



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

N. G. C. Index 351 was discovered and announced by Barnard in 1890. Jonckheere 320 and 900 were discovered and announced by Jonckheere in 1916 and 1912, respectively.

N. G. C. 6058 was photographed by Curtis with the Crossley Reflector, and from the resemblance of its form to that of planetary nebulae he predicted that we would find bright lines in its spectrum.

W. W. CAMPBELL,  
J. H. MOORE.

SPECTROGRAPHIC OBSERVATIONS OF ROTATION IN THE  
PLANETARY NEBULA N. G. C. 7026.

We have recently obtained spectrographic observations of the planetary nebula N. G. C. 7026 which are of special interest in that they indicate for this object a high angular velocity of rotation.

The form of this nebula is well shown in the drawing of the object made by Dr. Curtis, a reproduction of which accompanies his note in the present number of these PUBLICATIONS.

With the slit of the spectrograph placed parallel to the major axis of the nebula and between the two lobes, the bright portion of the spectral lines is found to be inclined  $4^{\circ}.3$  to the zero direction, as given by the comparison lines. This inclination, interpreted as a Doppler-Fizeau effect, is in the sense that a point on the major axis 4 seconds of arc south of the center is receding, with reference to a similar point north of the center, with a relative velocity of about  $42\text{km/sec}$ .

Spectrograms taken with the slit in the same position angle as the first one described, but set respectively along the eastern and western lobes, show the spectrum lines inclined in the same direction as before, but a little smaller in amount (about  $4^{\circ}$ ).

When the slit was placed along the short axis (*i. e.*, across the two lobes and the central nucleus), the spectrum lines appeared somewhat broad and hazy, but have no appreciable inclination.

Considering the general form of the outline of this nebula,

that of a very elongated ellipse, in fact the most elongated nebular form that we have yet observed, it is not surprising that its angular velocity of rotation is the greatest that we have thus far observed in planetary nebulæ.

W. W. CAMPBELL,  
J. H. MOORE.

#### ON THE ROTATION OF THE NEBULA JONCKHEERE 320.

The small planetary announced by Jonckheere in March, 1916, number 320, has recently been tested for spectrographic evidence of rotation. The form of this nebula is shown in Dr. Curtis's drawing, and briefly described in his paper in this number.

Our spectrographic observations indicate that this nebula is rotating about an axis coinciding approximately with the shorter axis of the bright central oval, in the sense that a point on the major axis of the oval 3 seconds of arc south-east of the center, has a velocity of approach of about  $10^{\text{km/sec}}$  relative to that of the corresponding point northwest of the center. When the slit was placed along the major axis of the fainter outer ring, a slightly smaller rotational effect was observed for the brighter oval. The spectrum of the faint ring was not recorded.

W. W. CAMPBELL,  
J. H. MOORE.

#### THE SPECTROSCOPIC BINARY $\eta$ 4 CENTAURI.\*

$\eta$  Centauri, a helium star of Class B 5, was observed by the D. O. Mills Expedition at Santiago, Chile, in the years 1908 to 1911 and announced as a spectroscopic binary in the *Lick Observatory Bulletin* 6, 56, 1910. The 36 two-prism plates taken show twenty or more lines between 3900A and 5000A, of which eighteen are well identified and two probably are enhanced "metallic" lines. Only the four lines H $\gamma$  4340A, He 4388A, He 4471A, Mg 4481A, were found uniformly sufficiently good for velocity measurement and these were weighted 1, 2, 4, 3, respectively. A period of 6.927 days best satisfying the observation was derived from a plotting of the observed velocities. The Lehmann-Filhé method and plani-

\* *Lick Observatory Bulletin*.