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SHORT TERM PERIODICITY OF V 1500 CYGNI IN JULY - AUGUST OF 1976

TV photometric observations of V 1500 Cygni (Nova Cygni 1975) were carried out at the Crimean Astrophysical Observatory using a 0.5 meter telescope and the television pick up tube LI-217 with a multialkali input photocathode. Special combination of glass filters allowed to register practically only the continuum radiation (see Fig.1).

Date of observations, number of TV pictures, duration of patrol and moments of extreme value of light variation are listed in Table 1.

Date 1976	Number of pictures	Duration of patrol	Moments J.D. <sub>☉</sub> = 2442...	
			min.	max.
July 23-24	865	2h27m	-	983 <sup>d</sup> 377
28-29	259	2 01	-	988.474
29-30	579	2 12	-	-
Aug. 2- 3	847	4 46	993 <sup>m</sup> 394	993.456
Summary	2550	11h26m		

The following method has been used for photometric calibration of TV pictures. Images of 8 artificial stars of known brightness (calibrating marks) have been projected on to the input photocathode of TV pick up tube during the exposures of the Nova. One brightness step of these marks was  $0^m.1 \div 0^m.2$ . Visual estimates of the brightness of Nova and the comparison star 1 (see Fig.2) have been made in the scale of artificial star's magnitudes. The star 2 was used as a control star.

The period of short term variations of Nova has been calculated using observed moments of extreme brightness (see Table 1) and moments published by Semeniuk et al. (1). Determination of the moments of minima was more accurate than that of maxima owing to the observed light fluctuation of the Nova at maxima. The period has been found for the interval of July 2 - August 2. It appears to be slightly less than the published ones (1,2,3).

Examination of the data obtained showed the forms of neighbouring maxima were different. That was the reason for doubling of the value of the period. Fig. 3. shows the light-curves of Nova constructed with the elements

$$T_0 = 2442962^d 404 + 0^h 27664 \cdot E.$$

The accuracy of each mark on the graph is about  $\pm 0^m 05$ . Fig. 3 shows variability of the peak brightnesses of the Nova. The mean amplitude of light variations is about  $0^m 45$ . It is also possible that the distance between two maxima is not constant.

Numerous TV observations obtained during ten days show that Nova Cygni 1975 is probably a close binary system with the period of light variations about 6.5 hours.

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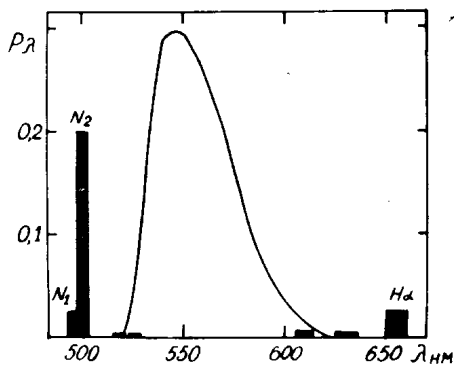


Fig.1. Response curve of TV apparatus for a star of type G2. Filled rectangles show emission lines observed in summer of 1976 in the spectrum of V 1500 Cygni.

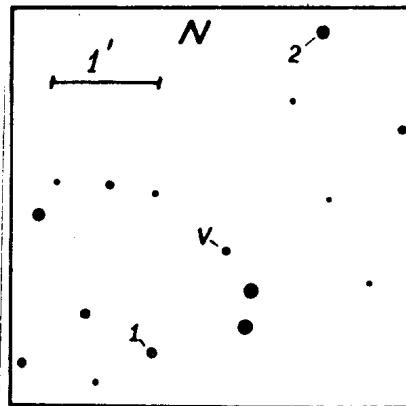


Fig.2. The chart of V 1500 Cygni region; 1-comparison star, 2-control star.

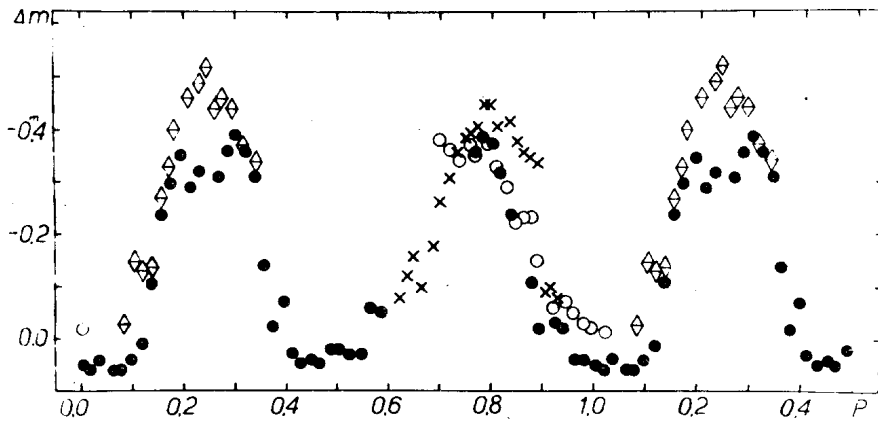


Fig.3. Television light - curves of V 1500 Cygni obtained on July 23 (crosses), 28 (rhombes), 29 (open circles) and August 2 (filled circles). Ordinates are stellar magnitudes of Nova minus that of star 1.