**Astronomy Section of Gresham's School Natural History Society**

Extracted by Bill Barton, FRAS, September 2017, from the Annual Reports of the Society (British Library holding R.Ac 3028a) 1921 to 1932.

1921, p 8-9.

**Astronomical Section**

*Chairman:* Mr. J. C. Miller

*Secretary:* J. P. M. Prentice

This report covers the period from October, 1920, to July, 1921.

Extensive repairs to the equatorial head have been made by W. R. Harper, which ought to make it easier to handle.

In observation, the Section has progressed enormously, the chief lines of work being meteor and solar observation. In addition, the Solar Eclipse of April 8th was observed, and also Comet Reid 1921a.

During the period covered by this report over 1,600 meteors were recorded in watches, totalling about 250 hours, a considerable improvement on last year's beginning of 393 meteors in 78 hours. The results have been communicated to the British Astronomical Association, and are published in its monthly Journal. The aim of our meteor observing has been the determination of the radiant points of meteoric showers, chiefly from an extensive number of paths, but a few doubly-observed meteors have also been recorded.

The following observers have contributed to meteor work:- M. T. Brockman, R. A. Crowther, W. R. Harper, J. P. M. Prentice. Of the great showers, the following were observed:-

|  |  |  |  |
| --- | --- | --- | --- |
| Orionids: | Oct. 17th to 23rd | 36 meteors, some fireballs. | P. |
| Leonids: | Nov. 15th. | 5 meteors, all faint | P. |
| Geminids: | Dec. 8th to 9th. | several | C. |
| Quadrantids: | Jan. 2nd. | >40 a few fireballs | P. |

The radiants determined from several paths are over 60, as against 15 last year. Of the minor showers, the best were 78° +40°, 55° +23°, 83° +21° in October, and 194° +31°, and 218° +31° at the end of March. A feeble shower from a southern radiant near Lambda Librae active from April 1st to 12th from 233° -22°.

Four meteor paths were mapped at Holt and at another station, the most interesting being

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Date, Time. | Mag. | Observers | H1  miles. | H2 | Vel.  m.p.s. | Radiant |
| Nov. 13, 8 46 | > ♀ | A.G.C.  W.R.H. | 68 | 28 | 28 | 44° +5° |
| Mar. 2, 10 0 | 2x ♀ | W.F.D.  J.P.M.P. | 77 | 34 | 20 | 176° +24° |
| Apr. 10, 8 10 | 4 | J.P.M.P.  & others | 54 | 54 | 11 | 64° -10° |

This last moved over 190 miles, having the abnormal duration of 17 secs. approx.

SOLAR OBSERVATIONS.- A splendid consistent series of observations has been carried on by M. T. Brockman during the Summer, using a 3-inch equatorial refractor with projection camera. Among the small spots of the declining sunspot activity he was rewarded by observing the great group of May, 1921, of which he made many drawings.

SOLAR ECLIPSE. April 8th, 1921. Observations were made by Crowther, Harper, Meiklejohn, Prentice. They consisted of

1. Photography C.- H.
2. Drawings P.
3. Temperature observations M.- P.
4. Timing of Contacts P.
5. Search for stars M.

The temperature during eclipse fell from 66° to 41½° (Sun). Venus was seen during eclipse for 23mins. (P.), M records Venus, Mars, Vega, Altair ?

REID'S COMET.- The comet was observed on 14 nights between April 11th and May 9th by J.P.M.P using 3-inch long-focus and 2-inch short-focus refractors, also wide-angle field glasses. The observations consist of:-

1. Notes and drawings of structural details.
2. Estimations of brightness and angular diameter.
3. Rough position among the stars.

The results were communicated to the B.A.A., and published in the Journal for June, 1921.

1922, p 4.

**HOLLAND-MARTIN PRIZES**

The Natural History prizes given by Mr. R. Holland-Martin were awarded for 1921 as follows:-

1. W. R. Harper- "Astronomical Observations."

& p10-12.

