STONYHURST COLLEGE OBSERVATORY.

RESULTS

OF

METEOROLOGICAL & MAGNETICAL OBSERVATIONS

WITH REPORT AND NOTES OF THE DIRECTOR,

REV. W. SIDGREAVES, S.J., F.R.A.S.

1906.

CLITHEROE:
PRINTED BY LORD & MARSLAND, TIMES OFFICE,
1907.

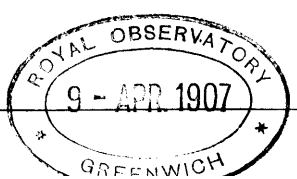

TABLE OF CONTENTS.

REPORT AND NOTES.

THE meteorological continuous records have been uninterrupted during the year, excepting only one week in September, while extensive alterations in the gas works were being carried out.

The year has been an average year for atmospheric pressure and temperature: but the rain-fall has been nearly 3 inches above the average. May was a remarkably cold and wet month, with a rain-fall a little more than 2 inches above the average, a mean temperature 7°.4 below the average, and a sun-shine record of less than half its average duration, showing only about 16 per cent. of its possible duration. September, on the contrary, was an exceptionally bright month with 175.6 hours of bright sunshine (over 46 per cent. of the possible number), and nearly 3 inches of rain less than the average.

The beginning of the same month, September, was marked by a high temperature wave. The change began in the small hours of the morning of August 31, with a ground fog travelling from the West and arriving about midnight. The highest temperatures of the year were then recorded successively at 79°.4 83°.4 and 83°.9 on August 31, and September 1 and 2.

January, October, and December were the wettest months, with over 6 inches of rain in each.

The wind storms of the year have not been heavy. The highest velocity registered was 43 miles in the hour. Velocities of 40 miles and over were reached on March 9, Nov. 29 and 30

at 40 miles, from the West; on January 15, at 42 miles from South by West; on February 2 and December 4, at 43 miles from the West.

The prevailing wind during the year has been from the West; a little over 46 per cent. of the total currents have come from nearly due West, and, omitting North and South Winds, the per centage of the total current was 69 on the West side of the Meridan, against 14 on the East side.

The Solar surface has been under observation on all available days during the year, and 210 drawings of spots and faculae have been made.

The mean disc-area of the spots (in units of 1/5000th the visible surface) appears at 4.79; and the mean daily range of the magnetic Declination (in minutes of arc) at 14.2.

The following table shows some probability that there is a retardation of the epoch of maximum magnetic disturbances upon that of Solar activity, similar to the lag of the minimum, noticed in 1901, '02: for, the small fall-off from 14.9 in 1905 to 14.2 in 1906 seems to indicate a change of magnetic conditions beginning later than the change of Solar activity, which shows a fall from 6.8 to 4.8.

Year	1901	'02	'03	'04	'05	'06
Spot area... ...	.29	0.33	1.93	2.54	6.8	4.8
Declination Range	9.1	9.0	11.8	11.9	14.9	14.2

The large grating spectrometer has also been employed upon the larger spots when the atmosphere has been calm enough for the steady working of the present heliostat.

A new heliostat is being built for the observatory by Sir Howard Grubb, through favour of the Royal Society's Government Grant Committee. This will carry a 12-inch silver-on-glass reflector, on loan to the observatory by the British Astronomical Association; and the system will be completed by a second reflector of 16 inches diameter, lent by the Royal Astronomical Society.

With this addition the full aperture of the 8-inch objective of the old equatorial telescope will take the place of the present half-filled 4-inch lens, and is expected to add very greatly to the efficient working of the large Rowland grating on the solar surface.

The 4-inch prismatic camera has been employed on almost every available night, but only on a selected number of the brighter stars which had been suspected of showing variable spectra.

Some very good photo spectrographs of *Mira Ceti* were obtained between November 25 and January 3, both by the Hilger compound prism adapted to the great equatorial, and by the Thorp objective prism on the Cook 4-inch Finder, now mounted as a separate equatorial telescope. But the hopeless clouds and fogs of January have shut out all possibility of following the star's spectrum through the conditions of its declining light.

The magnetographs of Horizontal force and direction have been in good working condition throughout the year. Some interruptions besides the week in September already mentioned, have been necessary, on account of the work of re-leading, and draining the arched roof of the underground magnetic chamber. There is now no longer any leakage; and the temperature has been considerably lowered by the introduction of Acetylene in place of the coal gas lights.

The vertical force balance, mentioned in our last report, as re-modelled on Monsr. Mailhat's design, has given excellent promise for the future; but the magnet has been continuously losing intensity, and is only now beginning to show signs of attaining a state of stability.

In our tabulated results of absolute measures of magnetic force and direction, it will be noticed that the measures of force in March and September are wanting, and also in September the direction of total force, or the Dip angle. The loss in March was, most probably, owing to the near presence of iron garden tools, unknown to the observer, during the experiments of Vibration; for there is no flaw in the observations, and the much shorter resulting time of one vibration is found to be impossible when compared with the photographic curve of horizontal force. The loss in September was occasioned by some unexplained accident attending a change of observer in that month.

The following Papers, by Fr. Cortie, were published during the year:

"Twelfth Report of the Section for the Observation of the Sun."—Memoirs B.A.A., Vol. 74, part 2.

"The Total Solar Eclipse of 1905"—Transactions of the Royal Irish Academy, Vol. 33, Section A, part 1.

"On the Connection between disturbed Areas of the Solar Surface and the Solar Corona."—Astrophysical Journal, Vol. 24, No. 5.

WALTER SIDGREAVES,

Director.

Stonyhurst Observatory.

Lat. 53° 50′ 40″N. Long. 9m. 52s. 68, W. Height of the Barometer above the sea 381 ft.

METEOROLOGICAL REPORT.

JANUARY, 1906.

Results of Observations taken during the Month.		Mean for the last 59 years
Mean Reading of the Barometer .... inches	29·443	29·463
Highest ,, on the 22nd ,,	30·216	30·283
Lowest ,, on the 9th ,,	28·691	28·598
Range of Barometer Readings ..... ,,	1·526	1·685
Highest Reading of a Max.Therm. on the 27th	48·0	51·3
Lowest Reading of a Min. Therm. on the 23rd	28·5	21·1
Range of Thermometer Readings	19·5	30·2
Mean of all the Highest Readings.....	43·3	42·3
Mean of all the Lowest Readings	37·0	32·7
Mean Daily Range.....	6·3	9·6
Deduced Monthly Mean from (Mean of Max. and Min.).....	40·2	37·3
Mean Temperature from Dry Bulb.....	40·0	37·4
Adopted Mean Temperature	40·1	37·3
Mean Temperature of Evaporation	38·7	36·1
Mean Temperature of Dew Point	36·9	33·9
Mean elastic force of Vapour ..... inches	0·219	0·197
Mean weight of Vapour in a cub.ft. of air (grns.)	2·5	2·4
Mean additional weight required for saturation,,	0·4	0·4
Mean degree of Humidity (saturation 100) ..	89	79
Mean weight of a cubic foot of air.... grains	546·0	549·7
Fall of Rain .....inches	6·070	4·156
Number of days on which Rain fell	25	20·7

JANUARY, 1906.

No. of days in the month on which the prevailing wind was	N	NE	E	SE	S	SW	W	NW
	2	1	2	0	3	8	12	3
Mean Velocity in miles per hour	9·8	2·7	14·3	0	14·6	15·7	12·2	13·4
Total No. of miles for each Direction	468	65	684	0	1046	3016	3525	967

The total number of miles registered during the month was 9771.

The max. Velocity of the wind was 42 miles per hour, on the 15th, at 11 a.m. Dir S. by W.

Mean amount Cloud (an overcast sky being indicated by 10·0) 8.9

In the Month of January the highest reading of the Barometer during 59 years, was on the	9th, in	1896, and was ...	30·597
The Lowest ,,	26th, 1884	,,	27·803
The highest Temperature	7th, 1887	,,	59·9
The lowest ,,	15th, 1881	,,	4·6
The highest adopted mean temperature of the month,		1898	43·7
The lowest ,,	,,	1881	29·2
Greatest fall of rain for the month in		1852	8·147
Least ,,	,,	1881	0·472
Greatest number of days on which rain fell		1872	31
Least ,,	,,	1879	8

TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure	—	0·020 inches
Monthly range ,, ...	—	0·159 ,,
Mean of highest temperatures	+	1·0 degrees
Mean of lowest ,, ...	+	4·3 ,,
Mean daily range ,, ...	—	3·3 ,,
Adopted mean temperature	+	2·8 ,,
Total rainfall	+	1·914 inches

Ground Frost on 1st, 2nd, 8th, 9th, 15th, 17th—23rd, 29th. Snow on 16th, 17th and 18th. Hail on 13th, 14th and 17th. Gale of Wind on 15th. Heavy Rain on 5th, 11th, 18th, 20th and 28th.

FEBRUARY, 1906.

Results of Observations taken during the Month		Mean for the last 59 years.
Mean Reading of the Barometer.....inches	29·314	29·505
Highest ,, on the 5th ,,	29·932	30·076
Lowest , on the 10th ,,	28·150	28·667
Range of Barometer Readings..... ,,	1·782	1·409
Highest Reading of a Max. Therm. on the 1st	44·7	52·1
Lowest Reading of a Min. Therm. on the 17th	21·5	21·9
Range of Thermometer Readings	23·2	30·2
Mean of all the Highest Readings.....	40·3	44·1
Mean of all the Lowest Readings	31·1	33·3
Mean Daily Range	9·2	10·8
Deduced Monthly Mean from (Mean of Max. and Min.).....	35·7	38·1
Mean Temperature from Dry Bulb	35·0	38·1
Adopted Mean Temperature	35·4	38·1
Mean Temperature of Evaporation	33·6	36·6
Mean Temperature of Dew Point	30·9	34·3
Mean elastic force of Vapour .....inches	0·173	0·192
Mean weight of Vapour in a cub. ft. of air (grns)	2·0	2.4
Mean additional weight required for saturation,,	0·4	0·4
Mean degree of Humidity (saturation 100)..	84	86
Mean weight of a cubic foot of air... grains	549·4	549·0
Fall of Rain..... inches	3·555	3·454
Number of days on which Rain fell	17	18·0

No. of days in the month on which the prevailing wind was	N	NE	E	SE	S	SW	W	NW
	3	2	1	0	2	3	11	6
Mean Velocity in miles per hour	8·8	5·2	5·1	0	10·2	13·5	13·8	11·9
Total No. of miles for each Direction	630	249	123	0	491	970	3650	1717

The total number of miles registered during the month was 7830.
The max Velocity of the wind was 43 miles per hour, on the 2nd, at Noon. Dir. W.

FEBRUARY, 1906.

Mean amount of Cloud (an overcast sky being indicated by 10·0)			6·8
In the month of February, the highest reading of the Barometer during 59 years, was on the 1st, in 1902, and was			....30·476
The lowest	,,	19th, 1900	,, ...27·870
The highest Temperature		8th, 1877	,, ... 58·3
The lowest	,,	11th, 1902	,, ... 5·0
The highest adopted mean temperature of the month,			1869 .. 44·0
The lowest	,,	,,	1855 .... 28·6
Greatest fall of rain for the month in			1848 8·882in
Least	,,	,, ,,	1858 0·306in
Greatest number of days on which rain fell			1868 28
Least	,,	,, ,,	1858 and '95 6

TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure	.. ..	—	0·191 inches
Monthly range ,,	.. ..	+	0·373 ,,
Mean of highest temperatures	.. ..	—	3·8 degrees
Mean of lowest ,,	.. ..	—	2·2 ,,
Mean daily range ,,	.. ..	—	1·6 ,,
Adopted mean temperature	.. ..	—	2·7 ,,
Total rainfall ,,	.. ..	+	0·191 inches

Ground frost on 3rd to the 28th Snow on 3rd, 9th—11th, 13th, 14th, 19th, 20th, 23rd, 24th and 26th. Hail on 2nd, 8th, 26th, 24th and 25th. Heavy Rain on 9th and 10th. Gales of wind on 2nd, 8th and 28th. Fog on 6th and 21st. Thunder on the 8th. Lunar Halo on 4th and 5th.

MARCH, 1906.

