

COMMISSION 27 OF THE I. A. U.
 INFORMATION BULLETIN ON VARIABLE STARS

Number 3409

Konkoly Observatory
 Budapest
 28 December 1989

HU ISSN 0374 - 0676

PHOTOELECTRIC OBSERVATIONS OF UW Ori

UW Ori was discovered by Luther (1911), who, however, suggested an incorrect period of $0^{\text{h}}.407902$. Subsequent period studies were reported, on the basis of photographic observations, by Whitney (1959), Ahnert (1960) and Todoran (1962), who gave different values as 2.038127, 2.038101 and 1.0080525 days respectively. So far, no photoelectric data of this star have been published.

From October 1986 to February 1987 and from October 1987 to January 1988 this star was observed photoelectrically in BV colours at Xinglong station, Beijing observatory with the 60 cm reflector.

BD+20^o1172 was used as the check star and the coordinates for the comparison star are $05^{\text{h}}54^{\text{m}}58^{\text{s}}$ (α 1987) and $20^{\text{o}}05'12''$ (δ 1987), as is shown in Figure 1.

A total of 567 photoelectric observations was obtained on 18 nights and three times of minima were determined by Kwee and Van Woerden's (1956) method. 27 times of minima were used to compute the period of this star.

The following ephemeris was derived by weighted least squares method:

$$\text{JD.Hel}(\text{Min I}) = 2447172.2684 + 2^{\text{d}}.03812913 \cdot E$$

$$\pm 50 \qquad \qquad \qquad 47$$

Light curves for this star in BV colours are given in Figure 2. O-C residuals of times of minima are given in Table I and the O-C diagram is shown in Figure 3. Over this interval no obvious variation of the period was found.

