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NEW LIGHT ELEMENTS OF TY URSAE MAJORIS

The variability of the short period eclipsing system TY UMa was discovered by Beljawsky (1933). The following light elements, obtained on the basis of photographic measurements, are reported in the literature:

Min I = helioc. J.D. 2427283.443 + $0^d.3010392$ n	Zverev	(1933)
27360.375 + 0.3011424	"	(1937)
38112.392 + 0.3011432	GCVS	(1968)
39651.447 + 0.3011424	Götz	(1969)

Several hundred photoelectric B and V observations were made at the Merate Observatory during the year 1967. By least squares fitting of a parabola to observations the following times of minimum were derived:

helioc. J.D. 2439532.4971	2439614.3955
532.6727	643.4673
561.5685	648.4306
562.4545	673.4247
563.5179	676.4407
566.5328	681.4023

From these values the new light elements follow:

(1) Min I = helioc. J.D. 2439532.67350 + $0^d.35453989$ n
$\pm$ 4 19 m.e.

The period $P_s = 0^d.30114$ is not really the true one P, but a related period rising from the likely unfavourable time distribution of the measurements. The 1 day interval of observations and the period P give rise to spurious periods (Renson, 1980):

$$P_s^{-1} = P^{-1} \pm 1\ j^{-1} \quad (j=\text{integer})$$

With the above values the equation is fulfilled with j=2.

The twelve photoelectric instants were then combined, in a weighted least squares solution, with twenty visual or photographic times given in the literature to derive the ephemeris given below:

(2) Min I = helioc. J.D. $2439532.6741 \pm 6 + 0^d.35453694 \pm 33$ n m.e.

The difference between the periods (1) and (2) is larger than the corresponding mean errors. However considering the short interval encompassed by photoelectric observations (about 150 days) we can only question a variation of the period. New B and V observations now in progress at the Merate Observatory will help to settle this point and to see if TY UMa undergoes seasonal light curve variations.

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