Result of Observations taken during the Month.		Mean for the last 59 years.
Mean Reading of the Barometer .... inches	29·576	29·460
Highest ,, on the 19th ,,	30·008	30·061
Lowest , on the 11th ,,	28·380	28·636
Range of Barometer Readings ..... ,,	1·628	1·425
Highest Reading of a Max. Therm. on the 17th	54·0	57·0
Lowest Reading of a Min. Therm. on the 14th	24·8	22·7
Range of Thermometer Readings	29·2	34·3
Mean of all the Highest Readings	44·7	47·3
Mean of all the Lowest Readings	34·6	34·1
Mean Daily Range	10·1	13·2
Deduced Monthly Mean (from Mean of Max. and Min.)	39·7	39·8
Mean Temperature from Dry Bulb	39·1	40·0
Adopted Mean Temperature	39·4	39.9
Mean Temperature of Evaporation	37·0	38·0
Mean Temperature of Dew Point	33·9	35·4
Mean Elastic force of Vapour .....inches	0·195	0·206
Mean weight of Vapour in a cubic ft. of air (grns)	2·3	2·4
Mean additional weight required for saturation,,	0·6	0·5
Mean degree of Humidity (saturation 100) ..	81	84
Mean weight of a cubic foot of air .... grains	549·6	546·4
Fall of Rain .....inches	4·243	3·315
Number of days on which Rain fell.....	13	18·0

	N	NE	E	SE	S	SW	W	NW
No. of days in the month on which the prevailing wind was	5	3	3	0	1	5	13	1
Mean Velocity in miles per hour	13·1	7·6	6·8	0	9·0	13·6	14·2	21·3
Total No. of miles for each Direction	1575	550	490	0	216	1636	4422	510

The total number of miles registered during the month was 9399.
The max. Velocity of the wind was 40 miles per hour, on the 9th, 11th, and 17. Dir. W.

MARCH, 1906.

Mean amount of Cloud (an overcast sky being indicated by 10·0)				7·4
In the month of March, the highest reading of the Barometer during 59 years, was on the	6th	in	1852, and was	30·401
The lowest	3rd, 1897			28·157
The highest Temperature	25th, 1871			68·0
The lowest	6th, 1886			11·5
The highest adopted mean temperature of the month,			1871	44·0
The lowest			1855 and 1892	35·6
Greatest fall of rain during the month in			1896	7·079 in
Least			1852	0·352 in
Greatest number of days on which rain fell,			1859, '61, '68 & '72	28
Least			1852	3

TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure	+	0·116 inches
Monthly range	+	0·203 ,,
Mean of highest temperatures	—	2·6 degrees
Mean of lowest ,,	+	0·5 ,,
Mean daily range ,,	—	3·1 ,,
Adopted mean temperature	—	0·5 ,,
Total rainfall	+	0·928 inches

Ground frost on 2nd, 5th, 8th—10th, 12th—14th, 18th—30th Snow on 2nd, 9th, 13th, 24th, 25th, 26th and 27th. Hail on 8th, 9th, 10th, 12th and 18th. Heavy rain on 7th, 10th, 14th. Gales of wind on 9th 11th, 16th and 17th. Lunar Halo on 2nd and 9th

APRIL, 1906.

Results of Observations taken during the Month.		Mean for the last 59 years.
Mean Reading of the Barometer ....inches	29·671	29·486
Highest ,, on the 8th ,,	30·317	29·969
Lowest ,, on the 29th ,,	28·812	28·815
Range of Barometer Readings ..... ,,	1·505	1·154
Highest Reading of a Max. Ther. on the 11th	65·4	65·5
Lowest Reading of a Min. Therm. on the 27th	29·8	28·1
Range of Thermometer Readings	35·6	37·4
Mean of all the Highest Readings	51·6	55·4
Mean of all the Lowest Readings	36·0	37·7
Mean Daily Range.....	15·6	17·7
Deduced Monthly Mean (from Mean of Max and Min.)	43·8	44·3
Mean Temperature from Dry Bulb	43·4	44·6
Adopted Mean Temperature	43·6	44·5
Mean Temperature of Evaporation	40·1	41·7
Mean Temperature of Dew Point	35·9	38·1
Mean elastic force of Vapour .....inches	0·211	0·234
Mean weight of Vapour in a cub.ft.of air (grns)	2·5	2·7
Mean additional weight required for saturation ,,	0·6	0·7
Mean degree of Humidity (saturation 100) ..	75	79
Mean weight of a cubic foot of air ....grains	546·9	542·1
Fall of Rain .....inches	2·050	2·458
Number of days on which Rain fell	10	15·9

	N	NE	E	SE	S	SW	W	NW
No. of days in the month on which the prevailing wind was	1	6	6	2	0	2	10	3
Mean Velocity in miles per hour	8·4	6·5	6·3	10·4	0	14·2	10·4	7·4
Total No. of Miles for each Direction	202	942	909	500	0	682	2486	535

The total number of miles registered during the month was 6259.
The max. Velocity of the wind was 34 miles per hour, on the 4th at 1 p.m. Dir. S.S.E.

APRIL, 1906.

Mean amount of Cloud (an overcast sky being indicated by 10·0)			6·3
In the month of April, the highest reading of the Barometer during 59 years, was on the 17th, in 1887, and was			30·251
The lowest ,,	20th, 1868	,,	28·358
The highest Temperature	14th, 1852	,,	74·1
The lowest ,,	13th, 1892	,,	20·8
The highest adopted mean temperature of the month,		1865 ...	48·5
The lowest ,,	,,	1879 ...	40·7
Greatest fall of rain during the month in		1867	5·672 in
Least ,,	,,	1852	0·478 in
Greatest number of days on which rain fell		1867	26
Least ,,	,,	1852	3

TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure	+	0·185 inches
Monthly range ,, ...	+	0·353 ,,
Mean of highest temperature ..	—	3·8 degrees
Mean of lowest ,, ..	—	1·7 ,,
Mean daily range ,, ...	—	2·1 ,,
Adopted mean temperature	—	0·9 ,,
Total rainfall	—	0·408 inches

Ground frost on 1st—11th, 14th—16th, 18th—20th, 23rd—30th. Snow on 18th, 23rd, 26th and 29th. Hail on 22nd, 28th, 29th and 30th. Heavy Rain on 27th. Lunar Halo on 3rd. Solar Halo on 24th and 25th.

MAY, 1906.

Results of Observations taken during the Month.		Mean for the last 59 years.
Mean Reading of the Barometer.....inches	29·426	29·523
Highest ,, on the 5th ,,	29·714	29·960
Lowest ,, on the 17th ,,	29·015	28·935
Range of Barometer Readings ..... ,,	0·699	1·025
Highest Reading of a Max. Therm. on the 24th	64·9	71·6
Lowest Reading of a Min. Therm. on the 1st	33·5	31·5
Range of Thermometer Readings	31·4	40·1
Mean of all the Highest Readings	54·3	59·6
Mean of all the Lowest Readings	44·2	42·1
Mean Daily Range	10·1	17·5
Deduced Monthly Mean (from Mean of Max. and Min.)	49·3	49·1
Mean Temperature from Dry Bulb.....	48·9	49·6
Adopted Mean Temperature	49·1	49·4
Mean Temperature of Evaporation	46·6	46·1
Mean Temperature of Dew Point	43·9	42·4
Mean elastic force of Vapour .....inches	0·288	0·275
Mean weight of Vapour in a cub. ft. of air (grns)	3·3	3·1
Mean additional weight required for saturation,,	0·7	0·9
Mean degree of Humidity (saturation 100..)	82	76
Mean weight of cubic foot of air ....grains	535·6	537·3
Fall of Rain .....inches	4·810	2·628
Number of days on which Rain fell	20	15·5

No. of days in the month on which the prevailing wind was	N	NE	E	SE	S	SW	W	NW
	3	5	4	0	6	2	9	2
Mean Velocity in miles per hour	9·5	6·1	7·6	0	12·7	8 5	13·1	7·2
Total No. of miles for each Direction	683	736	733	0	1837	408	2820	345

The total number of miles registered during the month was 7562.
The max. Velocity of the wind was 30 miles per hour, on the 5th at 7 p.m. Dir. S.

MAY, 1906.

Mean amount of Cloud (an overcast sky being indicated by 10·0)		9·0
In the month of May, the highest reading of the Barometer during 59 years, was on the 2nd in 1895, and was		30·217
The lowest ,, 28th, 1877 ,,		28·559
The highest Temperature 19th, 1864 ,,		82·5
The lowest ,, 4th, 1855 ,,		23·5
The highest adopted mean temperature of the month,	1848	55·1
The lowest ,, ,,	1855	45·0
Greatest fall of rain during the month in	1886	6·224 in
Least ,, ,,	1859	0·249 in
Greatest number of days on which rain fell	1872	28
Least ,, ,,	1853 and 1896	5

TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure	—	0·097 inches
Monthly range ,, ...	—	0·326 ,,
Mean of highest temperatures ..	—	5·3 degrees
Mean of lowest ,, ...	+	2·1 ,,
Mean daily range ,, ...	—	7·4 ,,
Adopted Mean temperature	—	0·3 ,,
Total rainfall	+	2·182 inches

Ground Frost on 1st, 2nd, 5th, 15th, 17th, 18th and 23rd Hail on 16th. Heavy rain on 8th, 19th, 25th and 27th. Thunder on 3rd. Lightning on 3rd and 13th.

JUNE, 1906.

Results of Observations taken during the Month.		Mean for the last 59 years.
Mean Reading of the Barometer ....inches	29·722	29·554
Highest ,, on the 4th ,,	30·001	29·911
Lowest ,, on the 1st ,,	29·037	29·041
Range of Barometer Readings..... ,,	0·964	0·870
Highest Reading of a Max. Therm. on the 12th	75·3	77·5
Lowest Reading of a Min. Therm. on the 5th	43·9	38·9
Range of Thermometer Readings.....	31·4	38·6
Mean of all the Highest Readings.....	64·6	65·9
Mean of all the Lowest Readings	49·0	48·0
Mean Daily Range.....	15·6	17·9
Deduced Monthly Mean (from Mean of Max. and Min.).....	56·8	55·3
Mean Temperature from Dry Bulb	57·5	55·2
Adopted Mean Temperature	57·2	55·1
Mean Temperature of Evaporation	53·7	52·1
Mean Temperature of Dew Point	50·4	48·6
Mean elastic force of Vapour .....inches	0·367	0·353
Mean weight of Vapour in a cub. ft. of air (grns)	4·1	3·9
Mean additional weight required for saturation,,	1·2	1·0
Mean degree of Humidity (saturation 100) ..	78	78
Mean weight of a cubic foot of air ....grains	531·9	531·0
Fall of Rain.....inches	1·928	3·376
Number of days on which rain fell	12	16·0

	N	NE	E	SE	S	SW	W	NW
No. of days in the month on which the prevailing wind was	2	5	5	0	1	5	12	0
Mean Velocity in miles per hour	7·2	5·7	5·6	0	6·1	9·4	8·3	0
Total No. of Miles for each Direction	344	683	669	0	147	1127	2404	0

The total number of miles registered during the month was 5374.
The max. Velocity of the wind was 27 miles per hour, on the 2nd, at 4 p.m. Dir. W. by N.

JUNE, 1906.

Mean amount of Cloud (an overcast sky being indicated by 10·0)			7·3
In the month of June, the highest reading of the Barometer during 59 years, was on the 15th, in 1874, and was			30·219
The lowest ,,	23rd, 1893	,, ...	28·813
The highest Temperature	18th, 1893	,, ...	88·7
The lowest ,,	9th, 1902	,, ...	32·0
The highest adopted mean temperature of the month,		1858..	59·0
The lowest ,,	,,	1856 and 1860..	52·2
Greatest fall of rain during the month in		1848	7·125 in
Least ,,	,,	1887	0·525 in
Greatest number of days on which rain fell		1862	27
Least ,,	,,	1887	4

TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure	..	+	0·168 inches
Monthly range ,,	..	+	0·094 ,,
Mean of highest temperatures	..	—	1·3 degrees
Mean of lowest ,,	..	+	1·0 ,,
Mean daily range ,,	..	—	2·3 ,,
Adopted mean temperature	..	+	2·1 ,,
Total rainfall	..	—	1·448 inches

Hail on 1st. Heavy rain on 26th. Thunder on 1st, 12th, 13th, 16th, 17th and 23rd. Lightning on 13th, 17th and 23rd. Solar Halo on 27th.

JULY, 1906.

Results of Observations taken during the Month.		Mean for the last 59 years.
Mean Reading of the Barometer.....inches	29·607	29·520
Highest .. on the 9th ..	29·917	29·891
Lowest .. on the 19th ..	29·229	29·018
Range of Barometer Readings..... ..	0·688	0·873
Highest Reading of a Max. Therm. on the 30th	73·4	78·7
Lowest Reading of a Min. Therm. on the 11th	43·5	42·3
Range of Thermometer Readings	29·9	36·4
Mean of all the Highest Readings	65·6	68·0
Mean of all the Lowest Readings	51·0	50·9
Mean Daily Range.....	14·6	17·1
Deduced Monthly Mean (from Mean of Max. and Min.).....	58·3	57·9
Mean Temperature from Dry Bulb.....	59·1	57·9
Adopted Mean Temperature	58·7	58·0
Mean Temperature of Evaporation	54·8	54·9
Mean Temperature of Dew Point	51·3	52·1
Mean elastic force of Vapour .....inches	0·379	0·390
Mean weight of Vapour in a cub. ft. of air (grns)	4·3	4·5
Mean additional weight required for saturation,,	1·4	1·1
Mean degree of Humidity (saturation 100) ..	76	81
Mean weight of a cubic foot of air....grains	528·1	527·4
Fall of rain .....inches	2·765	3·995
Number of days on which rain fell.....	17	17·7

	N	NE	E	SE	S	SW	W	NW
No. of days in the month on which the prevailing wind was	1	0	2	0	2	4	22	0
Mean Velocity in miles per hour	4·3	0	9·9	0	5·2	5·9	8·6	0
Total No. of miles for each Direction	103	0	473	0	250	565	4533	0

The total number of miles registered during the month was 5924.
The max. Velocity of the wind was 30 miles per hour, on the 19th, at 4 p.m. Dir. W. by S.

