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RECENT PHOTOELECTRIC OBSERVATIONS OF UX URSAE MAJORIS

Eclipses of the nova-like variable UX Ursae Majoris have been observed since its discovery (Beliavski 1933). From visual observations Zverev and Kukarkin (1937) established that the system had the relatively short period of $4^{\text{h}}43^{\text{m}}$. Since then a number of observers including Krzeminski and Walker (1963), Mandel (1965), Nather and Robinson (1974) and Africano and Wilson (1976) have pointed out that the observed time of minimum varies with respect to the computed time in a cyclic way with a period of about 29 years.

At least three mechanisms have been invoked to explain this phenomenon: mass transfer or the presence of an unseen third companion (Nather and Robinson 1974); apsidal motion (Africano and Wilson 1976). As the latter have pointed out, however, more observations are needed to determine how exactly the variation repeats. Such are given here.

Three times of minima were recently determined from photoelectric observations made in blue light with the #2, 90-centimeter telescope at Kitt Peak and are presented in Table I.

Table I
Observations

JD ₀ Minimum	O-C
2440000+	(day)
2804.8971	-0.0010
2806.8638	-0.0010
2807.8471	-0.0011

The residuals, second column, have been computed from Mandel's (1965) ephemeris for the times of eclipse. The phase corresponding to the observed times, again from a relation given by Mandel, is 0.73.

Because of cycle to cycle variations in the light curves at minimum, one would like to have at least six minima from which to determine a mean value for the residuals. Since this

condition is not met by the present observations, likely lower weight should be given the location of the point determined by the present results in the O-C versus phase diagram (see, for example, Figure 1 of Africano and Wilson 1976). However, the point lies close to the predicted curve and is in keeping with the suggestion that the cyclic behaviour of the residuals has a geometric cause.

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