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BV PHOTOMETRY OF ζ And

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Name of the object:	
ζ And = BD +23°106	
Equatorial coordinates:	Equinox:
R.A. = 0 ^h 44 ^m 41 ^s DEC. = +23°59'7	1950
Observatory and telescope:	
Yunnan Observatory, Academia Sinica, 35-cm Cassegrain telescope	
Detector:	Unrefrigerated 1P21 photomultiplier
Filter(s):	<i>BV</i>
Comparison star(s):	BD +22°153 = HD 5516
Check star(s):	BD +23°126 = HD 5316
Transformed to a standard system:	<i>UVB</i>
Standard stars (field) used:	Standard stars from Landolt (1983)
Availability of the data:	
Electronically through IBVS Web-site as 4935-t1.txt	
Type of variability:	Ellipsoidal eclipsing binary
Remarks:	
<p>The binary ζ And ($P = 17.7693$ days) is of considerable interest, especially since Stebbins (1928) has found that there is a distortion wave amplitude of 0.02 magnitude in the sinusoidal light variation of system. Photoelectric observations were obtained from October 1988 to February 1990, on 29 nights. The probable error of a single observation was estimated to be ± 0.017 magnitude. The phases were calculated with the light elements given by Danielkiewicz-Krosniak and Kurpinska-Winiarska (1991):</p> $\text{Hel. Min. I} = \text{J.D. } 2445253.180 + 17.7693 \times E.$ <p>The data are given in the Table 1 (4935-t1.txt, accessible only electronically). The light curves are shown in Figure 1. It is worthy to note that the light curves in 1990 have obviously changed their shapes near 0.5 phase. Their minimum depths became shallower than those in 1988-89.</p>	

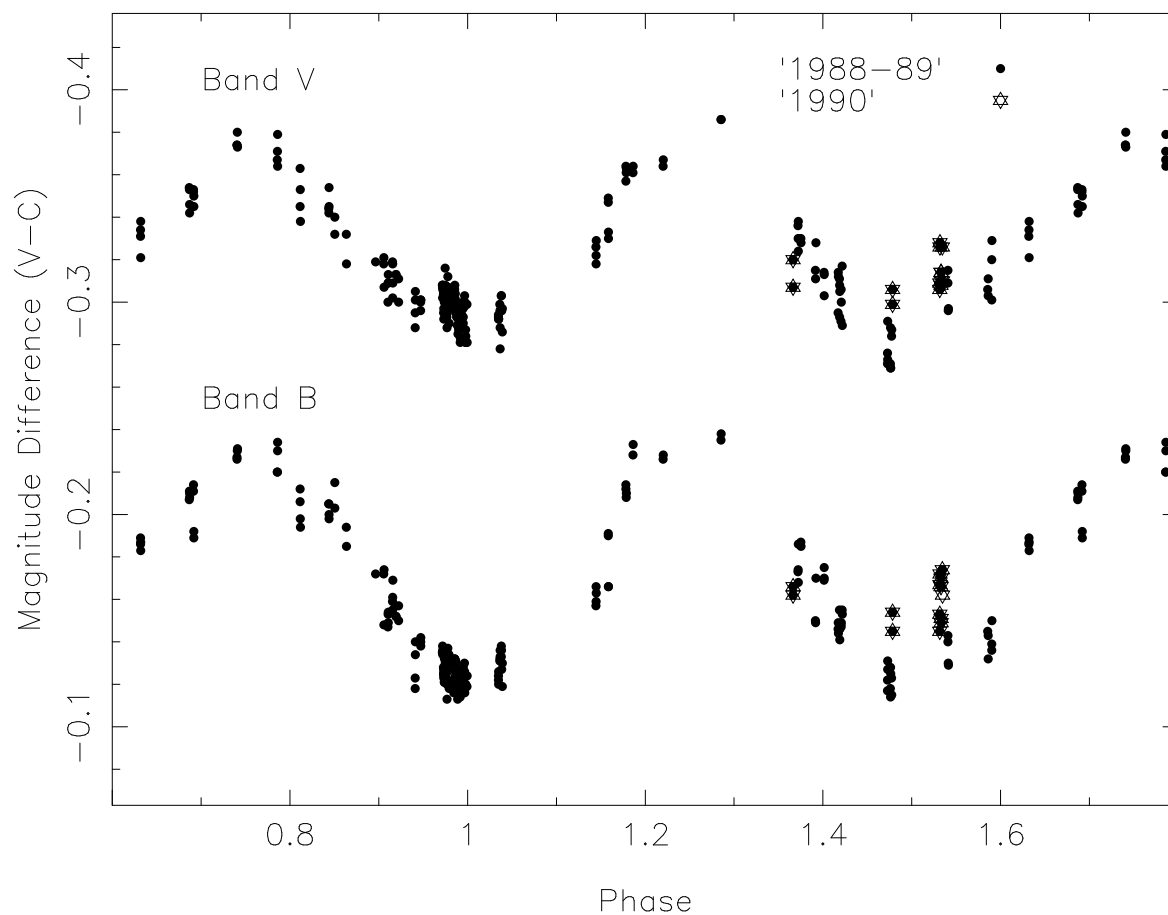


Figure 1. The photoelectric B and V light curves of the ζ And in 1988-90, relative to BD +22° 153

References:

- Danielkiewicz-Krosniak, E., Kurpinska-Winiarska, M., 1991, *Rocznik Astronomiczny Obserwatorium Krakowskiego*, **63**, 3
 Landolt, A. U., 1983, *Astron. J.*, **88**, 439
 Stebbins, J., 1928, *Pub. Washburn Obs.*, **15**, 29