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THE PERIOD OF KO Aur

KO Aur (BD+48^o1340) was discovered by Weber (1963) and this star was reported by Berthold (1978) to be an eclipsing binary with a period of 1.31793028 days and with 0^m.75 and 0^m.70 deep primary and secondary eclipses respectively. The ephemeris given by Berthold is as follows:

$$\text{Min. (hel.)} = \text{JD.}2436607.472 + 1.^{\text{d}}.31793028 \cdot E$$

From December 1988 to March 1989 this star was observed photoelectrically in UBV colours at Xinglong station, Beijing observatory with the 60 cm reflector.

The stars BD+48^o1342 and BD+48^o1344 were used as the comparison and the check star respectively.

The light curves with 614 UBV photoelectric observations were obtained on nine nights and six times of minima were determined by Kwee and Van Woerden's (1956) method. The results reveal that during the interval of our observation some minima times predicted according to the ephemeris given by Berthold (1978) were detected and some were not. It is interesting to note that the minima times detected just coincide with those minima times predicted according to an ephemeris with a triple of the old period given by Berthold (1978).

17 times of minima are listed in Table I, six of which are given by us and 11 of which were given by Berthold. Six times of minima are excluded from the moments given by Berthold, because the O-C residual of those minima times is over 0^d.5.

The ephemeris deduced by the weighted least squares method is as follows:

$$\text{JD.Hel}(\text{Min I}) = 2447512.0677 + 3.^{\text{d}}.9538047 \cdot E \\ \pm \quad 23 \quad \quad 28$$

The light curves in BV colours are given in Figure 1. The O-C diagram of minima times is shown in Figure 2. The O-C residuals of minima times show that the period for this binary seems to be constant over the time interval covered.

It is interesting to note that the binary system may be an RS CVn-type

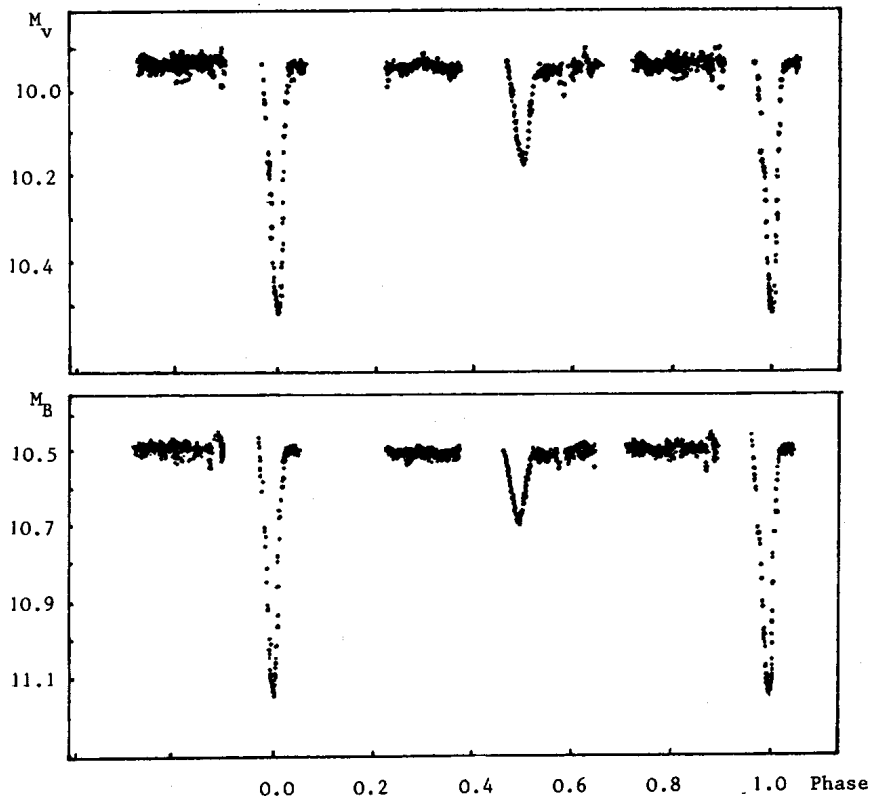


Fig. 1. The light curves of KO Aur in BV colours

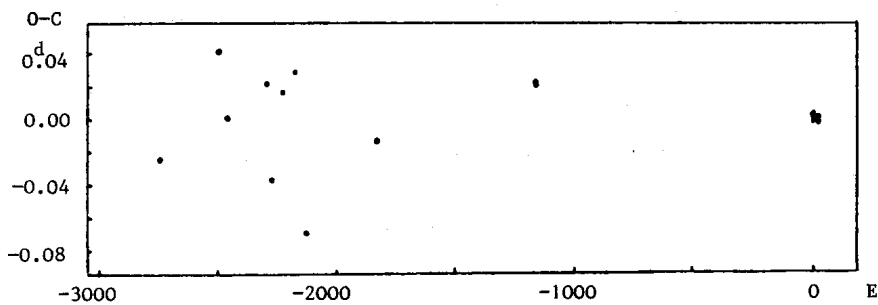


Fig. 2. The O-C diagram of times of minima for KO Aur

Table I. Times of minima of KO Aur

JD.(hel) -2400000+	E	O-C (days)	weight	observer
36607.4500	-2758.0	-0.0244	1	Berthold
37639.4590	-2497.0	0.0416	1	"
37730.3560	-2474.0	0.0011	1	"
38406.4780	-2303.0	0.0225	1	"
38495.3900	-2280.5	-0.0361	1	"
38651.6100	-2241.0	0.0186	1	"
38849.3110	-2191.0	0.0294	1	"
39070.6270	-2135.0	-0.0677	1	"
40205.4250	-1848.0	-0.0116	1	"
42866.3680	-1175.0	0.0208	1	"
42870.3230	-1174.0	0.0220	1	"
47506.1378	-1.5	0.0008	10	Zhang et al.
47510.0894	-0.5	-0.0014	10	"
47512.0697	0.0	0.0010	10	"
47595.0973	21.0	-0.0003	10	"
47597.0717	21.5	-0.0028	10	"
47599.0522	22.0	0.0008	10	"

eclipsing binary with a distortion wave outside the eclipses of the light curve but, in order to reveal other RS CVn characteristics, spectroscopic observations of this system are necessary.

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