

### THE ECLIPSING BINARY NSV 02980

NSV 02980 (Kholopov, 1982) was photographically observed by Hoffmeister (1949) who found variability in this star. NSV 02980 (CSV 00076) can unambiguously be identified with the field star GSC 0141.0638. From his observations Hoffmeister deduced that NSV 02980 was an RR Lyr or W UMa type star with a photographic magnitude variation range from 12.0 to 12.5. No photometric elements or even spectral class have been given.

From February 4 to April 12, 1995, one color photometry in the V band was performed using LYNXX-2 and ST-4 CCD cameras, at the three 0.4-m telescopes at Observatorio de Piera, Observatorio de Mollet, and Observatorio de Monegrillo (Spain). The observations collected during this observational period show that NSV 02980 is in fact an overcontact binary star. GSC 0141.0390 and GSC 0141.0666 were used as comparison and check stars respectively (see Figure 1).

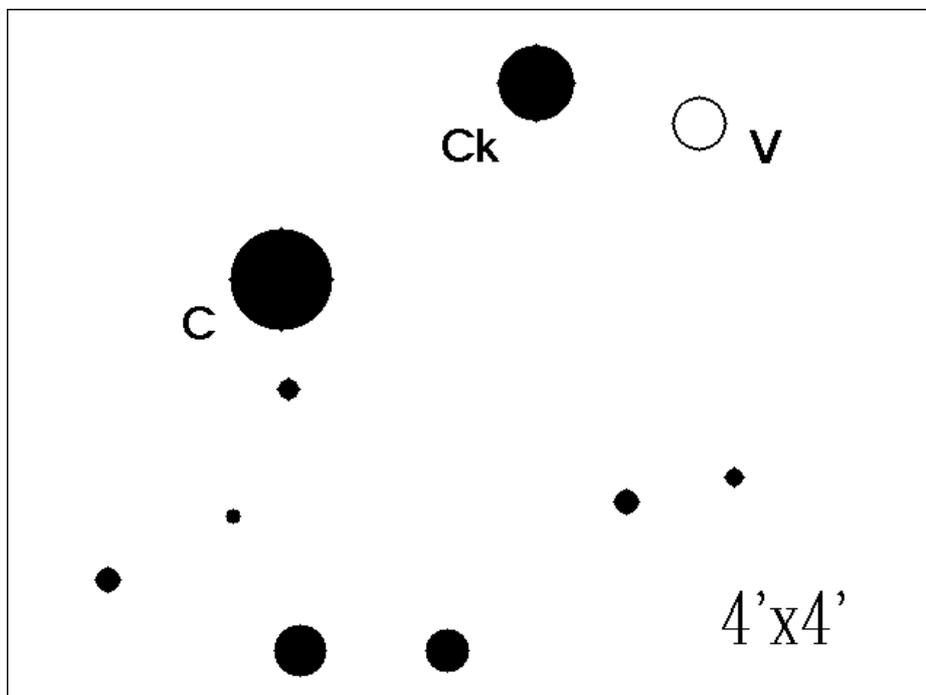


Figure 1. C = Comparison star, Ck = Check star, V = NSV 02980. North is on top.

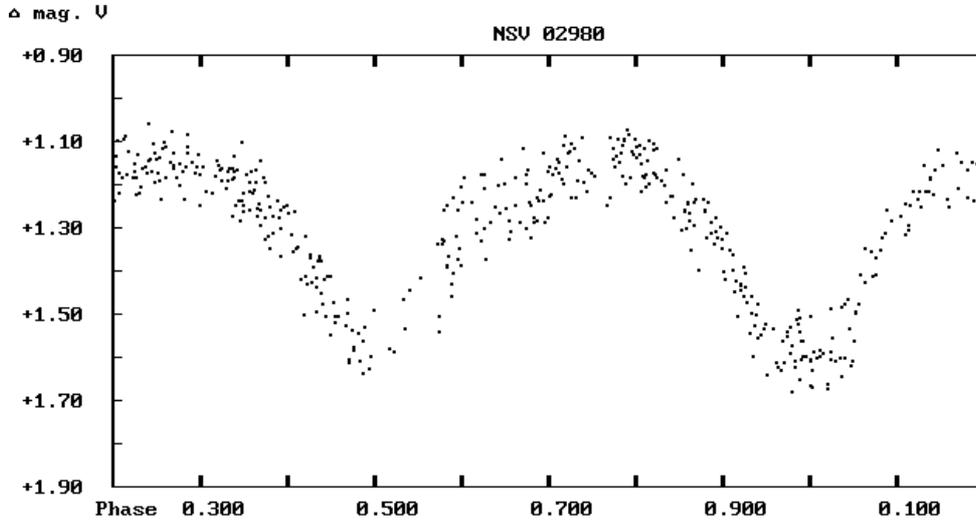


Figure 2

Figure 2 shows the obtained light curve. Light curve dispersion does not allow us to accurately determine the actual shape and depth of primary and secondary minima, but it seems that the primary minimum is a transit with a 0.45 magnitude depth and the secondary minimum is an occultation with a 0.43 magnitude depth.

Photometric elements derived from the light curve, for the primary minimum, are the following:

$$\text{Min. I} = \text{HJD } 2449800.429 + 0^{\text{d}}41630 \times E$$

$$\pm 2 \quad \pm 10$$

To derive the exact nature of the binary system, we plan to obtain more accurate observations.

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#### References:

- Hoffmeister, C., 1949, *Astronomische Abhandlungen, Ergänzungshefte zu den Astronomischen Nachrichten*, **12**, No. 1  
 Kholopov, P. N., editor, 1982, *New Catalogue of Suspected Variable Stars*, Moscow