NSV 2828: A New RRab Variable

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Abstract Using a total of 296 unfiltered CCD measures made between JD 2452989 and JD 2453073, we have confirmed the variability of NSV 2828, which appears to be an RRab star.

1. Introduction

NSV 2828 (= S8013 = GSC3386.0209 = USNO A2.0 1350.06437044; R.A. $06^h\ 07^m\ 30\overset{s}{.}78$, Dec. +51° 06' 53''.5, Equinox: 2000.0) was discovered to be a suspected short period pulsating variable star by Hoffmeister (1963) during a photographic survey carried out at the Karl-Schwarzschild Observatory of Tautenburg for the statistical study of RR Lyr-type variable stars in the northern hemisphere. With these parameters the star was listed in the first edition of the *New Catalogue of Suspected Variable Stars* (NSV; Kholopov *et al.* 1982). Strasbourg Observatory's SIMBAD database offered no other references about NSV 2828. A corrected position for NSV 2828 was published by Skiff (1999) and was used in this research to identify the variable.

2. Observations

A total of 296 unfiltered measures were taken between JD 2452989 and JD 2453073 using a CCD Camera with a Kodak 401E/L chip on a 20.8-cm Meade LX200 Schmidt Cassegrain telescope operating at the private "Betelgeuse" station of the author in Busto Arsizio, northern Italy.

The comparison star was GSC 3386.0265 (magnitude 12.20), while GSC 3386.0252 (a blend of two stars of magnitude 12.59 and12.99) and GSC 3386.0858 (magnitude 13.12) served as check stars (Figure 1).

3. Analysis

Our 296 CCD measures enabled us to confirm the RR Lyr nature of the variability of NSV 2828, and to draw the light curve shown in Figure 2.

The resulting amplitude of variation is about 1.06 magnitude. We obtained four times of maximum light (Table 1) that allow us to calculate the following ephemeris:

$$\begin{array}{ll} \mathrm{Max} = \mathrm{JD}\ 2452990.5840 & + 0.497932\ \mathrm{d} \times \mathrm{E}. \\ \qquad\qquad\pm 0.0006 & \pm 0.000013 \end{array} \qquad (1)$$

Table 1. Times of maxima of NSV 2828.

HJD	*E(1)*	*O-C(1)*
2452990.5834	0	–0.0006
2452999.5477	18	0.0009
2453020.4598	60	–0.0001
2453025.4392	70	0.0000

4. Conclusion

This work is a clear demonstration of how much there is still to learn about the stars listed in the *NSV Catalogue*. Further measurements on NSV 2828 will test the reliability of the period found.

5. Acknowledgement

This research has made use of the SIMBAD database, operated at Centre de Données astronomiques de Strasbourg.

References

Hoffmeister, C. 1963, *Astron. Nach.*, **287**, 169.
Kholopov, P. N., *et al.* 1982, *New Catalogue of Suspected Variable Stars*, Moscow.
Skiff, B. A. 1999, *Inf. Bull. Var. Stars*, No. 4720.

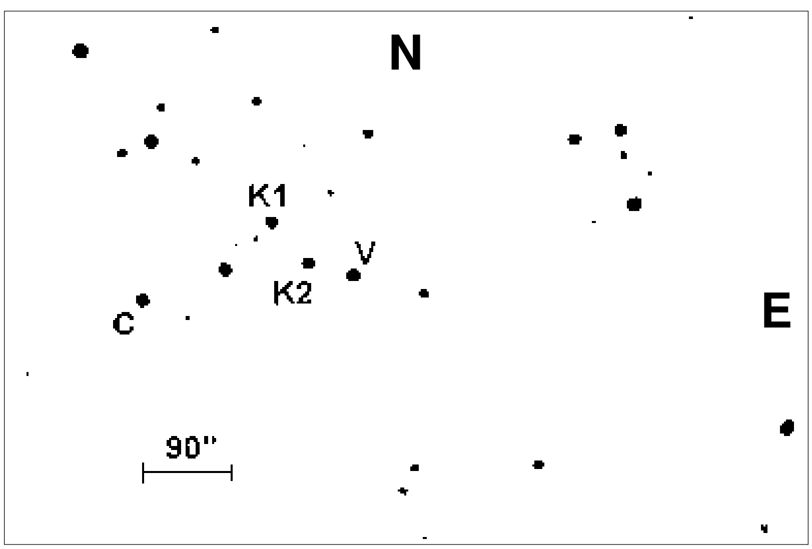

Figure 1. Finding chart of NSV 2828.

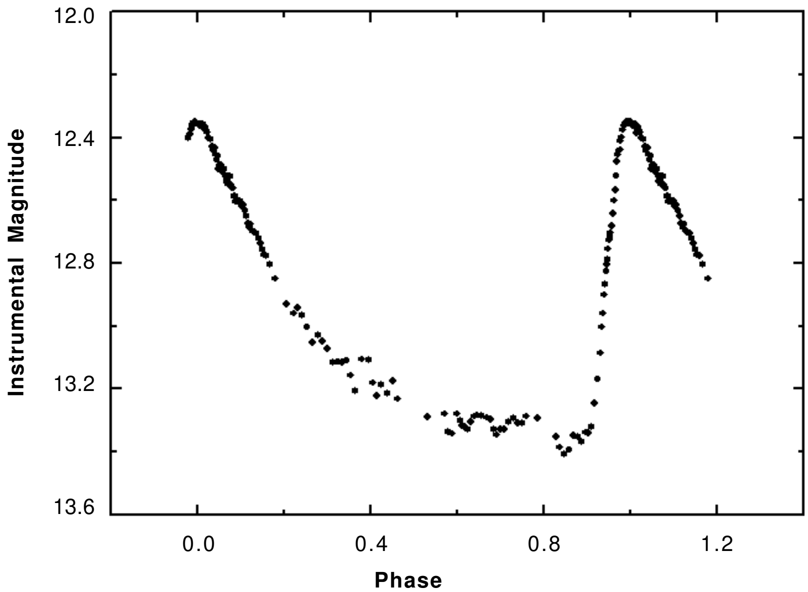

Figure 2. Unfiltered CCD light curve of NSV 2828.