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FURTHER BV PHOTOMETRY OF V1727 Cyg IN A LOW STATE

V1727 Cyg was identified as an optical counterpart of the X-ray source 4U2129+47 by Thorstensen et al. (1979), who found a large amplitude (1.5 mag in the B band) light variations with a period of 5.2 hr. EXOSAT observations of 4U2129+47 made in October 1983 showed no detectable X-ray flux (Pietsch et al. 1986), while coordinated optical observations indicated that the source no longer showed any large amplitude modulation. Its optical flux faded below the minimum value observed in the active state. Several groups of observers attempted to detect ellipsoidal variations in the light curve of V1727 Cyg during the extended low state of this system (Thorstensen et al. 1988; Kaluzny 1988, Chevalier et al. 1989; Cowley and Schmidtke 1990). All of them failed to detect any light variations, although variations of several tenths of a magnitude were expected. Moreover, spectroscopic studies show no evidence for the expected radial-velocity variations of the F star, which now dominates the optical light (Chevalier et al. 1989, Garcia et al. 1989, Cowley and Schmidtke 1990). It is rather unlikely that the star presently visible is the 5.2 hr companion of the x-ray source, although it has been suggested that it may be the third star in a hierarchical triple system.

In this note we present further CCD photometry of V1727 Cyg collected in a low state of this system. Observations were obtained during two observing runs on the #1 0.9-m telescope at the Kitt Peak National Observatory. The telescope was equipped with the RCA #3 camera during the first run (June 1989) while TEK #2 camera was used during the second run (December 1989). Initial processing of the images was done at KPNO. The photometry was extracted with the DAOPHOT package (Stetson 1987). Our BV photometry of V1727 Cyg is given in Table 1. The zero points of the transformation from the instrumental to the standard BV system were derived using magnitudes and colors of the reference stars No. 2 and No. 3 published by Cowley and Schmidtke (1990). The remaining transformation coefficients were derived based on the observations of several standard stars. For the reference star No. 1 we derived B and V magnitudes which are fainter by about 0.05 than the magnitudes published by Cowley and Schmidtke. The source of this discrepancy remains unclear for a moment (variable star?). The available data indicate that the optical flux of V1727 Cyg has been remarkably stable during the last few years. The average B and V magnitudes derived on June 1989 and on Dec 1989 agree to within 0.015 mag with the photometry derived in 1986 and 1988 by

Table 1  
BV photometry of V1727 Cyg. The probable errors of the individual observations range from 0.015 to 0.040 mag.

HJD 244 7000+	mag	Filter	HJD 244 7000+	mag	Filter
678.965	17.912	V	862.581	17.896	V
679.804	17.902	V	864.574	17.898	V
679.953	17.902	V	870.578	17.936	V
679.961	17.889	V	678.962	18.826	B
680.972	17.872	V	679.796	18.844	B
680.975	17.899	V	679.957	18.834	B
682.979	17.897	V			

Cowley and Schmidtke (1990). Also the average magnitudes derived by Thorstensen et al. (1988) and Kaluzny (1988) agree to within observational uncertainties with the values given in this note if we make slight adjustments reflecting usage of different comparison stars by different groups of observers.

Observations reported in this paper have been reduced on a DELL-310 computer on loan from Princeton University Observatory.

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