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FIRST BVR PHOTOMETRY OF TV URSAE MINORIS

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Name of the object:	
TV UMi = BD +73°654 = HIP 73474 = HD 133767	
Equatorial coordinates:	Equinox:
R.A. = 15 ^h 00 ^m 59 ^s .69 DEC. = +73°03'11".5	2000
Observatory and telescope:	
Ege University Observatory, 48-cm Cassegrain telescope Baja Observatory, 50-cm Ritchey-Chrétien telescope	
Detector:	Hamamatsu, R 4457 (PMT) SiTE 502B (Apogee AP-7 CCD)
Filter(s):	Johnson <i>B</i> , <i>V</i> and <i>R</i> unfiltered (Baja)
Comparison star(s):	BD +73°660 = SAO 8166 (Ege) BD +73°655 = SAO 8148 (Baja)
Check star(s):	BD +73°645 = HD 131493
Transformed to a standard system:	No
Availability of the data:	
Upon request	
Type of variability:	EB

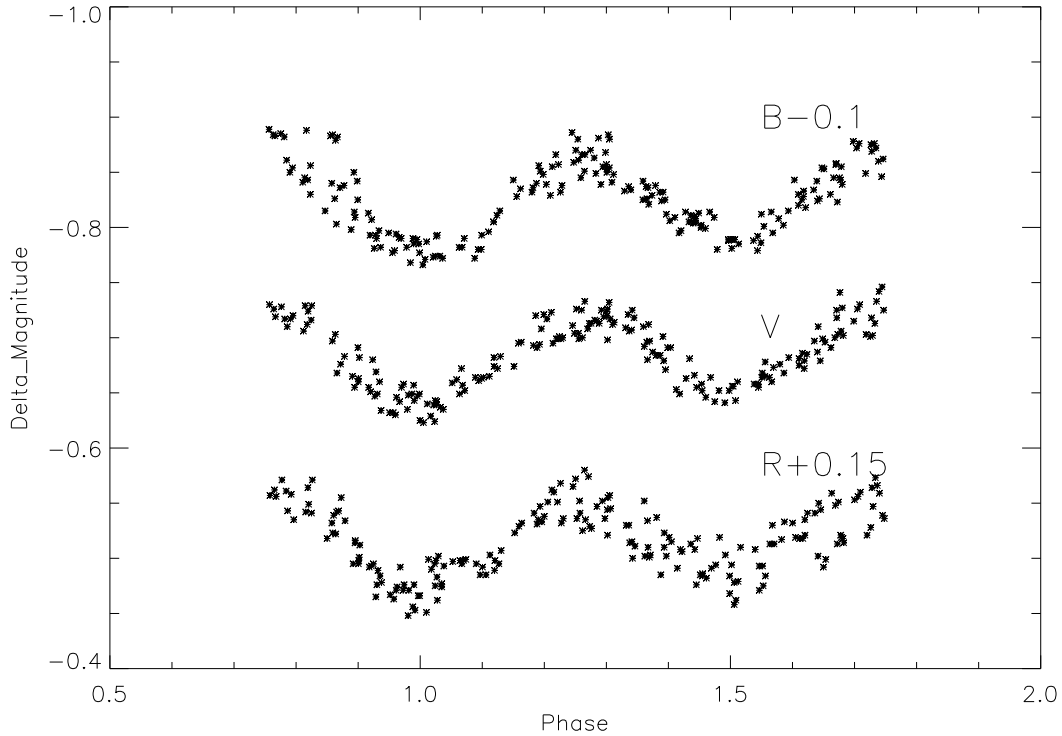


Figure 1. *B*, *V* and *R* light curves of TV UMi obtained at the Ege University Observatory.

Remarks:

In this paper we present *B*, *V* and *R* light curves of the eclipsing binary TV UMi. The variability of TV UMi was discovered by HIPPARCOS (ESA, 1997). The photometric observations of the system by HIPPARCOS show an EB type light curve (Kazarovets et al., 1999). The light elements of the system were given (ESA, 1997) as follows:

$$\text{HJD Min. I} = 2448500.2744 + 0^{\text{d}}415546 \times E.$$

The spectral type of the system is given as F8 (ESA, 1997). The first ground-based photometric observations were made over 9 nights during 2000 observing season at the Ege University Observatory and 3 nights at Baja Observatory as a part of the bilateral photometric campaign of the two institutes. The derived light curves for *B*, *V*, *R* colours are illustrated in Figure 1. The obtained minima times are given in Table 1. The *O* – *C* values are calculated on the base of our improved ephemeris (see below). Using the data given in Table 1 we derived the following, improved light elements and their errors:

$$\text{HJD Min. I} = 2448500.272(8) + 0^{\text{d}}415550(1) \times E.$$

The phases in Figure 1 are calculated using the above elements.

Times of minima:						
Star name	Time of min. HJD 2400000+	Error	Type	Filter	$O - C$ [day]	Rem.
TV UMi	48500.2744	—	I	—	0.0022	Hipparcos
	51684.421	2	II	B, V, R	- 0.003	Ege
	51731.382	2	II	B, V, R	0.001	Ege
	51762.331	2	I	B, V, R	-0.009	Ege
	51765.448	1	II	—	-0.008	Baja
	51766.487	1	I	—	-0.008	Baja
	51773.344	1	II	—	-0.008	Baja
	52091.448	1	I	B, V, R	-0.007	Ege
	52100.398	3	II	B, V, R	0.009	Ege

Acknowledgements:

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References:

- ESA, 1997, *The Hipparcos and Tycho Catalogues*, SP-1200
 Kazarovets, A. V., et al., 1999, *IBVS*, 4659