.	2·5.	3·0.	3·5.	4·0.	4·5.	5·0.	5·5.
	h. m.	Temperatures in Degrees Absolute above 200 a.											
May 6	11 15	87·5	84·0	80·5	76·5	73·0	...	...	...	...	...	...	...
8	15 15	92·5	88·0	84·0	81·5	78·0	77·0	73·5	70·5	67·0	63·0	...	....
8	20 20	86·5	86·0	83·5	80·0	78·0	76·5	72·5	68·0	65·0	62·0	58·0	...
9	5 10	79·0	82·5	80·0	77·5	76·5	74·0	71·0	65·5?	61·5	...	...	..
9	9 14	86·0	89·5	85·5	81·0	77·5	76·5	73·0	69·5	65·5	63·5	62·5	...
9	16 40	92·5	90·5	88·0	84·5	81·5	78·0	75·5	72·5	69·0	65·5	...	...
10	18 15	86·0	82·0	81·0	78·0	75·0	73·5	...	...	...	...	...	...
11	16 5	91·5	88·0	83·5	79·5	75·0	...	...	...	...	...	...	...
15	18 30	91·0	87·0	83·0	80·0	77·5	75·0	73·0	69·5	65·5	63·0	59·5	56·0
16	11 20	91·5	90·5	86·0	82·0	81·0	76·5	73·0	69·0	64·5	62·5	59·0	56·5
16	19 20	94·5	90·5	87·0	84·0	81·0	78·0	74·0	69·5	67·0	63·0	59·0	54·5
23	11 30	87·0	83·0	79·0	76·5	74·0	71·5	70·0	68·0	64·5	61·5	56·0?	...
24	17 40	91·5	88·0	84·0	79·5	78·0	76·0	71·5	68·5	67·0	64·0	62·5	...
27	17 30	92·5	90·0	86·5	81·5	77·5	74·0	69·0	69·5	68·5	65·5	...	...
28	12 0	91·5	86·5	82·0	78·0	74·5	72·0	69·5	65·0	63·5	61·5	57·0	52·5
28	17 20	91·5	87·0	83·0	79·0	75·0	71·0	69·5	67·0	64·0	61·5	58·5	54·5
29	17 30	92·5	88·0	84·0	80·5	77·5	75·5	72·5	69·5	66·5	62·5	59·0	56·5
30	17 15	95·0	90·5	86·5	82·0	81·0	75·5?	72·5	69·0	65·5	62·0	57·5	56·0
31	11 0	94·0	90·5	86·0	83·5	80·5	77·0	73·5	69·0	66·0	64·0	61·0	58·0
31	18 0	95·0	90·5	86·5	82·0	80·0	75·0	70·5	68·0	63·5	61·0	58·0	54·0
												6·0km	6·5km	7·0km
15	18 30											53·5	...	...
16	11 20											53·5	50·0	44·5?
28	17 20	(For observations at lower levels, see above.)										50·0	...	...
30	17 15											51·0	47·5	...
31	11 0											53·0	50·0	47·5
31	18 0											50·5	...	...
June 8	16 45	93·0	89·5	86·5	83·0	79·5	77·0	73·5	71·0	69·0	67·0	62·0	57·0
9	11 30	91·0	87·0	83·0	80·0	77·5	75·0	73·5	71·0	68·0	64·5	61·0	57·5
11	12 0	91·0?	87·0	82·0	80·0	78·0	...	...	...	...	...	...	...
22	18 0	86·0	86·0	83·0	78·0	73·0	68·5	68·0	67·0	65·0	62·0	59·5	57·0
26	10 0	89·0	83·5?	79·0	73·5?	73·0	...	...	...	...	...	...	...
29	12 0	93·0?	88·5	84·0	79·5	76·0	75·5	74·5	72·0	69·5	68·0	64·0	60·5
												6·0km	6·5km	7·0km	7·5km
8	16 45	(For observations at lower levels, see above.)										56·0	54·5	50·0	...
9	11 30											55·5	52·0	48·0	44·5
22	18 0											54·0	...	...	...
29	12 0											58·0	...	...	...
July 1	19 40	95·0	93·5	88·5	85·0	80·5	...	...	...	...	...	...	...
2	11 0	91·5?	87·0	83·0	82·0	79·5	77·0	73·5	...	...	...	...	...
2	16 30	94·0	90·0	85·0	82·0	78·0	77·0	74·0	71·5	68·5	65·5	62·0	58·5
3	11 30	88·5?	84·0	79·0	79·0	78·0	76·0	74·5	...	...	...	...	...
3	18 0	91·0	88·0	84·5	82·0	79·5	76·5	73·0	...	...	...	...	...
5	8 0	90·0?	86·5	85·0	83·0	79·5	...	...	...	...	...	...	...
6	8 40	91·5	85·0?	81·0	82·0	81·0	80·0	78·5	...	...	...	...	...
12	20 0	88·0	87·0	83·0	78·5	74·0	71·0	68·0	64·0	62·0	58·0	53·5	49·0
13	10 30	90·0?	86·0	81·0	78·0	74·0	70·5	68·0	66·0	...	...	...	...
18	9 0	90·0	87·0	83·5	80·5	76·5	74·0	72·0	69·5	66·0	62·0	58·0	55·0
23	18 30	92·0	87·0	84·0	82·0	79·0	76·5	73·5	71·5	68·5	65·5	61·0	56·5
24	11 30	90·0	86·0	82·5	78·0	75·0	72·5	68·5	66·0	63·5	61·5	59·0	55·0
25	12 15	91·0	86·0	82·5	80·0	75·5	71·0	69·0	65·5	62·0	60·0	...	...
26	11 0	88·5	84·5?	80·5?	76·0?	73·0	70·0	67·5	65·0	60·5	57·0	53·0	...
26	15 5	87·0	84·0	81·5	79·0	75·5	73·0	69·0	...	...	...	...	...
29	9 0	91·0	88·5	84·5	81·0	77·5	...	...	...	...	...	...	...
30	7 30	87·0	90·5	87·0	82·0	78·0	...	...	...	...	...	...	...
												6·0km	6·5km	7·0km
2	16 30	(For observations at lower levels, see above.)										54·5	53·0	48·0
12	20 0											44·0	...	...
24	11 38											50·5	47·0	...
Aug. 6	15 0	91·0	87·0?	83·0?	79·0?	75·5?	71·5	69·5	66·0	63·0	60·5	56·5	52·0
9	10 0	89·0?	85·5	80·5	77·0	77·5	76·0	74·0	...	...	...	...	...

Upper Air Temperatures. South Farnborough, 1918.

Date.	Time of Start G.M.T.	Ground.	Heights in Kilometres above M.S.L. 0·5.	1·0.	1·5.	2·0.	2·5.	3·0.	3·5.	4·0.	4·5.	5·0.	5·5.
	h. m.	Temperatures in Degrees Absolute above 200 a.											
Aug. 10	10 0	92·0?	87·5	84·0	81·5	81·0	80·0	77·5	76·0	73·0	69·5	65·5	62·5
12	13 0	95·0?	90·5	86·0	81·5	78·5	77·0	75·5	71·5	70·0	67·5	63·5	59·5
13	10 0	89·0	86·5	83·5	80·0	80·0	...	...	...	...	...	...	...
14	19 0	93·0	90·0	88·0	86·5	84·5	81·5	78·5	...	...	...	...	...
15	8 30	90·5	87·0	83·0	80·5	81·0	80·0	79·0	75·5	...	...	...	...
16	10 0	90·0?	85·5	82·5	81·0	81·5	...	...	...	...	...	...	...
20	18 40	93·0	93·0	91·5	90·5	88·0	83·5	79·0	74·5	70·0	69·0	67·0	63·0
22	16 15	99·0	96·5	95·0	92·5	89·0	86·0	83·5	80·0	76·0	72·5	...	...
22	19 0	94·5	93·0	92·0	90·5	88·0	83·5	79·0	74·5	70·0	69·0	65·5	63·0
24	9 55	90·5?	85·0	80·5	76·5	75·0	73·5	70·0	69·0	67·0	63·5	...	...
31	13 30	89·5?	85·0	82·5	80·5	77·0	74·5	72·0	69·5	67·5	65·0	61·5	58·5
								6·0km	6·5km	7·0km	7·5km	8·0km	8·5km
12	13 0	(For observations at lower levels, see above.)						56·5	53·0	54·0	48·5?	...	...
20	18 40							59·0	...	...	...	...	...
22	19 0							59·0	...	...	...	...	...
31	13 30							57·5	53·5	51·0	47·0	43·0	38·5
Sept. 19	9 30	85·0	80·0	77·0	73·5	70·5	67·5	...	...	...	...	...	...
20	6 45	80·5	80·0	76·5	73·0	70·0	66·5	64·5	61·5	...	...	...	...
23	9 45	85·0	80·5	77·0	75·0	71·5	...	...	...	...	...	...	...
Oct. 4	8 0	82·0	79·0	75·5	74·0	71·5	69·0	71·5	...	...	...	...	...
8	17 20	80·5	79·0	75·0	71·0	67·5	64·0	60·5	...	...	...	...	...
9	7 0	79·0	79·0	76·5	73·5	71·5	...	...	...	...	...	...	...
12	7 20	81·0	78·0	76·0	74·0	70·5	67·5	66·0	...	...	...	...	...
13	11 0	83·5	79·5	75·0	71·0	69·5	67·0	68·5	63·5	61·0	58·0	54·0	50·0
14	7 15	79·0	79·5	76·0	76·0	73·5	69·0	...	...	...	...	...	...
15	7 5	80·5	80·0	77·5	73·5	70·5	69·0	...	...	...	...	...	...
18	15 15	84·5?	80·0	76·0	72·0	68·0	65·0	...	...	...	...	...	...
22	11 30	86·0	83·5	80·0	76·5	72·0	70·5	68·0	65·0	61·0	57·5	...	...
24	10 20	82·0	79·0	80·0	78·0	76·0	73·0	71·0	68·0	65·5	63·5	59·5	56·5

Date.	Time of Start G.M.T.	Ground.	Heights in Kilometres above M.S.L. 0·5.	1·0.	1·5.	2·0.	2·5.	3·0.	3·5.	4·0.	4·5.	5·0.	5·5.
	h. m.	Temperatures in Degrees Absolute above 200 a.											
Oct. 24	14 45	84·5	79·5	79·0	77·5	76·0	75·0	...	...	...	...	...	...
29	9 5	84·5	82·0	80·0	80·0	78·0	...	...	...	...	...	...	...
													6·0km
24	10 20	(For observations at lower levels, see above.)											53·5
Nov. 6	10 5	78·0	76·0?	74·0?	71·5	69·0	66·5?	63·5?	60·5?	57·0	54·0	51·0	48·5
7	15 20	82·0	...	...	...	...	...	...	...	...	60·5	55·5	51·5
8	14 10	82·5	79·0	75·0	71·0	68·0	63·5	60·5	59·0	59·0	57·5	54·5	52·0
9	10 45	81·5	78·5	74·5	70·5	67·5	64·5	61·5	...	...	...	...	...
13	11 10	81·0	76·0	74·0	75·5	76·5	74·5	72·5	...	...	...	...	...
13	14 30	82·0	77·5	75·0	74·5	73·5	74·5	72·5	...	...	...	...	...
14	14 13	81·0	78·0	77·0	78·5	76·5	74·0	72·0	...	...	...	...	...
15	15 5	81·0	78·0	73·5	75·0	74·5	73·0	69·0	...	...	...	...	...
16	10 40	76·0	73·0	76·0	74·5	72·0	70·0	67·5	...	...	...	...	...
21	14 52	79·5	77·5	76·5	80·5	79·0	77·0	74·0	...	...	...	...	...
22	11 35	79·5	79·0	80·5	79·0	76·5	...	...	...	...	...	...	...
22	15 10	83·5	81·0	79·5	79·0	77·5	74·5	71·5	68·5	66·0	63·5	...	...
													6·0km
7	15 20	(For observations at lower levels, see above.)											50·5
8	14 10												47·5
Dec. 7	13 30	82·5	80·0	75·5	74·0	75·0	72·5	70·0	68·0	65·5	62·0	...	...
16	17 0	80·0	78·5	75·0	71·0?	67·5?	63·5?	60·5?	57·0?	53·5	50·0	44·5	40·5
17	15 45	78·0	76·5	73·5	69·5	67·0	63·5	60·0	56·0	53·0	...	...	...
19	11 0	78·0	75·5	72·5	69·5	66·0	63·0	60·0	55·5	50·5	47·5	42·0?	...
20	10 30	78·0	75·0	70·5	68·5	66·0	62·0	59·0	...	...	...	...	...
21	11 30	76·0	73·5	70·5	67·0	64·0	62·5	59·5	55·5	55·0	53·5	...	...
30	14 55	80·0	77·0	74·0	70·0	67·5	64·5	...	...	...	...	...	...
												6·0km	6·5km	7·0km
16	17 0	(For observations at lower levels, see above.)										37·0	33·0	29·0

Upper Air Temperatures—Aeroplane Ascents, 1918.

Monthly and Yearly Averages and Annual Range.

T = Temperature in Degrees Absolute above 200 a. N = Number of Observations. M. H. = Martlesham Heath. S. F. = South Farnborough. Av. = Average Temperatures for England, S.E.

