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IMPROVED EPHEMERIS FOR HD128141

The G-type star HD128141 was discovered to be a binary star of W UMA type by Bond (1975), who gave the preliminary ephemeris

$$JD_0 = 2442537.433 + 0^d.355 \cdot E.$$

We observed this star on 24 nights between April 1976 and June 1978 to obtain its light curve and improved ephemeris. The observations were made in two colours using an EMI6256S photomultiplier tube and standard B,V filters attached to the 30 cm Maksutov telescope of the University Observatory at Ankara. The comparison star was HD128128, and HD128186 and BD+9°2919 were used as occasional checks.

The observed times of minima are given below:

MJD ₀	m.e.	E	O-C
*2442536.933		-1013.5	+0.0017
42896.8763	±0.0004 V	0	+0.0004
.8746	7 B		-0.0013
42897.9419	6 V	3	+0.0005
.9418	5 B		+0.0004
43225.0333	5 V	924	-0.0013
.0334	4 B		-0.0012
43228.9410	5 V	935	-0.0002
.9408	3 B		-0.0004
43230.0068	3 V	938	+0.0001
.0072	4 B		+0.0005
43340.8120	8 V	1250	-0.0015
.8130	16 B		-0.0005
43573.0842	8 V	1904	+0.0025
.0850	8 B		+0.0033
43666.8402	10 V	2168	-0.0011
.8399	10 B		-0.0014
43669.8616	10 V	2176.5	+0.0015
.8600	13 B		-0.0001

*Bond (1975)

The first entry was taken from Bond. The times of minima and the associated errors were calculated by the method of Kwee and van Woerden (1956).

According to the present observations, the epoch given by Bond corresponds to the minimum that is approximately $0^m.02$ less deep. We have therefore considered it to be the epoch of the secondary minimum.

The following ephemeris was obtained from the table:

$$\text{MJD}_0(\text{Min I}) = 42896.8759 + 0.^d.3551501 \cdot E.$$

$\pm \quad \quad \quad \pm$
 $\quad \quad \quad 3 \quad \quad \quad 3$

After an initial graphical solution, the O-C value for each night (V and B combined) was assigned weight according to the mean error given above. For the first entry ± 0.001 was adopted. Exclusion of the night with E=1904, with a large O-C, did not change the result significantly. The secondary minima were included in the solution with the assumption that the phase difference is exactly half the period.

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References:

Bond, H.E., 1975, P.A.S.P. 87, 877

Kwee, K.K. and van Woerden, H., 1956, Bull.Astron.Neth. 12, 327