JULY, 1906

Mean amount Cloud (an overcast sky being indicated by 10·0)			7·3
In the month of July, the highest reading of the Barometer during 59 years, was on the 24th, in 1868, and was			30·112
The lowest ,,	15th, 1877	,,	28·564
The highest Temperature	20th, 1901	,,	89·0
The lowest ,,	1st, 1857	,,	36·0
The highest adopted mean temperature of the month,		1901	63·2
The lowest ,,	,,	1888	54·5
Greatest fall of rain during the month in	..	1888	8·602 in
Least ,,	,, ..	1868	0·669 in
Greatest number of days on which rain fell	..	1861	30
Least ,,	,, ..	1868	9

TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure ..	+	0·087	inches
Monthly Range ,, ..	—	0·185	,,
Mean of highest temperatures ..	—	2·4	degrees
Mean of lowest ,, ..	+	0·1	,,
Mean daily range ,, ..	—	2·5	,,
Adopted mean temperature ..	+	0·7	,,
Total rainfall	—	1·230	inches

Heavy rain on 15th. Thunder on 26th and 27th.

AUGUST, 1906.

Results of Observations taken during the Month.		Mean for the last 59 years.
Mean Reading of the Barometer ....inches	29·541	29·494
Highest ,, on the 28th ,,	30·026	29·889
Lowest ,, on the 25th ,,	29·050	28·948
Range of Barometer Readings ..... ,,	0·976	0·941
Highest Reading of a Max.Therm on the 31st	79·4	77·0
Lowest Reading of a Min. Therm. on the 19th	46·0	41·5
Range of Thermometer Readings	33·4	35·5
Mean of all the Highest Readings	66·1	67·0
Mean of all the Lowest Readings	53·5	50·5
Mean Daily Range	12·6	16·5
Deduced Monthly Mean (from Mean of Max. and Min.)	59·8	57·2
Mean Temperature from Dry Bulb.....	59·8	57·6
Adopted Mean Temperature	59·8	57·4
Mean Temperature of Evaporation	56·4	54 5
Mean Temperature of Dew Point	53·5	51·7
Mean elastic force of Vapour..... inches	0·409	0·386
Mean weight of Vapour in a cub.ft.of air(grns)	4·6	4·3
Mean additional weight required for saturation,,	1·2	0·9
Mean degree of Humidity (saturation 100)..	79	81
Mean weight of a cubic foot of air ....grains	526·4	527·4
Fall of Rain..... inches	4·665	5·061
Number of days on which Rain fell	20	19·9

	N	NE	E	SE	S	SW	W	NW
No. of days in the month on which the prevailing wind was	0	1	1	0	4	5	19	1
Mean velocity in miles per hour	0	3·2	8·9	0	12·4	6 8	8·5	7·0
Total No. of miles for each Direction	0	77	214	0	1189	817	3883	167

The total No. of miles registered during the month was 6347.
The max. Velocity of the wind was 38 miles per hour, on the 25th at 9 a.m Dir. W N.W.

AUGUST, 1906.

Mean amount of Cloud (an overcast sky being indicated by 10·0)			6·6
In the month of August, the highest reading of the Barometer during 59 years, was on the 21st, in 1874, and was		....	30·114
The lowest ,,	15th, 1903	,, ...	28·492
The highest Temperature	2nd, 1868	,, ...	88·0
The lowest ,,	13th. 1887	,, ...	33·4
The highest adopted mean temperature of the month,		1899	61·7
The lowest ,,		,, 1848	52·5
Greatest fall of rain during the month in		1891	9·869 in
Least ,,		,, 1871	2·085 in
Greatest number of days on which rain fell		1860	28
Least ,,		,, 1880	6

TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure	+	0·047	inches
Monthly range ,, ...	+	0·035	,,
Mean of highest temperatures ..	—	0·9	degrees
Mean of lowest ,, ...	+	3·0	,,
Mean daily range ,, ...	—	3·9	,,
Adopted mean temperature	+	2·4	,,
Total rainfall	—	0·396	inches

Heavy rain on 15th and 24th, Thunder on 1st, 2nd. 3rd. 8th, 13th, 14th and 15th. Lightning on 2nd, 7th, 8th, 14th and 15th.

SEPTEMBER, 1906.

Results of Observations taken during the Month.		Mean for the last 59 years.
Mean Reading of the Barometer.....inches	29·806	29·532
Highest ,, on the 27th ,,	30·222	30·027
Lowest ,, on the 15th ,,	29·093	28·865
Range of Barometer Readings ..... ,,	1·129	1·162
Highest Reading of a Max. Therm. on the 2nd	83·9	72·5
Lowest Reading of a Min. Therm. on the 28th	38·3	36·4
Range of Thermometer Readings	45·6	36·1
Mean of all the Highest Readings	62·0	62·4
Mean of all the Lowest Readings	47·7	47·1
Mean Daily Range.....	14·3	15.3
Deduced Monthly Mean (from Mean of Max. and Min.)	54·9	53·6
Mean Temperature from Dry Bulb.....	54·8	54·1
Adopted Mean Temperature	54·9	53·9
Mean Temperature of Evaporation	51·5	51·1
Mean Temperature of Dew Point	48·3	48·3
Mean elastic force of Vapour .... inches	0·337	0·339
Mean weight of Vapour in a cub.ft.of air (grns)	3·9	3·9
Mean additional weight required for saturation,,	1·1	0·8
Mean degree of Humidity (saturation 100) ...	78	81
Mean weight of a cubic foot of air .....grains	536·3	532·4
Fall of rain..... ..... inches	1·505	4·428
Number of days on which Rain fell	8	18·4

No. of days in the month on which the prevailing wind was	N	NE	E	SE	S	SW	W	NW
	5	7	1	1	4	0	10	2
Mean Velocity in miles per hour	4·2	4·2	5·1	5·0	6·8	0	9·1	7·9
Total No. of miles for each Direction	507	841	123	120	648	0	2195	379

The total number of miles registered during the month was 4813.
The max. Velocity of the wind was 30 miles per hour, on the 6th, at 2 a m. Dir. W.

SEPTEMBER, 1906.

Mean amount of Cloud (an overcast sky being indicated by 10·0)			5·2
In the month of September, the highest reading of the Barometer during 59 years, was on the	15th,	in 1851, and was	30·274
The lowest ,,	25th,	1896 ,,	28·314
The highest Temperature	6th,	1868 ,,	85·0
The lowest ,,	25th,	1885, and 30th, 1888	29·8
The highest adopted mean temperature of the month,		1865	59·1
The lowest ,, ,,		1863	50·9
Greatest fall of rain during the month in		1869	9·539in
Least ,, ,,		1894	0·801in
Greatest number of days on which rain fell		1866	30
Least ,, ,,		1851 and 1894	6

TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure	+	0·274 inches
Monthly range	—	0·033 ,,
Mean of highest temperatures	—	0·4 degrees
Mean of lowest ,,	+	0·6 ,,
Mean daily range ,,	—	1·0 ,,
Adopted mean temperature	+	1·0 ,,
Total rainfall ,,	—	2·923 inches

OCTOBER, 1906.

Results of Observations taken during the Month.		Mean for the last 59 years.
Mean Reading of the Barometer.....inches	29·377	29·435
Highest ,, on the 25th ,,	30·008	30·024
Lowest ,, on the 30th ,,	28·857	28·658
Range of Barometer Readings.....	1·151	1·366
Highest Reading of a Max Therm. on the 10th	63·8	64·1
Lowest Reading of a Min. Therm. on the 14th	31·3	29·1
Range of Thermometer Readings	32·5	35·0
Mean of all the Highest Readings	54·6	54·6
Mean of all the Lowest Readings	45·0	41·6
Mean Daily Range	9·6	13·0
Deduced Monthly Mean (from Mean of Max. and Min.)	49·8	47·2
Mean Temperature from Dry Bulb	49·5	47·7
Adopted Mean Temperature	49·7	47·4
Mean Temperature of Evaporation	47·9	45·2
Mean Temperature of Dew Point	46·0	42·8
Mean elastic force of Vapour.....inches	0·311	0·277
Mean weight of Vapour in a cub. ft. of air (grns)	3·6	3·2
Mean additional weight required for saturation,,	0·5	0·6
Mean degree of Humidity (saturation 100) ..	88	84
Mean weight of a cubic foot of air .. grains	533·9	537·6
Fall of Rain ....inches	6·966	5·113
Number of Days on which rain fell	27	21·1

No. of days in the month on which the prevailing wind was	N	NE	E	SE	S	SW	W	NW
	2	5	0	3	8	7	4	2
Mean Velocity in miles per hour	5·8	4·9	0	6·7	11·2	10·5	7·1	9·6
Total No. of miles for each Direction	280	592	0	479	2147	1772	686	463

The total number of miles registered during the month was 6419.
The max. Velocity of the wind was 32 miles per hour, on the 28th at 9 a.m. Dir. S. by W.

OCTOBER, 1906.

Mean amount of Cloud (an overcast sky being indicated by 10·0)			8·5
In the month of October the highest reading of the Barometer during 59 years, was on the	5th,	in 1884, and was ..	30·306
The lowest ,,	19th,	1862 ,, ...	28·139
The highest Temperature	9th,	1869 ,, ...	72·8
The lowest ,,	28th,	1895 ,, ...	17·8
The highest adopted mean temperature of the month,			1861 & '76 51·6
The lowest ,, ,,			1895 .. 42·8
Greatest fall of rain during the month in ..			1870 13·437 in
Least ,, ,, ..			1856 1·328 in
Greatest number of days on which rain fell ..			1873 31
Least ,, ,,			1881-'87-'97-'99 12

TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure	—	0·058	inches
Monthly range ,, ...	—	0·215	,,
Mean of highest temperatures ..		0·0	degrees
Mean of lowest ,, ...	+	3·4	,,
Mean daily range ,, ...	—	3·4	,,
Adopted mean temperature	+	2·3	,,
Total rainfall	+	1·853	inches

Ground Frost on 13th, 14th, 26th and 30th, Hail on 16th, 28th, and 29th. Heavy rain on 1st, 4th, 17th, 20th 27th and 28th. Thunder on 1st, 16th, 28th and 29th. Lightning on 1st, 16th, 28th and 29th,

NOVEMBER, 1906.

Results of Observations taken during the Month.		Mean for the last 59 years
Mean Reading of the Barometer.....inches	29·445	29·473
Highest ,, on the 11th .,	30·115	30·070
Lowest ,, on the 19th ,,	28·658	28·567
Range of Barometer Readings ,,	1·457	1·503
Highest Reading of a Max. Therm. on the 22nd	57·9	55·9
Lowest Reading of a Min. Therm. on the 13th	30·5	25·5
Range of Thermometer Readings	27·4	30·4
Mean of all the Highest Readings	48·5	47·4
Mean of all the Lowest Readings	39·7	36·6
Mean Daily Range	8·8	10·8
Deduced Monthly Mean (from Mean of Max. and Min)	44·1	41·7
Mean Temperature from Dry Bulb.....	43·9	41·9
Adopted Mean Temperature	44·0	41·8
Mean Temperature of Evaporation	42·4	39·7
Mean Temperature of Dew Point	40·5	38·2
Mean elastic force of Vapour ..... inches	0·252	0·232
Mean weight of Vapour in a cub.ft. of air (grns)	2·9	2·7
Mean additional weight required for saturation,,	0·4	0·4
Mean degree of Humidity (saturation 100) ...	87	87
Mean weight of a cubic foot of air .. grains..	541·5	544·7
Fall of Rain..... ..... inches	4·930	4·395
Number of days on which Rain fell	17	19·6

	N	NE	E	SE	S	SW	W	NW
No. of days in the month on which the prevailing wind was	3	6	0	0	2	6	11	2
Mean Velocity in miles per hour	7·8	8·9	0	0	5·2	10·2	14·0	4·9
Total No. of miles for each Direction.	561	1282	0	0	248	1467	3697	236

The total number of miles registered during the month was 7491.
The max. Velocity of the wind was 40 miles per hour on the 29th and 30th. Dir. W.

NOVEMBER, 1906.