	Surface.			Heights in metres above Mean Sea Level.																											
				500 m.		1000 m.		1500 m.		2000 m.		2500 m.		3000 m.		3500 m.		4000 m.		4500 m.		5000 m.		5500 m.		6000 m.		6500 m.		7000 m.		7500 m.		8000 m.		8500 m.	
	½ (max. + min.)	T.	N.	T.	N.	T.	N.	T.	N.	T.	N.	T.	N.	T.	N.	T.	N.	T.	N.	T.	N.	T.	N.	T.	N.	T.	N.	T.	N.	T.	N.	T.	N.	T.	N.
MONTHLY AVERAGES.																																			
JANUARY.																																			
M. H.	76·0	76·5	13	74·5	13	72·5	13	70·0	13	67·5	13	64·5	13	62·0	13	59·5	13	56·5	13	57·0	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...
S. F.	76·5	77·0	16	75·5	16	74·0	16	72·0	16	69·5	16	68·0	16	66·0	14	62·5	14	60·0	7	57·0	6	58·5	1	56·5	1	...	...	...	...	...	...	...	...	...	...
Av.	...	76·5	29	75·0	29	73·5	29	71·0	29	68·5	29	66·5	29	64·0	27	61·0	27	58·0	20	57·0	15	...	...	...	...	...	...	...	...	...	...	...	...	...	...
FEBRUARY.																																			
M. H.	79·0	78·5	17	76·0	17	74·0	17	72·0	17	70·0	17	68·0	17	65·0	17	62·0	17	59·5	15	56·0	10	45·0	2	49·0	1	46·0	1	...	...	...	...	...	...	...	...
S. F.	79·0	79·0	15	77·5	15	75·5	15	73·0	15	71·0	15	68·0	13	66·0	8	64·0	8	61·5	8	58·5	8	55·5	4	53·0	1	...	...	..	...	...	...	...	...	...	...
Av.	...	79·0	32	76·5	32	74·5	32	72·5	32	70·5	32	68·0	30	65·0	25	62·5	25	60·0	23	57·0	18	52·0	6	51·5	3	...	...	...	...	...	...	...	...	...	...
MARCH.																																			
M. H.	79·0	81·0	13	79·0	13	76·0	13	73·5	13	71·0	13	68·5	13	65·5	13	62·5	13	59·5	13	56·5	12	54·5	4	41·5	1	...	...	...	...	...	...	...	...	...	...
S. F.	79·0	83·0	14	80·5	14	77·5	14	74·0	14	71·5	14	69·5	9	67·0	8	64·5	7	61·5	7	58·0	7	51·0	3	43·5	1	42·0	1	38·5	1	...	...	...	...	...	...
Av.	...	82·0	27	80·0	27	77·0	27	74·0	27	71·5	27	69·0	22	66·0	21	63·5	20	60·0	20	57·0	19	53·0	7	42·5	2	...	...	...	...	...	...	...	...	...	...
APRIL.																																			
M. H.	79·5	81·5	9	79·0	9	76·5	9	73·0	9	69·5	9	66·5	9	63·5	9	60·0	9	57·5	8	52·5	3	...	...	...	...	..	...	...	...	...	...	...	...	...	...
S. F.	79·5	84·0	12	80·0	12	76·0	12	72·5	12	69·0	12	67·5	7	64·0	7	61·0	7	57·5	7	55·5	6	48·0	1	...	...	...	...	...	...	...	...	...	...	...	...
Av.	...	83·0	21	79·5	21	76·0	21	72·5	21	69·0	21	67·0	16	63·5	16	60·5	16	57·5	15	54·5	9	...	...	...	...	...	...	...	...	...	...	...	...	...	...
MAY.																																			
M. H.	85·5	87·5	23	86·5	23	84·0	23	81·0	23	78·0	23	75·5	23	73·0	23	69·5	23	66·5	22	63·5	18	60·0	17	55·5	4	52·0	2	...	...	...	...	...	...	...	...
S. F.	86·5	90·0	23	87·0	23	83·5	23	80·0	23	77·0	23	75·0	20	71·5	19	68·0	19	65·0	19	62·5	17	59·0	13	55·5	9	52·0	6	49·0	3	46·0	2	...	...	...	...
Av.	...	89·0	46	86·5	46	83·5	46	80·5	46	77·5	46	75·0	43	72·0	42	69·0	42	66·0	41	63·0	35	59·5	30	55·5	13	52·0	8	...	...	...	...	...	...	...	...
JUNE.																																			
M. H.	86·0	87·5	27	84·5	27	81·0	27	77·5	27	75·0	27	73·0	27	70·5	27	67·5	27	64·5	26	61·5	26	60·5	12	55·5	2	52·0	2	49·5	2	46·5	2	39·5	1	...	...
S. F.	86·5	90·5	6	87·0	6	83·0	6	79·0	6	76·0	6	74·0	4	72·5	4	70·5	4	68·0	4	65·5	4	61·5	4	58·0	4	56·0	4	53·5	2	49·0	2	44·5	1	...	...
Av.	...	88·0	33	84·5	33	81·0	33	78·0	33	75·5	33	73·0	31	70·5	31	68·0	31	65·0	30	62·0	30	60·5	16	57·0	6	54·5	6	51·0	4	47·5	4	42·0	2	...	...
JULY.																																			
M. H.	88·5	89·0	15	86·0	15	83·5	15	80·5	15	78·0	15	75·5	15	73·5	15	70·5	15	67·0	15	64·5	11	61·0	8	59·0	2	54·5	2	48·0	1	...	...	...	...	...	...
S. F.	89·5	90·5	17	87·0	17	83·5	17	80·5	17	77·5	17	74·0	13	71·5	13	67·5	8	64·5	7	61·5	7	57·5	6	55·0	5	49·5	3	50·0	2	48·0	1	...	...	...	...
Av.	...	89·5	32	86·5	32	83·5	32	80·5	32	77·5	32	75·0	28	72·5	28	69·5	23	66·5	22	63·5	18	59·5	14	56·0	7	51·5	5	49·5	3	...	...	...	...	...	...
AUGUST.																																			
M. H.	89·5	90·5	27	88·0	27	85·5	27	82·0	27	80·0	27	78·0	27	75·0	27	72·5	26	69·5	26	67·0	23	65·0	14	63·0	3	60·0	1	...	...	...	...	...	...	...	...
S. F.	89·5	92·0	13	88·5	13	85·5	13	83·0	13	81·5	13	79·0	11	76·0	11	73·0	9	69·5	8	67·0	8	63·5	6	60·0	6	58·0	4	53·5	2	52·5	2	48·0	2	43·0	1
Av.	...	91·0	40	88·5	40	85·5	40	82·5	40	80·5	40	78·0	38	75·5	38	72·5	35	69·5	34	67·0	31	64·5	20	61·0	9	58·5	5	...	...	...	...	...	...	...	...
SEPTEMBER.																																			
M. H	86·0	86·0	25	83·5	25	80·5	25	77·5	25	74·5	25	71·5	25	68·5	25	65·5	25	62·0	25	59·0	21	57·0	7	53·0	2	51·0	2	...	...	...	...	...	...	...	...
S. F.	86·0	83·5	3	80·0	3	77·0	3	74·0	3	70·5	3	67·0	2	64·5	1	61·5	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Av.	...	86·0	28	83·0	28	80·0	28	77·0	28	74·0	28	71·0	27	68·5	26	65·0	26	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
OCTOBER.																																			
M. H.	82·5	83·5	14	81·5	14	79·0	14	76·0	14	74·0	14	71·0	14	68·0	14	65·5	14	62·0	13	59·0	12	59·5	5	47·0	1	...	...	...	...	...	...	...	...	...	...
S. F.	82·0	82·5	12	80·0	12	77·0	12	75·0	12	72·0	12	69·0	10	67·5	6	65·5	3	62·5	3	59·5	3	57·0	2	53·5	2	53·5	1	...	...	...	...	...	...	...	...
Av.	...	83·0	26	80·5	26	78·0	26	75·5	26	73·0	26	70·0	24	68·0	20	65·5	17	62·0	16	59·0	15	58·5	7	51·0	3	...	...	...	...	...	...	...	...	...	...
NOVEMBER.																																			
M. H.	79·0	81·5	13	79·0	13	76·5	13	75·0	13	73·5	13	71·5	13	69·0	13	66·0	13	63·5	13	62·0	9	58·0	4	54·5	3	51·0	3	49·0	2	46·5	2	...	...	..	...
S. F.	78·0	80·5	12	77·5	11	76·0	11	75·5	11	73·5	11	71·0	10	68·5	10	62·5	3	60·5	3	59·0	4	53·5	3	50·5	3	49·0	2	...	...	...	...	...	...	...	...
Av.	...	81·0	25	78·5	24	76·0	24	75·0	24	73·5	24	71·5	23	68·5	23	65·5	16	63·0	16	61·0	13	56·0	7	52·5	6	50·0	5	...	...	...	...	...	...	...	...
DECEMBER.																																			
M. H.	79·5	83·0	11	81·0	11	78·5	11	76·5	11	75·0	11	73·0	11	69·0	10	65·0	7	61·0	6	57·5	6	56·5	4	54·0	2	50·5	2	...	...	...	...	...	...	...	...
S. F.	80·0	79·0	7	76·5	7	73·0	7	70·0	7	67·5	7	64·5	7	61·5	6	58·5	5	55·5	5	53·5	4	43·5	2	40·5	1	37·0	1	33·0	1	29·0	1	...	...	...	...
Av.	...	81·5	18	79·0	18	76·5	18	73·5	18	72·0	18	69·5	18	66·0	16	62·5	12	58·5	11	56·0	10	51·5	6	49·5	3	46·0	3	...	...	...	...	...	...	...	...
YEARLY AVERAGES.																																			
M. H.	82·5	84·0	207	81·5	207	79·0	207	76·0	207	74·0	207	71·5	207	68·5	206	65·5	202	62·5	195	59·5	160	57·5	77	53·0	21	52·0	15	49·0	5	46·5	4	39·5	1	...	...
S. F.	82·5	84·5	150	81·5	149	78·5	149	75·5	149	73·0	149	70·5	122	68·0	107	65·0	88	62·5	78	60·0	74	55·5	45	50·5	34	49·5	22	46·5	11	45·0	8	46·5	3	43·0	1
ANNUAL RANGE.																																			
M. H.	13·5	14·0		13·5		13·0		12·0		12·5		13·5		13·0		13·0		13·0		14·5		...		...		...		...		...		...		...	
S. F.	13·0	15·0		13·0		12·5		13·0		14·0		14·5		14·5		14·5		14·0		13·5		...		...		...		...		...		...	

Notes on Seismological Work at Eskdalemuir Observatory during 1918.

Equipment.—The instrumental equipment consists of three Galitzin pendulums, arranged to record displacements in the north, east, and vertical directions. There is also an Omori Seismograph, but it is not in use at present.

The constants of the two horizontal Galitzin instruments underwent no appreciable change during the year. The tables for magnification and lag, published in the *Annual Supplement* for 1915, therefore holds good for 1918.

Earthquakes.—The number of disturbances recorded during 1918, excluding those in which the displacement was very small, was 186. The epicentral distances were determined in 41 cases. On three occasions the epicentral distance exceeded a quadrant (10,000 kilometres).

Microseisms.—Since January 1911 the amplitude and period of the microseismic movement in the N–S direction as observed at 0 h., 6 h., 12 h., and 18 h. G.M.T. have been published in the *Geophysical Journal*. The mean values for each month of 1918 are given below, together with the corresponding means for the whole period 1911–1918. The mean values for the several years are also set out. The unit for the amplitude is the micron (10^{-6}m = ·001 mm. = μ).

MICROSEISMS.—MONTHLY MEANS, 1918.

1918.		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Amplitude . .		2·4	4·3	1·6	0·8	0·6	0·7	0·6	0·7	1·2	1·4	1·7	2·1
Period . .	sec.	5·8	8·9	6·0	4·9	5·0	4·9	4·3	4·2	4·4	4·9	5·3	5·6

MICROSEISMS.—MEAN ANNUAL VARIATION, 1911–1918.

1911–1918.		Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Amplitude . .	μ	2·5	2·6	1·7	1·2	0·7	0·5	0·3	0·4	0·8	1·3	1·8	2·1
Period . . .	sec.	6·1	6·4	5·7	5·4	4·8	4·5	4·4	4·4	4·9	5·3	5·8	5·8

MICROSEISMS.—YEARLY MEANS, 1911–1918.

Years		1911.	1912.	1913.	1914.	1915.	1916.	1917.	1918.
Amplitude . .	μ	1·1	1·1	1·6	1·6	1·3	1·1	1·1	1·5
Period . . .	sec.	5·2	5·0	5·5	5·4	5·2	5·3	5·2	5·4

The amplitude of the microseismal displacement increases with the period. The relation is not a linear one, as may be gathered from the following figures, deduced from a graphical representation of the data for the years 1911–1918.

Amplitude . .	μ	0·3	0·4	0·8	1·5	2·3	3·1
Period . . .	sec.	4 0	4·5	5·0	5·5	6·0	6·5

It may be mentioned that investigation of the possible connection between microseismal amplitude and the "state of the sea" at different points yields inconclusive results. For example, the correlation between the state of the sea at Lerwick and the microseismal amplitude at Eskdalemuir gives coefficients as high as 0·7 in winter, but very low in summer.

The Water-Level Recorder at Kew Observatory, Richmond.

A description of the apparatus will be found in the *Annual Supplement* for 1914. Regular observations commenced in July 1914. The values of the mid-height for each day have appeared in the monthly numbers of the Journal, along with the extreme values recorded during the month, and the dates on which these presented themselves. The general nature of the variation will be readily derived from the diagram, in which the graph A A shows the fluctuations in water level. The integrated rainfall (*i.e.* the total fall up to any assigned date) at Kew Observatory is represented by the graph B B, whilst the general rainfall in the Thames Valley * (obtained from twenty-four stations above Teddington) is integrated in the graph C C. The rainfall scale is five times that for the height of the water in the well.

The remarkably close correlation between the Thames Valley and Kew rainfalls has necessitated the adoption of a separate origin for the graph C C, which is 6 cm. above the zero of the scale shown on the right.

The response of water level to rainfall is variable. The five wet days, January 15–19, with an aggregate rainfall of 60 mm., produced a rise in water level of 1600 mm. The scanty rainfall of March was followed by the heavy showers of April. The rainfall during the first half of April, however, hardly affected the water-level, being mainly used up in saturating the soil. The rainfall on April 15–16 had a quick and very pronounced response in water-level, which attained its summit on April 26 and remained stationary for three days.

The underground water-level went below the low water-mark above Richmond Lock in June, and with a short break remained under the mark until the first week of November.

The heavy rains in July had lasted for a fortnight before there was any corresponding rise in the level of the water-table. The response to the exceptionally heavy September rainfall was also very small.

The response of the well to variations in height of the barometer, and to tide in the neighbouring river has been discussed † by E. G. Bilham. The effect of the alternation of spring and neap tides can be recognised in the diagram.

Table of Monthly Means of Electrical Data for Richmond, 1918.

The values of the positive and negative electrical charges of air are estimated by means of the Ebert apparatus. A popular account of the method will be found in a paper by C. D. Stewart. ‡ The following table gives mean values of the charges as measured month by month, but as the observations are only made on certain days the figures do not represent true means for the months. The number of days is given in the table. For a comparison of the units used in corresponding tables elsewhere reference may be made to the Introduction. Mean values of potential gradient at Richmond will be printed in *Hourly Values.*

