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DISCOVERY OF AN ECLIPSING BINARY STAR IN AURIGA

New photoelectric observations of BD +38°1005 (=HD 31992= SAO 57581) have shown that it is an Algol type eclipsing binary star with a period slightly longer than either 1 or 2 days.

A check of the GCVS's updated version (<ftp://cdsarc.u-strasbg.fr/cats/II/139B/catalog.Z>) and the recent volumes of the Information Bulletin on Variable Stars did not reveal any previously known variable at the position of BD +38°1005.

BD +38°1005 with a spectral type B5 was observed as the check star during the observations of early type eclipsing binary TT Aur. Observations were performed in 3 nights between 6-10 February 1997, and on 28 April 1997 at the National Observatory, by using a SSP-5A photometer attached to a 0.4m Cassegrain telescope.

The reduced U, B, and V differential observations of the check star BD +38°1005 with respect to the comparison star BD +39°1191 show that BD +38°1005 is a detached eclipsing binary (see Figure 1). The constancy of the comparison star (to TT Aur) was shown before (cf. Wachmann, 1985). Only the descending branch of two eclipse minima were observed. The observations with large scatter at the shoulder of the eclipse minimum were made at very large zenith distance. The following preliminary ephemeris has been computed for the future observations:

$$\text{MinI} = \text{HJD } 2450488.57 + 2^{\text{d}}02 \times E$$

or

$$\text{MinI} = \text{HJD } 2450488.57 + 1^{\text{d}}01 \times E$$

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Reference:

Wachmann, A.A. 1985, *A&AS*, **60**, 349

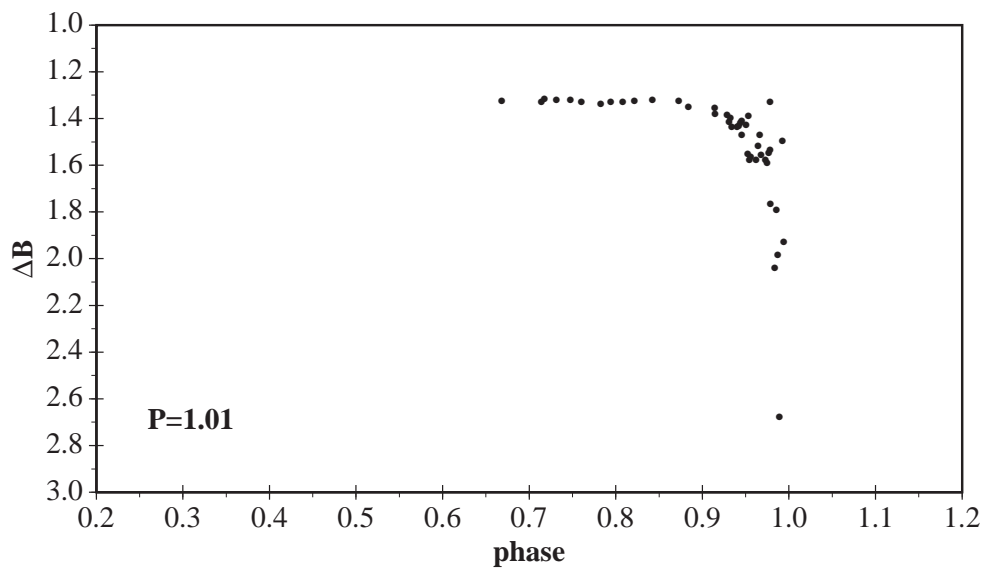
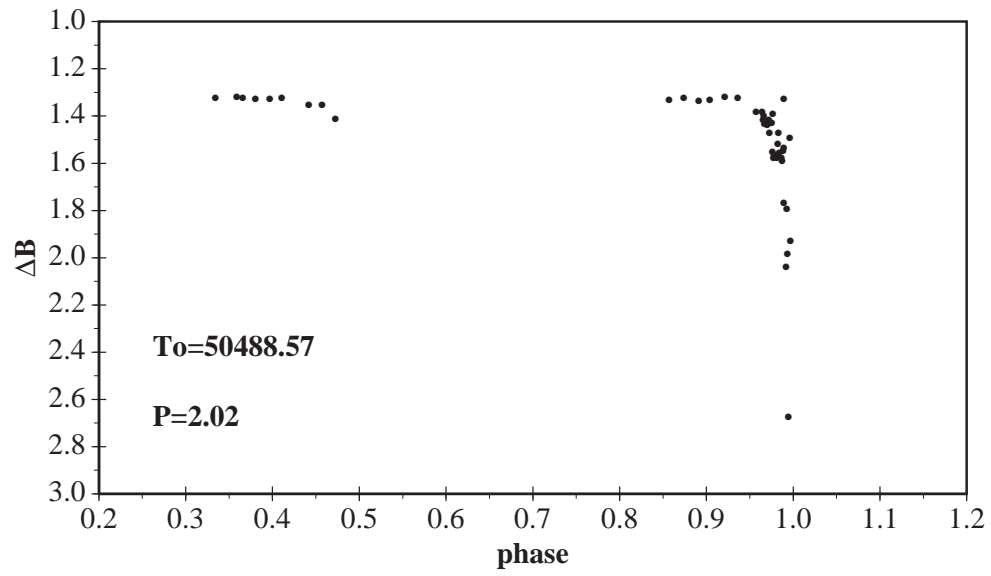


Figure 1. The light curve of BD +38°1005