Mean amount of Cloud (an overcast sky being indicated by 10·0)			8·2
In the month of November, the highest reading of the Barometer during 59 years was on the	12th,	in 1857, and was	30·350
The lowest ,,	11th,	1891 ,,	27·938
The highest Temperature	1st,	1900 ,,	62·4
The lowest ,,	15th,	1901 ,,	17·5
The highest adopted mean temperature of the month, 1881 and 1899			47·0
The lowest ,, ,,		1851	36·7
Greatest fall of rain during the month in ..		1866	9·026in
Least ,, ,, ..		1855	1·158in
Greatest number of days on which rain fell ..		1872	29
Least ,, ,. ..		1855	8

TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure	—	0·028 inches
Monthly range ,, ...	—	0·046 ,,
Mean of highest temperatures ..	+	1·1 degrees
Mean of lowest ,, ...	+	3·1 ,,
Mean daily range ,, ...	—	2·0 ,,
Adopted mean temperature	+	2·2 ,,
Total rainfall	+	0·535 inches

Ground Frost on 3rd, 4th, 6th, 12th, 13th, 14th, 18th and 19th. Snow on 18th, 19th and 20th. Hail on 15th, 20th and 30th. Heavy rain on 16th and 26th. Gales of wind on 29th and 30th. Fog on 6th and 25th. Lunar Halo on 3rd and 28th.

DECEMBER, 1906.

Results of Observations taken during the Month.		Mean for the last 59 years.
Mean Reading of the Barometer..... . inches	29·518	29·455
Highest ,, on the 21st ,,	30·237	30·081
Lowest ,, on the 26th ,,	28·624	28·562
Range of Barometer Readings ..... ,,	1·613	1·519
Highest Reading of a Max. Therm. on the 5th	51·5	53·1
Lowest Reading of a Min. Therm. on the 26th	21·3	20·5
Range of Thermometer Readings	30·2	32·6
Mean of all the Highest Readings	41·1	43·2
Mean of all the Lowest Readings	32·4	33·1
Mean Daily Range	8·7	10·1
Deduced Monthly Mean (from Mean of Max. and Min)	36·8	38·2
Mean Temperature from Dry Bulb	36·9	38·8
Adopted Mean Temperature	36·9	38·5
Mean Temperature of Evaporation	35·3	36·9
Mean Temperature of Dew Point	33·1	35·0
Mean elastic force of Vapour .....inches	0·189	0·205
Mean weight of Vapour in a cub.ft.of air (grns)	2·2	2·4
Mean additional weight required for saturation,,	0·5	0·4
Mean degree of Humidity (saturation 100) ...	87	87
Mean weight of a cubic foot of air ... grains	553·0	547·9
Fall of Rain ....inches	6·180	4·466
Number of days on which Rain fell	21	20·5

	N	NE	E	SE	S	SW	W	NW
No. of days in the month on which the prevailing wind was	3	3	1	1	2	3	12	6
Mean Velocity in miles per hour	13·0	3·3	6·5	4·5	3·2	3·8	17·2	11·3
Total No. of miles for each Direction	932	236	159	107	155	277	4956	1624

The total No. of miles registered during the month was 8446.
The max. Velocity of the wind was 43 miles per hour, on the 4th at 11 p.m. Dir. W.

DECEMBER, 1906.

Mean amount of Cloud (an overcast sky being indicated by 10·0)			8·3
In the Month of December, the highest reading of the Barometer during 59 years, was on the 22nd, in 1849, and was			30·378
The lowest ,,	8th, 1886	,,	27·350
The highest Temperature	9th, 1876	,,	58·1
The lowest ,,	24th, 1860	,,	6·7
The highest adopted mean temperature of the month		1857	44·6
The lowest ,, ,,	..	1878	30·3
Greatest fall of rain during the month	..	1880	9·211 in
Least ,,	..	1890	0·550 in
Greatest number of days on which rain fell	..	1868	31
Least ,,	..	1890	8

TABLE OF DIFFERENCES.

The signs + and — mean respectively above and below the monthly average.

Mean barometric pressure	+	0·063	inches
Monthly range ,, ...	+	0·094	,,
Mean of highest temperatures ..	—	2·1	degrees
Mean of lowest ,, ...	+	0·7	,,
Mean daily range ,, ...	—	1·4	,,
Adopted mean temperature	—	1·6	,,
Total rainfall	+	1·714	inches

Ground Frost on 1st, 2nd, 6th, 7th, 9th—16th, 19th, 21st, 22nd—30th. Snow on 12th, 13th. 25th, 26th, 27th and 28th. Hail on 5th, 12th, 13th, 24th, 25th and 26th. Heavy rain on 1st, 4th, 7th and 12th. Gales of wind on 3rd and 4th. Fog on 11th, 16th, 19th and 20th.

Summary of Observations, 1906.

Results of Observations taken during the Year.		Mean for the last 59 years.
Mean Reading of the Barometer .....inches	29·537	29·496
Highest ,, on April 8th ,,	30·317	30·290
Lowest ,, on Feb. 10th ,,	28·150	28·251
Range of Barometer Readings..... ,,	2·167	2·039
Highest Reading of a Max.Therm.on Sep 2nd	83·9	81·7
Lowest Reading of a Min. Therm.on Dec. 26th	21·3	15·7
Range of Thermometer Readings	62·6	66·0
Mean of all the Highest Readings.....	53·1	54·8
Mean of all the Lowest Readings	41·8	40·7
Mean Daily Range.....	11·3	14·1
Deduced Yearly Mean (from Mean of Max. and Min.).....	47·4	46·9
Mean Temperature from Dry Bulb	47·3	46·9
Adopted Mean Temperature	47·4	46·9
Mean Temperature of Evaporation	44·8	44·5
Mean Temperature of Dew Point	42·1	42·1
Mean elastic force of Vapour .....inches	0·278	0·273
Mean weight of Vapour in a cub.ft.of air (grns)	3·2	3·3
Mean additional weight required for saturation,,	0·8	0·7
Mean degree of Humidity (saturation 100)...	82	83
Mean weight of a cubic foot of air .....(grns)	539·9	539·2
Total fall of rain in the year..... .....inches	49·667	46·847
Number of Days per month on which rain fell	17·3	18·4

SUMMARY OF WIND.

	N	NE	E	SE	S	SW	W	NW
No of days in the year on which the prevailing wind was	30	44	26	7	35	50	145	28
Mean Velocity in miles per hour	8·7	5·9	7·3	7·2	10·0	10·6	11·2	10·3
Total No. of miles for each Direction	6285	6253	4577	1206	8374	12737	39260	6943

The total No. of miles registered during the year was 85635.
The max. Velocity of the wind was 43 miles per hour, on Feb. 2nd, at Noon, and Dec 4th. at 11 p.m. Dir. W.

Mean amount of Cloud (an overcast sky being indicated by 10·0) 7·5

Table of Differences, 1906.

The signs + and — mean respectively above and below the yearly average.

Mean barometric pressure	+	0·031	inches
Yearly range ,, ...	+	0·128	,,
Mean of highest temperatures	—	1·7	degrees
Mean of lowest ,, ...	+	1·1	,,
Mean daily range	—	2·8	,,
Adopted mean temperature	+	0·5	,,
Total rainfall	+	2·820	inches

Extreme Readings in the Last 59 Years.

The Maximum monthly mean height of the Barometer was in February, 1891, and was ..... inches	29·997
The Minimum ,, ,, in December, 1868, and was	28·984
The Maximum yearly mean height of the Barometer was in 1896, and was.....inches	29·584
The Minimum ,, ,, in 1886, and was.....	29·389
The greatest monthly range of the Barometer was in January, 1884, and was .....inches	2·409
The least ,, ,, in July, 1852, and was ,,	0·505
The highest reading of the Barometer during 59 years was on January 9th, 1896, and was .....inches	30·597
The lowest ,, ,, on December 8th, 1886, and was	27·350
Extreme range .....inches	3·247
The highest temperature was on July 20th, 1901, and was	89·0
The lowest ,, ,, January 15th, 1881.....	4·6
The highest adopted mean temperature of a month, July, 1901, and was	63·2
The lowest ,, ,, ,, February, 1855 ..	28·6
The highest adopted mean temperature of a year, 1868 ..	49·1
The lowest ,, ,, ,, ,, 1879 ..	44·1
The greatest monthly mean weight of vapour in a cubic foot of air ..... grains } July, 1852	5·1
The least ,, ,, February, 1855 and 1895, grains	1·4
The greatest fall of rain in a month was in October, 1870, and was .....inches	13·437
The least ,, ,, ,, May, 1859 ,,	0·249
The greatest number of days on which rain fell in one month, January, 1872, October, 1873, December, 1868	31
The least ,, ,, ,, ,, March, 1852	3
The greatest fall of rain in one year in 1866 ..... inches	62·183
The least ,, ,, ,, 1887 ..... ,,	31·250
The greatest number of days in one year on which rain fell .. 1872	319
The least ,, ,, ,. 1855	148

DATES OF OCCASIONAL PHENOMENA.

1906.	Frost.	Hoar Frost.	Snow.	Hail	Heavy Rain.
January	1, 2, 8, 9, 15, 17—23, 29		16, 17, 18	13, 14, 17	5, 11, 18, 20, 28
February	3—28		3, 9—11, 13, 14, 19, 20, 23, 24, 26	2, 8, 20, 24, 25	9, 10
March	2—5, 8—10, 12—14, 18—30		2, 9, 13, 24, 25, 26, 27	8, 9, 10, 12, 18	7, 10, 14
April	1—11, 14—16, 18—20, 23—30		18, 23, 26, 29	22, 28, 29, 30	27
May	1, 2, 5, 15, 17, 18, 23			16	8, 19, 25, 27
June				1	26
July					15
August					15, 24
September					
October	13, 14, 26, 30			16, 28, 29	1, 4, 17, 20, 27, 28
November	3, 4, 6, 12, 13, 14, 18, 19		18, 19, 20	15, 20, 30	16, 26
December	1, 2, 6, 7, 9—16, 19, 21, 22—31		12, 13, 25, 26, 27, 28	5, 12, 13, 24, 25, 26	1, 4, 7, 12

1906.	Gales of Wind.	Fog.	Thunder	Lightning.	Lunar Halo.	Solar Halo	Aurora Borealis
January	15						
February	2, 8, 28	6, 21	8		4, 5		
March	9, 11, 16, 17				2, 9		
April					3	24, 25	
May			3	3, 13			
June			1, 12, 13, 16, 17, 23	13, 17, 23		27	
July			26, 27				
August			1, 2, 3, 8, 13, 14, 15	2, 7, 8, 14, 15			
September							
October			1, 16, 28, 29	1, 16, 28, 29			
November	29, 30	6, 25			3, 28		
December	3, 4	11, 16, 19, 20					

MONTHLY TABLES FOR EACH HOUR OF RECORDED SUNSHINE

Local apparent time.	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9
January	0	0	0	0	0·5	2·6	3·5	4·7	4·6	3·4	2·8	0·8	0	0	0	0	0
February	0	0	0	0·6	3·4	8·7	11·0	11·5	10·3	10·1	12·8	6·2	0·2	0	0	0	0
March	0	0	1·0	6·2	11·3	14·3	16·0	14·3	16·9	15·8	15·9	14·0	10·6	2·8	0·6	0	0
April	0	0·8	9·3	15·0	17·5	19·3	19·0	19·2	19·5	20·7	18·7	16·4	14·8	9·8	1·8	0	0
May	0	1·7	4·3	4·4	5·3	6·7	6·1	5·7	6·9	6·3	6·4	6·9	7·4	6·8	4·6	0·2	0
June	1·1	7·2	11·4	12·5	12·4	12·5	15·6	16·3	15·8	15·9	16·2	15·9	13·6	16·7	12·5	4·8	0
July	0·2	5·6	9·6	12·5	13·5	14·3	15·5	16·0	15·2	16·4	17·8	17·7	17·5	10·6	9·4	4·5	0
August	0	0·7	6·8	10·7	12·9	16·7	14·2	15·2	16·8	15·5	16·8	16·5	15·6	12·8	6·8	1·2	0
September	0	0	4·5	11·4	16·3	21·1	22·1	21·5	21·4	17·2	14·5	10·4	10·3	4·6	0·3	0	0
October	0	0	0·2	3·4	7·5	7·7	8·0	6·7	10·1	6·1	4·9	4·4	1·1	0	0	0	0
November	0	0	0	0	0·3	2·5	3·2	4·4	4·7	4·1	2·6	2·2	0	0	0	0	0
December	0	0	0	0	1·3	4·4	5·9	7·6	7·6	5·8	4·0	0·7	0·2	0	0	0	0
Total	1·3	16·0	47·1	76·7	102·2	130·8	140·1	143·1	149·8	137·3	133·4	112·1	91·3	64·1	36·0	10·7	0

TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY.

