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PHOTOELECTRIC LIGHT CURVE AND TIMES OF
MINIMA OF V 1010 Oph

The star V 1010 Oph (BV 544, HD 151676) is an eclipsing binary of Beta Lyrae type. The variability of this star was discovered by Strohmeier, Knigge and Ott (1964). Spectroscopic investigations revealed that it could be classified as a single lined A3 star (Popper, 1966).

V 1010 Oph was observed photoelectrically by Leung (1974). He found that the eclipse was complete and the primary minimum was a transit. He also found that the primary star in the system was larger, hotter and had a spectral type of A3, while the spectral type of the secondary component is around G8.

Extensive photoelectric observations for star V 1010 Oph were carried out in two colours (B and V) in the second half of July 1985, in order to determine any variations in period or shape of the light curve of this star.

Photoelectric observations of this star were obtained using the 74 inch reflector of Kottamia observatory, Egypt. The photometer used was a single beam photoelectric photometer attached to the Cassegrain focus ($f/18$). Standard B and V filters with EMI 9558 B photomultiplier type with S-20 photocathode cooled by a propeller fan were used throughout. The variable star V 1010 Oph was observed more or less continuously through B and V filters with only occasional measurements of the comparison star (HD 151527, sp. type A0). During the interval of observations the nights were of good photometric quality.

From the individual observations, six moments of minima were obtained in each colour. Epochs of minimum light were determined by the method of bisecting chords. The derived epochs are listed in Table I.

O - C residuals were computed from the following ephemeris given by Leung (1974)

$$J.D.Hel.Min.I. = 2438937.7690 + 0.6614272 E$$

This ephemeris was also used for the reductions of the observations to give a

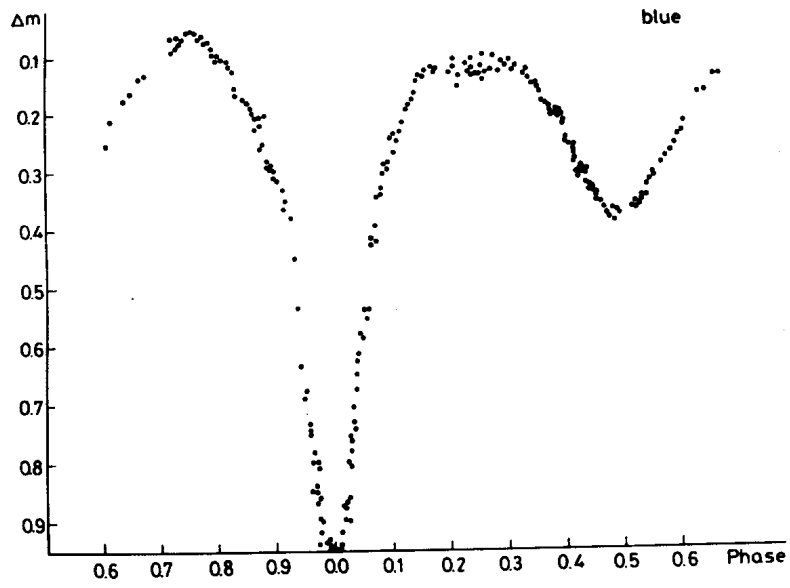


Figure 1

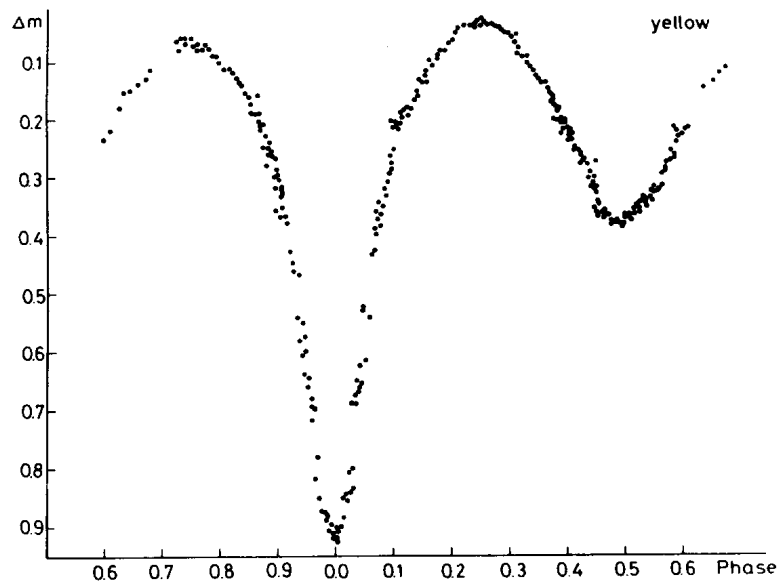


Figure 2

Table I
Times of minima of V 1010 Oph

J.D. observed	filter	Min.	E	O - C
2446268.3681	V	I	11083	+0.0014
2446268.3680	B			+0.0013
2446269.3599	V	II	11084.5	+0.0011
2446269.3597	B			+0.0009
2446270.3523	V	I	11086	+0.0014
2446270.3524	B			+0.0015
2446272.3361	V	I	11089	+0.0009
2446272.3362	B			+0.0010
2446273.3289	V	II	11090.5	+0.0015
2446273.3287	B			+0.0013
2446274.3195	V	I	11092	+0.0013
2446274.3207	B			+0.0012

complete light curve for B and V measurements. These light curves are shown in Figures 1 and 2, where Δm is the magnitude difference between the variable and the comparison star.

From these complete light curves we can conclude that no appreciable variations occur in the shape of the light curves of the system as compared with the previously obtained light curves.

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References:

- Leung, K.C., 1974, Ap.J. 79, No.8, 852.
 Popper, D.M., 1966, I.B.V.S. No. 154.
 Strohmeier, W., Knigge, R., Ott, H., 1964, I.B.V.S. No. 74.