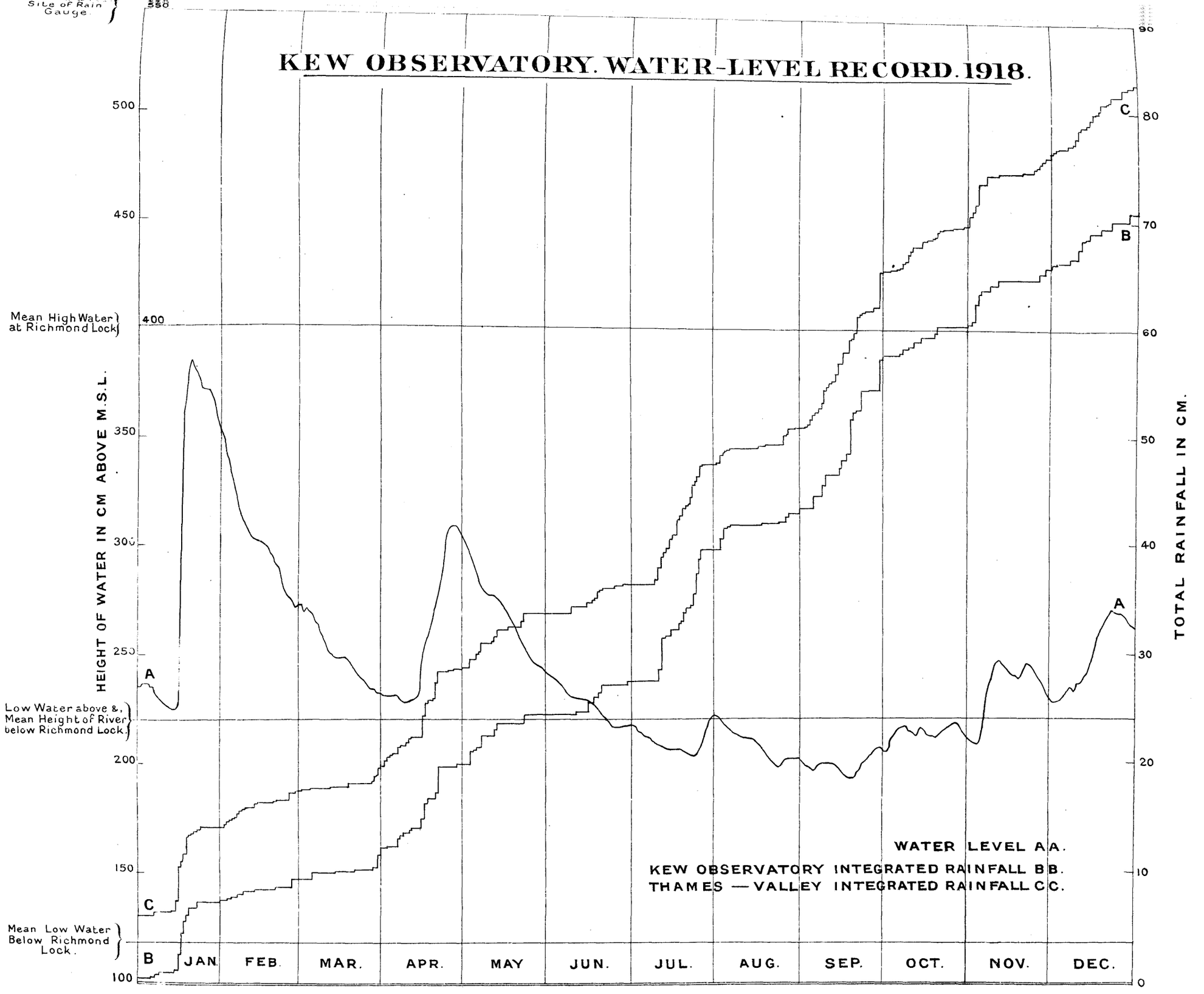
Charge per c.c. $\times 10^{16}$ *at about* 15 *h.*

		Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.	Year.
		Coulomb.	Coulomb.	Coulomb.	Coulomb.	Coulomb.	Coulomb.	Coulomb.	Coulomb.	Coulomb.	Coulomb.	Coulomb.	Coulomb.	Coulomb.
Richmond	+	*n* ·30	...	·42	·38	·55	·53	·75	·56	*x* ·87	·51	·33	·42	·51
	−	*n* ·18	...	·28	·23	·49	·33	·50	·34	*x* ·64	·31	·24	·23	·34
No. of days utilised		15	...	13	13	19	15	14	17	12	19	13	15	165

* A chart showing the rainfall of the Thames Valley is published monthly in *Symons's Met. Mag.*

† *Roy. Soc. Proc.*, A94, 1918, p. 165; and *Q. J. R. Met. Soc.*, vol. xliv., 1918, p. 171.

‡ *Q. J. R. Met. Soc.*, vol. xliii., 1917, p. 409.



P.S. 3317. 120. WT 37652. D. S. O. P. 515. 400. 3/20

To face page 114

A peculiarity of the Ebert apparatus should be mentioned. It is usual to take in immediate succession two observations, one with the inner cylinder charged positive — to obtain the negative charge in the atmosphere; the other with the cylinder charged negative—to obtain the positive charge in the atmosphere. A tendency for the second observation—especially when it deals with the negative atmospheric charge—to give a relatively low value has long been suspected. To meet this, a short interval has been allowed between the two observations, and the order of the observations has been different on successive days, so as to avoid favouring the positive charges at the expense of the negative, or conversely.

The effect has, however, decidedly increased during 1918; being presumably associated with the development of a furry appearance in the electrometer threads. It is natural to suppose that the numerical result derived from the second observation is reduced by this peculiarity, and consequently that the monthly and yearly means, in spite of the precautions adopted, are too low. On the other hand, the mean values for 1918 are not conspicuously low compared with those from previous years.

Wind Components for Deerness, Holyhead, Great Yarmouth, and Scilly, 1911–1918.

The wind components at these four anemograph stations* are published every month in Table 8 of the Journal. As several errors have been detected in the monthly sums of the wind components it has been considered desirable to set out the correct values in new tables, which will be found on pp. 116–123.

In accordance with the system adopted in the Journal, sums and differences of the South and North components and likewise those of the West and East components occurring during each month have been set out and the corresponding totals for the eight years have been computed.

It will be noticed that the sums of components may be regarded as representing the total movement along meridians and parallels of latitude, whilst differences give the net flow along these lines. It should be mentioned, however, that the practice in tabulating wind direction at Meteorological Office stations is to assume that the indications of the vane are not to be relied on when the wind speed averages less than 1·6 metre per second. Accordingly components are not computed in such circumstances, and occasions when these light winds are recorded are reckoned as "calms."

The small tables at the foot of the pages give for each month the total number of observations at the hours mentioned. Occasions when there was a "calm" have been counted, *i.e.* each figure tabulated is the number of days in the period less the number of occasions on which no anemometer record was available.

Mean values of the several components have been computed. The results are not given here, however. It is proposed to publish them at an early date with a suitable discussion.

* See Introduction, p. vi.

Wind Components: Monthly Sums, 1911-1918.

DEERNESS. — Lat. 58° 56′ N. Long. 2° 45′ W.

	Σ (S+N).				Σ (S−N)				Σ (W+E).				Σ (W−E).			
	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.
JANUARY.																
1911	183·5	185·0	169·0	155·4	58·1	79·2	64·2	60·6	165·1	154·3	142·7	177·8	120·5	111·3	90·9	117·8
1912	166·5	186·2	184·1	172·0	73·5	88·6	62·5	69·0	174·0	164·6	160·0	182·7	− 89·0	− 79·6	− 70·8	−106·3
1913	245·5	273·6	274·4	276·1	241·1	256·8	241·6	259·3	185·8	175·6	164·1	171·5	−135·6	−116·0	−127·7	−135·3
1914	160·1	163·3	171·3	172·1	110·9	118·7	98·5	70·9	157·0	151·4	139·8	137·3	100·4	83·6	71·8	93·1
1915	140·9	148·4	142·2	145·0	47·3	50·6	47·0	59·2	119·9	127·4	121·6	134·4	− 8·5	− 16·4	− 23·8	− 1·8
1916	178·7	194·7	193·8	169·8	114·1	110·1	95·2	118·6	220·5	221·1	226·3	202·4	215·5	188·9	207·7	186·4
1917	144·7	132·3	131·5	120·0	− 15·7	− 0·1	4·9	− 4·6	106·4	142·9	137·3	139·4	− 51·8	− 53·5	− 32·9	− 67·6
1918	184·0	227·0	192·7	212·8	− 18·6	− 64·6	− 36·3	− 14·2	142·4	158·4	182·3	171·6	55·6	64·6	30·1	54·8
Total	1401·9	1515·5	1459·0	1423·2	910·7	645·3	578·2	618·8	1280·1	1295·7	1274·1	1317·1	207·1	182·9	145·3	141·1
FEBRUARY.																
1911	123·1	162·9	142·9	101·5	53·3	33·3	43·3	63·3	117·6	123·8	188·9	127·5	111·4	99·8	166·7	121·1
1912	146·2	162·6	153·8	162·3	104·2	98·8	97·6	131·9	88·4	86·1	129·9	121·4	− 13·6	12·9	− 16·3	− 38·6
1913	124·1	109·5	116·5	106·6	62·3	69·5	92·7	74·0	84·6	82·8	92·8	85·1	49·6	59·4	58·6	60·5
1914	176·5	169·6	193·3	184·9	176·5	169·2	187·9	184·5	120·8	108·7	129·2	100·6	− 34·4	− 31·3	− 17·6	− 39·8
1915	182·6	161·5	183·3	173·3	123·0	107·1	130·1	131·3	132·8	145·7	151·4	140·3	− 77·2	− 93·5	− 80·2	− 78·9
1916	151·4	161·2	171·8	152·3	79·4	46·4	63·0	64·1	130·5	109·8	131·9	133·2	44·9	40·6	54·1	52·6
1917	116·8	108·8	101·9	110·3	30·8	48·8	38·7	30·3	112·4	121·8	132·3	97·4	28·2	44·2	75·3	34·0
1918	190·9	175·1	203·9	175·0	114·7	138·5	165·7	144·8	136·3	138·7	143·1	125·7	39·9	34·5	38·9	33·7
Total	1211·6	1211·2	1267·4	1172·2	750·2	711·6	819·0	824·2	929·4	917·4	1099·5	931·2	148·8	166·6	279·5	144·6
MARCH.																
1911	127·5	123·1	154·1	134·3	9·5	− 27·5	− 75·9	− 33·1	125·8	119·9	138·0	115·9	9·0	18·9	28·6	− 4·9
1912	129·7	141·4	132·4	149·5	102·9	73·2	64·6	98·5	109·9	138·1	132·7	119·9	− 14·3	15·7	− 2·9	− 17·9
1913	179·2	181·6	195·4	161·9	141·6	89·0	108·4	109·7	173·9	161·9	151·4	143·7	55·7	61·3	63·0	68·9
1914	103·0	114·2	126·2	99·7	33·0	52·8	37·2	30·3	154·9	176·3	197·8	163·0	31·5	− 3·3	5·0	13·2
1915	115·0	146·0	133·2	133·6	− 49·4	− 31·4	− 47·2	− 57·0	125·7	135·4	163·6	143·6	83·1	61·8	111·0	114·0
1916	138·7	155·5	172·2	148·7	− 64·1	− 53·3	− 90·6	− 69·9	112·4	137·8	142·5	107·8	− 26·4	− 39·8	− 18·3	− 24·6
1917	190·8	194·3	181·8	199·1	34·8	46·3	15·6	25·7	169·7	170·4	208·9	175·4	16·1	8·4	13·7	− 10·6
1918	143·7	151·7	147·3	137·9	93·1	96·9	97·3	92·5	115·3	122·4	143·5	108·3	− 41·7	− 41·8	− 26·3	− 45·7
Total	1127·6	1207·8	1242·6	1164·7	301·4	246·0	109·4	196·7	1087·6	1162·2	1278·4	1077·6	113·0	81·2	173·8	92·4
APRIL.																
1911	104·8	124·5	158·9	120·5	− 22·4	− 19·5	− 37·3	− 29·1	105·2	125·6	106·9	107·8	34·4	37·8	40·7	51·6
1912	123·5	134·6	147·6	123·5	− 2·5	− 4·0	− 30·2	− 8·1	98·9	135·6	121·3	77·8	39·9	79·2	56·9	11·8
1913	147·7	166·7	171·6	141·3	66·3	81·1	63·4	45·5	56·9	70·1	88·6	85·3	9·1	− 5·3	− 9·0	− 7·9
1914	113·8	146·1	136·4	96·5	102·0	98·7	85·4	65·5	117·3	130·3	158·2	132·5	65·9	41·9	63·0	78·5
1915	93·2	130·2	124·0	75·0	59·2	44·0	32·2	39·2	102·3	127·4	157·0	89·8	93·9	101·8	128·0	87·4
1916	108·9	158·2	147·9	115·1	26·3	74·4	46·9	21·9	108·2	139·0	165·8	108·5	53·6	36·4	54·6	40·1
1917	124·7	119·4	103·9	94·8	− 55·7	− 47·6	− 66·9	− 46·8	160·1	156·8	159·0	127·7	80·3	85·4	122·4	77·1
1918	95·7	114·4	117·2	102·4	1·7	15·0	− 1·4	− 16·0	67·2	82·7	97·0	82·9	− 41·8	− 52·5	− 58·0	− 49·9
Total	912·3	1094·1	1107·5	869·1	174·9	242·1	92·1	72·1	816·1	967·5	1053·8	812·3	335·3	324·7	398·6	288·7
MAY.																
1911	94·1	113·5	126·0	97·5	38·3	56·5	33·4	28·3	79·0	106·2	128·7	91·3	8·2	− 9·2	− 21·3	− 11·7
1912	106·7	145·5	139·3	117·5	− 28·5	− 37·9	− 56·9	− 38·5	91·6	108·7	120·2	79·1	28·2	42·5	61·2	29·7
1913	97·8	136·0	119·1	111·5	49·0	76·2	70·1	58·9	131·5	158·6	207·1	162·9	− 45·3	− 37·8	− 27·5	− 45·1
1914	98·2	124·8	124·0	85·5	7·6	15·6	3·6	− 12·5	87·8	114·9	159·4	95·7	57·4	62·1	92·8	69·5
1915	108·6	139·0	141·8	124·2	− 18·8	− 24·0	− 31·2	− 28·6	53·4	82·0	102·0	72·2	8·0	12·2	15·4	7·8
1916	92·6	127·1	113·6	86·3	17·8	9·1	11·8	8·3	102·4	104·3	114·5	106·5	− 16·0	− 10·5	− 27·7	− 26·1
1917	85·6	105·1	117·5	78·8	27·0	38·7	30·9	23·4	107·9	140·7	165·6	131·9	− 50·3	− 69·3	− 65·4	− 40·5
1918	57·2	95·5	88·8	59·7	39·8	57·5	51·8	34·1	109·6	135·2	140·4	103·6	− 54·6	− 28·8	− 58·2	− 55·8
Total	740·8	986·5	970·1	761·0	132·2	191·7	113·5	73·4	763·2	950·6	1137·9	843·2	− 64·4	− 38·8	− 30·7	− 72·2
JUNE.																
1911	109·5	131·8	141·7	101·1	− 10·7	− 16·0	− 36·3	− 33·9	99·0	97·2	121·9	99·9	30·2	30·2	42·5	37·1
1912	87·6	124·4	122·8	91·6	− 15·2	− 23·4	− 16·0	− 21·8	91·8	116·1	125·1	116·8	− 49·8	− 69·3	− 76·7	− 64·0
1913	86·6	104·5	102·7	77·3	33·0	23·9	8·1	6·1	88·8	112·4	115·3	83·3	25·8	57·8	41·9	21·9
1914	72·9	88·5	85·8	58·5	4·3	− 20·1	17·0	− 5·5	70·1	96·7	116·4	95·7	34·7	61·9	34·0	50·5
1915	61·7	82·9	90·5	66·5	− 18·7	− 16·9	− 38·5	− 40·1	71·3	102·9	127·7	89·2	− 11·5	− 10·7	− 20·3	− 16·2
1916	131·7	167·6	166·2	145·6	− 93·5	−116·4	−135·4	−122·2	86·8	90·5	96·6	93·7	13·0	33·1	41·6	38·3
1917	108·8	147·3	130·6	94·9	44·2	79·9	62·0	42·3	70·4	101·0	133·0	83·4	4·6	14·4	2·4	− 0·4
1918	83·8	110·1	117·0	91·8	− 26·6	− 0·1	− 10·8	− 5·2	142·0	170·3	190·1	137·4	107·6	125·5	145·7	108·2
Total	742·6	957·1	957·3	727·3	− 83·2	− 89·1	−149·9	−180·3	720·2	887·1	1026·1	799·4	154·6	242·9	211·1	175·4

NUMBER OF OBSERVATIONS (INCLUDING CALMS), 1911-1918.

Time.	January.	February.	March.	April.	May.	June.
3 h.	246	225	248	240	246	239
9 h.	245	225	248	240	246	239
15 h.	245	224	248	240	247	237
21 h.	247	225	248	240	247	239

DEERNESS.

