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ON THE VARIABILITY OF THE Am STAR 68 Tau (HD 27962)

The star HD 27962 (HR 1389 = 68 Tau = V776 Tau) is one of the few Am stars in which magnetic field has been measured (Babcock 1958), so it was included into our programme of photoelectric observations of magnetic stars with the aim of ascertaining the existence of light variations and determining the period, if any. The observations, in the UBV natural system, were carried out in 1973 and 1974 at the Stellar Station of the Catania Astrophysical Observatory using the 90 cm telescope and the equipment described elsewhere (Blanco et al. 1978).

The comparison stars used were: HD 27295 (HR 1339 = 53 Tau, B9 Mn) and HD 27934 (HR 1387 = 65 Tau, A7IV). After the reduction of the observations, HD 27295 was found to be variable, so it was eliminated from the programme: its periodicity has been investigated separately (Catalano et al. 1988). The second comparison (HD 27934) in turn was found in the literature to be a suspected  $\delta$  Sct star. However, during our observing session, it did not show evidence of variability.

UBV observations of HD 27962 by Winzer (1974) and Kuvshinov et al. (1976) are available in the literature with different results: Winzer (1974), using HD 27819 (HR 1380 = 64 Tau, A7V) as a comparison, found HD 27962 to be constant to better than 0.01 mag on a time-base of 20 days, while Kuvshinov et al. (1976), using the same comparison and on a time-base of about 700 days, found it to be variable with a period of 57.25 days, which they find to be also the period of the orbital motion and of the magnetic field variation. It has to be noted that practically in the same time Conti et al. (1974) did not find any significant radial velocity variation from coude spectra (resolution 10 Å/mm) thus questioning that HD 27962 is a spectroscopic binary. This negative result was later confirmed by Häupl (1980).

In this very unclear situation we decided to search for periodicity, using all sets of UBV data and transforming Kuvshinov et al.'s observations and ours into the Winzer's system. By means of the procedure described by

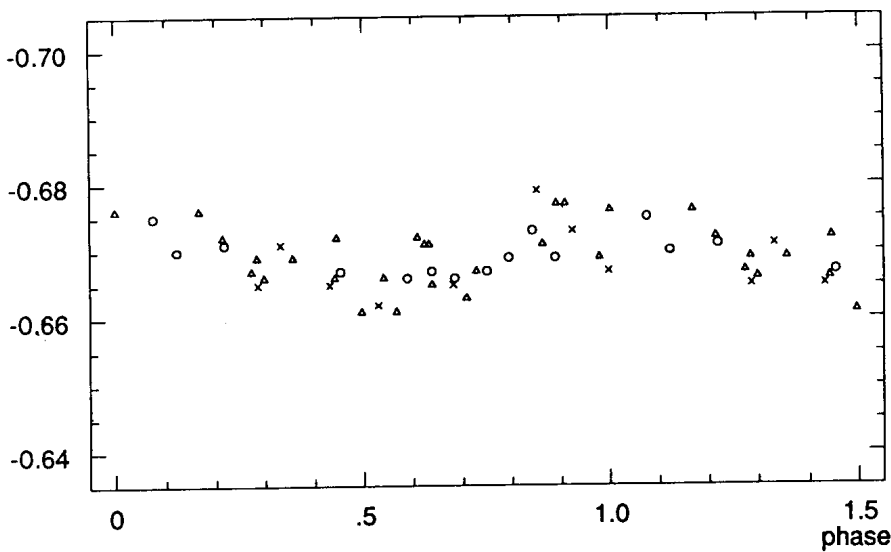


Figure 1

U light curve of HD 27962. The phase is computed according to formula (1) in the text. Code is the following:  
 Open circles: observations by Winzer (1974)  
 triangles: Kuvshinov et al. (1976)  
 crosses: Catalano and Leone (this paper)

Deeming (1975) we found that the data could be best represented by the elements:

$$JD (\text{Max. U light}) = 2440\ 604.34 + 21.2637 E \quad (1)$$

The resulting U light curve is reported in Figure 1, where a small amplitude variation is evident. Using all three sets of data no acceptable phase diagram was obtained with the 57.25 days period given by Kuvshinov et al. (1976).

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## ERRATUM

In the ephemerides of the U light curve of HD 27295 (IBVS No. 3220) the initial epoch refers to the minimum light instead of the maximum light given by a clerical mistake.

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