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BD+61°277 CONFIRMED AS AN ECLIPSING BINARY STAR

The star BD+61°277 was noted to be an eclipsing binary by Soloviev (1944), who found a preliminary period of 2.<sup>d</sup>4. Apparently no further observations have been made of this star. BD+61°277 was monitored on 10 nights during the 1983-1984 observing season and on 20 nights during the 1984-1985 observing season with the 41-cm reflector of the Morgan-Monroe Station of the Goethe Link Observatory. Differential measurements were made using BD+61°282 as a comparison star. The photometer employed a 1P21 photomultiplier tube cooled with dry ice and standard B and V filters. Observations of standard stars for determining extinction and transformation coefficients were made on two nights during the Autumn of 1984. From these it was found that  $V_{\max} = 9.5$  and  $(B-V) = +.58$ .

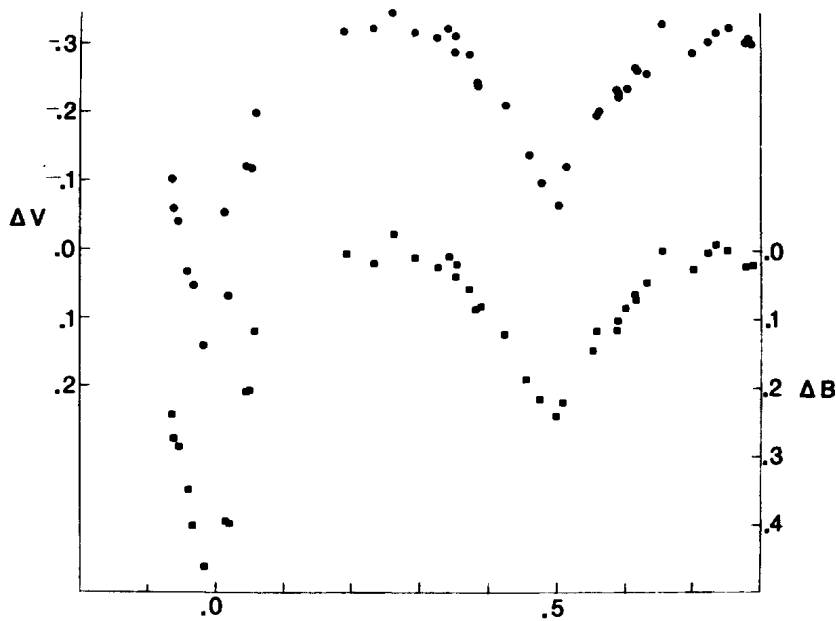


Figure 1

Phase

BD+61°277 was observed to be in eclipse on several nights, but the  $2^d.4$  period did not fit the observations well. Plots of the observations were generated using various values of the period. The best fit occurred with a period of  $6^d.1622$ . The accompanying figure shows the observations folded on this period. The primary eclipse was found to be  $^m.45$  deep and the secondary  $^m.25$  deep. The duration of secondary eclipse is  $1^d.7$ . The sparseness of observations near primary eclipse made it impossible to determine a time of primary minimum light with any precision. It was possible to estimate the time of minimum light for one secondary eclipse, and this epoch may be used to predict future eclipses:

$$\text{HJD Min I} = 2446024.969 + 6.1622(E + .5).$$

Soloviev published 3 times of minimum light determined from photographic observations. It was not possible to reconcile these epochs of minimum light with the period determined in this study.

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Reference:

Soloviev, A. 1944 Astronomical Circulars No. 34.