**Astronomical Section**

*Chairman:* Mr. J. C. Miller

*Secretary:* R. A. Crowther

A fair amount of meteor work has been done throughout the year. Although through the summer little was done owing to the light evenings, good work is now being done, as can be seen from the table:-

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| MONTH | W.R.H. | J.M.C.M | R.A.C. | R.M.E. | B.C-Y. | Total |
| Up to and including June | 6 | 9 | 13 | - | - | 28 |
| July | - | 2 | 2 | - | - | 4 |
| August | - | - | 10 | - | - | 10 |
| Sept | 3 | - | 5 | - | - | 8 |
| October | - | 10 | 20 | 7 | 4 | 41 |
|  | 9 | 21 | 50 | 7 | 4 | 91 |
| W.R.H.- Harper J.M.C.M.- Meiklejohn  R.A.C.- Crowther. R.M.E.- Evans  B.C-Y.- B. Cooke-Yarborough | | | | | | |

This shows that 91 meteors have been recorded in about 12½ hours watching. It is interesting to note that out of that number 41 have been recorded in the last month and 36 of these are pure white colour.

On the 14th October at 7h. 17m. G.M.T. a very curious meteor was seen by B. Cooke-Yarborough and R. A. Crowther. It started its course at 295° +53° and at 275° +32.5° an explosion occurred with the result that a meteor was shot out to 264° +28.5° with a path of 10.5° and the original meteor continued its course to 265° +24° with a total path of 33°. The magnitude of both meteors was the same, 1.5, and their colour was also the same. This seems to show that it was the same meteor and not another crossing its path.

On Oct. 16th 1921, a partial eclipse of the moon was observed by members of the section, and drawings were made from 12h. 23m. G.M.T. to 13h. 3m. A thin mist spread over the moon, which made it more difficult to see.

On November 25th, a very fine sunspot was observed; it could be seen with the naked eye from 20h. 10m. to 20h. 25m. G.M.T. through the morning mist. Drawings were made from 23h. 45m. to 1h. 5m. which showed the spot to have a large number of smaller ones surrounding it. The spot was very long and irregular; by 2h. 5m. G.M.T. on Nov. 26th it had practically disappeared, and on Nov. 27th nothing was to be seen of it.

Observations on variable stars have been made by J. S. Murray, but they are not sufficiently consecutive to be of much real value. The work has chiefly been in the direction of perfecting the method of observation. The variables under observation are both long period- R. Leonis and T. Cephei. The latter is circumpolar and can be observed well in winter, but is too close to the horizon in summer. R. Leonis rises too late at night, and this year the maximum was in September, when the star was behind the Sun; efforts are therefore being concentrated on T. Cephei.

A further difficulty was experienced when it was necessary to use averted instead of direct vision:- *i.e.* when the stars were at a minimum. For averted vision makes these variables, which are both red M stars, appear duller in comparison with white stars than when direct vision is used.

Thirty-two observations were made on T. Cephei between Oct. 5th, 1921 and Oct. 13th, 1922, while twenty observations on R. Leonis in 1921 determined one maximum, (calculated by Cunchy's method), of 5.8 on Nov. 28th, 1921.

1923, p 5-7.

**Astronomical Section**

*Chairman:* Mr. A. B. Douglas

*Secretary:* R. A. Crowther

During the early part of the year the Section was unfortunate in having numerous cloudy evenings, or else too bright a moon for meteor observation. On a few evenings in February and March extensive lunar work was done, chiefly by J. M. C. Meiklejohn, R. M. Evans and R. A. Crowther, with the result that several drawings were made, including Gassendi, Tycho, Ptolemy and Plato and the Valley of the Alps. From these two models have been made - one J. M. C. Meiklejohn and R. M. Evans of Gassendi, and the other of the region of Ptolemy, by R. A. Crowther.

R. M. Evans has also made a few observations of the sun, but on only one occasion had he any success. Meteor work affords the chief interest of the Section, but, although little was done early in the year, every opportunity is now being taken with regard to observation.

