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HD 61429, A POSSIBLE NEW W UMa ECLIPSING BINARY SYSTEM

Photoelectric observations of HD 61429 have been obtained with the Bochum University 61 cm telescope at La Silla, Chile. Used as a comparison for HD 63462 and HD 62623 it turned out to be variable itself.

Of spectral type B9, HD 61429 is a visual double stars (ADS 6246) with a companion of similar spectral type and magnitude at 0.1 arcseconds distance. Radial velocity variations of the order of 70 km/sec have been reported in the Publ. Lick Obs. (1928). They might be due to the presence of a third, unseen companion.

Between January 3 and January 31, 1977 observations relative to HD 60863 were made on 23 nights. Reduction procedures were the same as those described by Stift (1978). The combination of the observations of each night yields an internal precision of $\sim 0.002^m$. The observations were analyzed with the help of a period search program using a five component Fourier least squares fit. The final period retained of 2.57895 days yields by far the smallest scatter and the resulting light curve in V is shown in Fig. 1. Colour variations are marginal. Despite the imperfect phase coverage a W UMa or β Lyr type eclipsing binary nature of HD 61429 appears very likely. This would account for the observed variations in radial velocity; most unfortunately the RV data are too few and of low precision to derive a curve of RV variations.

We shall mention two alternative periods which give considerable scatter but cannot be ruled out completely. A period of 0.56371 days suggests non-radial pulsations of a star related to β Cep variable (Smith, 1977).

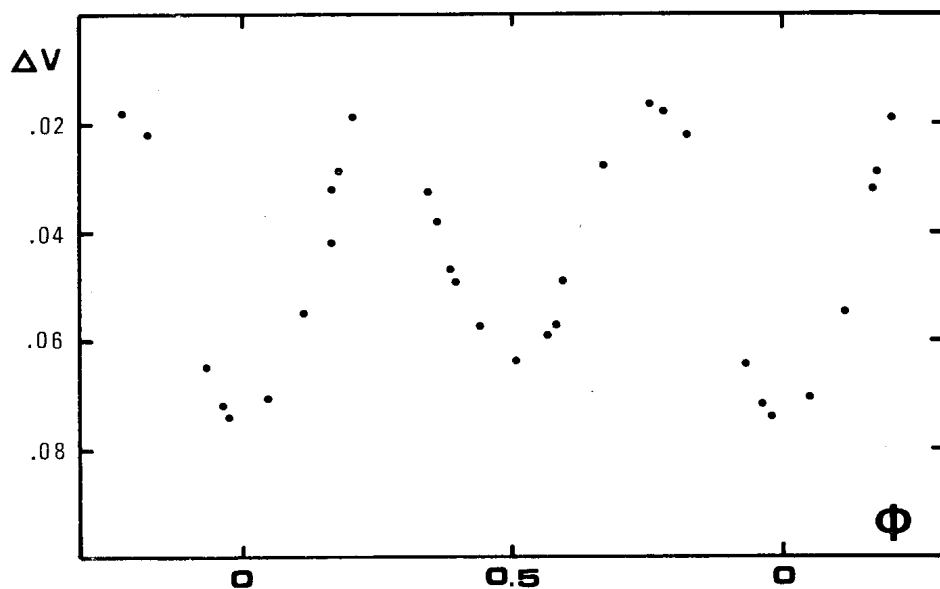


Figure 1: Light curve of HD 61429 relative to HD 60863. The phases are given by $\phi = (\text{J.D.} - 2443100) 2.57895^{-1}$.

Photometry in the Maitzen system (Maitzen, private communication) excludes an Ap-Si star. A period of 4.488 days is neither convincing nor would HD 61429 fit into any known variable class.

As so often we have to call on more observations, photoelectric and spectroscopic, for further clarification.

M.J. STIFT
 Institut für Astronomie
 Universitäts-Sternwarte
 Wien

References:

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