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NSV 00361 IS AN OVERCONTACT BINARY SYSTEM IN PISCES

NSV 00361 (HV 06379, CSV 000111, P 2493, GSC 0015.0112) was announced as a possible RR Lyrae type star by Shapley and Hughes (1934). According to Kholopov (1982) it varies from the 12.4 to 13.0 photographic magnitudes, without giving other data about its variability.

In order to have more information about this star, NSV 00361 was included in the program of the Grup d'Estudis Astronòmics for the identification and characterization of new variable stars. The object was observed for 12 nights between 10 October 1996 and 2 December 1996 at Monegrillo Observatory (Spain). A CCD camera equipped with B and V filters was used attached to the 0.4-m telescope. BD+02°0139 (GSC 0015.0334) and GSC 0015.0231 were used as comparison and check stars respectively. To have an indication of its magnitude in the B and V bands, the comparison star was also observed with a photoelectric photometer coupled to the Cassegrain focus of the 0.6-m telescope at Esteve Duran Observatory.

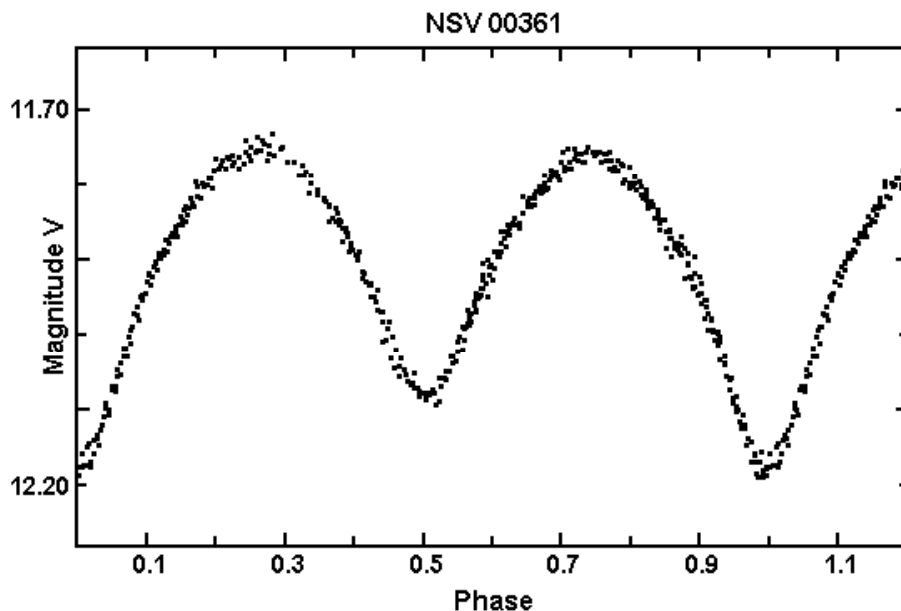


Figure 1

These observations allowed to determine that NSV 00361 is not an RR Lyrae but an overcontact eclipsing binary star with an amplitude of 0.43 ± 0.01 magnitudes at Min. I in the V band of ($0^m43 \pm 0^m02$ in B) and 0.33 ± 0.01 magnitudes at Min. II ($0^m33 \pm 0^m02$ in B). At maximum light, NSV 00361 is a 11.75 ± 0.08 magnitude object in the V band ($12^m68 \pm 0^m16$ in B). Figure 1 shows the phase curve of NSV 00361 in the V band.

The following ephemeris has been computed for the system:

$$\begin{aligned} \text{Min.I} = & \text{HJD } 2450376.43495 + 0^{\text{d}}342487 \times E \\ & \pm 0.00015 \quad \pm 0.000030 \end{aligned}$$

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