The following is an example of the work this term:-

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| C = Crowther. M = Meicklejohn. E = Evans.  P = J. P. M. Prentice (O.G.) | | | | | | |
| Month | C. | E. | M. | P. | Total | Watch |
| September | 6 | - | 5 | 1 | 12 | 2 hrs. 5 mins |
| October | 27 | 5 | 14 | 6 | 52 | 5 ' 17 " |
| Total | 33 | 5 | 19 | 7 | 64 | 7 hrs. 22 mins. |

While observing on October 9th, R. M. Evans succeeded in obtaining three accordances with J. P. M. Prentice at Stowmarket, and also observed a meteor with an irregular path.

|  |  |  |  |
| --- | --- | --- | --- |
| Date. | G.M.T. | Magnitude. | Observer. |
| October 6th | 8.53 | -2 | C and M |
| 6th | 9.22 | -1.7 | C |
| 6th | 9.29 | -.5 | C |
| 6th | 9.42 | -.7 | M |
| 9th | 9.14 | -1 | E |

A radiant very close to β Cygnus was found on October 6th by R. A. Crowther, and confirmed by J. M. C. Meiklejohn on October 9th. On both these dates the total number of meteors from the radiant was 8.

A 6½-inch Newtonian reflector telescope has been presented to the Section, but repairs are necessary before it can be used. J. P. M. Prentice has also very kindly presented the Section with a 3-in. refractor telescope. =

The following papers have been read to the Section:-

* "The Application of Spectrum Analysis to Astronomy," by W. Harper.
* "The Moon," by J. M C. Meiklejohn.
* "Comets and Meteors," by J. M. C. Meiklejohn.
* "The Relation between Comets and Meteors" by R. A. Crowther.
* "The History of Astronomy," by Mr. A. B. Douglas.
* "Some Interesting Astronomical Objects," by R. A. Crowther.

1924, p 11-13.

**Astronomical Section**

*Chairman*: Mr. A. B. Douglas

*Secretary*: R. A. Crowther

J. M. C. Meiklejohn (Summer Term)

The weather has interfered with the work of this Section perhaps more than any other. But work has been done on the observatory and telescope, and a great deal of meteor observation was carried out on clear winter nights as the following table shows:-

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| R.A.C.- Crowther. A.P.M.- Meiklejohn mi.  R.M.E.- Evans mi. R.L.W.P.- Prentice  M.S.F.- Fordham. S.D.R.- Robertson  E.L.J.- Jarvis. B.C-Y.- Yarborough  J.M.C.M.- Meiklejohn ma. | | | | | | | | | | |
| MONTH | R.A.C. | R.M.E. | M.S.F. | E.L.J. | J.M.C.M | A.P.M. | R.L.W.P | S.D.R. | B.C-Y. | TOTAL |
| Sept. | - | - | - | - | 5 | - | 1 | - | - | 6 |
| Oct. | 47 | - | - | - | 25 | - | 12 | 2 | - | 86 |
| Nov. | 62 | 3 | 3 | 1 | 23 | 16 | 25 | 3 | 4 | 140 |
| Dec. | 20 | - | 8 | - | - | - | 3 | - | 2 | 33 |
| Jan. | - | - | - | - | - | - | 31 | - | - | 31 |
| Feb. | 7 | - | - | - | - | - | - | - | 4 | 11 |
|  | 136 | 3 | 11 | 1 | 53 | 16 | 72 | 5 | 10 | 307 |

The total number of meteors recorded was 307.

The following members have observed meteors of a minus magnitude:- Crowther (10), Prentice (8), J. Meiklejohn (4), A. Meiklejohn (1).

The following papers have been read to the Section during the year:-

1. R. A. Crowther on "Interesting Astronomical Objects."
2. R. A. Crowther on "Halley's Comet."
3. J. M. C. Meiklejohn on "Lunar Landscapes."

1925, p 11-12.

**Astronomical Section**

*Chairman*: Mr. A. B. Douglas

*Secretary*: J. M. C. Meiklejohn

The Section has devoted a great deal of its time to the erection of the new telescope, which will shortly be in use; but in spite of this a large number of meteors were observed last Autumn.

