

camera plate taken on September 8, 1921. On all plates, however, the bright portion is the outstanding feature.

It would appear therefore, from the remarks in the Henry Draper Catalogue, of which the volume containing this star has become available since the first note was written, that a change must have taken place in the hydrogen lines since they are described from the Harvard plates as "very faint dark lines." The presence of bright lines (presumably $\lambda\lambda$ 4658, 4701) was suspected.

Direct photographs by Mr. Hubble with the 60-inch telescope on May 24, 1922, with exposure times from one second to 60 minutes, did not reveal any nebulosity about the star.

The following photometric notes are included in the H. D. remarks: "RY *Scuti* Variable. Max. 8.3, Min. 9.2. Class and period, unknown." More data would be welcome.

PAUL W. MERRILL.

May 29, 1922.

SUMMARY OF MOUNT WILSON MAGNETIC OBSERVATIONS OF SUN SPOTS FOR JULY AND AUGUST, 1922

The sun-spots were somewhat more active during July than in the two preceding months, but during August there was less activity than at any time since the last minimum. The mean number of groups observed daily was 1.1 for July and 0.5 for August. In July there were but nine spotless days, while in August there were seventeen, sixteen of which were consecutive.

A NEW PLANETARY NEBULA

R. A. $18^{\text{h}}46^{\text{m}}22^{\text{s}}$ Dec. $+ 20^{\circ}44'$ (1920)

Bright line images of this object are seen on two photographs made with the 10-inch Cooke telescope and 6° objective prism on June 21 and 22, 1922. The following estimates of the intensities of the lines were made from a slitless spectrogram taken with the 60-inch telescope and focal plane spectrograph on June 22, 1922: N_1 (16), N_2 (8), $H\beta$ (14), 4471 (1.5), 4388 (0.2), 4363 (0.2), $H\gamma$ (8), $H\delta$ (4), $H\epsilon$ (1). Direct photographs made with the Hooker telescope on June 23, 1922, show the

planetary image to be slightly elongated as compared with the perfectly round images of the adjacent stars. With the same instrument a minute disk about 3" in diameter is discernible visually. No central star is seen. A rough estimate of the visual magnitude of the nebula as a whole is about 11.5.

M. L. HUMASON.

GENERAL NOTES

A Very Massive Star:—Under this title Dr. J. S. Plaskett, Director of the Dominion Astrophysical Observatory, Victoria, B. C., presented at the meeting of the Royal Astronomical Society of London on June 9, a paper giving the results of his researches upon the star B. D. + 6°.1309 (R. A. 6^h32.0^m; Decl. +6°13'). The star is one of a number which had been placed upon a special program of radial velocity observations about a year ago because they gave promise of adding to our knowledge of the masses of stars of very early spectral type (Oe to Oe5). It was not known to be a spectroscopic binary at that time but the very first spectrogram, secured on December 16, 1921, showed a doubling of the lines (of type about Oe5) with large displacement—conclusive evidence of the presence of two bodies in the system. Special attention was therefore given to the star and 30 spectrograms were obtained as promptly as possible and measured to determine the orbit. The results are of exceptional interest.

The period proves to be 14.414 days, and from this and the other orbital data the following values of the distance between the centers of the two components and of their masses were derived:

$$(a_1 + a_2) \sin i = 89,750,000 \text{ km} = 129 \text{ times the radius of our Sun.}$$

$$m_1 \sin^3 i = 75.6 \text{ times the mass of the Sun.}$$

$$m_1 \sin^3 i = 63.3 \text{ times the mass of the Sun.}$$

$$(m_1 + m_2) \sin^3 i = 138.9 \text{ times the mass of the Sun.}$$

These results rest directly upon the spectrographic measures and involve no assumption except the applicability of the law of gravitation to binary star systems. They express, however,