	Σ (S+N).				Σ (S−N).				Σ (W+E).				Σ (W−E).			
	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.
JULY.																
1911 .	78·6	102·2	118·4	79·8	8·4	29·6	23·0	10·4	75·4	84·1	118·9	83·0	23·2	20·5	23·1	37·0
1912 .	119·5	168·5	160·8	107·0	− 21·7	− 4·5	− 2·6	− 17·8	79·2	86·0	106·0	91·2	− 9·6	− 22·4	− 20·0	− 13·4
1913 .	75·5	98·6	112·0	83·3	− 56·1	− 75·0	− 79·4	− 67·7	69·7	92·8	104·4	74·0	− 43·7	− 51·8	− 48·4	− 34·6
1914 .	74·8	101·5	89·2	65·0	− 7·0	− 3·7	− 2·2	− 1·0	94·8	104·7	146·6	106·5	− 0·2	− 20·9	− 21·8	− 19·7
1915 .	62·7	89·0	102·6	56·2	− 17·3	− 3·8	− 0·6	− 17·2	70·8	94·1	109·1	60·1	− 25·4	− 28·7	− 15·7	− 17·1
1916 .	61·5	75·4	92·1	66·4	− 10·7	− 10·2	− 20·9	− 8·6	67·2	90·3	105·0	63·4	− 37·6	− 44·3	− 53·2	− 29·4
1917 .	55·7	87·9	101·4	64·7	− 8·7	− 3·1	− 15·2	− 20·5	51·5	86·6	92·6	57·6	− 13·5	− 13·4	− 15·8	− 9·0
1918 .	58·4	80·2	77·0	53·3	13·2	13·6	− 7·4	− 11·3	84·5	109·3	120·3	86·3	− 13·3	− 28·5	− 37·7	− 27·7
Total .	586·7	803·3	853·5	575·7	− 99·9	− 43·5	− 110·7	− 127·7	593·1	747·9	902·9	622·7	93·3	60·1	45·1	48·3
AUGUST.																
1911 .	94·1	90·0	97·5	86·0	31·7	53·2	40·5	44·9	71·3	89·6	89·1	61·2	− 2·5	2·9	− 34·5	− 20·0
1912 .	89·8	87·2	98·3	92·1	− 52·2	− 45·8	− 53·1	− 48·9	70·2	111·2	119·7	92·0	− 13·8	3·6	3·5	− 16·0
1913 .	57·4	98·4	104·7	71·1	− 13·2	− 4·4	− 39·9	− 25·5	50·0	57·9	75·9	50·5	− 35·8	− 33·5	− 64·1	− 36·5
1914 .	81·4	102·2	91·1	62·0	59·0	86·2	67·5	44·0	67·3	75·4	113·0	60·1	− 27·1	− 19·8	− 20·8	− 26·7
1915 .	60·3	78·0	80·3	58·8	− 21·5	− 25·4	− 14·7	− 19·8	105·9	117·9	131·0	108·7	− 43·7	− 58·5	− 59·6	− 53·1
1916 .	67·6	97·8	111·4	73·6	− 4·6	− 3·2	− 16·4	− 2·2	90·4	100·3	100·1	87·2	− 9·6	2·3	2·5	2·0
1917 .	107·9	109·9	108·4	90·5	4·1	14·1	4·2	3·3	87·5	99·9	122·3	97·5	− 38·7	− 45·9	− 58·3	− 38·3
1918 .	55·3	71·7	73·8	63·8	20·9	22·9	20·4	28·4	113·0	121·2	129·7	89·9	− 17·6	− 23·4	− 30·7	− 26·5
Total .	583·8	735·2	765·5	597·9	24·2	97·6	14·5	23·9	661·6	773·4	880·8	647·1	24·0	58·2	52·8	17·1
SEPTEMBER.																
1911 .	110·5	120·1	113·9	112·1	46·9	42·9	19·7	41·3	110·5	116·7	129·5	117·2	93·5	100·7	115·3	104·8
1912 .	109·9	127·0	131·5	114·9	− 3·7	− 11·2	− 7·9	− 8·5	98·0	113·2	150·4	114·2	− 35·2	− 41·2	− 51·2	− 35·8
1913 .	91·4	107·1	121·3	101·7	20·6	11·7	26·3	37·9	76·6	100·5	98·0	90·7	− 36·8	− 53·5	− 57·2	− 54·1
1914 .	83·5	110·9	113·2	106·7	12·1	36·5	46·2	8·1	105·1	109·5	125·4	95·3	− 75·3	− 72·9	− 83·6	− 62·1
1915 .	140·2	165·2	164·9	144·6	− 8·8	− 7·2	− 16·5	− 15·6	87·5	95·7	106·4	84·8	− 31·7	− 24·9	− 32·2	− 35·0
1916 .	99·4	108·6	114·6	94·6	17·4	16·6	− 4·6	− 4·2	94·3	113·9	128·0	105·3	− 33·3	− 35·5	− 45·0	− 27·7
1917 .	112·4	114·6	90·2	80·1	60·8	59·4	66·4	47·3	118·4	123·0	146·7	135·8	− 93·8	− 103·2	− 127·7	− 104·0
1918 .	95·0	118·5	121·7	106·3	− 35·2	− 24·3	− 31·1	− 46·9	118·4	104·5	122·4	124·1	− 53·0	− 32·7	− 61·0	− 47·5
Total .	842·3	972·0	971·3	861·0	110·1	124·4	98·5	59·4	808·8	877·0	1006·8	867·4	− 315·6	− 307·8	− 395·0	− 292·8
OCTOBER.																
1911 .	127·4	148·7	144·5	136·0	− 21·6	− 8·5	− 2·9	− 9·0	90·2	92·6	113·9	124·9	− 11·8	− 20·2	− 21·1	− 30·9
1912 .	137·4	173·1	163·0	145·3	49·6	83·3	59·4	54·9	118·5	133·3	161·4	138·2	− 10·9	− 21·1	− 3·4	12·8
1913 .	126·0	156·8	152·7	147·5	84·8	119·6	97·1	99·7	102·5	92·2	117·9	106·5	− 33·7	− 29·8	− 13·3	− 18·9
1914 .	105·6	114·3	124·6	111·7	63·8	78·1	71·8	73·9	117·6	130·5	131·7	114·2	− 7·4	− 16·3	− 33·3	− 44·8
1915 .	143·7	149·6	149·9	139·2	98·9	102·6	113·7	118·6	94·5	104·5	109·0	116·5	− 73·9	− 83·3	− 98·4	− 100·1
1916 .	121·1	150·8	163·0	139·5	74·3	82·6	98·8	100·3	144·1	138·3	161·9	149·2	10·9	− 27·9	13·3	− 4·8
1917 .	143·2	172·0	193·5	143·1	10·8	4·0	6·3	25·3	121·9	138·5	151·8	149·1	75·9	87·5	90·8	69·7
1918 .	149·8	153·0	162·7	141·9	98·2	83·4	83·7	82·3	105·3	80·6	113·9	104·7	26·5	27·8	51·1	33·7
Total .	1054·2	1218·3	1253·9	1104·2	458·8	545·1	527·9	546·0	894·6	910·5	1061·5	1003·3	− 24·4	− 83·3	− 14·3	− 83·3
NOVEMBER.																
1911 .	172·8	149·3	152·7	165·7	24·2	47·9	20·5	20·7	105·1	99·4	130·2	138·5	3·1	− 9·0	− 13·2	− 20·5
1912 .	181·6	163·5	128·6	145·4	− 30·4	− 40·1	− 30·4	− 22·8	125·6	142·0	145·2	117·1	125·6	124·2	127·4	111·3
1913 .	153·5	140·4	155·7	142·0	122·9	114·6	119·7	112·0	139·9	130·9	154·2	171·5	99·5	100·7	133·2	126·1
1914 .	148·8	145·1	115·4	147·1	50·2	38·5	31·0	51·5	164·4	161·1	158·0	132·0	3·2	27·9	45·0	29·0
1915 .	159·9	162·1	160·6	160·9	− 75·1	− 79·9	− 83·0	− 59·3	99·6	117·3	118·0	117·5	49·2	29·3	64·6	57·3
1916 .	155·4	161·3	158·6	143·4	111·0	120·3	123·2	113·8	145·7	155·0	147·9	169·2	− 35·5	− 23·8	− 34·9	− 34·0
1917 .	95·4	102·7	136·0	108·8	8·6	− 5·3	8·4	39·6	155·4	157·4	135·6	148·1	148·6	134·2	116·0	129·9
1918 .	134·3	158·5	157·1	142·3	133·5	143·5	138·9	130·9	76·3	104·7	94·3	95·7	− 0·7	12·3	25·3	6·3
Total .	1201·7	1182·9	1164·7	1155·6	344·9	339·5	328·3	386·4	1012·0	1067·8	1083·4	1089·6	393·0	395·8	463·4	405·4
DECEMBER.																
1911 .	204·3	178·7	170·0	192·5	198·7	167·9	165·6	178·9	123·3	117·3	142·0	151·2	− 34·1	− 41·3	− 68·2	− 61·8
1912 .	129·2	161·5	171·1	149·3	104·0	135·3	151·9	123·3	114·4	125·0	139·3	114·9	100·0	85·4	90·1	88·9
1913 .	116·4	133·4	117·4	109·1	− 41·0	− 9·0	− 16·2	− 14·3	167·0	192·8	202·0	161·9	155·8	168·8	180·4	144·5
1914 .	179·0	170·0	151·9	167·1	84·4	74·4	71·1	77·9	150·9	144·6	170·7	161·9	− 35·7	− 61·6	− 35·7	− 41·7
1915 .	149·9	160·7	155·3	162·7	− 32·1	− 1·9	− 3·9	− 3·5	180·5	178·1	187·3	192·4	− 110·5	− 124·7	− 107·7	− 109·0
1916 .	133·2	137·1	138·0	128·8	45·6	45·1	58·4	29·4	93·5	105·0	94·9	98·6	1·7	− 4·8	12·9	22·4
1917 .	139·0	143·6	172·3	141·7	− 49·2	− 46·2	− 20·3	− 38·5	163·8	152·8	156·3	154·2	158·8	136·8	147·7	154·2
1918 .	143·2	147·0	141·0	145·3	69·2	70·6	68·2	74·9	108·9	89·0	85·7	119·9	26·1	31·8	33·3	26·7
Total .	1194·2	1232·0	1217·0	1196·5	379·6	436·2	474·8	428·1	1102·3	1104·6	1178·2	1155·0	262·1	190·4	252·8	224·2

NUMBER OF OBSERVATIONS (INCLUDING CALMS), 1911-1918.

Time.	July.	August.	September.	October.	November.	December.
3 h.	248	248	240	241	240	247
9 h.	248	248	240	238	240	247
15 h.	248	248	240	244	240	246
21 h.	248	248	240	245	240	246

Wind Components: Monthly Sums, 1911-1918.

HOLYHEAD. — Lat. 53° 18′ N. Long. 4° 39′ W.

