

OUR ASTRONOMICAL COLUMN.

ASTRONOMICAL OCCURRENCES IN MAY :—

- May 1-6. Epoch of Aquarid meteoric shower (Radiant 338° - 2°.)
- 2. 16h. 50m. Inferior conjunction of Jupiter's Sat. IV. (Callisto).
- 9. Neptune 10° south of μ Geminorum (Mag. 3.2).
- „ Saturn. Major axis of outer ring = 38''98, minor axis = 9''09.
- 12. 1h. Moon in conjunction with Jupiter. Jupiter 0° 44' N.
- 15. Venus. Illuminated portion of disc = 0.969, of Mars = 0.999.
- 16. Pallas in opposition to the Sun (Pallas Mag. 8).
- 20. 10h. 52m. Minimum of Algol (β Persei).
- 21. 9h. 1m. to 9h. 26m. Moon occults σ Leonis (Mag. 3.8).
- 30. 6h. Mars in conjunction with the Sun.

COMET 1904 a.—Circular No. 65 from the Kiel Central-stelle contains a telegram received from Prof. Pickering, who announces that the comet 1904 a was photographed at Harvard on March 11 and 15, and April 1, 5, 13 and 16, and also gives the coordinates for those dates. He further gives the following set of elliptic elements, and an ephemeris, calculated by Messrs. Curtiss, Albrecht, and Leuschner from observations made on April 17, 18 and 19 :—

Epoch 1904 April 18.62 Greenwich.

$$\begin{array}{l} M = 159 \ 8 \\ \infty = 258 \ 57 \\ \Omega = 272 \ 13 \\ i = 126 \ 39 \end{array} \quad \left| \quad \begin{array}{l} q = 1.7177 \\ e = 0.1773 \\ U = 3^{\text{h}}.02 \end{array} \right.$$

Ephemeris 12h. G.M.T.

| 1904 | a | | | δ | Brightness |
|----------|-----|-------|----|----------|----------------|
| | h. | m. | s. | | |
| April 21 | ... | 16 44 | 32 | ... | 47 13 ... 0.98 |
| 25 | ... | 16 31 | 8 | ... | 49 30 |
| 29 | ... | 16 16 | 8 | ... | 51 34 |
| May 3 | ... | 15 59 | 44 | ... | 53 22 ... 0.88 |

The comet was observed on April 19 and 20 by Herren Wirtz and Becker respectively, who determined the following positions :—

| M.T. (Strassburg) | a | | | δ | Mag. | |
|-------------------|-----|---------|-----|-----------|------|------------------|
| | h. | m. | s. | | | |
| April 19 | ... | 9 11.3 | ... | 252 44 56 | ... | 45 55 13 ... 9.1 |
| 20 | ... | 11 37.4 | ... | 251 56 1 | ... | 46 35 38 ... 9.3 |

ELEMENTS AND EPHEMERIS FOR WOLF'S COMET (1884 III.).—The following elements for Wolf's comet (1884 III.), corrected for the planetary perturbations up to the epoch June 12, 1904, are given by Herr A. Berberich in No. 3940 of the *Astronomische Nachrichten* :—

Epoch 1904 June 12.0 Berlin.

$$\left. \begin{array}{l} M = 312 \ 52 \ 22.66 \\ \infty = 172 \ 50 \ 38.22 \\ \Omega = 206 \ 28 \ 59.66 \\ i = 25 \ 14 \ 40.20 \\ \phi = 33 \ 48 \ 59.19 \\ \mu = 520'' .05191 \\ \log a = 0.5559733 \end{array} \right\} 1900.0$$

An ephemeris for the period May 7–August 11, 1904, from which the following is an extract, is also given :—

Ephemeris 12h. (M.T. Berlin).

