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CONFIRMATION OF THE 525 DAY PERIOD VARIABILITY FOR HD 2453

On the basis of the probable spectrum and magnetic variability suggested by Babcock (1958), photoelectric observations of HD 2453 were carried out at the stellar station of the Catania Astrophysical Observatory. The measurements were performed from 1970 through 1974 at a 30 cm telescope in the UBV natural system using the equipment described in Blanco et al. (1978). The comparison stars were HD 1439 (C1; HR 71 ; A1V) and HD 952 (C2; HR 44 ; A1V). A plot of the magnitude differences C1 - C2 did not show any variation. Magnitude differences between HD 2453 and the comparison stars have been computed in each

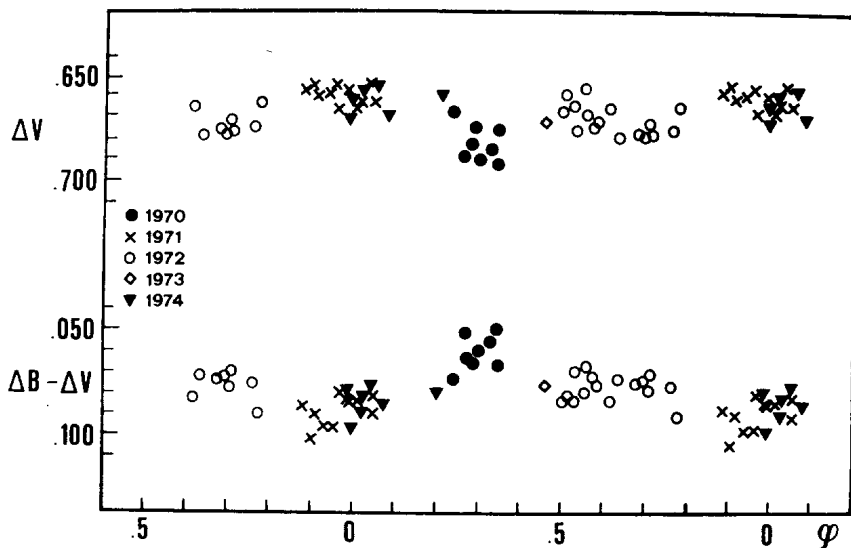


Figure 1. Light and colour variations of HD 2453 plotted vs. phase computed by means of formula (2). ΔV is Δm in V light computed by means of formula (1); $\Delta(B-V)$ is computed as $\Delta B - \Delta V$. Codes are as follows: \bullet 1970, \times 1971, \circ 1972, \diamond 1973, \blacktriangledown 1974 .

colour by means of the formula:

$$\Delta_m = \frac{1}{2}((A_p - C_2) + (A_p - C_1) + \langle C_1 - C_2 \rangle) \quad (1)$$

where $\langle C_1 - C_2 \rangle$ is the annual average value of the magnitude differences between the comparison stars.

Search for variability on a time scale of months or shorter did not get results. The best representation of the observations is obtained by phasing them with the Wolff's 525 day period: we obtain light curves showing small amplitude variations in ΔV and even smaller in ΔB and ΔU . In Figure 1 the ΔV and $\Delta(B - V)$ variations are plotted versus the phase computed by means of the ephemeris (Wolff, 1975):

$$\text{J.D. (magnetic minimum)} = 2442\,288 + 525 \cdot E \quad (2)$$

It is evident from the Figure that the ΔV and $\Delta(B - V)$ variations are opposite in phase, the $\Delta(B - V)$ being in phase with the magnetic field intensity variation.

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