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PHOTOELECTRIC OBSERVATIONS
OF NOVA HER 1963

Nova Her 1963 showed gradual brightening before its maximum (1). The light curve during decline was observed in many observatories, however rapid fluctuations, in few hours observation, were not observed.

The nova showed random changes in brightness of 0.02, 0.05 magnitudes during the summer 1965 when it was observed by Chincarini in blue and ultraviolet light with the 24" of the Lick Observatory. The maximum amplitude of light variations was of 0.13 magnitudes in one hour. Such fluctuations were also observed the year before by Almár at the Konkoly Observatory and a short periodicity, about 1 hour, was suspected (2). Observations by Almár and Chincarini at the Astrophysical Observatory of Asiago (March 16, 1966) and by Almár (March 28, 1966) showed after a period of constant brightness a decrease in luminosity. Following these observations Rosino announced the presence of a minimum of 40 minutes duration and 0.^m1 depth similar to the partial eclipse of the Algol-type binaries (3).

Observations of the nova were carried out at Lick Observatory on the nights April 20, 21, 22 and 27 (U. T.). The 1P21 cell without any filter has been used. The light curve of the nova is now characterized by:

- a/ fluctuations of amplitude between 0.2 and 0.1 magnitudes and lasting from 5 to 50 minutes
- b/ overimposed a few minima with amplitude of 0.1-0.2 magnitudes and lasting only 15 minutes were observed.

A preliminary analysis of the observations did not show evidence of eclipse. However a piece of the light curve observed on April 22 is almost exactly (within 0.02 magnitudes) repeated on the light curve of the night April 27. During this period, lasting about 90 minutes, the nova increased in brightness of about 0.2 magnitudes with fluctuations of 0.06-0.10 magnitudes. The same features lasting 90 minutes seem to be present on the night April 20, in this case the agreement is poorer. A period $P = 359.5$ minutes could agree with all our observations. More observations are needed in order to understand the nature of the periodicity. A spectrum obtained at the Crossley during 1965 showed very strong hydrogen and nebular emissions on a faint continuum. Most of the light should, therefore, be coming from the expanding gaseous shell.

Lick Observatory
May 29, 1966

G. CHINCARINI
V. S. HOWARD

Referendes:

- (1) W. Götz Sky and Telescope (April 1966)
- (2) I. Almár Private communication (March 1966)
- (3) L. Rosino I. A. U. Circular No. 1953. Ny. 1171/1966.