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CCD PHOTOMETRY OF EIGHT SUSPECTED CATACLYSMIC VARIABLES

Several CV candidates were selected from the Palomar–Green Catalog (Green et al. 1986) and the New Catalogue of Suspected Variable Stars (Kholopov 1982) to confirm or reject photometrically their proposed CV nature and to search for orbital variability and eclipses. The observations were performed using the CCD camera on the Danish 1.5m telescope at the European Southern Observatory in Dec. 1988 / Jan. 1989 (Table 1). Differential instrumental magnitudes were then derived relative to nearby comparison stars on the same CCD image. We present here results for eight targets which are unlikely to be CVs.

PG0240+066

Spectrophotometry of this object (Zwitter and Munari 1995) revealed a hot continuum with Balmer absorption lines. An absorption line spectrum is often seen during an outburst of a CV, replacing the prominent emission lines at quiescence. But PG0240+066 showed its usual brightness. Photometric observations by Misselt and Shafter (1995) covering more than three hours did not show obvious variability exceeding a 0.02 mag level. Our photometry confirms their result. PG0240+066 is certainly a misidentification as a CV.

PG0248+054

This object showed spectrophotometrically (Zwitter and Munari 1995) the same behaviour as PG0240+066. Our photometric observations cover slightly more than two hours and give no evidence for any variability (scatter less than 0.01 mag). Also PG0248+054 is certainly not a CV.

PG0947+036

This object also proved to be constant in brightness during the nearly three hour observing run (scatter less than 0.03 mag) and is very probably not a member of the CV class.

NSV 00870

Haro and Luyten (1960) suggested this blue star (Var 10) to be a variable of the SS Cyg type. The photometry covering nearly three hours did not reveal variability above a 0.02 mag level. Therefore, our observations do not support the identification of NSV 00870 as a CV.

NSV 02853

Hoffmeister (1949) classified this star (S 3962) as a short period variable. A possible CV nature is assigned in the NSV catalogue. We observed this object for nearly two hours and found it to be constant in brightness (scatter less than 0.01 mag). NSV 02853 is very probably a misclassification as a CV.

NSV 03775

The variability of this star was detected by Hoffmeister (1949). The object is listed as a potential CV or RR Lyr star in the NSV catalogue. Our photometry demonstrates that it is an RR Lyr star. NSV 03775 dimmed steadily by approx. 0.44 mag during the 4.75 hours observing run (Figure 1).

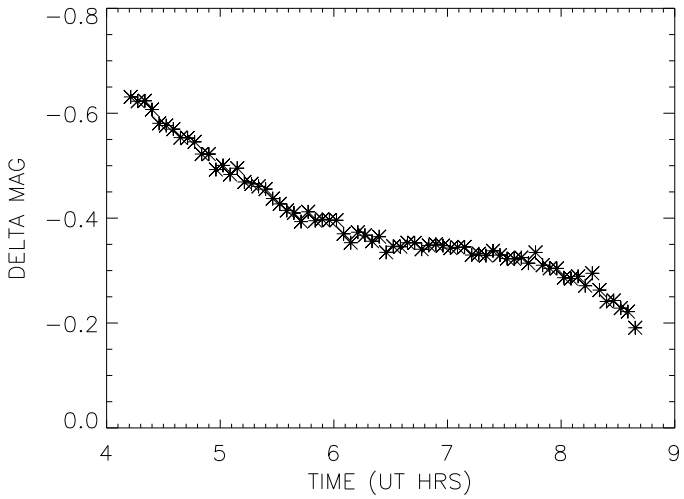

Figure 1. Light curve of NSV 03775 obtained on 1988 Dec. 31

NSV 04498

Luyten et al. (1968) regarded this blue object (LB 10776) as a U Gem star or, possibly, nova. Since no finding chart is available and no star could be found at the given position we probed several stars in the vicinity (in fact nearly all stars in the sparse field). None of them turned out to be variable. We conclude that either the coordinates from the literature are wrong or the magnitude of NSV 04498 is now beyond the detection limit of our frames (approx. 23–24 mag).

NSV 04884 = V411 Car = N Car 1953

Perek (1960) detected this nova as an emission line object on objective prism plates. Duerbeck (1984, 1987) traced its outburst history on Harvard plates and identified it on the corresponding ESO/SERC chart with a 19 mag star. Our two observing runs for this star (three nights apart, covering approx. three hours each) do not show any periodic or non–periodic variability. The star was constant within 0.02 mag and its relative brightness was the same for the two runs, an unexpected behaviour for a postnova. Assuming the

identification as being correct we had a closer look at a three–dimensional representation of the brightness–profile of the star and found two bumps in the wings, one about 1.″5 towards NE and one about 2″ towards NW. Application of PSF techniques isolated two stars of approx. 21 and 22 mag respectively. One of these is presumed to be the postnova. From the scatter of the combined brightness of the three stars we place an upper limit on the variability of the two fainter ones at an approx. 0.1 and 0.3 mag level respectively.

Table 1. Journal of observations. Start is the time for the midpoint of the first exposure. Duration includes also gaps due to any interruption of the exposure series. Magnitudes (photographic) are from the literature. Observations were performed in integral light except for NSV 03775 where a Johnson B filter was used.

Object	Date	Start (UT)	Duration (h)	Int.Time (s)	Frames (No.)	Mag
PG0240+066	1988 Dec. 28	1:50	1.27	180	23	16.5
PG0248+054	1988 Dec. 30	1:09	2.23	180	35	16.2
PG0947+036	1988 Dec. 29	5:51	2.94	180	45	16.8
NSV 00870	1988 Dec. 27	2:11	2.75	180	45	18.1/19.5
NSV 02853	1988 Dec. 29	3:22	1.87	120/90	43	15.3/15.9
NSV 03775	1988 Dec. 31	4:13	4.44	180	73	13.8/16.0
NSV 04498	1989 Jan. 01	5:50	1.67	180	27	18.5
NSV 04884	1988 Dec. 27	5:29	2.84	120	63	19
	1988 Dec. 30	4:04	3.22	180	50	

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