1906.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
January - - -	0	0	0	0·2	0	0	0·1	0	0	0·9	0	0	2·7	0·4	0·4	0·2	1·2
February - - -	0	1·7	6·0	5·7	6·7	0	1·8	1·2	7·5	0	2·0	4·3	0	1·1	3·2	1·3	1·9
March - - -	0	4·0	4·7	5·5	1·1	0	0·8	2·3	3·8	0·3	0	8·0	7·1	8·3	0	0	7·1
April - - -	0	9·7	10·7	9·9	0·4	9·2	9·8	1·1	11·8	10·8	10·5	5·7	6·3	12·5	9·0	6·1	4·2
May - - -	11·2	0·3	2·6	5·0	2·1	0·1	0·8	0	3·7	4·4	0·4	0·8	7·3	3·2	5·8	1·8	1.4
June - - -	4·3	9·5	8·0	9·7	10·2	10·4	3·8	14·7	12·3	4·1	11·1	11·2	0	2·1	7·7	5·0	1·3
July - - -	10·4	0·4	9·3	10·6	7·7	3·7	9·3	11·4	8·8	1·7	10·8	8·7	0	7·3	7·5	0	1·3
August - - -	4·3	1·1	9·7	5·2	8·3	9·3	8·7	1·7	8·2	1·3	3·0	0	5·1	6·9	7·3	3·3	0·8
September - - -	11·8	11·7	2·7	8·8	4·4	7·5	0·3	6·6	9·5	10·4	8·3	0	1·2	5·3	7·3	4·2	5·6
October - - -	0·2	0	5·8	0	0·1	1·0	0	5·2	0	1·4	0·3	1·4	6·2	5·2	0·5	0·4	3·3
November - - -	0	0	1·3	0	1·3	3·9	1·1	0	2·3	1·8	0	1·3	0	0	0·1	0	0·1
December - - -	5·7	0	3·3	1·3	0	0·5	0	0	5·9	4·7	0	0	1·5	1·9	0	0	0

TOTAL AMOUNT OF SUNSHINE RECORDED ON EACH DAY.

(Continued)

1906.	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Monthly Total.	Per centage each month.
January - -	0	5·3	0	0·6	6·2	0	0	0·3	0	0	0	3·0	1·2	0·2	22·9	9·2
February - -	5·4	0	5·2	5·7	1·8	5·7	0	4·8	1·8	0	0	0	0	0	74·8	27·5
March - -	8·8	6·2	3·8	6·8	7·8	8·1	4·4	9·7	5·9	3·5	9·8	9·2	1·1	1·6	139·7	38·2
April - -	12·3	8·2	2·8	0·1	9·2	8·2	5·5	9·0	0·7	4·2	7·2	2·7	4·0	0	201·8	48·2
May - -	6·1	0	1·3	3·3	0·4	0	4·8	2·7	0	0·7	1·3	0·5	2·7	5·0	79·7	16·2
June - - -	7·4	13·8	5·3	0·8	2·7	5·6	4·8	0·3	0·8	9·8	5·4	6·1	12·2	0	200·4	39·4
July - - -	2·8	14·2	11·8	2·8	1·1	0·3	12·2	8·5	12·5	1·5	3·0	3·7	5·8	7·2	196·3	38·6
August - -	1·6	9·0	0	0	10·2	6·8	3·8	8·1	0	10·0	10·6	11·3	11·8	11·8	179·2	39·2
September -	9·4	2·5	2·6	6·9	3·3	1·5	5·6	5·5	3·4	9·0	8·8	7·6	3·9	0	175·6	46·3
October - -	0	1·8	6·2	0·3	0·3	3·8	4·2	8·2	0·2	3·3	0·1	0·7	0	0	60·1	18·4
November -	0	1·2	1·9	0	0·2	2·1	3·8	0·1	0	0·6	0	0·3	0·6	0	24·0	9·4
December - -	0	0	0	0	0	0	0	6·0	2·3	3·4	0	1·0	0	0	37·5	16·2

SUMMARY OF SUNSHINE.

1906.	Number of days on which Sunshine was recorded.	Amount, or Total Number of Hours	Per centage of possible Sunshine.	Mean for the last 26 Years.		
				Days.	Amount. Hours	Per centage of possible Sunshine
January ...	15	22·9	9·2	14·0	34·1	13·7
February ...	20	74·8	27·5	17·5	59·2	21·6
March ...	26	139·7	38·2	24·0	107·2	29·2
April ...	29	201·8	48·2	26·1	151·9	36·4
May ...	27	79·7	16·2	27·5	190·3	38·5
June ...	29	200·4	39·4	27·8	196·2	38·6
July ...	29	196·3	38·6	28·4	180·6	35·5
August ...	27	179·2	39·2	27·5	152·8	33·6
September	29	175·6	46·3	25·7	128·5	34·1
October ...	24	60·1	18·4	22·9	87·1	26·6
November	18	24·0	9·4	16·9	44·3	17·2
December	12	37·5	16·2	12·8	26·0	11·3
Year	285	1392·0	31·2	271·0	1358·2	30·1

SUMMARY OF SUNSHINE

(Continued).

EXTREMES FOR THE LAST 26 YEARS.

Month	Number of Days on which Sunshine was recorded.				Amount, or Total number of Hours.				Percentage of possible Sunshine.			
	GREATEST		LEAST		GREATEST		LEAST		GREATEST		LEAST	
	Days	Year	Days	Year	Hours	Year	Hours	Year	o/o	Year	o/o	Year
Jan.	21	1881	8	1898	64·2	1881	14·9	1885	25·9	1881	6·0	1885
Feb.	24	1895	11	1882	89·3	1887	29·6	1882	32·8	1887	10·9	1882
Mar	28	1894, 1905	17	1904	162·1	1893	67·0	1895	44·2	1893	18·3	1895
Apr.	29	1900	23	1883, 1885, 1888, 1897	223·7	1893	95·7	1889	53·4	1893	22·8	1889
May	30	1881, 1882, 1884, 1888, 1905	22	1886	266·6	1881	79·7	1906	54·1	1881	16·2	1906
June	30	1896, 1904	24	1888, 1897	272·5	1887	115·0	1890	53·6	1887	22·6	1890
July	31	1882	25	1888	247·2	1887	98·0	1888	48·6	1887	19·3	1888
Aug	31	1886, 1893	23	1894	235·2	1899	88·4	1891	51·5	1899	19·3	1891
Sept	29	1895, 1899	21	1897	175·0	1906	62·9	1896	46·3	1906	16·6	1896
Oct.	28	1891	17	1889	134·9	1899	50·0	1889	41·4	1899	15·3	1889
Nov	23	1883	9	1897	65·2	1903	18·5	1891	25·5	1903	7·2	1891
Dec.	18	1886	6	1882	60·1	1886	13·8	1903	26·0	1886	6·0	1903
Year	290	1887	251	1903	1613·7	1887	1132·1	1888	36·1	1887	25·3	1888

OBSERVATIONS OF UPPER CLOUDS (CIRRUS).

Date. 1906.		G. M. T.	Cloud.		Wind.		Direction of Lower Clouds.
			Direction.	V'locity (0—6.)	Direction.	Force (0—12)	
January	11	9 a.m.	W	2	SW	2	SW
,,	13	9 a.m.	W	2	WSW	2	W
,,	14	9 a.m.	SW	2	SW	2	W
February	2	9 a.m.	NW	4	W by N	4	W
,,	7	10 a.m.	NW	2	SW	1	W
,,	16	10 a.m.	W	1	S	1	W
,,	17	10 a.m.	W	1	W	0	W
,,	22	10 a.m.	W	1	N	1	NW
,,	23	10 a.m.	NE	2	NE	2	NE
April	10	9 a.m.	N	1	NE	1	NNE
,,	11	9 a.m.	ENE	1	NNE	1	NE
,,	12	9 a.m.	ENE	1	NE	1	E
,,	13	9 a.m.	ENE	1	SW	1	W
,,	14	9 a.m.	N	1	N	1	N
,,	15	9 a.m.	W	2	WSW	2	W
,,	17	9 a.m.	SW	1	NNW	1	N
May	21	9 a.m.	NE	1	NE	1	NE
,,	22	9 a.m.	E	1	Calm	0	E
,,	31	9 a.m.	W	3	W	4	W
June	2	9 p.m.	W	3	NNW	4	W
,,	3	9 p.m.	SW	2	WSW	2	WSW
,,	7	9 a.m.	W	1	Calm	0	W
,,	9	9 p.m.	N	1	NE	1	N
,,	16	9 p.m.	N	1	N	1	N
,,	17	9 p.m.	N	1	N by E	1	N
,,	18	9 p.m.	SW	1	SW	1	SW
,,	19	9 p.m.	W	1	Calm	0	W
,,	20	10 a.m.	S	1	SW	2	SSW
,,	30	10 p.m.	SW	1	NW	1	W
,,	31	9 p.m.	W	1	W	1	W
July	3	9 p.m.	W	1	Calm	0	W
,,	4	9 p.m.	W	1	Calm	0	W
,,	11	9 a.m.	E	1	WNW	2	NW

OBSERVATIONS OF UPPER CLOUDS (Continued).

Date 1906	G. M. T.	Cloud.		Wind.		Direction of Lower Clouds.
		Direction.	V'locity (0—6).	Direction.	Force (0—12.)	
July 14	9 p.m.	W	2	WSW	2	W
,, 15	9 p.m.	W	1	W	1	W
,, 17	9 p.m.	W by N	1	SW	2	W
,, 19	9 a.m.	NW	3	W by S	4	W
,, 25	9 a.m.	W	1	Calm	0	SW
,, 26	9 a.m.	SE	3	SE by E	4	—
August 4	9 p.m.	SW	2	WSW	2	SW
,, 5	9 p.m.	W	1	Calm	0	W
,, 6	9 p.m.	NW	1	Calm	0	W
,, 7	9 p.m.	W	1	Calm	0	—
,, 18	9 a.m.	W	1	NW	1	SW
,, 19	9 a.m.	W	3	WNW	4	W
,, 27	9 a.m.	S	1	W	1	SW
,, 28	9 a.m.	SE	1	E	1	E
September 5	9 a.m.	NW	2	SW	2	W
,, 6	9 a.m.	NW	2	W	4	W
,, 9	9 a.m.	S	1	WNW	2	SW
,, 10	9 a.m.	NW	1	Calm	0	W
,, 11	9 a.m.	WNW	1	SSE	1	W
,, 18	9 a.m.	N	1	NE	2	NW
October 3	9 a.m.	S	1	S	1	S by W
,, 6	9 a.m.	W	2	W	2	W
,, 8	9 a.m.	W	2	W	4	W
,, 14	9 a.m.	SSW	1	SW	1	W
,, 17	9 a.m.	SW	1	SW	2	SW
,, 20	9 a.m.	SW	1	S	1	W
,, 25	9 a.m.	NE	1	Calm	0	N
,, 29	9 a.m.	SW	1	SW by S	2	W
November 2	9 p.m.	N	3	SW	4	NW
,, 4	9 p.m.	NE	1	Calm	0	NE
,, 5	9 p.m.	NNE	2	NE	2	NE
,, 10	9 p.m.	N	3	NE	4	NE
,, 19	9 p.m.	WNW	2	W	4	W

Observations of Earth-Magnetism, 1906.

Absolute measures of Horizontal Magnetic Force have been made once each month, by the method of Vibration and Deflection.

In these observations the same Magnet has been employed from the beginning of the series in March. 1863. The weight of the Magnet with its stirrup is 825 grains, and its length 3·94 inches nearly. Its moment of inertia, measured by the method of vibrations, with and without a known increase of the moment, is 5·27303 to the English foot—second—grain units, at the temperature 35° Fahr., and its rate of increase is 0·00073 for increase of 10°.

The temperature corrections have been obtained from the formula $q(t°—32°) + q'(t°—32°)^2$ where t° is the observed temperature and 32° Fahr. the adopted standard temperature. The values of the co-efficient q and q' are respectively 0·0001128 and 0·000000436.

The induction co-efficient μ is 0·000244.

The correction for error of graduation of the Deflection bar at 1·0 foot is + 0·00004ft. at 1·3 + 0·000064 ft.

The observed times of vibration are entered in the Table without corrections.

The time of one vibration has been obtained each month from the mean of twelve determinations of the time of 100 vibrations.

The angles of deflection are each the mean of two sets or readings.

In deducing from these observations the ratio and product of the magnetic moment m of the magnet, and the earth's horizontal magnetic intensity X, the induction and temperature corrections have always been applied, and the observed time of vibration has been corrected for the effect of torsion of the suspending thread; but no correction has been required for the rate of the chronometer, or for the arc of vibration, the former having been always under $1·5^s$ and the latter never over 50′.

The average deflection of the magnet caused by a twist of the torsion circle through 90° has been about 8′·0 of arc.

In the calculations of the ratio $\frac{m}{X}$, the third and subsequent terms of the series $1 + \frac{P}{r2} + \frac{Q}{r4}$ + &c., have always been omitted.

The value of the constant P was found to be —0·00411.

The Vertical and Total Forces are deduced from the measures of the Horizontal Force, and the Angle of Inclination or Dip.

All the computations are in English foot—second—grain units; but in the final table the results are given only in C. G. S units.

The Dip, or angle between the direction of total force, and that of its horizontal component, has been measured with Dover's Circle, No. 159, once each month by two needles, always when possible on the days of vibration and deflection observations.

