

COMMISSIONS 27 AND 42 OF THE IAU
 INFORMATION BULLETIN ON VARIABLE STARS

Number 3903

Konkoly Observatory
 Budapest
 6 July 1993

HU ISSN 0324 - 0676

**TIMES OF MINIMUM OF ECLIPSING BINARIES WITH
 NON-CIRCULAR ORBITS**

During April and May 1993, we enjoyed an observational stay at the Rosemary Hill Observatory, operated by the Department of Astronomy of the University of Florida, Gainesville, U.S.A. One of the observing programs consisted in the timing of minima of eclipsing binaries with non-circular orbits, the results of which are reported here.

The minimum times given in Table I were determined photoelectrically employing the 76 cm (30 inch) reflector of the Rosemary Hill Observatory, located near the town of Bronson in north-central Florida. This telescope is equipped with a standard one-channel photometer at its Cassegrain focus. An EM16256S photomultiplier operated in the DC-mode and cooled with dry ice yields good photometric quality down to about 13th magnitude. The set of filters has been carefully chosen in order to reproduce the standard Johnson UBV system (Diethelm, 1993).

The times of minimum were deduced from differential photometry using comparison stars taken from the previous work on these variables. None of the comparison stars showed variability exceeding the accuracy of the photometric system. A field diaphragm of 32 arcseconds diameter was used throughout.

Table I
 Times of minimum of eclipsing binaries with non-circular orbits

Star	Type	O JDhel	e.e.	O-C (GCVS 85)	n	Remarks
BW Boo	s	49099.73:	± 0.05	-0.16	32	V, remark overleaf
EK Cep	p	49115.8081	± 0.0003	+0.0058	36	V
V478 Cyg	p	49124.7720	± 0.0030	+0.0197	32	V
V959 Cyg	p	49124.8123	± 0.0015	-0.0340	14	V
V577 Oph	s	49105.7808	± 0.0020	+0.4884	50	see Diethelm (1993)
EQ Vul	s	49113.82:	± 0.02	-0.04	38	V, remark overleaf

Remarks to Table I:

BW Boo: The displaced secondary reported by Kurpinska (1975) is confirmed. Due to the small amplitude (about 0.025 mag in V) and the very slow variation, only an approximate time of minimum can be given.

EQ Vul: The night of JD 2449113 was not of photometric quality. The lightcurve therefore shows considerable scatter due to the changing sky conditions. Furthermore, the descending branch is very poorly covered. The time given in Table I is only an upper limit to the actual time of minimum.

Acknowledgements: We would like to thank the staff of the Department of Astronomy of the University of Florida for their hospitality and for the generous allocation of observing time at Rosemary Hill Observatory. The continuing technical assistance by J. Baker is especially acknowledged. This research is supported by a grant from the Emilia Guggenheim-Schnurr foundation.

R. Diethelm
BBSAG
Rennweg 1
CH-4118 Rodersdorf
Switzerland

References:

Diethelm, R: 1993, I.B.V.S. No. 3894
Kurpinska, M: 1975, I.B.V.S No. 1007