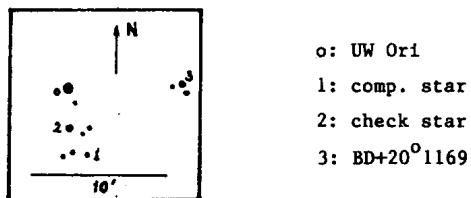


Fig. 1. Finding chart for the binary UW Ori

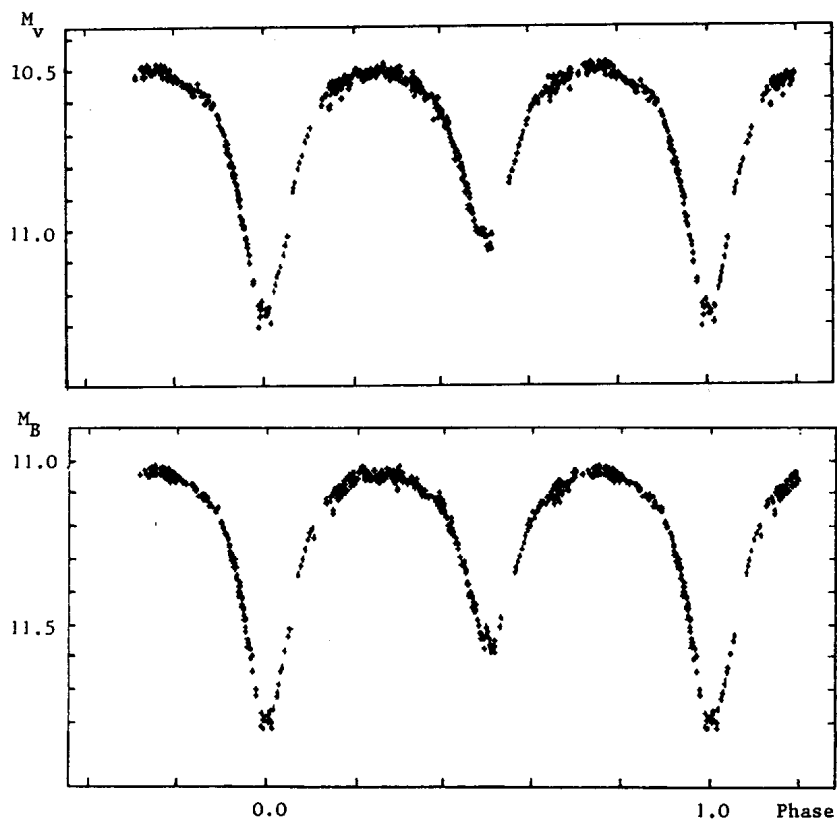


Fig. 2. The light curves of UW Ori in BV colours

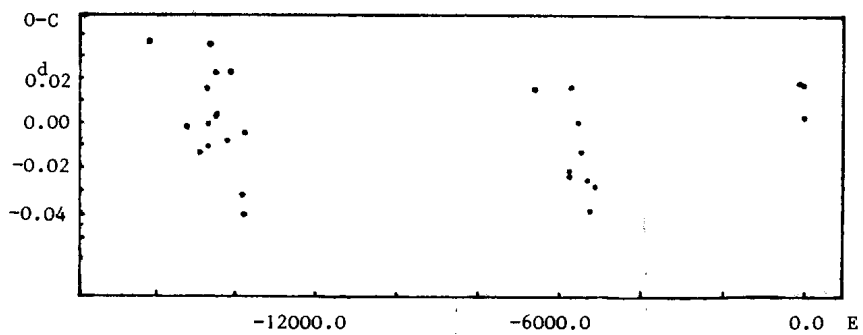


Fig. 3. The O-C diagram of times of minima for UW Ori

Table I. Times of minima of UW Ori

JD(hel) 2400000+	E	o-c (days)	weight	method	observer
14307.4730	-16125.0	0.0367	1	pg.	Luther
16172.3240	-15210.0	-0.0004	1	pg.	"
16871.3910	-14867.0	-0.0117	1	pg.	"
17198.5130	-14706.5	-0.0095	1	pg.	"
17235.2430	-14688.5	0.0342	1	pg.	"
17242.3420	-14685.0	-0.0002	1	pg.	"
17297.3880	-14658.0	0.0163	1	pg.	"
17614.3040	-14502.5	0.0032	1	pg.	"
17668.3340	-14476.0	0.0228	1	pg.	"
17670.3530	-14475.0	0.0037	1	pg.	"
18264.4570	-14183.5	-0.0070	1	pg.	"
18361.2970	-14136.0	0.0219	1	pg.	"
19013.4450	-13816.0	-0.0314	1	pg.	"
19058.2740	-13794.0	-0.0413	1	pg.	"
19068.5020	-13789.0	-0.0039	1	pg.	"
33657.4500	- 6631.0	0.0158	1	pg.	Ahnert
35428.5480	- 5762.0	-0.0204	1	pg.	Whitney
35432.6220	- 5760.0	-0.0227	1	pg.	"
35483.6140	- 5735.0	0.0161	1	pg.	"
35808.6800	- 5575.5	0.0005	1	pg.	"
35910.5730	- 5525.5	-0.0130	1	pg.	"
36287.6150	- 5340.5	-0.0243	1	pg.	"
36558.6720	- 5207.5	-0.0390	1	pg.	"
36561.7410	- 5206.0	-0.0272	1	pg.	"
46794.2144	- 185.5	0.0189	2	pe.	Zhang et al.
47172.2861	0.0	0.0177	2	pe.	"
47173.2917	0.5	0.0042	2	pe.	"

From the light curves the star is to be an eclipsing binary of Beta Lyrae type with $0^m.78$ and $0^m.54$ deep primary and secondary eclipses respectively.

ZHANG RONG-XIAN, ZHANG JI-TONG,
LI QI-SHENG, ZHAI DI-SHENG,
ZHANG XIAO-YU

Beijing observatory
Academia Sinica
Beijing 100080
China

References:

- Ahnert, P.: 1960, Mitt. über Ver. Sterne, No.643.
Kwee, K.K. and Van Woerden, H.: 1956, Bull. Astron. Inst. Netherl. 12, 327.
Luther, W.: 1911, Astron. Nachr., 187, 191.
Todoran, I.: 1962, Studii Cercetari de Astronomie, 7, No.1, 155.
Whitney, S.: 1959, Astron. J., 64, 258.