The Declination has been observed at the beginning of each week, usually on Mondays at 4 p.m. and is quoted as the angle between the horizontal direction of force and the Astronomical Meridian, measured from the North Point.

The Differential Instruments, or Photo-Magnetographs, are of the same pattern as those at the Kew Observatory, except that the radial distances between the centres of the magnets and the surfaces of the respective cylinders are shorter, and the clock is not provided with an automatic light-cut-off, for the time scale. The "cut-offs" are made by hand at the hours 0, 2, 20, and 22 of the astronomical day, to furnish two time marks at each end of the day's curves, the changes being made between 10-30 and 11 a.m., civil time.

The scale value of the Bifilar horizontal force torsion balance, has remained very constant at 0·00051 C. G. S. for one centimetre, during the last thirteen years.

The scale value of the Unifilar Declination Magnet is 11'·28 arc per centimetre.

OBSERVATIONS OF DECLINATION AND DIP.

1906	G.M.T. Civil Day	West Declination		Magnetic Dip.		
		Observations.	Monthly Mean.	Needle	Dip.	G.M.T. Civil Day
	D. H. M.	° ′	° ′		° ′	D. H. M.
Jan.	1 0 0	17 48·7	17 48·5	1	68 48	16 16 15
	8 0 0	17 46·0		2	68 48	,, 16 50
	16 0 0	17 50·2				
	22 0 0	17 49·6				
	29 0 0	17 47·8				
Feb.	5 0 0	17 49·7	17 50·6	1	68 53	16 11 45
	12 0 0	17 51·2		2	68 52	,, 12 32
	20 0 0	17 51·2				
	26 0 0	17 50·1				
March	6 0 0	17 53·7	17 57·1	1	68 53	17 12 0
	13 0 0	17 56·9		2	68 41	,, 12 38
	20 0 0	17 64·2				
	27 0 0	17 53·6				
April	3 0 0	17 54·9	17 57·7	1	68 46	18 12 10
	10 0 0	17 62·7		2	68 50	,, 12 45
	18 0 0	17 56·0				
	24 0 0	17 57·3				
May	1 0 0	17 51·5	17 52·2	1	68 46	16 11 20
	8 0 0	17 54·2		2	68 47	,, 11 40
	18 0 0	17 46·4				
	22 0 0	17 56·1				
	29 0 0	17 52·6				
June	5 0 0	17 50·9	17 46·0	1	68 48	16 12 20
	11 0 0	17 51·9		2	68 49	,, 12 55
	18 0 0	17 51·8				
	26 0 0	17 29·2				
July	3 0 0	17 47·7	17 48·9	1	68 51	15 12 5
	11 0 0	17 55·7		2	68 46	,, 12 40
	18 0 0	17 46·1				
	24 0 0	17 45·9				

OBSERVATIONS OF DECLINATION AND DIP.

(Continued.)

1906	G.M.T. Civil Day	West Declination		Magnetic Dip.		
		Observations.	Monthly Mean.	Needle	Dip.	G.M.T. Civil Day
	D. H. M.	° ′	° ′		° ′	D. H. M.
Aug.	2 0 0	17 46·6				
	9 0 0	17 54·6				
	14 0 0	17 50·3	17 49·0	1	68 53	22 11 30
	22 0 0	17 44·6		2	68 49	,, 12 5
Sept.	28 0 0	17 40·7				
	5 0 0	17 40·7	17 42·8	1	.. ..	.. .. ..
	11 0 0	17 48·2		2	.. ..	.. .. ..
	28 0 0	17 41·7				
Oct.	1 0 0	17 38·3				
	8 0 0	17 38·6	17 43·4	1	68 47	23 11 0
	22 0 0	17 48·2		2	68 46	,, 12 30
	29 0 0	17 48·3				
Nov.	5 0 0	17 43·0				
	12 6 0	17 40·6	17 42·3	1	68 47	19 11 0
	19 0 0	17 44·1		2	68 45	,, 12 30
	27 0 0	17 41·5				
Dec.	3 0 0	17 47·5				
	14 0 0	17 37·4	17 41·5	1	68 49	24 11 0
	22 0 0	17 36·9		2	68 45	,, 12 30
	31 0 0	17 44·3				
Yearly Mean			17 48·3		68 48·1	

OBSERVATIONS OF VIBRATIONS AND DEFLECTIONS FOR ABSOLUTE MEASURE OF MAGNETIC FORCE.

1906.	G. M. T. (Civil Day)	Temp.	Time of one vibration	G. M. T.	Temp.	Observed Deflection at 1·0 ft. / at 1·3 ft.	Value of m
	D. H. M.	°	S.	D. H. M.	°	° ′	
Jan.	16 12 11	40·5	6·045	16 15 7 15 30	42·0 43·0	11 26·1 5 14·2	0·3761
Feb.	16 10 12	47·5	6·055	16 10 50 11 15	50·0 49·0	11 28·8 5 15·7	0·3767
Mar.	17 11 23	57·5	5·805	17 10 25 10 48	55·0 56·0	11 26·7 5 11·3	....
Apr.	18 10 38	46·0	6·050	18 11 25 11 55	48·0 49·0	11 30·4 5 11·2	0·3771
May	16 9 25	49·3	6·050	16 9 55 10 45	50·0 51·0	11 24·9 5 11·1	0·3760
June	16 10 31	58·0	6·059	16 11 18 11 38	59·0 61·0	11 26·0 5 8·4	0·3763
July	15 10 38	59·5	6·050	15 11 23 11 55	61·0 61·0	11 26·9 5 10·5	0·3771
Aug.	22 15 21	72·0	6·050	22 16 20 16 30	70·0 70·0	11 22·4 5 11·3	0·3770
Sept.	....	..	....	.....	..	.....	....
Oct.	22 11 11	50·5	6·0616	22 12 20 12 40	59 59	11 25·9 5 11·0	0·3761
Nov.	20 10 6	40·0	6·0455	20 10 20 10 30	42 42	11 29·1 5 10·8	0·3770
Dec.	22 12 15	33·0	6·0525	22 10 40 10 50	33 33	11 27·0 5 14·9	0·3755

ABSOLUTE MEASURES—SUMMARY.

DIRECTION.			FORCE.		
1906	Declination.	Dip.	Horizontal	Vertical	Total
	° ′	° ′			
Jan.	17 48·5	68 48·3	0·17403	0·44880	0·48130
Feb.	50·6	52·5	0·17336	0·44902	0·48155
Mar.	57·1	47·2	....	....	....
April	57·7	47·5	0·17331	0·44675	0·47914
May	52·2	46·5	0·17403	0·44815	0·48075
June	46·0	48·2	0·17380	0·44809	0·48040
July	48·9	49·0	0·17385	0·44845	0·48089
Aug.	49·0	50·8	0·17400	0·44940	0·48187
Sept.	42·8	....	....	....	....
Oct.	43·4	46·2	0·17399	0·44780	0·48038
Nov.	42·3	46·0	0·17357	0·44666	0·47912
Dec.	41·5	47·0	0·17330	0·44638	0·47888
Means	17 48·3	68 48·8	0·17372	0·44795	0·48043

HORIZONTAL MAGNETIC DIRECTION.

Horizontal Magnetic Direction, west of north, (from daily measures of the continuous curves.)

1906	MEAN OF				Differences	Difference of *a* and *b*, or Mean daily range.	Highest reading of the month.	Lowest reading of the month.	Monthly range.
	Highest daily readings *(a)*	Lowest daily readings *(b)*	*a* and *b*. *(c)*	Daily readings at 4a.m. & 4p.m *(d)*	*d*—*c*.				
	17°+						17°+		
	′	′	′	′	′	′	′	′	′
January	53·8	45·2	49·5	49.3	—0·2	8·6	61·0	33·0	28·0
February	56·3	41.1	48·7	50·0	1·3	15.2	70·0	2·0	68·0
March	58·1	43·0	50·6	51·1	0·5	15·0	63·0	30·5	32·5
April	59·7	44·9	52·3	52·7	0·4	18·5	64·0	39·5	24·5
May	58·5	43·3	50·9	51·4	0·5	15·2	62·5	34·0	28·5
June	57·6	43·7	50·7	51·1	0·4	13·8	65·0	39·5	25·5
July	51·9	35·9	43·9	44·5	0·6	16·0	58·2	22·2	36·0
August	51·4	37·5	44·5	43·6	—0·9	13·9	60·2	29·2	31·0
September	51·4	34·3	42·9	43·7	0·8	17·4	58·2	8·2	50·0
October	50·2	37·5	43·9	43·6	—0·3	12·5	54·2	24·7	29·5
November	45·4	34.4	39·9	39·8	—0·1	11·0	51·2	21·2	30·0
December	47·1	34·2	40·7	42·2	1·5	13·4	59·2	—0·8	60·0
Means ..	53·5	39·6	46·5	46·9	0·4	14·2	60·6	23·6	37·0

Mean for the year 17°.46′ ·9

HORIZONTAL MAGNETIC FORCE.

Horizontal Magnetic Force in C. G. S. units (from daily measures of the continuous curves.)

The figures in the columns are entered to the unit 10^{-5} C. G. S.

1906.	MEAN OF				Differences $d-c$	Differences of a and b or Mean daily Range.	Highest reading of the Month.	Lowest reading of the Month.	Monthly Range.
	Highest daily readings. (a)	Lowest daily readings. (b)	a and b. (c)	Daily readings 4a.m. & 4p.m. (d)					
	17000 +				0+		17000+		0+
January - -	386	358	372	374	2	28	448	318	130
February -	386	336	361	365	4	50	408	248	160
March - -	400	346	373	377	4	53	428	313	115
April - -	407	352	380	384	4	52	428	348	80
May - -	448	375	412	419	7	74	497	307	190
June - -	447	366	407	416	9	81	532	347	185
July - -	447	358	403	411	8	90	597	317	280
August - -	426	355	391	395	4	71	507	322	185
September -	417	341	379	386	7	76	477	202	275
October - -	413	362	388	393	5	53	432	330	102
November -	408	370	389	391	2	39	437	300	137
December -	426	377	402	414	12	50	487	227	260
Means - -	418	358	388	394	6	60	473	298	175

Mean Horizontal Force for the year 0·17394 C.G.S. units.

DATES OF MAGNETIC DISTURBANCES, 1906.

The disturbances are divided generally into three classes, *small*, *moderate*, and *greater*; these are indicated by the initial letters of the classes, and the letter c denotes *calm*. Very great disturbances are marked vg. The days are reckoned astronomically from noon to noon

Month.		Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.
Day	1	c	s	s	c	s	g	m	m	m	m	c	s
	2	s	s	c	m	c	g	s	s	m	m	c	s
	3	c	s	m	s	c	m	s	s	g	s	c	s
	4	s	s	m	s	c	m	s	s	g	s	s	c
	5	s	s	s	c	c	s	m	s	s	s	s	s
	6	c	m	m	c	s	s	m	c	s	c	s	s
	7	s	s	m	c	s	m	s	g	s	c	s	m
	8	c	s	s	s	m	m	s	g	c	c	s	g
	9	s	s	m	s	s	s	m	m	c	c	s	m
	10	c	m	s	m	s	s	s	s	c	s	s	s
	11	s	c	s	s	s	m	g	m	s	s	s	c
	12	s	c	m	s	s	m	m	g	s	s	s	s
	13	s	c	m	s	s	m	s	m	s	s	...	c
	14	m	s	m	s	g	s	s	m	...	c	...	s
	15	s	m	c	c	g	m	s	s	s	s	s	s
	16	c	s	s	c	s	m	s	m	s	c	s	g
	17	c	s	s	s	s	s	s	c	...	c	s	s
	18	s	m	s	s	s	s	s	c	...	s	m	c
	19	s	g	s	s	m	c	s	s	...	s	s	s
	20	s	c	c	s	g	c	s	s	...	s	s	s
	21	s	s	c	s	s	c	m	s	s	s	g	g
	22	c	s	c	s	s	c	m	s	g	m	s	vg
	23	c	m	c	m	s	s	m	s	m	s	c	s
	24	c	g	m	m	s	s	m	s	m	c	s	s
	25	c	g	s	s	s	m	s	s	m	c	c	c
	26	s	m	s	c	s	m	m	m	m	s	s	m
	27	s	s	s	c	m	s	m	m	s	m	s	s
	28	c	m	s	m	s	s	m	s	c	s	s	s
	29	c		s	s	s	s	g	s	s	s	s	c
	30	c		s	s	s	s	m	m	m	s	s	s
	31	m		s		s		m	s		s		c
Totals	c	14	4	6	8	4	4	0	3	4	9	5	7
	s	15	14	16	17	21	13	15	16	11	18	21	17
	m	2	7	9	5	3	11	14	9	7	4	1	3
	g	0	3	0	0	3	2	2	3	8	0	1	3
	vg	0	0	0	0	0	0	0	0	0	0	0	1

DATES OF SOLAR DRAWINGS.

