

components were much closer, and more difficult to observe. Where the years are represented by the measures of more than one observer, the mean is taken for the position shown on the diagram.

The interest of this pair is further increased by the proper motion of the system. This is given by Stumpe from Argelander as $0''.481$ in the direction of $262^\circ.95$.

The place of this star (1880) is:

R.A. $13^h 43^m 38^s$

Decl. $+ 27^\circ 35'$

Chicago: November 20.

The Lunar Eclipse, 1892 May 11-12. By G. J. Newbegin.

The night of May 11-12 turned out so exceptionally fine and clear that (though in -16° of declination) the Moon soon became a steady object in the telescope.

With regard to the eclipse, I decided to take a series of photos at about half-hour intervals, and so endeavour to secure a permanent record of its several stages.

The exposures were made at 9 20, 9.50, 10 30, 11, 11.30 P.M., 12 midnight, and 12.30 A.M.

The periods of exposure were varied to allow for the decreasing illumination of the Moon, and were respectively 20^s , 20^s , 30^s , 40^s , 30^s , 20^s , 20^s .

The plates were the Ilford Ordinary, developed by hydroquinone.

The instrument by which they were taken is a 9-inch Cooke Equatoreal, aperture reduced to two inches for the whole series.

The intervals between the exposures were occupied in developing the plates.

1892 November 11.

Note on an Occultation of DM. $+4^\circ.123$ (Mag. 6.5) by Mars on 1893 January 14. By A. M. W. Downing, M.A.

Amongst the cases of possible occultations of stars by planets, given by Herr Berberich in *Ast. Nach.*, No. 3131, is one of the occultation of a 6.5 mag. star by Mars on January 14 next. The star will be occulted to observers situated at the Cape and at Durban; and the particulars of the occultation are given below for these observatories, as well as those of the near approach of the planet to the star as seen from Greenwich.

The star's place is taken from the Albany Zone Catalogue (where it is No. 204), the planet's from the *Nautical Almanac*, from which source are also taken the horizontal parallax and semi-diameter. The latter, as adopted in the *Nautical Almanac*, is undoubtedly too large—probably $0''.6$ too large at the distance with which we are here concerned—so that the durations given below are probably too great in a corresponding proportion.

Cape Observatory. Middle of occultation January 14, $6^h 52^m.9$ Cape mean time. Duration, $4^m.9$. Position-angle at immersion, 50° . Position-angle at emersion, 260° . Unfortunately, the Sun does not set at the Cape on this day until $7^h 10^m$ Cape mean time.

Natal Observatory. Middle of occultation January 14, $7^h 43^m.7$ Durban mean time. Duration, $4^m.9$. Position-angle at immersion, 52° . Position-angle at emersion, 258° . At Durban the Sun sets on this day at $7^h 0^m$ Durban mean time.

Greenwich Observatory. Time of nearest approach, January 14, $5^h 40^m.2$ Greenwich mean time. Distance of star from centre of planet at this time, $9''.8$. Position-angle, 335° .

1892 December 9.

Photographs of Comet Holmes. By Isaac Roberts, D.Sc., F.R.S.

Two photographs of Comet Holmes have been taken with the 20-inch reflector. The first, on November 18 (last month) between sidereal time $0^h 30^m$ and $1^h 45^m$, with exposure of 75 minutes; and the second, on the 20th, with an exposure of 30 minutes. The one now presented is an enlargement from the first negative to the scale of 1 millimetre to 30 seconds of arc, the position of the comet then being, approximately, in R.A. $0^h 43^m$, Decl. N. $37^\circ 24'$.

The photograph shows the comet to be nearly circular in outline, with the n.p. semicircle well defined, but the s.f. side is undefined and shades into invisibility. The diameter of the defined part measures about 12 minutes of arc, and the comet has a well-defined stellar nucleus when viewed with a low magnifying power, but with a magnifying power of 77 diameters on the negative the nucleus is semi-transparent, and shades without a definite boundary into the comet.

From the nucleus projects a dense condensation, resembling a tail, about 6 minutes of arc in length and 80 seconds in breadth, extending in the n.p. to s.f. direction. The tail is straight, not sharply defined at the margins, and shades into invisibility. It ends with the undefined side, and forms a radius to the circle of the comet.