| 1904 | a | | | δ | log r | log Δ | Brightness |
|-------|-----|----------|----|----------|--------|--------------|------------|
| | h. | m. | s. | | | | |
| May 7 | ... | 18 2 21 | + | 2 50.9 | 0.5298 | 0.4223 | 0.012 |
| 11 | ... | 18 1 1 | + | 3 27.8 | | | |
| 15 | ... | 17 59 21 | + | 4 4.2 | 0.5243 | 0.4044 | 0.014 |
| 19 | ... | 17 57 23 | + | 4 39.7 | | | |
| 23 | ... | 17 55 7 | + | 5 13.9 | 0.5186 | 0.3881 | 0.015 |
| 27 | ... | 17 52 35 | + | 5 46.6 | | | |
| 31 | ... | 17 49 48 | + | 6 17.4 | 0.5128 | 0.3739 | 0.017 |

STARS HAVING PECULIAR SPECTRA.—In Circular No. 76 of the Harvard College Observatory, Prof. Pickering gives a list of stars which have been found, on the Henry Draper

Memorial photographs, to possess peculiar spectra. The present list contains the designation, the coordinates, the magnitude and the nature of the spectrum peculiarity of twenty-two stars, and is supplementary to the similar lists previously published.

Circulars No. 77 and No. 78 have also been received. The first is a supplement to the "Provisional Catalogue of Variable Stars" published in vol. xlvi. of the Harvard College Observatory *Annals*; the second deals with the variable stars in the nebula of Orion, and in many cases confirms Dr. Max Wolf's conclusions respecting the variability of a number of the stars published in Dr. Bond's discussion of the nebula, which appeared in vol. v. of the Harvard College Observatory *Annals*.

SPECTRA OBTAINED FROM THE WEHNELT INTERRUPTER DISCHARGE.—Mr. H. W. Morse, of the Jefferson Physical Laboratory, Harvard University, has obtained the spectra of a number of elements, using as the light source the brilliant glow which surrounds the "active" electrode of a Wehnelt interrupter when the current is passing. He hoped to obtain, among other results, some indications, from the nature of the spectra, that the temperature of this glow was intermediate between that of the flame and arc, or arc and spark, and thereby to provide another definite step in the laboratory temperature scale. From the spectra obtained, however, it appears that the environment of the electrode passes through a very great range of temperature with each interruption of the current, for under the same constant experimental conditions the strongest lines of the condensed spark appeared at the same time as lines usually attributed to the flame. Usually the "Wehnelt" spectrum is closely allied to that of the spark, but often some of the strongest lines are missing.

Mr. Morse discusses in detail the results obtained for each of the thirteen elements he used, and in a series of tables gives the wave-length of each line obtained, together with the relative intensity of the line in the arc, spark, and "Wehnelt" spectra respectively. A number of reproductions of the spectra obtained also accompany the paper, which is published in No. 3, vol. xix., of the *Astrophysical Journal*.

VARIABLE STARS OF THE ORION NEBULA.—Prof. Ernst Hartwig, in a communication to No. 3936 of the *Astronomische Nachrichten*, gives a list of corrections to the "Chart of Stars in the Nebula of Orion" which was published in vol. v. of the Harvard College Observatory *Annals*. The corrections have been obtained from observations made by Dr. Max Wolf and from the measurement of a photograph taken by Prof. Scheiner, and are given in tabular form for the equator of 1857.

THE GERMAN ANTARCTIC EXPEDITION.¹

THE German South Polar Expedition was absent altogether twenty-eight months, of which fourteen months were passed in the south polar ice, ten months with our operations in the South Atlantic and South Indian oceans, and four months with our work and residence in the islands of the Indian and Atlantic Oceans and at the Cape.

After leaving Cape Town on December 7, 1901, a successful series of soundings and investigations was carried on between there and Kerguelen, and further on as far as the fringe of ice. Amongst the results, I lay stress on the demonstration of a trough more than 4500 metres deep, running between the Crozet Islands and Kerguelen, and connecting the abysses of the Indian Ocean with a deep ravine on the outer edge of the Austral Glacial sea.

The results of the expedition cannot be comprehensively surveyed until the whole material and the copious collections, all of which have been brought back in good condition, are worked up and made accessible. It may, however, be already affirmed that the Gauss Expedition achieved everything in the region assigned to it that it was possible to achieve in the time available. It discovered a new land, and thereby cleared up an old contested question regarding the nature and extent of the Antarctic continent

¹ Abridged from a paper by Dr. Erich von Drygalski read before the Royal Geographical Society on April 25. J