	Σ (S+N).				Σ (S−N).				Σ (W+E).				Σ (W−E).			
	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.
JANUARY.																
1911 .	167·8	143·1	150·0	163·4	41·6	35·1	44·6	32·0	103·9	111·2	112·6	116·6	49·3	52·4	55·8	77·4
1912 .	114·1	109·7	119·9	110·1	76·3	57·7	47·5	56·5	136·7	149·1	159·8	138·0	— 36·9	— 52·3	— 27·4	— 20·8
1913 .	151·3	172·0	184·7	154·2	110·3	131·8	155·7	132·6	123·4	101·1	104·6	118·8	— 2·2	— 22·5	— 0·4	8·8
1914 .	107·4	108·2	132·2	124·4	14·8	42·6	63·0	58·8	155·3	159·7	158·0	172·2	61·1	36·5	56·8	37·2
1915 .	150·0	154·6	154·3	143·0	— 13·4	— 15·4	— 30·5	— 32·2	159·9	187·7	192·9	165·6	136·5	124·3	144·1	142·0
1916 .	174·4	165·4	180·7	163·8	90·4	111·6	116·9	104·2	182·6	195·1	187·6	179·3	177·6	183·9	187·6	176·7
1917 .	118·4	114·1	149·5	128·[illegible]	— 96·0	— 97·9	— 78·1	— 74·3	224·9	190·5	201·8	197·8	— 27·5	—50·9	— 60·0	— 59·8
1918 .	170·9	180·4	180·9	175·[illegible]	9·3	37·0	57·7	50·5	145·7	115·2	153·5	134·2	87·1	73·4	114·5	91·8
Total .	1154·3	1147·5	1252·2	1162·[illegible]	233·3	302·5	376·8	328·1	1232·4	1209·6	1270·8	1222·5	445·0	344·8	471·0	453·3
FEBRUARY.																
1911 .	131·5	134·5	134·1	131·7	82·9	88·3	75·3	91·5	151·6	138·1	130·6	101·9	111·6	93·3	107·4	73·5
1912 .	136·9	153·1	169·3	134·6	51·1	40·5	88·1	89·0	101·5	141·9	120·3	95·8	— 26·5	— 54·1	— 58·5	— 53·0
1913 .	100·0	115·2	124·4	113·0	82·6	85·8	82·4	68·2	120·8	110·1	115·9	127·4	1·2	8·3	12·5	13·0
1914 .	160·0	187·7	199·2	171·0	158·0	186·5	195·8	167·4	112·7	101·6	81·0	94·2	65·1	56·6	48·8	55·8
1915 .	146·1	154·5	164·9	171·8	46·5	53·7	87·1	65·0	114·2	118·5	127·2	133·7	54·8	47·5	47·4	54·5
1916 .	131·7	134·7	163·1	151·2	7·3	— 24·3	0·3	17·8	189·3	219·6	200·0	202·2	51·3	77·2	44·2	32·2
1917 .	75·8	82·5	71·6	53·0	— 14·4	— 3·3	— 23·0	— 14·4	95·0	87·7	95·4	77·2	— 13·2	— 29·5	— 15·4	— 8·6
1918 .	148·9	143·5	164·5	174·5	94·5	97·7	116·3	90·7	142·9	109·5	120·1	135·3	136·3	103·1	95·7	122·3
Total .	1030·9	1105·7	1191·1	1100·8	508·5	524·9	622·3	575·2	1028·0	1027·0	990·5	967·7	380·6	302·4	282·1	289·7
MARCH.																
1911 .	150·5	158·7	161·4	159·9	— 83·1	— 80·1	— 75·4	— 87·5	201·3	224·8	174·6	172·7	— 42·9	— 44·2	— 43·0	— 68·9
1912 .	105·2	119·5	134·6	123·4	91·8	110·5	107·0	70·8	123·1	139·9	79·0	108·7	97·1	81·9	62·0	93·5
1913 .	139·5	139·5	171·8	169·5	90·9	94·3	108·2	94·1	161·5	175·0	146·7	160·2	130·3	141·0	105·1	90·4
1914 .	124·8	120·1	142·7	114·8	31·8	22·1	59·1	57·8	170·6	161·0	133·6	152·9	125·6	129·8	109·4	129·5
1915 .	107·4	100·7	138·3	108·4	— 61·8	— 49·1	— 54·9	— 38·6	132·4	154·6	120·5	121·2	40·6	45·4	39·5	34·0
1916 .	139·3	116·6	143·0	111·2	— 90·9	— 73·8	— 81·0	— 76·8	226·8	231·3	214·9	204·7	—111·6	—137·9	—137·1	—117·5
1917 .	132·6	106·2	119·6	114·4	— 31·4	— 14·0	6·8	— 8·4	168·7	149·4	143·9	163·9	7·1	— 23·6	4·1	— 24·3
1918 .	113·7	124·0	109·6	116·3	29·3	49·4	23·0	31·1	129·8	150·9	153·3	138·3	— 42·6	— 48·5	— 10·9	— 4·1
Total .	1013·0	985·3	1121·0	1017·9	— 23·4	59·3	92·8	42·5	1314·2	1386·9	1166·5	1222·6	203·6	143·9	129·1	132·6
APRIL.																
1911 .	142·4	170·0	194·9	151·3	42·2	40·2	49·7	28·7	129·2	140·4	106·4	102·8	16·4	8·0	26·6	23·4
1912 .	91·2	112·9	121·9	83·6	— 15·8	22·9	10·7	— 7·6	90·8	111·0	119·5	80·2	25·6	21·8	56·7	37·0
1913 .	125·3	149·0	174·4	151·6	23·9	24·2	44·2	23·8	120·6	123·4	122·2	129·2	24·0	35·8	16·0	23·6
1914 .	83·7	112·5	125·9	86·7	46·5	59·7	52·3	54·7	107·5	121·1	117·6	98·3	62·9	65·1	65·2	55·7
1915 .	83·1	104·5	122·6	86·3	1·1	— 1·5	— 18·0	— 8·9	144·9	156·2	129·0	137·1	85·3	68·2	68·0	72·5
1916 .	114·8	137·0	122·6	92·0	— 3·0	12·2	32·0	— 0·4	134·4	143·1	130·8	123·1	116·8	112·9	112·4	105·3
1917 .	114·9	115·5	101·7	95·9	— 74·9	— 52·9	— 57·1	— 36·5	150·9	145·6	127·3	114·8	113·1	117·6	121·1	92·2
1918 .	112·4	120·9	135·9	105·5	— 97·6	—100·1	—114·5	— 79·9	126·4	140·8	165·0	129·7	— 63·6	— 72·6	— 61·0	— 75·5
Total .	867·8	1022·3	1099·9	852·9	— 77·6	4·7	— 0·7	— 26·1	1004·7	1081·6	1017·8	915·2	380·5	356·8	405·0	334·2
MAY.																
1911 .	97·0	123·0	143·7	100·4	29·2	30·6	4·3	28·6	86·0	81·2	101·8	87·9	3·0	5·2	28·6	— 1·1
1912 .	80·6	80·7	109·5	91·6	11·4	7·1	23·7	19·4	87·8	86·7	72·3	83·5	30·4	22·5	37·5	41·3
1913 .	123·6	147·5	156·5	137·4	38·6	57·7	70·3	58·2	110·1	137·1	99·5	71·2	22·9	8·1	56·7	39·6
1914 .	90·5	119·6	105·4	122·1	— 2·7	— 1·8	— 24·8	— 33·3	103·9	101·2	90·3	90·1	60·3	80·6	90·3	60·5
1915 .	48·3	77·0	91·8	61·2	— 4·1	— 19·0	— 44·4	— 11·4	120·0	139·5	127·5	118·9	— 91·2	—104·5	— 78·1	— 94·5
1916 .	85·4	111·2	110·3	81·5	6·0	25·4	41·1	43·5	107·1	114·7	115·4	95·3	26·5	10·7	33·4	23·1
1917 .	71·4	84·9	107·8	97·7	11·6	10·7	— 5·2	5·7	71·8	89·6	103·5	88·8	— 33·8	— 52·4	— 35·5	— 51·8
1918 .	71·1	72·2	95·4	72·4	24·1	26·4	26·0	25·2	66·5	91·0	90·2	71·2	7·3	7·6	52·2	29·0
Total .	667·9	816·1	920·4	764·3	114·1	137·1	91·0	135·9	753·2	841·0	800·5	706·9	25·4	— 22·2	185·1	46·1
JUNE.																
1911 .	94·0	126·9	146·5	101·2	— 12·4	— 8·5	— 5·3	— 10·2	100·8	99·2	100·5	88·6	38·2	58·0	62·9	41·8
1912 .	90·4	128·6	153·8	107·4	59·8	75·8	99·2	66·2	81·0	77·7	69·1	74·8	44·4	55·3	45·1	51·6
1913 .	80·2	103·7	110·8	88·9	33·0	47·1	69·4	50·9	128·0	114·4	97·2	107·2	114·8	96·8	95·2	96·8
1914 .	122·5	132·0	124·7	97·1	— 69·7	— 60·4	— 42·9	— 19·9	94·7	114·3	84·3	68·9	16·7	15·9	35·9	24·5
1915 .	50·3	72·5	96·5	71·4	25·3	19·5	— 3·9	9·2	87·0	89·6	92·1	88·1	— 28·2	— 5·8	— 0·3	— 34·7
1916 .	138·3	151·2	118·1	103·3	— 78·1	— 60·4	— 15·9	— 36·9	131·4	128·5	125·6	94·7	81·8	76·5	54·4	54·7
1917 .	86·6	111·8	138·9	101·8	43·6	51·4	62·3	54·0	70·6	75·5	72·7	61·6	26·8	17·5	43·3	26·6
1918 .	83·3	100·4	110·4	87·9	— 37·3	— 42·2	— 3·4	— 28·3	106·5	122·9	112·0	96·8	103·1	113·5	107·4	94·2
Total .	745·6	927·1	993·7	759·0	— 35·8	22·3	159·5	85·0	800·0	822·1	753·5	680·7	397·6	427·7	443·9	355·5

NUMBER OF OBSERVATIONS (INCLUDING CALMS), 1911-1918.

Time.	January.	February.	March.	April.	May.	June.
3 h.	248	226	242	240	248	240
9 h.	248	226	242	240	248	240
15 h.	248	226	243	240	247	240
21 h.	248	226	243	240	248	240

HOLYHEAD.

	Σ (S+N).				Σ (S−N).				Σ (W+E).				Σ (W−E).			
	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.
JULY.																
1911 .	86·4	106·0	134·6	100·4	39·8	47·2	67·6	37·0	84·3	91·9	93·2	65·6	42·5	61·5	58·4	39·4
1912 .	125·8	126·6	143·6	139·0	− 60·4	− 30·0	− 18·4	− 41·8	91·3	103·1	79·4	94·2	26·1	16·3	4·4	14·8
1913 .	111·6	111·0	126·4	106·2	− 84·6	− 75·0	− 61·6	− 48·0	83·1	92·5	66·1	55·0	55·3	18·9	43·7	34·2
1914 .	114·8	110·0	118·4	106·1	15·6	5·0	30·4	30·1	108·7	114·8	99·4	90·7	68·3	69·8	74·4	59·7
1915 .	93·1	97·4	132·3	99·5	− 1·9	26·4	53·3	31·3	124·7	118·9	128·6	114·4	105·9	111·3	113·8	94·6
1916 .	80·5	84·8	100·8	80·2	8·7	12·6	14·2	21·4	84·4	83·5	94·3	68·4	83·4	71·3	79·9	66·8
1917 .	81·9	86·3	136·6	105·4	19·7	35·5	24·4	22·2	93·2	84·0	92·9	73·3	− 15·4	− 2·4	11·5	18·1
1918 .	76·6	94·0	116·8	94·6	40·4	64·2	89·2	56·4	87·1	105·4	82·9	95·0	70·5	64·2	75·3	77·8
Total .	770·7	816·1	1009·5	831·4	− 22·7	85·9	199·1	108·6	756·8	794·1	736·8	656·6	436·6	410·9	461·4	405·4
AUGUST.																
1911 .	92·4	130·8	156·5	120·5	46·6	61·2	56·3	47·5	115·2	102·3	88·3	104·6	9·6	− 4·3	10·7	17·8
1912 .	109·3	118·4	111·9	93·1	− 22·3	− 24·6	20·5	7·1	144·2	180·7	132·4	125·6	91·6	96·5	83·8	85·6
1913 .	81·1	92·3	114·1	84·6	− 39·9	− 32·9	− 49·1	− 32·0	75·1	87·1	81·8	72·2	30·3	25·3	44·6	40·2
1914 .	83·3	102·0	122·9	85·2	53·1	80·8	77·5	58·8	75·8	85·0	91·6	72·3	49·8	52·8	57·2	40·7
1915 .	94·4	98·8	104·0	89·8	− 51·6	− 34·2	− 6·6	− 7·2	77·9	90·7	94·8	80·6	46·3	36·3	68·2	55·2
1916 .	77·2	107·9	117·5	102·2	30·0	27·1	36·7	45·4	63·8	86·4	87·1	76·7	38·6	60·0	65·9	45·7
1917 .	137·1	151·6	146·4	122·2	− 4·7	14·6	56·6	25·0	113·7	128·2	135·3	135·0	87·9	111·0	108·3	83·0
1918 .	85·5	101·5	140·9	95·9	26·3	45·3	80·7	35·5	133·2	134·7	119·6	134·6	112·0	93·5	100·0	122·4
Total .	760·3	903·3	1014·2	793·5	37·5	137·3	272·6	180·1	798·9	895·1	830·9	801·6	466·1	471·1	538·7	490·6
SEPTEMBER.																
1911 .	95·8	110·9	126·5	117·0	− 1·6	− 9·1	0·7	− 33·8	118·8	104·7	72·9	84·5	64·0	68·9	54·9	38·7
1912 .	78·7	80·5	103·5	83·5	− 42·1	− 33·3	− 17·5	− 45·5	146·9	155·5	132·3	134·3	22·9	0·9	39·5	0·5
1913 .	88·3	117·2	124·9	104·6	2·9	− 8·2	− 18·1	− 6·0	107·7	108·5	92·8	77·2	− 43·7	− 83·5	− 50·6	− 46·6
1914 .	98·1	92·9	116·9	91·7	− 25·3	3·9	16·5	− 18·1	132·1	139·6	126·3	133·8	77·9	67·4	85·5	91·6
1915 .	91·4	106·0	121·0	103·7	− 17·2	18·0	9·8	− 14·7	66·8	63·8	70·4	61·0	29·4	18·8	37·6	17·4
1916 .	134·7	132·6	113·2	117·5	− 67·1	− 51·0	− 48·8	− 69·5	113·0	128·1	124·3	118·3	48·2	28·5	45·7	48·9
1917 .	82·3	113·0	130·8	96·6	59·3	82·8	97·8	75·4	121·3	124·5	127·2	128·7	121·3	112·9	117·6	120·3
1918 .	90·7	117·2	143·6	109·5	− 4·1	25·6	40·2	24·1	206·7	210·1	214·7	198·0	159·9	154·7	143·3	128·8
Total .	760·0	870·3	980·4	824·1	− 95·2	28·7	80·6	− 88·1	1013·3	1034·8	960·9	935·8	479·9	368·6	473·5	399·6
OCTOBER.																
1911 .	98·9	104·8	105·5	99·6	− 0·5	7·4	− 39·1	− 19·0	143·0	140·4	157·7	173·0	− 40·2	− 72·6	− 14·7	− 12·2
1912 .	113·2	151·0	135·3	125·0	46·8	57·6	67·5	35·2	106·5	117·1	118·6	107·2	33·1	53·7	65·6	26·4
1913 .	145·3	145·0	142·3	122·9	66·3	59·8	66·1	59·9	115·1	121·4	120·3	113·3	− 47·9	− 45·0	− 39·7	− 46·5
1914 .	94·4	95·5	81·8	77·3	− 29 0	− 31·5	− 20·4	− 19·7	125·9	133·8	119·7	121·6	− 2·7	− 11·4	− 29·1	0·6
1915 .	86·1	87·4	99·2	89·2	41·3	24·6	31·2	36·8	92·6	111·6	102·6	104·1	− 70·8	− 84·8	− 55·6	− 89·9
1916 .	134·8	154·5	167·4	121·8	62·4	99·7	120·8	58·4	178·0	179·5	193·9	184·0	90·2	111·7	119·7	104·8
1917 .	149·4	143·9	161·0	148·8	− 57·0	− 6·3	− 35·2	− 23·6	229·2	215·7	206·5	235·7	229·2	215·7	190·7	226·9
1918 .	165·3	158·2	157·5	157·6	42·5	23·6	48·9	58·2	143·6	152·6	153·3	135·7	106·0	109·2	93·1	95·3
Total .	987·4	1040·3	1050·0	942·2	172·8	234·9	239·8	186·2	1133·9	1172·1	1172·6	1174·6	296·9	276·5	339·0	305·4
NOVEMBER.																
1911 .	152·5	159·6	166·3	151·4	17·5	34·4	46·5	18·0	188·4	188·3	186·9	174·8	43·6	46·9	46·3	47·8
1912 .	140·1	144·4	139·8	142·8	− 47·1	− 21·2	− 19·8	− 25·0	161·3	150·5	157·7	149·0	132·5	135·9	148·3	122·2
1913 .	124·8	132·5	131·2	112·4	88·8	79·7	97·2	86·2	168·2	177·0	176·9	185·9	127·0	147·0	154·7	167·5
1914 .	131·1	122·1	107·2	96·2	46·7	23·7	25·6	46·0	193·9	193·8	179·8	174·6	54·3	53·8	85·0	56·6
1915 .	120·3	110·3	121·6	134·5	− 43·5	− 39·1	− 50·2	− 55·3	141·4	138·8	147·6	140·3	− 28·8	4·6	− 5·0	− 20·1
1916 .	148·9	144·3	148·9	141·2	93·7	105·7	94·5	66·4	189·9	186·9	169·3	183·2	70·7	65·3	95·3	81·8
1917 .	109·7	124·2	128·3	134·3	− 1·3	19·0	47·5	49·9	216·6	181·8	184·5	200·7	192·8	170·2	173·1	170·7
1918 .	109·9	114·3	108·7	106·9	69·7	91·3	76·1	94·7	117·6	101·5	105·2	90·8	59·2	66·7	52·2	38·0
Total .	1037·3	1051·7	1052·0	1019·7	224·5	293·5	317·4	280·9	1377·3	1318·6	1307·9	1299·3	651·3	690·4	749·9	664·5
DECEMBER.																
1911 .	151·6	142·4	179·0	169·9	131·0	112·8	163·8	143·9	136·5	152·5	140·3	138·1	94·3	82·7	82·1	72·9
1912 .	161·1	188·3	206·4	157·3	141·5	173·3	161·6	128·1	165·5	156·1	180·9	174·0	147·7	116·1	161·9	174·0
1913 .	104·5	97·1	138·3	117·6	1·5	− 10·7	− 7·9	− 5·4	198·6	193·7	201·3	202·7	148·0	165·1	168·3	174·1
1914 .	148·9	131·3	157·4	134·5	104·1	91·5	108·8	79·7	177·8	188·5	186·2	182·9	90·2	93·3	63·0	78·3
1915 .	128·7	126·9	140·5	114·9	57·3	45·3	35·3	34·7	177·3	178·3	161·9	147·8	68·1	24·3	46·9	46·2
1916 .	111·6	107·0	106·2	109·2	31·4	22·2	32·0	33·2	104·9	107·7	122·8	118·2	32·5	14·5	54·2	62·2
1917 .	153·2	138·5	166·8	157·3	− 30·8	− 47·3	− 76·4	− 58·1	180·8	171·1	177·8	180·1	51·4	29·5	21·8	32·9
1918 .	176·0	179·5	151·5	162·5	68·6	58·9	24·9	46·1	183·5	171·0	173·6	143·7	140·1	145·0	159·0	127·5
Total .	1135·6	1111·0	1246·1	1123·2	504·6	446·0	442·1	402·2	1324·9	1318·9	1344·8	1287·5	772·3	670·5	757·2	768·1

NUMBER OF OBSERVATIONS (INCLUDING CALMS), 1911-1918.

