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U B V OBSERVATIONS OF VW CEPHEI

UBV photoelectric observations of the W Ursae Majoris type system VW Cephei (BD +75°0752) were carried out at the Mount Laguna Observatory during three consecutive nights 5/6, 6/7 and 7/8 July, 1988. The 24-inch Smith f/20 telescope was used with the standard U,B,V filters and thermo-electrically cooled EMI 6256 photomultiplier. BD +75°0765 was used as a comparison star and approximately 500 measurements were obtained through each filter.

Three sets of data of the light curves and fifteen times of minimum light were determined from the observations of VW Cep. The data reduction and standardization program for differential photometry (Guinan et al., 1986) and a version of the Kordylewski's "tracing - paper" method (see Szafraniec, 1948) adopted to the IBM-PC computer graphics (Guinan et al. 1987) were employed. The times of primary (I) and secondary (II) minimum light of the VW Cephei for each filter are given in Table I.

The differential U, B, V observations of VW Cephei are plotted against phase in Figure 1. The working ephemeris were used :

$$JD \text{ Hel Min I} = 244\,4176.6161 + 0.2783136 E.$$

Table I.: Times of minima of VW Ceph

J.D. hel. 244 0000+	m.e.	type	filter
7348.8079	$\pm .0002$	I	V
7348.8074	$\pm .0002$	I	B
7348.8063	$\pm .0004$	I	U
7348.9476	$\pm .0003$	II	V
7348.9459	$\pm .0006$	II	B
7348.9456	$\pm .0008$	II	U
7349.9215	$\pm .0003$	I	V
7349.9215	$\pm .0001$	I	B
7349.9217	$\pm .0003$	I	U
7350.7554	$\pm .0003$	I	V
7350.7553	$\pm .0001$	I	B
7350.7547	$\pm .0002$	I	U
7350.8944	$\pm .0001$	II	V
7350.8947	$\pm .0001$	II	B
7350.8946	$\pm .0002$	II	U

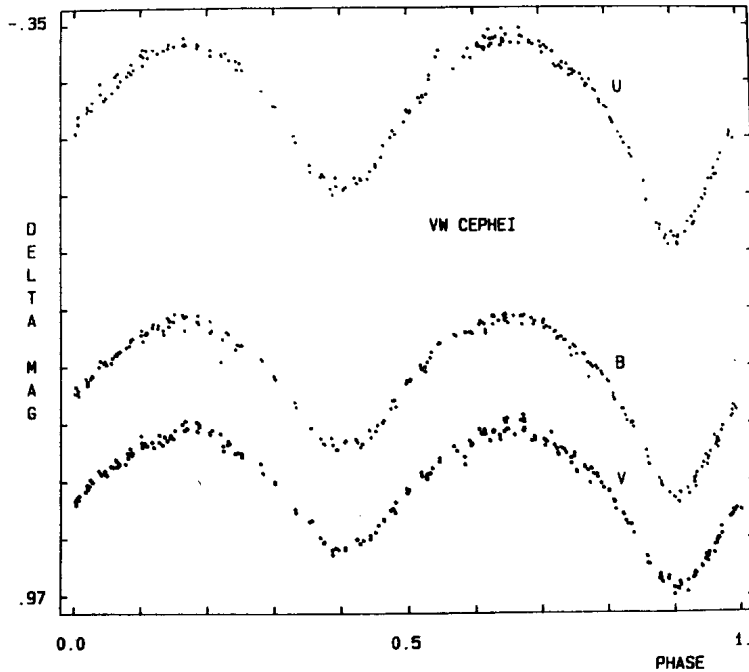


Figure 1.: The differential U, B, V observations of VW Cephei plotted in phase.

These light curves are almost symmetric and both the maxima in B, V band pass are nearly equal. In the past the light curves showed large asymmetries most noticeable in the differences of heights of maxima (Kotarska and Glowina, 1983).

The relative depth of primary minimum in U band pass is significantly deeper than in B and V due in part to small differences of stars temperatures and gravity darkening effects. In the U light curve the maximum following secondary minimum is slightly brighter by the order of 0.02 mag than the corresponding maximum that follows the primary minimum.

The analysis of the observations is underway.

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