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**BD  $-02^{\circ}5436$ , A NEW UU HERCULIS VARIABLE?**

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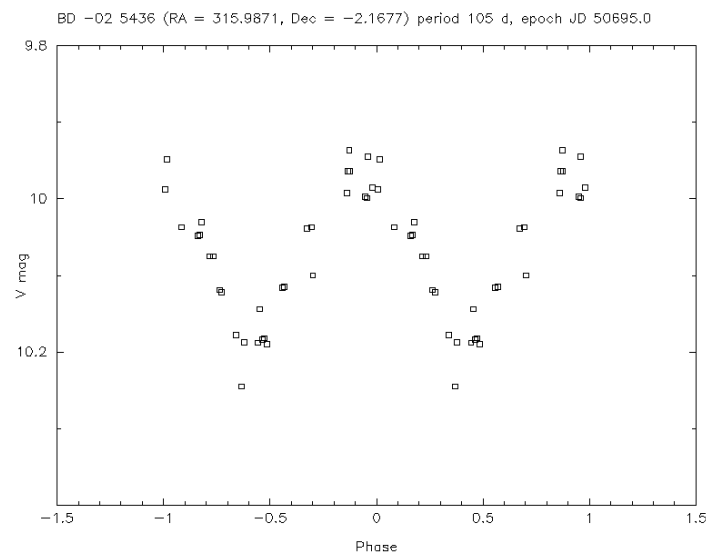
<b>Name of the object:</b>	
BD $-02^{\circ}5436$ = PPM 204765 = GSC 5196-0130	
<b>Equatorial coordinates:</b>	<b>Equinox:</b>
R.A. = $21^{\text{h}}03^{\text{m}}57^{\text{s}}.0$ DEC. = $-2^{\circ}10'04''$	J2000
<b>Observatory and telescope:</b>	
Dayton TASS MkIII camera system: three CCD cameras, each using 135-mm f/2.8 lenses, operated serially in drift-scan (time-delay integration) mode.	
<b>Detector:</b>	Kodak KAF-0400, 14 arcsec/pxl
<b>Filter(s):</b>	Johnson V
<b>Transformed to a standard system:</b>	Johnson V
<b>Standard stars (field) used:</b>	First order transformation coefficients were calculated using Landolt standard stars in the Declination zone $-1^{\circ}.5$ to $-4^{\circ}.5$ . Nightly zero points were set with Tycho stars present in each image. Per-observation internal uncertainties are expected to be $0^{\text{m}}.020$ – $0^{\text{m}}.025$ at the magnitude of the variable. An analysis of the photometric accuracy for a larger dataset has been performed by Richmond (1998).
<b>Availability of the data:</b>	
Through IBVS Web-site as 4709-t1.txt	
<b>Type of variability:</b>	SRd, possibly UU Herculis type

**Remarks:**

BD  $-02^{\circ}5436$  was found to be variable in data taken with the Dayton, Ohio TASS MkIII camera system (Gombert & Droege 1998). The star is not present in the ‘Combined General Catalogue of Variable Stars’ (GCVS 4.1, Kholopov *et al.* 1998). The star was observed 32 times between UT dates 11 July 1997 and 23 October 1998. During this interval the star showed a well-defined periodicity of 105 days. The Tycho  $B - V$  color of the star corrected to the standard system is  $0.53 \pm 0.06$ . This, combined with the small-amplitude, sawtooth-shaped lightcurve, suggests the star is of the UU Herculis type. This is a rare class of high-latitude F-type supergiants exhibiting sometimes varying modes of pulsation, but whose fundamental characteristics are enigmatic (*cf.* Klochkova *et al.* 1997, Fernie & Seager 1995). A period of about 52.5 days (more characteristic of UU Herculis type variables) could not be established from the data collected to date.

**Acknowledgements:**

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**Figure 1.** Photometry of BD  $-02^{\circ}5436$  phased for a period of 105 days.

## References:

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 Klochkova, V. G., Panchuk, V. E., and Chentsov, E. L., 1997, *Astron. Astrophys.*, **323**, 789  
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