

COMMISSION 27 OF THE I. A. U.  
INFORMATION BULLETIN ON VARIABLE STARS  
Number 2828

Konkoly Observatory  
Budapest  
29 November 1985  
HU ISSN 0374 - 0676

1985 - UBV LIGHT CURVES OF V508 OPHIUCHI

V508 Oph (BD+13<sup>o</sup>3496) is an uncommon eclipsing binary. Its variability was first detected by Hoffmeister (1935) and Jacchia (1936), who classified the star as a W UMa type eclipsing binary. Karetnikov (1963, 1977) obtained photographic and photovisual light curves with amplitudes of the order of 1<sup>m</sup>.1 in B and 0<sup>m</sup>.7 in V. Further BV photoelectric observations by Rovithis and Rovithis-Livaniou (1983) confirmed the mentioned peculiar amplitudes of light variations. More recently, Lapasset and Funes (1985) could not corroborate the previous photometric behaviour of V508 Oph from UBV data. Their 1984-observations showed normal W UMa type light curves with depths of minima of about 0<sup>m</sup>.80, 0<sup>m</sup>.86 and 0<sup>m</sup>.94 in V, B and U, respectively. The few observations made only partially covered the orbital cycle.

In this note, new photoelectric data obtained at El Leoncito Observatory (San Juan, Argentina) during the 1985 - winter season are presented. They were performed by means of a 76-cm reflector telescope, an RCA 34031(A) photomultiplier refrigerated by Peltier effect and photon-counting electronics. Standard UBV filters were also employed. The measurements were made differentially with respect to the comparison star BD+13<sup>o</sup>3495. All the observations were corrected for first and second order differential extinction using mean coefficients for El Leoncito.

A total of 249 UBV observations were derived and from them four new times of minima were calculated. The total of 11 photoelectric minima derived from Rovithis-Livaniou and Rovithis (1983), Lapasset and Funes (1985) and the present data, were used to deduce the following linear least squares ephemeris:

$$\text{Min.I. (JDhel.)} = 2444785.3251 + 0.^d_34479444 \cdot E \quad (1) \\ \pm .0005 \quad \pm .00000019$$

Comparing this equation with the older ephemeris given by Karetnikov (1977):

$$\text{Min.I. (JDhel.)} = 2428416.3342 + 0.^d_344791922 \cdot E \quad (2) \\ \pm .0002 \quad \pm .000000012$$

there seems to be a small increment in the orbital period. This will be studied in detail and published elsewhere.

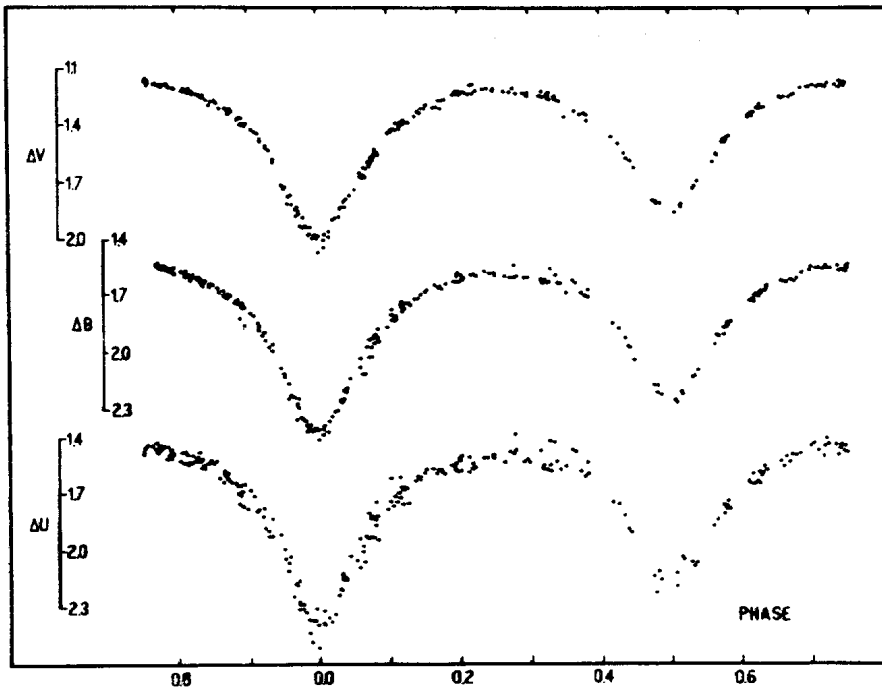


Figure 1. UB light curves of V508 Ophiuchi

Table I. Photoelectric times of minimum of V508 Oph

Min.	JDhel. 2440000.+	E	O-C	Reference
II	4783.4265	-5.5	-0.0022	A
II	4784.4623	-2.5	-0.0008	A
I	4785.3283	0.0	0.0032	A
II	4785.4958	0.5	-0.0017	A
I	4786.3623	3.0	0.0028	A
I	4864.2816	229.0	-0.0014	A
I	5915.5615	3278.0	0.0003	B
I	6239.6684	4218.0	0.0003	C
I	6240.7035	4221.0	0.0011	C
II	6241.5635	4223.5	-0.0009	C
I	6241.7362	4224.0	-0.0006	C

References to Table I:

- A: Rovithis-Livaniou and Rovithis (1983)
- B: Lapasset and Funes (1985)
- C: Lapasset (this work)

Equation (1) was used to calculate the phases of all the observations and the residuals (O-C) listed in Table I. The light curves of V508 Oph derived from 1984-85 observations are shown in Figure 1. The presumptions exposed by Lapasset and Funes (1985) are here confirmed: the present UBV data show the normal behaviour of W UMa type stars. Depths of primary minima are about  $0.81^m$ ,  $0.85^m$  and  $0.92^m$  in V, B and U, respectively. The differences between primary and secondary minima are about  $0.10^m$ . Thus the conclusions of the mentioned paper are still valid: since errors can be assumed for neither the older nor the present data, it has to be believed that a sudden change has actually occurred to V508 Oph between 1981 and 1984.

The author is very grateful to the Director of the Felix Aguilar Observatory (San Juan) for granting the running time at El Leoncito Observatory.

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