

Middle place (C - O) $\Delta\alpha = -0^{\circ}.005$ $\Delta\delta = -0^{\circ}.6$

$$\begin{aligned} x &= [9.9971854]r \sin(v + 50^{\circ} 39' 22.60) \\ y &= [9.9977319]r \sin(v + 321^{\circ} 19' 36.79) \\ z &= [9.1833907]r \sin(v + 272^{\circ} 55' 27.04) \end{aligned}$$

accenting ω , Ω and i to denote these quantities for the year 1900, then

$\omega, -\omega = +1^{\circ}.07$, $\Omega, -\Omega = +149^{\circ}.77$, $i, -i = -1^{\circ}.39$

These elements will give some idea of the corrections necessary; no doubt observations of this planetoid at previous oppositions are available, and will be used in the final corrections.

Sydney, N. S. W., 1897 Nov. 2.

NEBULAS NEAR CASTOR,

By E. E. BARNARD.

In 1888, when we first went to Mt. Hamilton, and before the completion of the Lick Observatory, I found quite a number of new nebulas with the 12-inch equatorial. Among these were five within less than a degree of *Castor*. The positions of these nebulas were determined by equatorial pointings—carefully corrected by pointings on *Castor*—before the micrometer could be used.

These nebulas are interesting on account of their closeness to this well-known star, and I have taken them from a list of unpublished new nebulas which I have in hand, waiting for star catalogues to complete the positions of a number of those which were micrometrically observed, before publication.

These nebulas near *Castor* were all discovered on 1888 May 9, except No. 1, which was found May 12 of that year. They were all subsequently seen.

Yerkes Observatory, Williams Bay, Wisconsin, 1897 Dec. 18.

The positions here given are reduced to 1860.0, the epoch of DREYER'S New General Catalogue.

No.	α	δ	Description
1	7 ^h 24 ^m 23 ^s	+31° 44.4'	close p. 10 ^m star
2	7 24 43	+31 35.5	small, faint
3	7 25 12	+31 40.5	small, 3 S *s in curve 2' p ±
4	7 25 27	+31 40.5	very, very faint
5	7 25 59	+31 31.0	small, faint

This close clustering together of a few nebulas in isolated spots is a remarkable feature which I have come across a number of times. I have discovered several nests of these similar to this one near *Castor*. In most of the other cases, however, the individual nebulas are very much smaller.

It is now nearly ten years since these nebulas were discovered, and I regret that they were not published sooner.

MERIDIAN-CIRCLE OBSERVATIONS OF COMPARISON-STARS, FOR COMET ζ 1897,

By R. H. TUCKER.

DM. No.	R.A.	1897.0	Decl.	Mag.	Epoch
78°70	1 ^h 59 ^m 32.83 ^s		+78° 27' 58.0"	8½	1897.82
78°74	2 5 19.16		+78 13 30.3	9¼	1897.82
77°84	2 22 11.68		+77 12 25.4	7½	1897.84

NOTICE.

A moderate number of copies of the *Third Catalogue of Variable Stars* are still available, and will be distributed gratuitously to those interested in the subject, on application to the Editor of this Journal.

CONTENTS.

OBSERVATIONS OF THE VARIABLES Z HERCULIS AND Y CYGNI, WITH RESEARCHES ON THEIR PERIODS, BY N. C. DUNÉR.
 OBSERVATIONS OF LONG-PERIOD VARIABLES, BY PAUL S. YENDELL.
 THE LEONIDS OF 1897, BY E. E. BARNARD.
 OBSERVATIONS OF (11) PARTHENOPE, BY EVERETT I. YOWELL.
 OBSERVATIONS OF COMET ζ 1897, BY WILLIAM J. HUSSEY.
 OBSERVATIONS OF MINOR PLANETS, BY MARY W. WHITNEY AND CAROLINE E. FURNESS.
 NOTE ON THE PROPER MOTION OF BRADLEY 2444^a = 3250, BY J. G. PORTER.
 EPHEMERIS OF MINOR PLANET (387), 1898 AZ, BY JOHN H. OGBURN.
 ELEMENTS OF COMET ζ 1897, BY R. TRACY CRAWFORD.
 LIST NO. 5 OF NEBULAS DISCOVERED AT THE LOWE OBSERVATORY, BY LEWIS SWIFT.
 ELEMENTS OF THE ORBIT OF (194) PROKNE, BY C. J. MERFIELD.
 NEBULAS NEAR CASTOR, BY E. E. BARNARD.
 MERIDIAN-CIRCLE OBSERVATIONS OF COMPARISON-STARS, FOR COMET ζ 1897, BY R. H. TUCKER.
 NOTICE.

PUBLISHED IN BOSTON, TRI-MONTHLY, BY S. C. CHANDLER. ADDRESS, CAMBRIDGE, MASS. ASSOCIATE EDITORS, ASAPH HALL AND LEWIS BOSS. PRICE, \$5.00 THE VOLUME. PRESS OF THOS. P. NICHOLS, LYNN, MASS. Entered at the Post Office, Boston, Mass., as second-class matter. Closed Dec. 23.

1897AJ.....18