The figures express, in decimals of a day, the Greenwich Civil time at which the drawing was made.

1906.	January	February	March	April	May	June	July	August	September	October	November	December
1					·57		·39	·40	·39	·59		·45
2		·47	·58	·43		·45		·53	·39			
3		·42	·47	·64		·40	·45	·40		·37	·39	·49
4	·45	·47	·49	·64	·68	·38	·42	·63	·50		·46	
5		·51			·39	·38	·35	·49	·40		·58	
6				·45		·46	·65	·38	·43	·35	·50	
7	·57			·46		·42	·44	·60				
8		·52	·69			·40	·49	·45	·50	·35	·58	
9	·60	·51	·59	·43	·57	·38	·48	·39	·41		·46	·54
10			·46	·63		·43	·72	·73	·42	·50		·47
11		·61		·62		·48	·44	·67	·42	·41		
12		·50	·43	·48		·38	·65			·41	·59	
13	·57		·38		·39			·64		·36		·53
14			·47	·49	·57	·60	·39	·39	·44	·38		·59
15				·41	·46	·43	·57	·40	·40			
16				·64				·45	·52			
17			·40		·48	·59		·48	·40	·39		
18		·48		·58	·69	·37	·63	·77	·36			
19	·56					·40	·46	·52	·43	·60	·49	
20		·49	·64		·64	·45	·44		·43	·37	·43	
21		·44	·42				·43		·39			
22		·41	·42	·48		·69		·46	·39			
23		·44	·48	·66				·47	·63	·41	·51	
24	·47		·40	·62	·40	·36	·43	·50	·40	·50	·49	
25		·42	·48				·38	·39	·38	·43	·54	·50
26		·65	·40				·38		·37			
27				·58	·60	·44		·42	·38	·54		·48
28			·44		·75	·73		·38	·38			
29	·49		·49			·63	·45	·35	·41		·53	·47
30	·48				·61	·39	·38	·40	·39		·50	
31					·58		·46	·36				

PRESENTATIONS TO THE LIBRARY, 1906.

An Asterisk (*) indicates that the work is an excerpt.

Adelaide Observatory, South Australia:
Meteorological Observations.....1902, 1903, and 1904.
(Observatory).
Athens, Observatoire National d' Athènes:
Annales, Tome IV.
(Observatory).
Batavia, Institut Botanique de L'état de Buitenzorg, Jave:
Observations Météorologiques, 1903-1904.
(Institute).
Batavia, Royal Magnetical and Meteorological Observatory:
—: Observations, Vol. 27, 1904.
—: *"On Magnetic Disturbances as recorded at Batavia," by Dr. W. Van Bemmelen.
(Observatory).
Berlin, Königl. Preuss. Meteorol. Inst.:
—: Die Niederschläge in den Nordeutschen Stromgebieten.....
In drei Banden, 1, 2, 3.
—: Bericht über die Fàtigkeit im Jahre 1905.
—: Deutsches Meteorologisches Jahrbuch für 1902, Elsaas-Lothringen.
—: Deutsches Meteorologisches Jahrbuch für 1905, Preussen und benachbarte Staaten.
(Institute).
Biggs (J. H. W.):
Chart of Average Weather, and Chart of Average Monthly Rainfall; Bowness Windermere.....based on Astronomical and Meteorological Data.
(Author.)
Bolton, Corporation Meteorological Observatory:
Monthly Summaries, 1906.
(Corporation).
Bolton (S.):
Fluctuations in the Velocity of Jupiter's great S. Tropical Marking, 1901 to 1905.
(Author.)
Bucuresci, Institutul Meteorologie:
Buletinul lunar al Observatiunilor Meteorologice din România .....Anul 14, 1905.
(Institute).

Budapest: M. Kir. orsz. meteorológiai és földmágnességi intézet:
—: Bulletin Hebdomadaire des Observatoires Sismigues de la Hongrie et de la Croatie, 1906.
—: VI. Bericht über die Tätigkeit der Klg. ung. Reichsanstalt für Meteorologie u Erdmagnetismus und des Observatoriums in O—Gyalla im Jahre 1905
(Institute).
Budapest, Institut Meteor. et Magnet. du Royaume de Hongrie:
Avis macrosismique de Hongrie, 1906.
(Institute).
Budapest, Königl. Ung. Reichsanstalt für Meteorol. und Erdmagnet.:
—: Jahrbücher. Band 33, Theil 4; Band 34, Theil 1—3.
—: Die Erdbeben in Ungarn im Jahre 1903, 1904, 1905.
von Anton Réthly.
—: Namen—und Sachregister der Bibliothek.
(Institute).
Buitenzorg, Institut Botanique de L'Etat:
Observations Météorologiques, 1903—1904.
(Institute).
Cambridge Observatory:
Annual Report of the Observatory Syndicate, 1905 May—1906 May.
(Observatory).
Canada, Department of Marine [etc.]:
—: Report of the Meteorological Service of Canada, by R. F. Stupart, Director, 1904.
—: Monthly Weather Review, 1906.
(Department.)
Cape of Good Hope, Royal Observatory:
—: Report of His Majesty's Astronomer for the year 1905.
—: Catalogue of Stars for the Equinox 1900. 0
—: Catalogue of 8560 Astrographic Stars.....1900.
—: Meridian Observations, 1900 to 1904.
—: Annals:—
Vol. 10, pt. 2, Spectra of Silicon, Fluorine, and Oxygen.
Vol. 12, pt. 2, Determination of the Mass of Jupiter, and Orbits of the Satellites.
Vol. 12, pt. 3, Determination of the Inclinations and Nodes of the Orbits of Jupiter's Satellites.
—: Independent Day-numbers for the years 1908 and 1909.
(Observatory).
China, Observatoire Magnét. et Meteorol. de Zi-Ka-Wei:
—: Bulletin des Observations, Tome 29, 1903.
—: Annales de l'Observatoire Astronomique de Zô-Sé, 1905:
Observations Solaires, par R. P. S. Chevalier [in two Vols. with plates].
(Observatory).
Cleveland, Meteorological Observatory:
Eleventh Annual Report, 1905-6.
(Observatory).

Colorado College Observatory:
Annual Meteorological Summary for 1905.
(Observatory).
Colne, Corporation:
Rain Records, 1901—1906.
(Corporation).
Deslandres, (M. H.):
—: Sur le Sens Précis de Mots Anciens et sur le Choix de mots Nouveaux.
—: *Etude de l'Atmosphère Solaire Autour des Taches.
—: *Remarques sur l'Etat Actuel des Recherches Solaires et sur les Moyens de les Améliorer.
(Author.)
De Vregille, (Pierre, S.J.):
—: *Les Observatoires de la Compagnie de Jésus au début du XXe Siècle.
—: *l'Observatoire de Sainte-Croix a Marseille (1702-1763).
—: *La Météorologie d'Alexandrie et de Beyrouth.
—: l'Obersvatoire du Collège de la Trinité a Lyon (1565—1794).
(Author.)
Dresden, Königl. Sächsischen meteorologischen Inst.:
—: Monatsberichte, 1905.
—: Deutsches Meteorologisches Jahrbuch für 1902, Königreich Sachsen.
(Institute).
Edinburgh, Royal Observatory:
Annals, Vol. 2.—New Reduction of Henderson's Catalogue for the Epoch 1840.0.
(Observatory).
Egypt, Survey Department:
The Rains of the Nile Basin in 1905.
(Department).
Eiffel, (G):
*Les Observations Météorologiques du Weather Bureau de Washington.
(Author).
Ellis, (William):
*Sun-spots and Magnetism—A Retrospect.
(Author).
Evershed, (J.):
*Total Solar Eclipse of 1905, August 30.—Report of the Eclipse Expedition to Pineda de la Sierra, Spain.
(Author.)
Falmouth Observatory:
Meteorological and Magnetical Tables and Reports for 1905.
(Observatory).
France. Observatoire de Chevreuse (seine-et-oise):
Météorologie, 1903—4—5.
(Observatory).
Geneva, Observatoire:
*Quelques Notes sur la photographie de Soleil, par Emile Schœr.
(Author.)

Granada, Observatorio Astronómico Geodinámico y Meteorológico :
—: Boletin Mensual, 1906.
—: " Eclipse de 1905 " (Fasiculo 4, 5).
—: *L'Eclipse totale de Lune du 9 Fevrier 1906.
(Observatory).
Greenwich, Royal Observatory :
—: Astronomical, Magnetical, and Meteorological Observations, 1904.....under the direction of Sir W. H. M. Christie.
—: Appendices :
Photo-Heliographic Results, 1904.
Meteorological Reductions—IV. Temperature 1891—1905.
—: Clock Star List, 1907.
—: *Mean Areas and Heliographic Latitudes of Sun-Spots in the year 1904, deduced from photographs taken at the Royal Observatory, Greenwich; at Dehra Dún; at Kodhaikánal Observatory, India; and in Mauritius.
(Observatory).
Groningen, Astronomical Laboratory :
Plan of Selected Areas, by J. C. Kapteyn.
(Author.)
Habana, Observatorio del Colegio de Belen :
Observaciones Meteorologicas y Magneticas, 1905.
(Observatory).
Hamburg, Sternwarte :
Beiträge Zur Meereskunde. Zur Kenntnis der Wirbelstürme (Mit Tabellen und Tafelen). von A. Schück.
(Author.)
Harvard College Astronomical Observatory :
—: Annals :—
Vol. 39, Part 2, Peruvian Meteorology, 1892—1895.
Vol. 56, No. 2, Stars having Spectra of class B.
Vol. 58, Parts 1 and 2, Observations and Investigations made at the Blue Hill Met. Observatory 1903—4.
Vol. 60, No. 1, Geometrical Methods in the Theory of Combining Observations, by A. Searle; No. 2, Early Observations of the Sixth Satellite of Jupiter.
—: Circular, No. 113—118.
(Observatory).
Hinks, (Arthur R.) :
*Suggestions for a Theory of the Milky Way and the Clouds of Magellan.
(Author).
Hong Kong Observatory :
Meteorological Obesrvations, 1905.
(Observatory).
India, Meteorological Department, Simla and Alipore :
Memoirs, Vol. 20, part 1.
(Department).
International Commission :
Observations, 1904, Heft 1—12; 1905, 1—3 and 5—7.
(Commission).

Ireland, Clongowes-Wood College Observatory, Kildare:
Meteorological Report for 1906.
(Observatory).
Jersey, Observatoire St. Louis:
—: Bulletin des Observations Magnétiques et Météorologiques.
—: L'Inclinaison du Vent sur L'Horizon, par P. Marc Dechevrens, S.J., Director.
(Observatory).
Kodaikánal Observatory:
—: Bulletin No. 6. Widened Lines in Sun-Spot Spectra.
—: ,, ,, 7. List of Prominences observed 1905, July 1—1905, December 31; with an Abstract for the year 1905.
(Observatory).
Kalocsa, Haynald-Observatorium:
—: *Uber Winddrehungen in Kalocsa, Von J. Fényi, S.J.
—: *Uber den grossen Sonnenfleck vom Februar 1905, Von J. Fényi, S.J.
(Author.)
Lancaster, County Palatine of:
Report of the Medical Officer of Health for 1905.
(Medical Officer).
Lick Observatory, University of California:
Bulletin, No. 90—108.
(Observatory).
Liverpool Astronomical Society:
—: Annual Report, 1905—1906.
—: Transactions (new series) Vol. 1. Solar Eclipse, 1905, August 30.
(Society).
Liverpool Observatory, Bidston:
Report of the Director.
(Observatory).
Lockyer (Sir J. Norman):
*Some Stars with Peculiar Spectra.
(Author.)
Lockyer (Dr. W. J. S.):
—: *Barometric Variations of Long Duration over Large Areas.
—: *Some World's Weather Problems.
(Author.)
London, Meteorological Committee:
First Report of, for the year ending 31st March, 1906.
(The Committee).
London, Meteorological Office:
—: Hourly readings obtained from the self-recording instruments at the four Observatories in connection with the Meteorological Office, 1904 (New Series, Vol. 5.)
—: Report of the director upon an Inquiry into the relation between the estimates of Wind-Force according to Admiral Beaufort's scale and the Velocities recorded by Anemometers belonging to the Office.....

