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W DELPHINI
REQUEST FOR NEW OBSERVATIONS

As it is known, W Delphini is a semi-detached close binary system. It has been frequently observed and an unpublished list of primary minima was prepared by D. Lichtenknecker and F. Agerer. That is why a new study of the orbital period may be undertaken.

Years ago, Plavec (1960) considered that period variation of W Delphini could be caused by the apsidal motion. Then, this star was included among the semi-detached binary systems with "observed" apsidal motion.

From the actual list of primary minima, we have drawn the diagram of O-C residuals based on the linear formula:

$$\text{Min. Hel.} = \text{JD } 2418048.6187 + 4^{d}.8060633 \times E.$$

An inspection of O–C differences (see Figure 1) makes it evident that, if the corresponding curve is a periodic one, its period must be U>90 years; while in Plavec's paper, U≃51 years has been given for apsidal period.

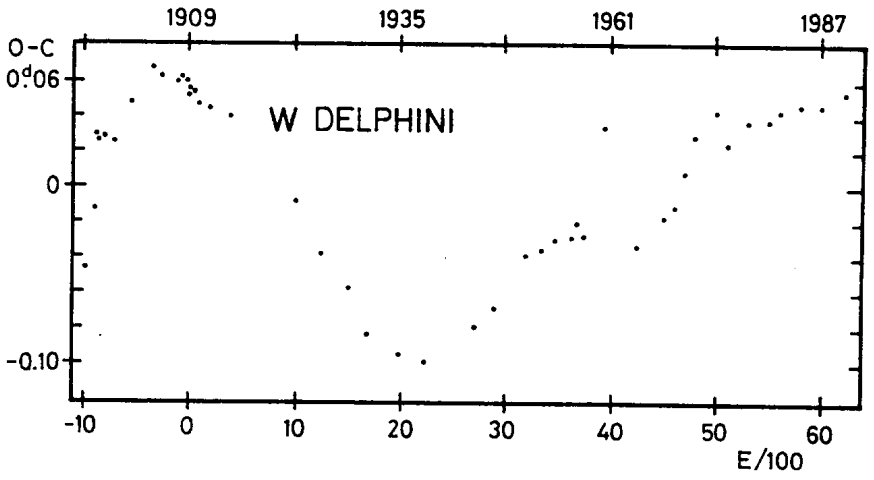

Figure 1.

As we can see in Figure 1, in order to determine an accurate value for the long period U, new series of primary minima are necessary. In addition, in order to accept or to reject the hypothesis of the apsidal motion, very accurate photometric observations of the secondary minima are necessary. Anyhow, in our days, there are many observers who could contribute to the study of the semi-detached system W Delphini.

F. AGERER
Dorfstrasse 19
D-W-8311 Zweikirchen
Germany

I. TODORAN
Astronomical Observatory
3400 Cluj-Napoca
Romania

Reference:

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