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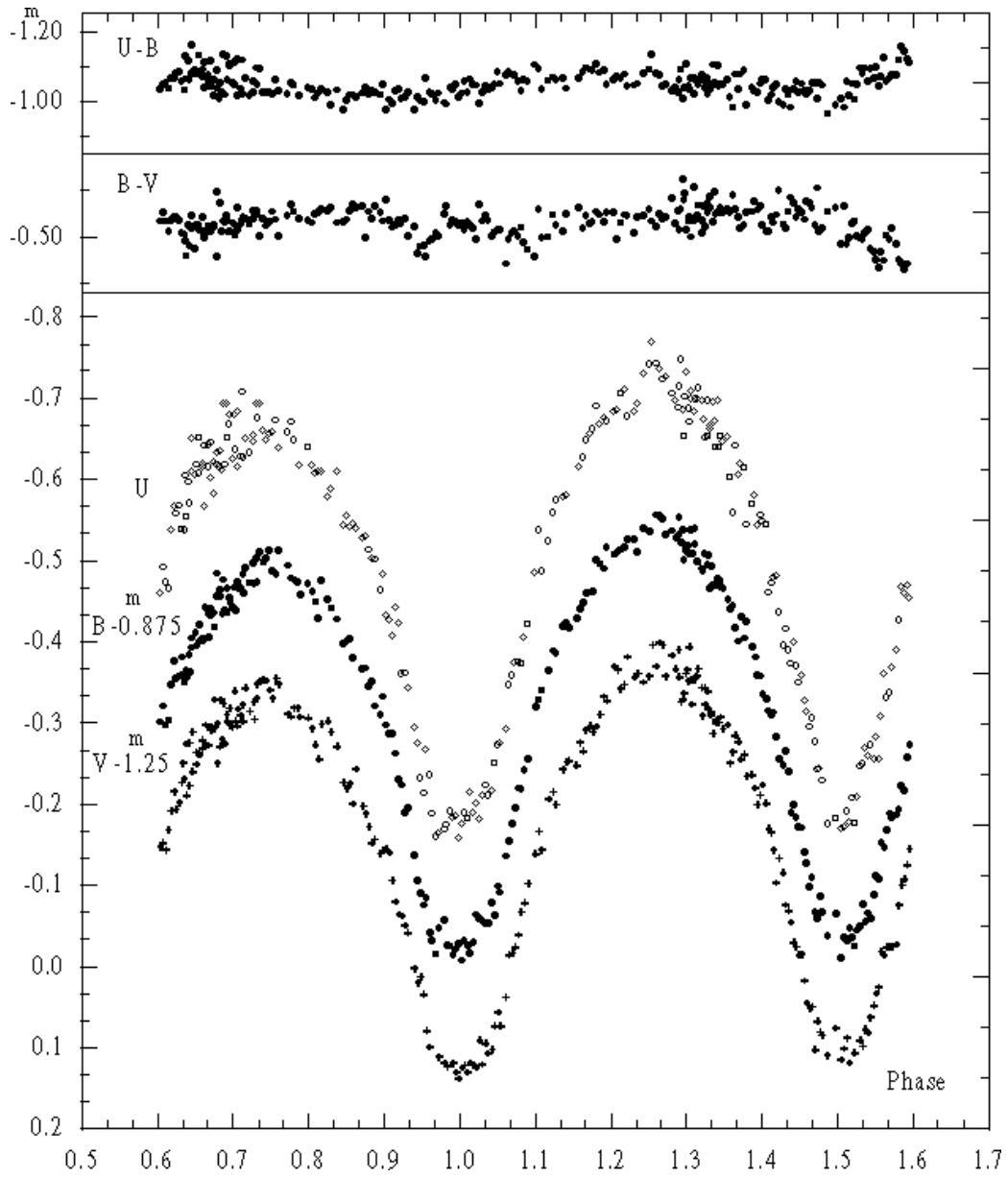
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UBV PHOTOMETRY OF THE NEWLY FOUND ACTIVE STAR  
YY CORONAE BOREALIS

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<b>Name of the object:</b>	
YY CrB = BD +38°2706 = HIP 77598 = HD 141990	
<b>Equatorial coordinates:</b>	<b>Equinox:</b>
R.A.= 15 <sup>h</sup> 50 <sup>m</sup> 32 <sup>s</sup> .43 DEC.= +37°50′07″.6	2000
<b>Observatory and telescope:</b>	
Ankara University Observatory, 30-cm Maksutov telescope	
<b>Detector:</b>	Hamamatsu, R 1414 (PMT)
<b>Filter(s):</b>	Johnson <i>U</i> , <i>B</i> and <i>V</i>
<b>Comparison star(s):</b>	BD +38°2708
<b>Check star(s):</b>	BD +38°2701
<b>Transformed to a standard system:</b>	No
<b>Availability of the data:</b>	
Upon request	
<b>Type of variability:</b>	EW



**Figure 1.** The light and color curves of YY CrB

Table 1: The light levels and their differences in the light curves of YY CrB

	$U$	$B$	$V$
Max. light at 0.75	-0.676	0.372	0.919
Max. light at 0.25	-0.736	0.324	0.867
Min. light at 0.00	-0.176	0.854	1.375
Min. light at 0.50	-0.177	0.840	1.352
$\Delta_{\text{max.}} (m_{0.75} - m_{0.25})$	0.060	0.048	0.052
$\Delta_{\text{min.}} (m_{0.00} - m_{0.50})$	0.001	0.014	0.023
Depth of Min. I	0.530	0.506	0.482
Depth of Min. II	0.529	0.492	0.459

**Remarks:**

The EW type active eclipsing binary star YY CrB was discovered by HIPPARCOS (ESA, 1997). The system has a spectral type of G5 and an amplitude of 0<sup>m</sup>491 ranging from 8<sup>m</sup>643 to 9<sup>m</sup>134 in *V* band (ESA, 1997). Sipahi et al. (2000) carried out the first ground based photometric observations of the system in *B*, *V* and *R* bands. Both the light curve of HIPPARCOS and light curves of Sipahi et al. have almost equal maxima and minima, and there are no significant asymmetries in their data. The star was observed photoelectrically with the 30-cm Maksutov telescope at the Ankara University Observation on the nights of 8 and 9 May, 2000. The phases of the observations were calculated using the following light elements given by Soyduğan et al. (2000):

$$\text{HJD}_{\min I} = 2448500.2535 + 0^d3765694 \times E.$$

The differential *U*, *B* and *V* light, and *U* – *B* and *B* – *V* color curves in the instrumental system are shown in Figure 1. The shape of the light curves are typical of W UMa type. A pronounced asymmetry is evident in the light curves. This asymmetry is located between the descending and ascending shoulders of the primary minimum (see Table 1). There is no significant variation due to maculation or proximity effects at either minimum in the *U* – *B* and *B* – *V* color curves in Figure 1.

**Acknowledgements:**

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**References:**

- ESA, 1997, The Hipparcos & Tycho Catalogues, SP-1220  
 Sipahi, E., Keskin, V., Yaşarsoy, B., 2000, *IBVS*, No. 4859  
 Soyduğan, F., Erdem, A., Özdemir, S., Demircan, O., Soyduğan, E., Bulut, İ., 2000, in XII. National Astronomy Meeting, ed. İbanoğlu, C., Ege University Press, in press