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PHOTOELECTRIC MINIMA AND NEW LIGHT ELEMENTS OF W UMA

The variability of the short period eclipsing variable W Ursae Majoris (BD +56^o1400, HD 83950) was discovered by Müller and Kempf (1903) at the beginning of this century. Previous observational data were well summarized up to now by several authors. They have given different light elements for different intervals of cycles. Kwee (1956) suggested that W UMA was a triple system.

The observations in B and V were made at the Ege University observatory. The light curve obtained from these observations has been published by Evren et al. (1979). The photoelectric minima obtained recently are given in the following table.

JD Hel.	(O-C) _I	(O-C) _{II}	Minimum type
2443 563.3995	-.0016	.0006	primary
564.4005	-.0015	.0006	"
928.3998	-.0013	-.0001	"
928.5658	-.0021	-.0009	secondary
929.4009	-.0011	.0001	primary
929.5668	-.0021	-.0008	secondary
930.4019	-.0011	.0002	primary

The photoelectric Min I observations from 1965 to 1979 March were collected and the (O-C)_I values were calculated from the following light elements (Equ.1).

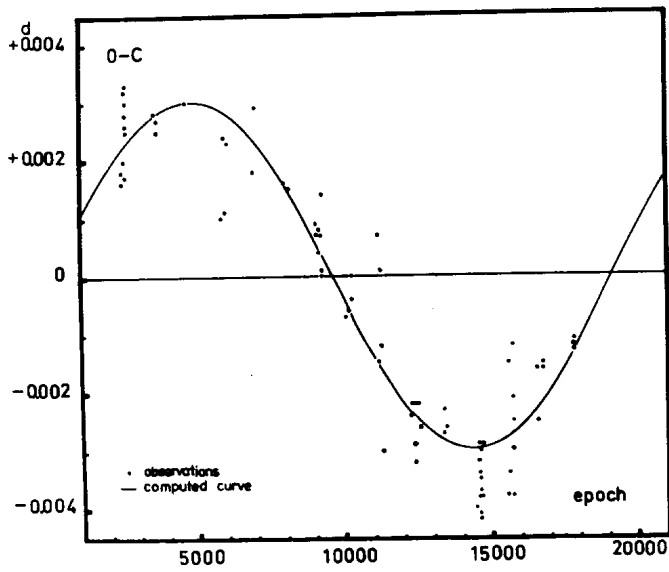
$$\text{Min I} = \text{JD Hel. } 2437986.9742 + 0^{\text{d}}.33363808 \cdot E \quad (1)$$

The (O-C)_I variation is shown in the Figure. The new light elements computed and the observations from 1965 to 1979 March are represented with the following equation, on the assumption that the (O-C)_I variation shows a sinusoidal curve;

$$\text{Min I} = \text{JD Hel. } 2437986.97426 + 0^{\text{d}}.33363808 \cdot E + \begin{matrix} \pm 5 \\ \pm 6 \end{matrix}$$

$$0^{\text{d}}.00302 \cdot \sin(E \cdot 2\pi / 19200.9) \quad (2)$$

$\begin{matrix} \pm 4 & \pm 1 \end{matrix}$



The $(O-C)_{II}$ values in the table are differences between observations and calculations with the new light elements (Equ.2).

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References:

- Evren, S., Tunca, Z. and Tümer, O., 1979, I.B.V.S. No. 1577
 Kwee, K.K., 1956, B.A.N. 12, 330
 Müller, G. and Kempf, P., 1903, Ap.J. 17, 201