—: The Life History of Surface Air Currents: A Study of the Surface Trajectories of moving air, by W. N. Shaw; and R. G. K. Lempfert.
(The Office).
London, Royal Astronomical Society:
—: Memoirs, Vol. 56.
—: Monthly Notices, 1906.
(Society).
London, Royal Botanic Society:
Quarterly Record.....April—June 1906.
(Society).
London, Royal Institution:
Proceedings of, No. 99, 1905.
(Institution).
London, Royal Meteorological Society:
The Meteorological Record: Monthly Results of Observations made at Stations of the Society, with remarks on the Weather .....by W. Marriott. Vol. 24 (No. 95, 96; Vol. 25, No. 99, 100).
(Society).
London, Royal Society:
—: Proceedings of, 1906.
—: Year Book of, 1906.
(Society).
London, Solar Physics Observatory:
—: Report of Work done in the year 1905.
—: Tables of Wave-lengths of Enhanced Lines.
—: *Report of the Expedition to Castellón de la Palma, Spain, by H. C. Callendar and A. Fowler.
(Observatory and Authors).
Madrid, Observatorio del Colegio de N. S. del Recuerdo:
Boletín Meteorológico, 1906.
(Observatory).
Manila, Philippine Weather Bureau:
—: Annual Report of the Director, for 1903 part 1—3.
—: do. do. do. do. ,, 1904 ,, 1, 2.
—: Monthly Bulletins. 1904, November; 1905, May; Sept.—Dec.; 1906, Jan.—April.
—: The Hong Kong Typhoon, 1906, September 18, by José Algué S.J., Director.
(Bureau).
Manchester Astronomical Society, Godlee Observatory:
—: First Annual Report, 1905.
—: *Address by the President, E. T. Whitelow, Nov. 1906. "Recent Conclusions regarding the Form and Dimensions of our Stellar System."
(Society).
Mauritius, Royal Alfred Observatory:
—: Magnetical and Meteorological Observations, 1904.
—: Annual Report of the Director for the year 1905.
(Observatory).

Messina, Osservatorio di Messina :
Annuario dell' Anno 1905.
(Observatory).
Mexico, Observatorio Meteorologico de Leon :
Boletin Mensual, 1906, Abriel—Sept.
(Observatory).
Mexico, Observatorio Meteorol. Magnét. Central :
—: Boletín Mensual, Mes de Noviembre, 1902.
—: do. do. do. ,, Junio, 1904.
—: Tiempo probable durante el mes de Marzo, Abril, Mayo, 1906.
(Observatory).
Mexico, Observatorio Meteorologico, Merida.
—: Boletin Mensual, 1905, Mes de Diciembre.
—: do. do. 1906, do. Enero, Febrero.
(Observatory).
Mexico, Observatorio del Seminario de Guadalajara :
Boletin Mensual, 1905, Aug. and Dec.
(Observatory).
Mexico, Sociedad Astronomica :
—: Boletin de la Soc. Astr. de Mexico, 1906.
—: Velada en Conmemoracion del Cuarto Centenario de la Muerte de Cristóbal Colón.
(Society).
Mexico, Sociedad Scientifica "Antonio Alzate" :
Memoirs y Revista. Tomo 22. No. 7, 8.
(Society).
Mexico, Saltillo :
Observatorio Meteorológico del Colegio de San Juan Nepomuceno.....1905.
(Observatory).
Missouri, Laws Observatory :
Bulletin, No. 8, 9.
(Observatory).
Mont Blanc Observatoire Meteorologique :
Annales. Tome VI. Physique et Glaciaire du Mont Blanc.
(Observatory).
Montevideo, Observatorio Meteorológico del Colegio pro de Villa Colón :
Boletin Mensual. No. 1—9; 1904 Dec.—1905 Aug.
(Observatory).
Mount Wilson, California, Solar Observatory :
—: *Contributions .....No. 1—4; 8—12.
—: *Report of the Director, George E. Hale.
(Carnegie Institution).
Moye (M) :
Essai sur les Destinées des Mondes.
(Author.)
Natal Observatory :
Report of the Government Astronomer for the year 1905.
(Observatory).

National Physical Laboratory:
Report of the Observatory Department for 1905.
(Kew Observatory).

Newall (H. F.):
Total Solar Eclipse of 1905, August 30.—
*Preliminary Report of the Observations made at Guelma, Algeria.
(Author).

New York Meteorological Observatory:
Hourly Readings from the Draper Self-recording Instruments, 1906.
(Observatory).

New York, Columbia University Observatory:
Contributions.—No. 1 and 2, The Rutherfurd Photographic Measures by John Krom Rees; No. 24, Rutherfurd Photographs of the Stellar Clusters h and x Persei, by Anne Sewell Young.
(Authors).

Odessa, Observatoire Météorol. et Magnét. de l'Université impériale:
—: Annales, 1904, 1905.
—: Revue Météorologique. Travaux du réseau météorologique du Sud-Ouest de la Russie, 1904-5 par A. Klossovsky.
—: Revue Météorologique. Travaux du réseau météorologique du Sud-Oust de la Russie...1886—1895 par A. Klossovsky.
—: Etude Climatérique de la Russie et problèmes de la météorologie agricole, par A. Klossovsky.
—: Vie Physique de Notre Planète, par A Klossovsky.
(Observatory).

Optical Convention:
Catalogue of Optical and general Scientific Instruments, 1905.
(Secretary).

Oxford University Observatory:
—: Thirty-first Annual Report of the Savilian Professor of Astronomy . . . . for 1905-6.
—: Oxford Astrographic Catalogue. Vol. 1, Zone + 31°.
—: *Miscellaneous Papers. No. 117-121.
(Observatory).

Paris, Bureau Central Météorologique de France:
Bulletin Mensuel, 1906.
(Bureau).

Paris, Observatoire:
*Sur le Spectre des Etoiles Nouvelles: par M. H. E. Lau.
(Author).

Paris, Société Meteorologique de France:
Revue Mensuelle, 1906.
(Society).

Perpignan, Observatoire Météor. et Magnét:
Observations Meteorologiques.....1904.
(Observatory).

Perth Observatory, Western Australia:
Meteorological Observations.....1904.
(Observatory).
Pickering, (E. C.):
—: *An International Southern Telescope.
—: *Oration on the Aims of an Astronomer.
(Author).
Pola, Hydrographisches Amt der K. und K. Kriegs-Marine:
—: Veröffentlichungen, No. 21.
—: Ergebnisse der Meteorologischen Beobachtungen.....1901—1905.
(Hydrographic Office).
Pola, Sebenico und Teodo:
Meteorologische Termin-Beobachtungen. Feb.—Nov. 1905.
(Hydrographic Office).
Potsdam, Astrophysikalisches Observatorium:
—: Publikationen, Nr. 47—51; 53.
—: *Report of the Astrophysical Observatory of Potsdam, by . C. Vogel.
(Observatory).
—: *On "Newcombe-Engelmanns Populäre Astronomie," third edition, by N. C. Dunér.
(Author).
Puebla, Observatorio Astronomico del Colegio Catolico:
Perturbaciones Seismicas Registradas en Puebla. 1877—1906, by Gustavo Heredia, S.J., Director.
(Observatory).
Rajna (Prof. Michele):
Sulle Condizioni dell'Osservatorio della R. Università di Bologna.
(Author).
Rambaut (Arthur A.):
—: *A New Instrument for Measuring Stellar Photographs.
—: *The Green Flash on the Horizon.
(Author).
Registrar-General:
Quarterly Returns of Marriages, Births and Deaths.....No. 231.
(Registrar General).
Rhodesia, Bulawayo Observatory:
Meteorological Observations, 1897—1904.
(Observatory).
Rigge (W. F., S.J.):
*Polar Triangles.
*Some Problems on the Orthographic Projection of the Sphere.
(Author).
San Fernando, Instituto y Observatorio de Marina:
—: Almanaque Náutico para el año 1908.
—: Observaciones Meteorológicas Magnéticas y Séismicas año 1905.
(Observatory).
Schindler (Robert):
The Mechanics of the Moon.
(Author).

Scottish Meteorological Society:
Journal, for the year 1905.
(Society).
See (T.J.J.):
*Researches on the rigidity of the heavenly bodies.
(Author).
Snellen (Maurits):
*Einige Neuerungen an erdmagnetischen Messapparaten.
(Author).
Southport, Fernley Meteorological Observatory:
Report for the year 1905.
(Observatory).
Stockholm, Commission Royale pour la mesure d'un Arc de Méridien au Spitzberg:
Missions scientifiques pour la mesure d'un Arc de Méridien au Spitzberg Vol. 1, 2 parts; Vol. 2, 10 parts.
(The Commission).
Stockholm, Kongliga Svenska Vetenskaps Akademie:
—: Arkiv för matematik, astronomi och fysik, Band 2, Häfte 3, 4; Band 3, Häfte 1.
—: Observations Météorologiques Suédoises.....1905.
(Academy).
St. Petersburg, Observatoire Physique Central Nicholas:
Annales, 1903. Partie 1; Partie 2, fascic. 1 and 2.
(Observatory).
Smirnow (D.):
*Magnetische Messungen in Siberien.
(Author).
Strassburg, Kaiserliche Erdbebenstation für Erdbebenforschungen:
—: Wöchentlicher Bericht der Kaiserl. Hauptstation. für Erdbebenforschungen bei Strassburg, 1906.
—: Monatsberichte der Kaiserl. Hauptstation für Erdbebenforschungen. No. 31—49.
(Institute).
Strassburg, Meteorologischer Landesdienst für Elsass Lothringen:
Deutsches Meteorologisches Jahrbuch für 1902. Elsass Lothringen.
(Observatory).
Tacubaya, Observatorio Astronómico Nacional:
Anuario.....para el año de 1907. F. Valle. Año 26.
(Observatory).
Tagerholm (Erik):
—: *Talcott-Observations made at Upsala during the Summer of 1905.
—: *Photographical Measurement of the principal Stars in the Cluster of Coma Berenices, and determination of their Proper Motions.
(Author).

Tokyo, Observatoire Astronomique :
—: Annales, Tome 3, Fasc. 3, 4.
(Observatory).
—: On the Harmonic Analysis of Sun-spot Numbers, by S. Hirayama.
(Author).
Tortosa, Observatorio de l'Ebro :
—: Observationes magnétiques à l'occasion de l'éclipse de Soleil du 30 août 1905.
—: Mémoires de l'Observatoire de l'Ebre :—No. 1, Notice sur l'Observatoire et sur Quelques Observations de l'Eclipse du 30 Août 1905, par le P. R. Cirera S.J., Director.
—: Noticia del Observatorio y de Algunas Observaciones del Eclipse de 30 de Agosto de 1905, por el P. R. Cirera S.J.
—: *La Section Magnétique de l'Observatoire de l'Ebre, par le R. P. Etienne Merveille S.J.
(Observatory).
—: *Observations made at Tortosa with selenium cells during the Total Solar Eclipse, 1905, Aug. 30, by T. Wulf and J. D. Lucas.
(Authors).
—: *Observations of the Total Solar Eclipse, 1905 Aug. 30, at Tortosa, by Dr. J. Stein, S.J.
(Author).
Turin, Reale Accademia della Scienze :
—: *Sulla Velocità di Propagazione delle onde Sismiche nel Terremoto della Calabria del giorno 8 Settem. 1905.
—: *Sopra il Calcolo della Profondità degli Impocentri nei movimenti sismici.
—: *Sopra le Perturbazioni Magnetiche dovute al Terremoto della Calabria dell' 8 Settem. 1905.
(Author, G. B. Rizzo).
Turin, Societa Meteorol. Italiana Comitato Direttivo :
—: Bollettino Mensuale.....Serie 2, Vol. 24, No. 1—6.
—: Bollettino Bimensuale.....Serie 3, Vol. 25, No. 5—10.
(Society).
Toulouse, Observatoire :
Catalogue Photographique du Ciel, Tome 7, Observations D'Eros.
(Observatory).
Transvaal, Meteorological Department :
Annual Reports for the year ended 30th June, 1905.
(Department).
Uccle, Observatoire Royal :
Observations Solaires effectuées a Uccle en 1905.
(Mgr. Spée).
Upsala, Observatoire Meterol. de l'Université d'Upsal :
Bulletin Mensuel. Vol. 37. Année 1905.
(Observatory).

Vienna, K. K. Zentral-Anstalt für Meteorol. und Geodynamik:
Jahrbücher.....1904. (Two parts).
(Observatory).
Wales, Astronomical Society:
The Cambrian Natural Observer, 1905.
(Society).
Washington, United States Department of Agriculture:
—: Annual Summary, 1905.
—: Monthly Weather Review, 1906, Jan.—Sep.
—: *Studies on the Diurnal Periods in the lower Strata of our Atmosphere, by F. H. Bigelow.
(Department).
Washington, United States Naval Observatory:
—: Synopsis of Report of the Superintendent for the Fiscal year ending, 1906, June 30.
—: Publications, series 2, Vol. 4, parts 1—4:—
(1) Sun, Moon, Planets, and Miscellaneous Stars, 1900—03.
(2) ,, ,, ,, Comets 1866—91.
(3 Standard and Zodiacal Stars 1901—02.
(4) Total Solar Eclipses of 1900 and 1901, etc.
—: Monthly Pilot Charts of the North Atlantic Ocean, 1905, Jan.—Dec.
(Observatory).
Yale University Observatory:
Transactions of, Vol. II., part 1,—Parallax Investigations on 163 stars, mainly of large Proper Motion. By Elkin, Smith, and Chase.
(Observatory).
Zürich, Observatoire fédéral:
Astronomische Mitteilungen gegründet von Dr. Rudolf Wolf.
(Observatory).