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PHOTOELECTRIC OBSERVATIONS OF TY Del

The eclipsing binary TY Del (BD+12^o4539) was discovered by Hoffmeister (1934) who classified it as an Algol system. The best period to date has been that of Ahnert (1973), who gives $P = 1.1911204^d$. This variable has been extensively observed photographically and visually, but the only photoelectric observations appear to be one time of minimum light reported by Pohl and Kizilirmak (1972). Koch et al. (1979) called attention to the lack of photoelectric observations to encourage further work on this system.

For this reason TY Del was observed on five nights during the autumn of 1982 with the 40 cm telescope at the Morgan-Monroe Station of Goethe Link Observatory. Differential measurements were made with standard UBV filters along with a 1P21 photomultiplier tube cooled with dry ice. The comparison star used was BD+12^o4543 while BD+12^o4542 was used as a check star.

Unfortunately, only about half of the light curve was observed, giving good definition of only primary eclipse. The Hertzprung method was used to determine three times of minimum light which are presented below. For each eclipse a time of minimum light was determined for the observations in each filter which were then averaged.

JD Hel.	Min.	(O-C)
2445200+		
16.6413	I	-.0002
41.6545	I	-.0007
53.5673	I	.0008

These were combined with the minimum given by Pohl and Kizilirmak to form a new set of light elements:

$$\text{Hel. Min. I} = 2445216.6415 + 1.1911287^d E \\ \pm 3 \qquad \pm 2$$

The residuals given above are computed for these light elements. This new

period agrees with previously published periods to the fifth decimal. It is hoped that these revised light elements will assist others in planning observations of this star.

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