The lectures given in the winter terms were illustrated by lantern slides and were as follows:-

Mr. B. A. Fletcher on "Spectra."

Mr. A. B. Douglas on "Constellations."

1926, p 19.

**Astronomical Section**

*Chairman*: Mr. A. B. Douglas

*Secretary*: S. D. G. Robertson

During the past year a fair number of meteors have been recorded, but fewer than usual, owing to a lack of specialised knowledge.

In the Midsummer Term some sun-spots were observed and original drawings made.

1927, no report.

1928, p 30.

**Astronomical Section**

*Chairman:* Mr. A. B. Douglas

*Secretary:* F. J. C. Ellis

This Section has shown abundant signs in the last year of regaining its lost activity. Both the small and the large telescope have been used frequently, although the weather in the last winter made night observing very difficult.

Since the reconstitution of the Section the following lantern lectures have been given to the Section:-

"The Solar System," by Mr. A. B. Douglas.

"Meteors," by F. J. C. Ellis.

"Stars and Atoms," by Mr. A. B. Douglas.

"The Moon," by Mr. H. J. Hales.

1929, p 9-10.

**Astronomical Section**

*Chairman:* Mr. A. B. Douglas

*Secretary:* F. J. C. Ellis

Since last Easter, when the report was published, there has only been one lecture. This, was given in the Michaelmas Term the Chairman on "Nebulæ."

The weather on a great many Saturday nights has been unsuitable for observations; nevertheless the 3-inch telescope has been used on several occasions when the planets, nebulæ, and double stars have been observed. No original observations have been recorded, but several drawings have been made- of Jupiter's belts and the changes in positions of the four great satellites, one of Mars, two of Venus, and also a few of double and multiple stars and sunspots.

No comets have been observed. When the periodic comet Pons-Winneche was near β Cygni in June, a whole Saturday evening was spent in sweeping for it without success; later it was found out that only one person claimed to have seen it in England.

A suggestion was made by the British Astronomical Association in their report that a series of eight naked-eye drawings of the moon should be made for the purpose the capacity for grasping detail in different observers, and thus for making corrections in the differences in observations of Mars. As two of the nights were cloudy, three members prepared a set of six drawings two days before and after full moon in the Michaelmas Term. However, owing to the conditions under which they were drawn, the degree of accuracy and the amount of detail we not very great, so they were not sent up.

No systematic watch has been kept up for meteors, but several isolated ones have been recorded while observing and their paths have been noted down. One member recorded under good conditions six Lyrids on the night of April 18th, and two members while they were observing the moon had the good fortune to see a superb meteor fall very slowly from R.A. 13 hrs. 32 m. N. decl. 44°, to R.A. 11 hrs. 12 m. N. decl. 41° 51'.

A very valuable addition to the Astronomical literature of the library has been made in "Astronomy and Cosmogony", by Jeans, and of Norton's Star Atlas, which is of great practical value to the Section. It is hoped that this year more members will make use of this literature, and enter for the Bushell Prize.

It is important that the hut, which is now only partially completed, shall be finished early in this Summer Term, as it is probable that a grant of money will be given to the Section for putting the large reflector in order. This will widen the field of observations immensely, and as Mr. Fletcher has kindly offered to give a lecture on "Celestial Mechanics," the prospects of the Astronomical Section are bright.

1930, p 10.

**Astronomical Section**

*Chairman:* Mr. A. B. Douglas

*Secretary:* F. J. C. Ellis.

The section has been practically non-existent during the past year, and the School is evidently suffering from a lean period as regards astronomy.

Mr. Fletcher gave a very instructive lantern lecture on "Celestial Mechanics" in the Michaelmas Term, and on April 8th the section's one observer picked up comet 1930e near Capella in the constellation Auriga, when it appeared as a very small and hazy disc. Beyond this we can but ruminate upon the accomplishments of our predecessors and the possibilities of our successors.

1931 & 1932

No reports