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PHOTOELECTRIC OBSERVATION OF THE ECLIPSING BINARY μ HERCULIS

The eclipsing binary μ Her (68 Her, HR 6431, HD 156 633, BD+33° 2864, GC 23 359, SAO 65 913) was detected as an optical variable in 1869 (Schmidt, 1869). In 1903 it was found to be a spectroscopic binary (Frost and Adams, 1903), and in 1908 an eclipsing variable with a period of 2.051 days. The first set of photoelectric light curves for μ Her was obtained in 1922 (Baker, 1926).

This eclipsing binary was observed photoelectrically with the 40 cm Cassegrain telescope of Al-Battani Observatory (Iraq, Tarmiya, latitude +33°47'32" N, longitude 44°28'6" E) during 26 nights between May-September 1985.

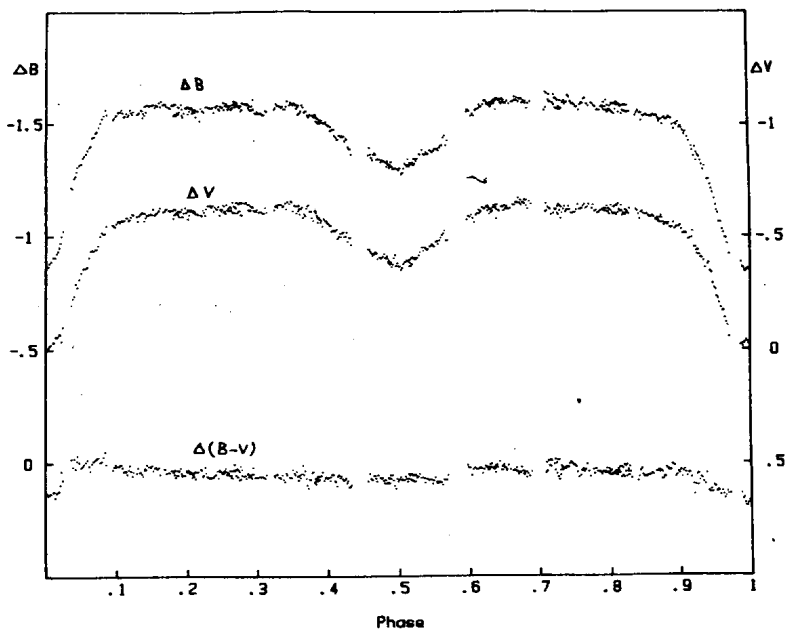


Figure 1. Light curve of the eclipsing binary μ Her

The photometer was furnished with an uncooled 1P21 photomultiplier tube and UBV filters in close accordance with the standard Johnson's filters (Kadourie et al., 1986). The observations were only made in B and V lights. The star 72 Her (HD 157 214 or SAO 65 963) was used as a comparison star, and the check star was HD 158 261 or SAO 66 054. The estimated uncertainties for a single observation are of the order of $+0.05^m$ in V and $+0.06^m$ in B. The extinction coefficients have been calculated from the comparison star observations.

A total of 598 observations were obtained in each filter which are presented in Figure 1, where the phases are calculated according to Koch and Pfeiffer (1977):

$$\text{Min. I. (hel.)} = 240\ 5830.033 + 2.05102\ 70\ E$$

In the following table the observed heliocentric times of minima with the O-C values from the above ephemeris are presented.

Type	J.D.	O-C
Min. I	244 6315.24147	-0.0104
Min. II	244 6314.22640	0.0

The strong asymmetry in the secondary minimum provides strong evidence for the reflection effect and indicates the existence of a gaseous stream in the system (Al-Naimiy and Budding, 1977). The analysis of the light curves will be published elsewhere.

S.R. JABBAR, N.L. JABIR, H.A. FLEYEH, Q.S. MAJEED

Space and Astronomy Research Centre
Scientific Research Council
Nadiriya, Baghdad, Iraq

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