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PRELIMINARY RESULTS OF OBSERVATIONS
OF EU DELPHINI

HOWARD J. LANDIS
50 Price Road West
Locust Grove, GA 30248

Abstract

The first results of photoelectric observations in V light of the small-range SRb star EU Delphini are given. A light curve is shown, representing about two cycles of the star's activity. Several more years of observations may better reveal the true character of this star.

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EU Delphini is a SRb star, one of several in the AAVSO Photoelectric Photometry Chart Catalogue. It has a range of 0^m9 , a period of 59.5 days, and a spectral type of M6III, according to the General Catalogue of Variable Stars (Kukarkin et al. 1969). The range given on the AAVSO chart is 1^m1 , from 5^m8 to 6^m9 . The comparison star used was SAO 106396, and the check star used was SAO 106253.

This paper demonstrates what one observer can learn about a star in one season with minimal instrumentation. Equipment used consisted of an 8-inch Newtonian telescope, a photomultiplier tube photometer driving a DC amplifier driving a 10-inch strip chart recorder. Three delta magnitudes were generated each observing session, and most standard errors were less than 0.01.

None of the magnitude values are reduced to the UBV Standard. My epsilon V is 0.003, so reduction would not change the values very greatly.

During the 113 days that EU Del was observable, 48 observations were obtained. At the start of observations the light curve was climbing rapidly. After a few weeks, it reached a rounded maximum (at -0.58 delta magnitude), then as it descended to minimum it appeared to present a simple sine curve. At this point, it did not appear to be irregular.

However, suddenly the curve dropped away from the previous cycle's curve, and never reached the value of the first maximum. Then as it fell again, it went fainter than the first "minimum." By this time we were well into winter weather and good observing nights were fewer. Also, the quality of observations decreased as EU Del became lower in the sky at evening twilight. The last four points show EU Del at 0^m09 differential magnitude.

Either the comparison or the check star is varying by about 0^m07 . Its period might be about 4.1 days, but this figure must be confirmed and the new variable identified.

REFERENCE

Kukarkin, B. V. et al. 1969, General Catalogue of Variable Stars, Third Edition, Moscow.

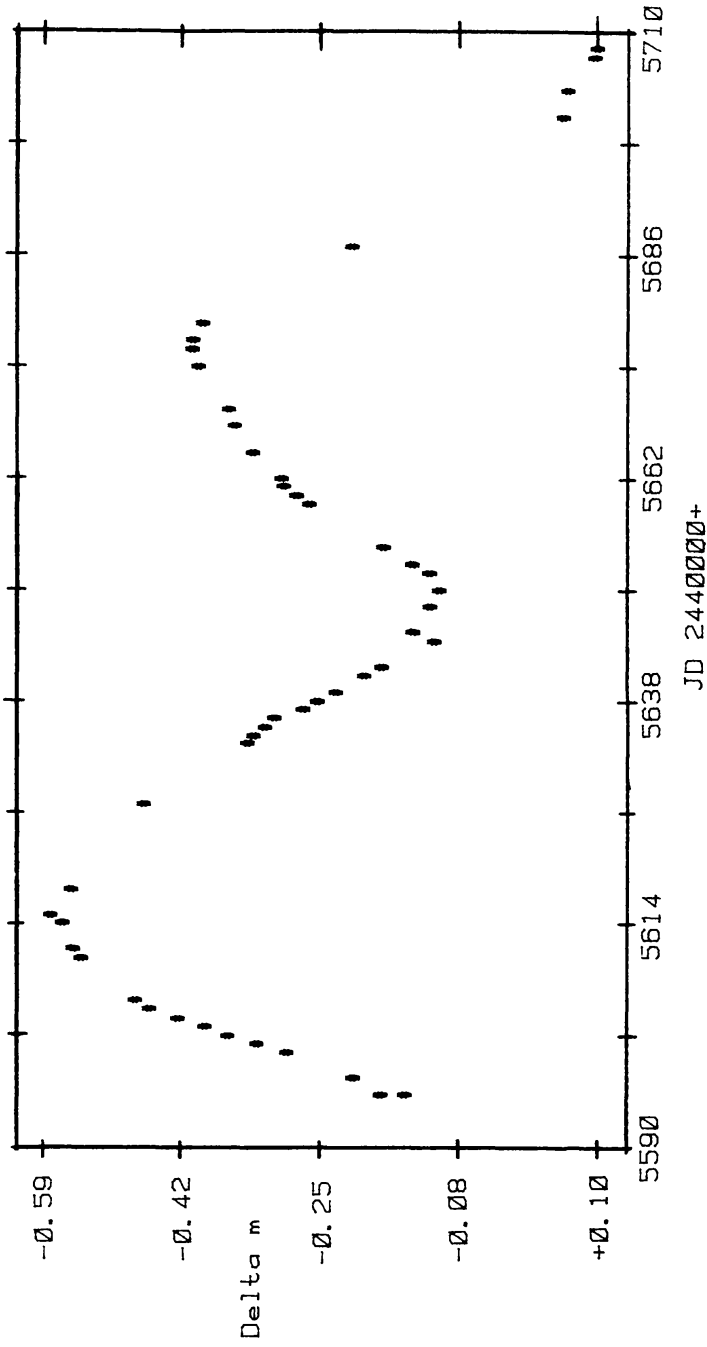


Figure 1. Light curve of EU Delphini, plotted Julian Date versus delta magnitude.