

UBV PHOTOMETRY OF THE W UMa STAR BH Cas

The eclipsing binary BH Cassiopeiae was re-established as a W UMa-type star by Metcalfe (1995). Observations in the V-band were obtained in 1994 and 1995 at the Steward Observatory 1.5-m telescope using the 2kBig CCD. Photoelectric observations in the U- and B-bands were obtained in 1996 at the McDonald Observatory 2.1-m telescope. The extinction-corrected, normalized data are shown in Figure 1.

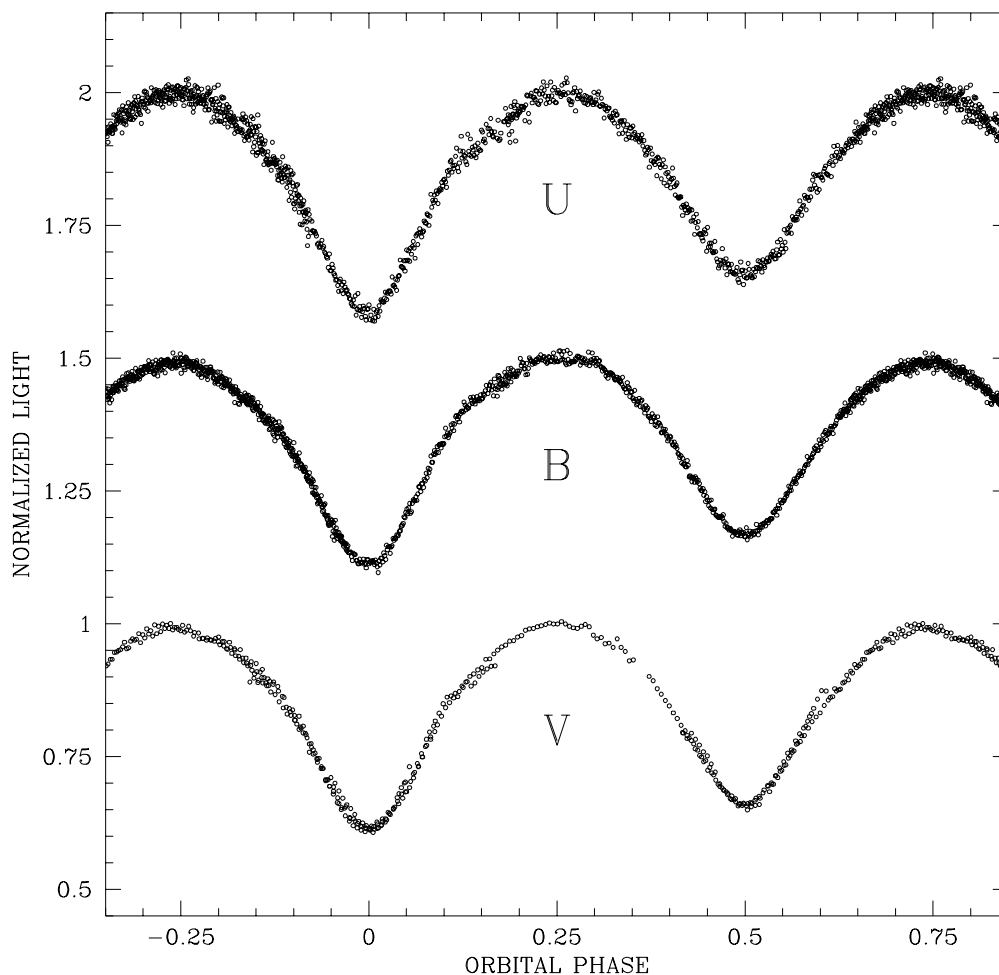


Figure 1. UBV observations of BH Cas, phased with the ephemeris given in this paper.

Times of minimum light were derived from quadratic fits to the 12 minima included in the B- and V-band data (see Table 1), and the following ephemeris was determined:

$$\text{Min I} = \text{HJD } 2449998.618(7 \pm 3) + 0^d.405890(04 \pm 13) \times E$$

Table 1. Observed times of minimum light for BH Cas.

Type	HJD of Min.	Epoch	Type	HJD of Min.	Epoch
II	2449634.7378	-896.5	I	2449978.7288	-49.0
I	2449767.6665	-569.0	II	2449998.8213	+0.5
II	2449970.8154	-68.5	I*	2450429.6738	+1062.0
I	2449971.8315	-66.0	II*	2450430.6883	+1064.5
II	2449977.7170	-51.5	I*	2450431.7023	+1067.0
I	2449977.9187	-51.0	II*	2450436.7780	+1079.5

*Times derived from B-band data.

Spectroscopic observations to be obtained from McDonald Observatory will allow the absolute masses and radii of the two components to be determined. Further constraints would be possible with the addition of R- and I-band light curves where BH Cas is brighter ($m_R = 12.3, m_I = 11.7$). Collaboration with observers at longitudes much different than McDonald Observatory ($L_w \simeq 6^{\text{h}}56^{\text{m}}1$) on the spectroscopic observations is most welcome.

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Reference:
 Metcalfe, T.S., 1995, *IBVS*, No. 4197