Time.	July.	August.	September.	October.	November.	December.
3 h.	248	248	239	248	240	247
9 h.	248	248	239	248	240	247
15 h.	248	247	239	248	240	247
21 h.	248	248	239	248	240	247

Wind Components: Monthly Sums, 1911-1918.

GREAT YARMOUTH.—Lat. 52° 37′ N. Long. 1° 43′ E.

	Σ (S+N).				Σ (S−N).				Σ (W+E).				Σ (W−E).			
	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.
JANUARY.																
1911 .	73·8	86·0	76·2	71·7	− 7·6	19·0	24·4	9·1	108·6	110·0	99·1	110·7	22·8	7·0	8·7	21·9
1912 .	66·3	72·7	76·3	66·4	10·7	16·1	27·1	19·8	138·0	139·5	134·6	153·4	− 47·0	− 53·7	− 46·1	− 64·0
1913 .	108·3	107·0	107·5	129·5	98·7	85·2	86·7	113·3	129·7	117·0	111·0	130·6	− 46·1	− 31·6	− 32·0	− 52·4
1914 .	60·8	65·1	67·0	77·8	23·0	10·5	25·0	11·8	81·6	78·3	82·9	102·7	39·6	29·3	24·9	25·1
1915 .	66·8	75·0	82·4	81·6	− 8·2	− 0·6	− 2·0	− 6·6	119·6	103·8	120·6	120·7	65·2	46·4	37·8	52·5
1916 .	72·2	62·6	62·7	59·4	9·2	0·6	7·9	18·4	95·4	87·1	98·2	79·0	91·0	85·3	92·4	73·0
1917 .	89·2	71·0	85·2	74·1	− 20·2	− 31·6	− 49·8	− 36·3	215·8	197·2	197·3	221·6	−137·4	−119·2	−136·7	−150·6
1918 .	94·3	77·1	89·0	95·6	30·3	23·9	30·0	55·6	89·6	75·4	87·6	77·2	68·0	50·6	55·4	52·4
Total .	631·7	616·5	646·3	656·1	135·9	123·1	149·3	185·1	978·3	908·3	931·3	995·9	56·1	14·1	4·3	− 42·1
FEBRUARY.																
1911 .	77·5	60·9	72·6	65·7	32·9	9·9	22·4	29·1	75·9	97·6	101·0	90·8	68·7	93·8	85·8	87·0
1912 .	88·0	64·5	96·1	92·4	62·2	50·9	62·3	54·0	75·7	92·3	92·2	86·6	− 12·3	− 9·7	− 25·0	− 37·6
1913 .	73·3	80·1	83·0	78·5	8·1	8·9	15·0	4·9	119·0	111·4	108·8	123·1	− 16·8	− 20·2	− 12·2	− 35·5
1914 .	106·2	101·8	103·1	113·3	101·6	96·0	96·1	112·5	54·1	60·3	47·8	43·2	35·5	58·3	27·2	34·6
1915 .	100·6	116·8	112·9	99·9	51·0	75·8	71·7	66·1	70·6	79·0	80·1	56·3	38·0	36·4	24·9	21·1
1916 .	99·0	102·8	94·2	81·6	31·6	28·0	− 1·0	26·2	132·5	134·6	155·4	149·2	− 23·3	− 15·2	− 2·8	− 34·2
1917 .	55·5	58·6	53·2	53·5	− 11·1	− 1·8	6·4	− 1·9	72·5	77·1	84·5	89·2	− 32·5	− 33·9	− 39·3	− 41·8
1918 .	72·5	76·2	91·4	95·8	56·7	53·8	51·8	78·0	97·6	101·6	108·8	85·1	56·4	60·6	59·6	29·1
Total .	672·6	661·7	706·5	680·7	333·0	321·5	324·7	368·9	697·9	753·9	778·6	723·5	113·7	170·1	118·2	22·7
MARCH.																
1911 .	117·2	111·3	126·3	107·9	− 70·6	− 65·9	−100·3	− 66·9	146·4	169·5	153·0	130·8	− 46·2	− 48·9	− 38·6	− 55·6
1912 .	81·8	98·5	93·9	88·5	64·2	74·3	71·5	82·3	94·2	109·2	121·7	64·4	74·6	89·4	'75·1	43·0
1913 .	89·3	103·4	92·9	80·2	62·9	64·4	62·3	50·8	100·4	129·8	150·9	100·1	66·6	73·0	95·5	65·9
1914 .	59·8	78·4	83·2	72·2	40·2	49·4	18·8	43·2	90·1	119·6	108·8	86·3	72·7	75·4	79·2	65·5
1915 .	48·5	60·5	88·7	63·3	− 30·9	− 31·5	− 48·7	− 34·1	74·8	87·7	85·5	70·3	33·0	15·7	24·7	5·5
1916 .	80·3	98·6	94·6	109·3	55·5	43·2	− 49·4	− 58·9	159·3	174·4	163·4	169·6	−111·3	−104·2	−102·4	−124·4
1917 .	92·9	80·7	107·7	97·2	− 23·3	− 29·1	− 47·5	− 15·4	136·8	123·8	142·4	130·3	− 59·2	− 30·8	− 50·0	− 66·5
1918 .	81·5	89·8	120·5	83·5	− 25·3	− 25·0	− 18·5	− 19·9	127·2	132·3	120·8	112·2	− 83·6	− 73·3	− 85·6	− 62·4
Total .	651·3	721·2	807·8	702·1	72·7	79·8	−111·8	− 18·9	929·2	1046·3	1046·5	864·0	− 53·4	− 3·7	− 2·1	−129·0
APRIL.																
1911 .	102·0	134·7	152·5	116·9	− 12·8	− 6·7	− 33·9	− 40·3	95·6	105·7	128·2	84·0	15·2	16·9	17·2	8·0
1912 .	91·0	87·4	103·0	90·5	− 58·2	− 69·6	− 65·4	− 57·3	82·1	93·7	112·2	94·9	44·5	47·1	− 7·2	− 16·1
1913 .	21·1	29·6	22·5	24·5	21·1	29·6	18·7	21·9	10·2	12·0	23·4	21·7	2·6	0·6	− 6·2	12·3
1914 .	44·1	69·0	78·1	66·8	7·3	5·8	12·3	13·6	72·5	100·8	107·1	81·8	10·1	15·0	− 4·3	− 10·4
1915 .	60·6	91·2	102·8	77·1	− 35·4	− 49·2	− 30·2	− 30·7	90·8	113·0	104·9	83·3	− 2·2	21·0	− 7·3	− 6·7
1916 .	32·5	72·2	80·1	52·6	− 8·1	− 29·0	− 30·7	− 7·2	67·7	75·1	89·2	62·8	45·1	48·9	30·2	19·2
1917 .	61·8	86·7	115·6	64·8	− 30·2	− 20·9	− 0·8	− 15·0	52·9	76·9	85·4	56·7	35·7	44·3	34·4	35·9
1918 .	114·0	132·8	153·1	118·0	− 87·0	−103·0	−102·9	−100·6	83·0	96·9	80·4	96·1	− 51·2	− 43·7	− 43·2	− 52·1
Total .	527·1	703·6	807·7	611·2	−203·3	−243·0	−232·9	−215·6	554·8	674·1	730·8	581·3	99·8	150·1	13·6	− 9·9
MAY.																
1911 .	64·9	90·3	112·2	101·2	− 28·3	− 36·1	− 33·4	− 18·8	57·8	68·2	80·9	63·1	− 9·4	− 21·0	− 51·3	− 36·1
1912 .	39·1	73·1	90·0	54·5	10·7	− 10·9	− 2·2	6·5	82·0	102·6	94·7	71·8	10·2	2·0	− 29·1	− 35·2
1913 .	71·2	93·4	117·1	79·5	− 0·8	7·8	29·1	21·9	86·0	109·1	95·4	70·6	− 11·8	− 27·1	− 56·4	− 36·0
1914 .	72·5	103·6	103·1	70·8	− 26·3	− 44·8	− 35·5	− 22·2	62·7	82·1	95·1	64·6	3·9	15·1	− 1·1	− 9·4
1915 .	104·8	101·2	122·8	100·0	− 71·4	− 58·4	− 75·4	− 78·8	116·2	121·5	134·5	127·0	− 92·6	− 99·3	−118·5	−119·0
1916 .	46·5	79·5	100·4	54·7	9·1	− 6·9	35·6	19·5	72·2	91·7	91·8	71·5	8·8	− 15·3	− 54·8	− 13·3
1917 .	54·7	58·2	84·1	66·1	− 25·5	− 17·6	− 41·3	− 30·7	90·7	102·4	120·0	100·3	− 68·7	− 71·6	− 93·0	− 95·3
1918 .	61·4	91·9	92·6	56·8	− 24·8	− 40·7	− 31·2	− 16·4	58·8	61·6	73·7	58·5	− 35·2	− 26·6	− 48·7	− 43·3
Total .	515·1	691·2	822·3	583·6	−157·3	−207·6	−154·3	−119·0	626·4	739·2	786·1	627·4	−194·8	−243·8	−452·9	−387·6
JUNE.																
1911 .	63·8	97·7	112·6	77·4	12·0	0·9	− 5·2	12·0	81·4	81·9	94·1	69·7	− 4·6	23·7	8·9	1·7
1912 .	51·3	73·7	99·8	68·4	38·9	54·1	61·4	41·4	66·2	102·9	82·1	52·6	32·8	45·9	− 4·1	7·8
1913 .	39·0	81·8	91·4	49·6	8·4	10·8	15·8	12·6	65·6	93·1	108·3	69·8	34·0	25·1	8·5	3·4
1914 .	70·1	82·9	119·8	81·4	− 20·3	− 41·1	− 19·6	11·0	51·3	65·2	69·4	40·6	− 2·1	8·8	− 45·2	− 16·2
1915 .	54·4	79·2	103·1	77·8	− 23·2	− 19·8	− 0·3	− 10·4	64·1	81·3	96·4	84·3	− 49·1	− 55·3	− 79·0	− 54·7
1916 .	57·9	95·1	108·8	71·7	− 17·1	− 26·5	− 23·8	4·7	56·5	85·9	70·2	51·9	53·5	69·9	40·0	42·3
1917 .	60·4	76·2	106·9	71·7	2·2	− 18·2	13·9	− 7·7	77·3	64·5	79·3	60·6	− 20·3	− 8·9	− 40·1	− 32·0
1918 .	43·7	85·4	95·7	41·9	− 8·1	− 32·8	− 23·1	− 1·3	62·7	85·5	87·9	57·7	38·7	35·1	− 12·7	19·9
Total .	440·6	672·0	838·1	539·9	− 7·2	− 72·6	19·1	62·3	525·1	660·3	687·7	487·2	82·9	144·3	−123·7	− 27·8

NUMBER OF OBSERVATIONS (INCLUDING CALMS), 1911-1918.

Time.	January.	February.	March.	April.	May.	June.
3 h.	229	224	243	212	246	236
9 h.	228	223	241	212	244	237
15 h.	231	224	245	214	244	236
21 h.	231	224	245	213	246	237

GREAT YARMOUTH.

