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CSV 6984 - A NEW W UMa TYPE VARIABLE STAR

The variable BV 97 = CSV 6984 = BD +37^o2356 was discovered by Kippenhahn (1955). Filatov (1960) suspected W UMa type variability but light elements has not been found. This investigation was undertaken with the aim of classification of the variable and determination of light and orbital elements of the binary. In May 1980, photoelectric observations of CSV 6984 were made in the UBV system at Crimea Station of the Sternberg Institute. The measurements were made using a 60 cm reflector equipped with a photon counting photometer (Lyuty, 1971). HD 113730 served as comparison star (Westerlund, 1963). About 300 observations in V and B bands were obtained and a few in U band. The mean error of a single observation is 0.^m01. The light and colour curves are shown in Figure 1.

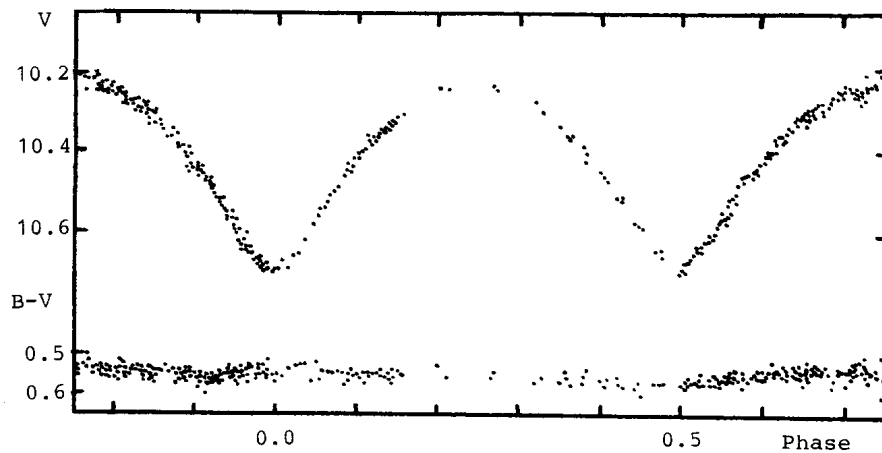


Figure 1

Four moments of minima were determined from the observations:

JD.hel. = 2444365.445 (II), 367.559 (I), 370.439 (II) and 374.4732 (I). The light elements are:

$$\text{JD.hel. Min I} = 2444365.2497 + 0.^d38416 \text{ E.}$$

The period could not be determined correctly enough for the short observational set. Therefore, all published epochs of minima could not be represented with a common period.

Least-squares solutions were made for the light at the maxima according to the formula:

$$I = A_0 + A_1 \cos \theta + A_2 \cos 2\theta$$

The Russell - Merrill method (1952) was used to calculate the rectified intensities. An analysis of the light curves using Lavrov's computer code (1976) was made. The orbital elements of the binary are given in Table I.

Table I

Element	V-solution	B-solution	
x	occ	occ	adopted
$k=a_2/a_1$	0.66	0.76	± 0.16
a_2	0.33	0.35	± 0.06
i	76°	77°	$\pm 3^\circ$
L_1	0.70	0.68	± 0.11

As the present solution is unreliable, more detailed investigations are needed.

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