	Σ (S+N).				Σ (S−N).				Σ (W+E).				Σ (W−E).			
	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.
JULY.																
1911 .	51·8	82·2	111·6	73·5	7·8	− 33·0	− 33·4	− 13·5	50·3	73·9	80·0	43·8	22·5	33·9	− 19·6	1·8
1912 .	67·2	92·1	113·7	95·0	− 3·8	− 7·9	5·5	− 0·6	78·2	92·2	92·6	73·7	− 20·0	− 20·8	− 47·4	− 40·7
1913 .	52·7	80·9	93·1	64·9	− 38·7	− 54·9	− 53·3	− 34·9	43·8	51·9	49·2	30·8	19·4	11·1	− 11·0	2·8
1914 .	45·7	75·3	106·4	68·8	1·7	3·5	15·4	17·0	60·8	82·4	81·9	63·3	20·8	29·4	0·7	1·9
1915 .	10·4	13·4	29·5	13·8	5·2	− 0·8	16·1	5·8	19·2	22·0	9·8	13·1	9·8	11·0	− 3·8	2·5
1916 .	34·5	56·9	74·8	51·4	3·9	− 12·1	− 6·2	1·4	42·4	55·4	79·4	42·0	30·0	30·2	− 12·2	− 5·2
1917 .	76·6	92·5	123·3	89·8	− 32·8	− 32·7	− 34·9	− 38·0	94·5	84·1	89·5	71·0	− 23·1	− 21·9	− 40·1	− 32·6
1918 .	51·6	110·4	115·4	72·0	25·4	34·2	45·4	20·4	59·1	73·7	90·3	60·2	44·1	45·9	7·9	3·0
Total .	390·5	603·7	767·8	529·2	− 31·3	−103·7	− 45·4	− 42·4	448·3	535·6	572·7	397·9	103·5	118·8	−125·5	− 66·5
AUGUST.																
1911 .	64·6	89·1	113·6	68·7	− 2·8	6·3	13·4	11·5	68·5	96·9	90·8	73·4	11·3	− 13·5	− 30·6	− 23·4
1912 .	66·4	102·5	75·9	68·2	27·0	36·1	33·1	34·2	92·2	103·8	110·2	72·6	34·8	45·8	53·6	48·2
1913 .	49·6	61·6	75·7	56·5	− 23·8	− 39·2	− 47·3	− 17·1	54·2	59·4	44·3	40·0	3·8	2·6	− 19·5	− 7·0
1914 .	66·7	97·9	118·7	73·0	− 9·7	6·7	13·1	− 20·8	78·5	72·5	81·4	72·1	− 3·5	6·3	− 24·0	− 20·1
1915 .	47·6	55·5	93·7	53·7	− 2·4	− 31·5	− 5·5	5·9	57·1	62·5	53·1	39·7	28·7	36·5	2·9	− 5·1
1916 .	58·6	83·8	101·4	65·9	− 0·2	− 5·0	11·0	0·1	70·4	7?·6	76·6	67·2	16·8	26·6	− 8·8	0·0
1917 .	89·5	103·7	124·2	108·4	51·9	55·5	64·0	62·8	82·6	97·8	107·1	83·0	37·0	38·6	8·7	− 3·0
1918 .	39·9	56·6	95·7	66·4	13·5	− 13·6	31·7	26·2	64·7	92·4	87·1	58·0	21·7	58·6	15·3	13·0
Total .	482·9	650·7	798·9	560·8	53·5	15·3	113·5	102·8	568·2	662·9	650·6	506·0	150·6	201·5	− 2·4	2·6
SEPTEMBER.																
1911 .	67·7	67·5	99·9	80·8	4·1	0·5	7·5	4·8	59·6	90·4	78·7	62·3	19·4	45·6	16·3	1·3
1912 .	73·4	71·2	76·0	75·5	− 3·8	− 29·2	− 54·8	− 31·1	137·0	162·0	128·8	136·1	− 31·0	− 40·8	− 50·8	− 61·3
1913 .	86·2	97·8	107·6	88·5	4·0	3·4	− 9·6	− 14·9	95·1	106·1	109·1	105·5	− 64·1	− 76·9	− 89·9	− 99·1
1914 .	56·9	81·1	84·0	64·1	− 4·9	− 23·1	1·2	12·3	100·6	112·6	124·6	97·3	17·0	28·6	24·6	11·7
1915 .	63·9	69·4	80·4	68·4	0·1	− 6·0	2·0	− 3·4	91·4	102·5	102·4	103·0	− 25·8	− 19·5	− 41·4	− 54·2
1916 .	68·6	70·5	100·6	66·8	− 33·4	− 50·5	− 45·6	− 27·2	79·0	95·4	97·6	80·8	− 6·4	− 3·2	− 15·2	− 16·2
1917 .	42·4	53·6	85·3	58·5	29·8	19·4	49·1	41·1	71·0	88·8	90·5	73·6	48·6	63·0	39·5	40·2
1918 .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total .	459·1	511·1	633·8	502·6	− 4·1	− 85·5	− 50·2	− 18·4	633·7	757·8	731·7	658·6	− 42·3	− 3·2	−116·9	−177·6
OCTOBER.																
1911 .	94·2	97·1	96·7	90·4	− 23·4	− 17·5	− 4·5	− 22·4	118·9	111·7	96·4	104·6	− 32·3	− 37·5	− 23·2	− 32·0
1912 .	62·0	62·5	75·0	80·2	26·0	26·7	40·6	43·0	53·7	80·9	73·5	64·7	32·3	39·7	30·7	4·9
1913 .	49·7	59·9	91·5	71·8	34·9	40·7	74·3	58·8	74·6	82·8	83·4	73·6	− 21·0	− 32·4	− 57·8	− 35·0
1914 .	71·3	84·4	95·5	78·9	− 13·5	− 14·8	− 18·7	− 25·1	109·5	125·3	109·4	115·5	− 38·3	− 44·5	− 50·8	− 66·5
1915 .	74·7	95·9	95·1	75·1	8·1	17·7	20·3	17·5	109·4	125·8	123·0	129·3	− 87·4	−101·6	−105·8	−118·3
1916 .	84·6	120·4	102·4	100·5	64·6	96·0	86·6	78·5	111·7	135·6	127·5	112·3	46·7	42·4	38·3	45·9
1917 .	63·3	54·1	70·3	81·2	52·9	34·7	43·5	65·2	114·0	117·0	101·2	94·7	111·8	116·0	96·0	81·9
1918 .	28·9	32·3	39·5	31·3	− 12·9	− 8·1	− 1·7	− 2·5	11·3	14·3	18·5	11·8	1·5	2·3	− 5·5	− 2·6
Total .	528·7	606·6	666·0	609·4	136·7	175·4	240·4	213·0	703·1	793·4	732·9	706·5	13·3	− 15·6	− 78·1	−121·7
NOVEMBER.																
1911 .	91·7	116·4	86·7	111·9	46·1	60·0	40·9	56·5	133·8	133·7	108·2	111·9	7·4	8·3	5·2	9·9
1912 .	63·9	70·6	71·7	68·5	− 14·7	3·8	− 3·5	4·9	92·8	94·0	86·7	83·2	85·8	81·0	80·1	83·2
1913 .	65·2	79·1	74·5	65·4	50·0	71·9	52·9	46·0	90·6	101·2	108·4	101·7	73·2	81·8	77·2	63·7
1914 .	80·5	109·3	78·2	90·2	25·1	47·7	22·8	34·8	139·7	137·3	130·9	116·7	− 10·3	1·9	14·9	2·7
1915 .	92·1	89·9	87·5	87·2	− 24·9	− 43·5	− 33·5	− 20·2	114·6	118·1	116·3	102·8	− 37·0	− 17·3	− 18·1	− 17·0
1916 .	86·0	96·3	103·9	98·9	66·0	70·7	84·7	82·3	129·3	132·4	111·7	124·1	− 7·1	− 12·6	− 19·1	− 17·1
1917 .	49·4	53·2	49·9	62·6	11·0	11·2	− 0·9	20·0	104·4	113·2	113·5	100·9	95·4	108·8	108·9	89·3
1918 .	78·9	69·8	77·3	76·7	27·7	34·4	19·1	22·3	66·0	66·3	83·9	95·0	− 24·6	− 19·9	− 39·1	− 35·0
Total .	607·7	684·6	629·7	661·4	186·3	256·2	182·5	246·6	871·2	896·2	859·6	836·3	182·8	232·0	210·0	179·7
DECEMBER.																
1911 .	107·3	114·0	84·9	100·0	94·9	108·6	76·9	81·2	67·5	80·4	60·0	81·9	15·5	8·2	38·6	19·9
1912 .	80·3	88·1	104·9	98·3	66·7	69·3	96·1	89·7	111·3	99·4	81·4	87·9	110·1	84·6	69·8	87·9
1913 .	66·5	79·4	85·4	81·1	− 11·7	− 2·4	− 21·8	− 23·1	126·6	117·8	137·6	137·1	70·4	77·8	67·0	69·9
1914 .	97·2	108·5	106·7	110·0	71·6	69·1	74·7	92·0	118·6	124·0	95·2	105·2	49·4	32·0	34·8	30·4
1915 .	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
1916 .	60·2	66·0	73·9	48·4	18·4	21·8	26·3	12·2	99·9	105·9	106·2	103·1	13·5	− 28·5	21·2	30·9
1917 .	105·2	96·0	98·2	106·1	− 60·8	− 54·8	− 65·4	− 77·3	135·1	131·3	147·9	148·0	4·9	− 8·5	− 35·1	− 28·6
1918 .	77·5	79·3	79·7	80·0	69·1	70·9	64·3	57·4	50·4	78·5	90·0	63·3	39·0	52·5	59·6	55·1
Total .	594·2	631·3	633·7	623·9	248·2	282·5	251·1	232·1	709·4	737·3	718·3	726·5	302·8	218·1	255·9	265·5

NUMBER OF OBSERVATIONS (INCLUDING CALMS), 1911-1918.

Time.	July.	August.	September.	October.	November.	December.
3 h.	220	238	209	223	239	215
9 h.	219	237	209	223	239	215
15 h.	220	236	209	225	239	215
21 h.	220	238	209	224	239	214

Wind Components: Monthly Sums, 1911-1918.

SCILLY.—Lat. 49° 56′ N. Long. 6° 18′ W.

	Σ (S+N).				Σ (S−N).				Σ (W+E).				Σ (W−E).			
	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.
JANUARY.																
1911	127·2	109·4	106·9	108·8	− 31·2	− 13·0	− 9·5	− 18·4	105·7	126·1	141·6	123·8	24·3	14·3	8·0	6·6
1912	135·5	133·7	127·0	118·0	105·1	91·7	65·4	103·8	153·8	172·4	144·9	164·0	− 8·0	− 8·0	7·9	− 11·0
1913	104·1	159·5	172·7	174·8	83·7	94·5	102·9	125·6	177·6	171·4	195·8	179·9	130·2	116·0	140·6	117·3
1914	124·9	138·6	144·6	141·4	23·5	20·4	35·0	44·8	161·8	150·5	179·3	195·1	14·2	5·1	19·3	30·3
1915	147·7	153·4	150·3	139·6	− 43·9	− 88·8	− 74·1	− 77·6	272·1	240·9	256·9	277·4	195·5	185·9	200·7	209·0
1916	147·1	143·4	133·0	137·1	62·7	54·4	63·2	55·7	171·9	186·9	189·9	174·9	153·5	174·5	174·3	159·9
1917	174·7	172·3	155·5	152·6	− 40·5	− 36·9	− 52·7	− 14·2	197·5	200·3	212·8	228·6	− 74·9	−101·7	− 40·4	− 59·0
1918	158·2	162·0	164·8	159·0	57·6	67·0	82·2	87·2	85·6	97·9	106·5	101·5	27·4	15·7	42·1	27·9
Total	1179·4	1172·3	1154·8	1131·3	217·0	189·3	212·4	306·9	1326·0	1346·4	1427·7	1445·2	462·2	401·8	552·5	481·0
FEBRUARY.																
1911	94·2	88·3	89·6	120·4	41·8	37·1	47·6	75·8	192·5	178·5	193·4	178·6	90·3	88·3	81·4	79·0
1912	174·5	173·5	161·6	176·5	124·3	126·3	111·6	131·5	175·8	144·0	139·8	161·8	− 21·2	− 42·0	− 21·6	− 24·6
1913	131·0	118·0	110·7	114·1	66·6	79·6	49·1	51·5	154·0	144·8	153·3	145·0	− 20·6	− 41·0	− 20·9	− 25·8
1914	151·3	141·5	174·6	172·0	106·1	87·5	111·6	111·2	144·3	117·2	137·7	152·3	114·7	88·6	115·9	110·3
1915	166·7	170·0	186·1	157·1	53·9	58·0	35·3	32·9	157·8	171·3	192·3	178·0	109·4	138·9	144·3	145·8
1916	124·9	152·0	164·7	135·8	− 58·3	− 72·2	− 76·1	− 46·0	229·8	230·6	214·9	228·5	150·2	116·6	126·9	142·3
1917	74·7	74·0	70·4	65·9	2·1	4·0	− 18·4	− 9·1	118·0	121·4	115·8	103·7	− 82·6	− 58·4	− 52·0	− 65·7
1918	140·1	146·9	161·7	170·7	51·9	53·3	72·9	61·1	141·6	146·6	156·6	150·2	131·8	137·0	137·8	129·8
Total	1057·4	1064·2	1119·4	1112·5	388·4	373·6	333·6	408·9	1313·8	1254·4	1303·8	1298·1	472·0	428·0	511·8	491·1
MARCH.																
1911	127·7	142·2	145·1	130·3	− 77·1	− 49·4	− 39·5	− 40·9	189·8	163·0	183·0	174·1	− 25·2	− 16·0	− 63·8	− 41·7
1912	141·6	124·6	148·5	141·2	79·8	65·8	43·9	29·0	240·9	188·2	228·6	258·4	200·7	180·2	218·8	253·0
1913	113·2	125·4	143·7	146·1	36·0	46·6	54·1	45·9	255·6	225·6	209·3	215·9	166·6	135·6	146·7	164·1
1914	160·3	153·5	155·8	166·3	− 85·7	− 64·5	− 40·0	− 40·9	292·4	244·7	279·0	244·3	246·0	223·7	265·8	238·3
1915	96·6	99·8	113·1	103·9	− 44·8	− 43·6	− 39·1	− 53·5	153·6	155·9	148·3	149·6	− 25·6	− 48·3	− 30·7	− 35·2
1916	118·9	137·6	133·1	118·7	− 66·3	− 70·2	− 65·7	− 65·1	164·9	179·6	169·1	179·9	− 47·1	− 74·4	− 48·9	− 47·7
1917	166·2	139·7	132·0	134·9	− 37·0	− 22·9	− 24·6	− 28·1	131·0	134·9	115·0	150·2	26·8	18·3	32·8	65·0
1918	123·0	129·0	127·0	135·0	31·0	32·8	39·6	64·4	157·3	155·9	148·7	158·3	− 26·5	− 49·3	− 20·3	− 58·5
Total	1047·5	1051·8	1098·3	1082·4	−164·1	−105·4	− 71·3	− 89·2	1585·5	1447·8	1481·0	1530·7	515·7	369·8	500·4	537·3
APRIL.																
1911	120·1	125·8	147·1	131·5	13·3	24·6	21·9	17·7	164·4	144·4	160·1	140·9	17·4	6·8	23·3	18·5
1912	88·1	92·6	101·8	87·1	− 53·1	− 42·2	− 44·6	− 45·1	122·6	122·9	142·0	116·3	57·4	− 0·5	20·0	50·3
1913	121·8	137·4	139·3	140·9	7·2	− 18·6	− 4·7	− 9·5	153·7	135·1	174·5	166·2	66·3	37·5	73·7	91·2
1914	96·2	77·5	90·4	79·4	− 22·8	2·3	22·6	− 0·8	159·2	152·7	170·0	149·9	40·6	18·5	5·2	31·3
1915	105·6	118·1	105·2	105·8	− 58·0	− 67·7	− 76·4	− 76·2	132·9	134·8	158·0	132·7	69·3	61·2	84·0	90·5
1916	124·9	122·3	127·4	131·3	− 57·1	− 74·3	− 68·0	− 66·5	156·3	173·8	178·7	178·5	113·9	89·6	106·7	116·1
1917	113·9	128·1	141·5	113·3	−112·5	−116·3	−133·9	−113·3	117·9	115·8	137·0	134·1	66·7	62·0	106·6	100·5
1918	98·7	99·3	131·2	101·4	− 59·5	− 52·9	− 78·2	− 74·2	113·6	112·1	108·6	100·5	− 33·8	− 60·9	− 44·0	− 25·3
Total	869·3	901·1	983·9	890·7	−342·5	−345·1	−361·3	−367·9	1120·6	1091·6	1228·9	1119·1	397·8	214·2	375·5	473·1
MAY.																
1911	67·5	88·6	72·9	59·8	− 6·5	5·4	2·1	− 13·6	78·0	82·0	100·3	58·9	25·2	− 0·4	18·5	21·7
1912	78·8	70·9	90·2	70·6	− 3·4	− 2·7	− 6·2	− 13·2	78·5	93·9	89·9	85·9	27·9	14·3	28·7	36·5
1913	154·8	169·0	162·3	157·8	1·4	− 3·4	14·7	31·6	131·2	122·2	142·8	136·0	49·4	63·4	82·2	53·8
1914	104·7	108·7	118·5	118·7	− 68·7	− 47·7	− 61·1	− 70·9	112·5	116·8	145·0	125·2	39·9	15·8	56·8	51·6
1915	90·3	96·6	113·3	92·0	8·7	6·2	2·9	− 10·6	106·2	103·8	121·7	86·6	− 68·2	− 87·6	− 84·1	− 67·6
1916	81·3	85·0	100·3	84·2	− 21·5	− 10·6	− 19·1	− 20·0	111·6	117·0	125·4	117·0	65·0	55·0	52·8	56·0
1917	84·2	98·4	117·6	93·1	29·6	38·6	55·0	29·5	105·6	113·2	106·9	88·0	− 49·4	− 63·2	− 60·7	− 30·6
1918	86·8	86·9	103·9	82·5	− 1·4	4·9	5·3	3·5	78·1	89·4	83·3	73·7	2·7	− 0·4	− 2·3	4·
Total	748·4	804·1	879·0	758·7	− 61·8	− 9·3	− 6·4	− 63·7	801·7	838·3	915·3	771·3	92·5	− 3·1	91·9	126·1
JUNE.																
1911	86·8	79·8	117·7	106·3	− 33·0	− 28·0	− 15·7	− 28·3	130·1	136·0	115·5	122·5	31·9	15·2	15·3	49·3
1912	89·1	98·2	114·7	73·2	37·1	10·0	20·3	− 6·2	129·8	136·3	142·8	157·4	103·0	112·1	132·2	151·2
1913	86·6	72·2	76·4	91·0	− 8·6	− 25·0	− 16·2	− 29·8	130·9	122·9	131·8	128·4	97·5	80·3	104·0	66·4
1914	94·3	110·6	111·0	102·1	− 79·9	− 70·6	−107·6	− 99·3	70·0	69·3	100·0	82·1	16·0	− 10·1	16·8	26·7
1915	40·5	58·6	64·4	51·4	14·3	27·0	42·6	18·6	111·5	141·3	120·2	103·4	− 27·5	− 56·1	− 57·8	− 38·8
1916	116·0	129·3	119·3	120·9	− 50·4	− 61·5	− 66·9	− 83·3	135·5	116·7	137·6	142·4	80·3	49·1	82·8	91·4
1917	68·6	83·1	88·8	71·0	− 0·2	− 0·1	− 5·4	− 8·0	81·2	70·1	78·9	77·4	14·0	16·3	27·5	7·4
1918	109·6	124·7	125·3	118·6	− 71·8	− 79·9	− 99·1	−101·6	85·6	102·2	101·9	90·9	23·8	19·2	28·1	35 9
Total	691·5	756·5	817·6	734·5	−192·5	−228·1	−248·0	−337·9	874·6	894·8	928·7	904·5	339·0	226·0	348·9	389·5

NUMBER OF OBSERVATIONS (INCLUDING CALMS), 1911-1918.

Time.	January.	February.	March.	April.	May.	June.
3 h.	247	225	248	239	245	240
9 h.	247	223	248	234	245	240
15 h.	247	223	248	239	246	239
21 h.	247	224	248	239	246	239

SCILLY.

	Σ (S+N).				Σ (S−N).				Σ (W+E).				Σ (W−E).			
	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.	3 h.	9 h.	15 h.	21 h.
JULY.																
1911 .	78·1	73·2	79·5	85·3	— 6·5	— 6·2	— 2·5	— 3·1	76·8	87·2	78·6	79·1	— 6·0	— 21·8	0·0	5·1
1912 .	136·3	131·9	140·7	122·9	— 15·5	— 30·1	— 20·7	— 29·9	101·5	93·7	95·4	100·0	28·3	20·7	24·6	35·0
1913 .	81·1	113·9	97·3	82·6	— 78·1	— 79·9	— 70·9	— 76·8	100·1	126·0	77·9	98·3	14·7	5·2	4·3	27·9
1914 .	98·0	105·4	123·3	94·6	— 39·6	— 9·0	— 21·1	— 22·2	130·6	102·9	135·7	131·8	98·2	62·5	73·3	76·4
1915 .	68·7	86·5	98·6	70·0	2·7	— 12·3	9·2	1·0	144·5	127·9	142·1	131·5	130·3	106·9	106·7	127·3
1916 .	69·2	74·1	83·8	66·2	— 35·2	— 35·7	— 62·2	— 57·6	76·8	83·4	92·0	66·2	61·8	58·4	69·0	55·8
1917 .	62·1	76·6	77·7	63·7	2·7	11·4	11·3	— 2·5	93·6	80·6	99·2	77·5	22·4	10·6	19·0	31·9
1918 .	94·0	115·6	109·6	117·7	— 14·4	— 26·8	— 48·0	— 11·1	118·4	130·0	138·5	120·0	91·8	85·8	96·5	75·8
Total .	687·5	777·2	810·5	703·0	—183·9	—188·6	—204·9	—202·2	842·3	831·7	859·4	804·4	441·5	328·3	3·394	435·2
AUGUST.																
1911 .	74·2	76·4	91·5	64·5	20·4	17·4	25·3	6·3	76·0	93·5	98·4	66·9	32·2	19·1	33·0	42·3
1912 .	85·5	103·4	104·9	107·5	— 27·5	— 20·4	— 29·9	— 29·3	167·1	177·7	197·2	175·4	131·9	135·3	152·8	144·6
1913 .	61·3	70·1	76·8	79·8	— 50·1	— 47·3	— 54·2	— 58·4	83·5	97·7	89·7	73·1	9·7	— 1·1	16·3	17·7
1914 .	55·6	65·4	91·0	68·3	11·0	27·2	31·2	15·1	79·9	83·7	105·1	91·4	36·5	42·1	42·7	21·8
1915 .	68·9	82·5	79·5	76·4	— 9·7	— 18·1	— 15·7	— 29·2	77·5	99·2	110·6	93·5	37·5	22·4	49·8	50·7
1916 .	73·6	90·4	94·0	80·6	7·6	1·2	— 7·4	— 7·0	98·2	99·7	115·6	105·0	39·8	24·7	43·8	58·6
1917 .	113·1	112·4	98·2	98·8	— 27·9	— 19·6	— 2·8	— 15·8	124·6	142·6	150·7	151·2	122·4	120·4	150·7	151·2
1918 .	97·5	83·2	87·0	107·1	— 37·9	— 38·6	— 32·8	— 69·3	103·8	104·7	122·9	123·7	86·8	72·7	104·9	116·1
Total .	629·7	683·8	722·9	683·0	—114·1	— 98·2	— 86·3	—187·6	810·6	898·8	990·2	880·2	496·8	435·6	594·0	603·0
SEPTEMBER.																
1911 .	80·1	81·5	107·3	82·2	— 19·3	— 23·1	— 17·1	— 46·6	110·3	102·5	82·3	111·2	9·1	— 12·1	1·1	11·2
1912 .	70·8	83·2	79·5	79·2	— 12·6	— 23·6	— 27·1	— 29·6	158·3	141·4	178·0	171·6	— 38·9	— 56·0	— 87·6	— 78·8
1913 .	73·7	75·9	96·6	97·1	1·1	3·7	— 27·4	— 16·7	90·1	102·0	95·0	86·4	— 29·5	— 45·2	— 23·8	— 22·6
1914 .	107·7	99·4	94·8	91·7	2·5	— 1·6	— 5·2	— 14·9	149·1	153·5	176·9	165·8	— 5·7	— 8·1	8·7	4·0
1915 .	106·8	104·0	106·0	100·0	17·6	4·0	— 3·0	— 11·2	98·0	108·6	127·7	100·9	— 45·8	— 22·2	— 14·1	— 40·9
1916 .	124·2	101·3	125·3	128·9	— 57·4	— 43·7	— 26·1	— 28·1	75·4	82·7	99·3	91·6	9·2	— 2·7	2·5	3·6
1917 .	59·1	63·7	70·5	66·5	— 1·5	15·3	3·3	— 10·3	80·7	91·9	85·7	84·9	52·5	60·9	65·7	69·5
1918 .	149·3	126·6	140·0	139·9	— 25·3	— 20·4	8·6	— 26·3	177·9	167·2	166·1	181·5	160·1	134·8	149·7	151·5
Total .	771·7	735·6	820·0	785·5	— 94·9	— 89·4	— 94·0	—183·7	939·8	949·8	1011·0	993·9	111·0	49·4	102·2	97·5
OCTOBER.																
1911 .	127·8	105·2	123·8	135·7	16·2	— 14·8	— 26·4	— 8·5	174·7	190·4	212·5	200·7	— 34·7	— 2·0	— 2·1	— 5·7
1912 .	133·2	135·7	130·1	114·7	53·4	38·7	42·1	49·5	148·5	151·3	154·4	144·6	70·5	64·7	68·4	51·4
1913 .	102·4	113·7	135·9	124·0	73·2	76·5	91·5	90·8	127·9	108·2	108·0	141·0	— 7·1	— 36·2	— 42·6	0·2
1914 .	96·2	97·1	105·0	88·8	— 42·8	— 22·9	— 46·8	— 30·8	88·8	102·4	120·8	108·6	5·2	— 8·2	— 17·8	— 26·2
1915 .	92·8	90·5	110·8	136·7	25·0	8·9	18·2	43·9	84·8	108·3	104·7	97·4	— 15·2	— 19·3	— 20·9	— 30·2
1916 .	134·2	127·5	123·3	138·1	46·6	39·3	45·1	68·7	222·7	243·4	214·0	230·3	182·1	202·8	188·2	163·9
1917 .	177·0	168·8	136·4	169·3	—105·4	— 95·8	— 94·0	— 89·1	188·3	189·5	229·5	217·9	179·3	175·5	223·5	197·7
1918 .	151·6	132·0	141·4	130·1	— 11·6	— 58·6	— 29·2	— 20·9	130·0	131·9	134·6	133·6	88·8	87·1	99·6	87·4
Total .	1015·2	970·5	1006·7	1037·4	54·6	— 28·7	0·5	103·6	1165·7	1225·4	1278·5	1274·1	468·9	464·4	496·3	438·5
NOVEMBER.																
1911 .	21·9	24·1	27·3	36·1	17·5	18·7	21·1	26·3	67·6	57·8	54·2	57·2	67·6	57·8	54·2	57·2
1912 .	141·0	132·9	142·1	128·2	— 39·0	— 32·9	— 62·1	— 58·6	170·6	99·4	142·3	157·1	118·2	79·4	112·3	100·9
1913 .	133·3	108·8	140·4	162·5	3·5	1·4	32·6	7·9	223·1	192·4	197·3	199·1	197·1	169·4	169·5	180·1
1914 .	146·7	117·6	119·2	111·2	23·9	3·2	— 1·0	7·2	183·8	169·5	199·2	186·3	45·6	48·9	76·6	53·3
1915 .	145·9	124·3	119·0	108·4	— 40·5	— 21·7	— 2·2	— 30·2	163·4	175·7	147·0	164·4	— 21·4	— 27·9	— 25·8	— 24·4
1916 .	168·9	163·4	146·2	172·2	39·7	11·2	13·4	45·2	159·6	177·3	185·2	138·9	83·6	114·9	116·0	74·5
1917 .	95·2	91·9	96·1	103·1	— 62·2	— 56·1	— 71·5	— 59·9	141·8	133·5	143·5	121·7	131·4	130·1	136·9	118·5
1918 .	88·7	104·7	125·5	117·5	53·3	60·9	60·3	78·7	135·4	136·2	156·9	151·8	35·4	20·2	29·1	20·4
Total .	941·6	867·7	915·8	939·2	— 3·8	— 15·3	— 9·4	16·6	1245·3	1141·8	1225·6	1176·5	657·5	592·8	668·8	580·5
DECEMBER.																
1911 .	126·9	121·2	130·6	134·2	77·7	80·0	94·6	78·6	168·3	155·6	185·6	175·4	106·5	127·0	156·2	121·8
1912 .	181·8	179·2	149·5	139·1	138·8	141·6	97·7	95·5	175·9	191·5	229·6	206·4	133·7	158·9	221·0	191·2
1913 .	120·8	135·0	142·4	131·4	— 98·4	— 89·6	— 92·8	— 86·0	201·8	191·8	192·9	186·8	99·2	120·0	105·5	110·8
1914 .	183·9	160·5	175·3	180·2	102·1	88·3	104·9	93·8	219·4	203·6	215·3	226·7	143·0	130·4	165·1	142·1
1915 .	162·2	151·7	158·5	165·8	68·4	93·1	64·9	69·2	194·6	204·3	219·8	215·9	114·6	164·7	163·6	166·3
1916 .	105·2	120·1	103·2	86·8	— 42·4	— 55·5	— 5·8	1·8	127·5	161·1	162·6	140·4	60·5	72·9	66·8	53·8
1917 .	123·6	116·5	119·9	123·1	— 41·6	— 73·5	— 67·1	— 45·3	107·4	96·1	98·2	99·4	— 15·4	2·7	2·8	— 28·6
1918 .	155·9	148·4	137·8	172·0	— 4·7	— 11·6	— 12·0	22·8	246·5	225·6	227·5	230·1	241·3	218·2	222·3	214·3
Total .	1160·3	1132·6	1117·2	1132·6	199·9	172·8	184·4	230·4	1441·4	1429·6	1531·5	1481·1	883·4	994·8	1103·3	971·7

NUMBER OF OBSERVATIONS (INCLUDING CALMS), 1911-1918.

Time.	July.	August.	September.	October.	November.	December.
3 h.	245	247	239	245	206	232
9 h.	246	247	236	240	203	229
15 h.	243	248	239	246	208	232
21 h.	245	247	239	247	206	232

Table of Monthly Means of Magnetic Data for Eskdalemuir.

The following table gives the mean monthly values of the daily maximum and minimum and of the corresponding daily range of the magnetic elements at Eskdalemuir Observatory. The corresponding data published for Kew Observatory in previous years are no longer available. It should be mentioned, however, that the magnetograms for "international quiet days" have been tabulated at that Observatory, and that a summary of the results will be printed in *Hourly Values*.

Month.	North Component.			West Component.			Vertical Component.		
	Max. 15000 γ +	Min. 15000 γ +	Range.	Max. 4000 γ +	Min. 4000 γ +	Range.	Max. 44000 γ +	Min. 44000 γ +	Range.
	γ	γ	γ	γ	γ	γ	γ	γ	γ
January . .	1011	940	71	979	900	79	1089	1052	37
February .	1015	932	83	981	895	86	1093	1045	48
March . .	1024	929 −	95 +	986	891 −	95 +	1100	1048 −	52 +
April . .	1034	907	127	985	867	118	1104	1023 −	81 +
May . .	1033	922 −	111 +	974	877 −	97 +	1086	1025 −	61 +
June . .	1029	935	94	966	883	83	1077	1022	55
July . .	1037	936	101	971	877	94	1089	1031	58
August . .	1042	916	126	975	872	103	1100 +	1031	69 +
September .	1027	907	120	968	860	108	1104	1027	77
October . .	1031	913	118	963	854	109	1121	1046	75
November .	1017	921	96	949	859	90	1100	1043	57
December .	1017	911	106	940	835	105	1112 +	1039	73 +
Year . .	1026	922 −	104 +	970	873 −	97 +	1098 +	1036 −	62 +

The traces passed the limits of registration on twelve occasions; the value accepted for the maximum or minimum in such a case represents the upper or lower edge of the photographic sheet. Such values have been excluded in the calculation of the monthly means published each month, but are used in obtaining the figures entered in the table above. The mean values of the daily range for the months affected are thus underestimated, but the differences from the true values are probably small.

The extreme values for the year and the corresponding annual ranges were as follows:—

	Maximum.	Minimum.	Range.
North Component . . .	16371 γ	< 15699 γ	> 672 γ
West „ . . .	5136 γ	4690 γ	446 γ
Vertical „ . . .	> 45369 γ	44809 γ	> 560 γ

ERRATA FOR 1918.

Page 11, Table 6. North Component, Maximum 12th, *for* 954 *read* 1054.
Page 11, Table 6. North Component, Mean, *for* 1011 *read* 1015.
Page 17, Table 1. South Kensington Radiation, Daily Total Normal, *insert* 566.
Page 18, Table 3. Humidity Percentage Normals, *for* 8·1, 8·1 *read* 81, 81.
Page 19, Table 6. West Component, Minimum 27th, *for* 971 *read* 871.
Page 19, Table 6. West Component Mean, *for* 901 *read* 897.
Page 54, Table 7. Air Pressure Normal at 21 h., *for* 1014 *read* 1011·4.
Page 63, Table 6. West Component, Minimum 7th, *for* 983 *read* 883.
Page 63, Table 6. West Component, Minimum 12th, *for* 876 *read* 877.
Page 63, Table 6 West Component, Mean, *for* 875 *read* 872.