

COMMISSION 27 OF THE I. A. U.  
INFORMATION BULLETIN ON VARIABLE STARS  
Number 3356

Konkoly Observatory  
Budapest  
18 July 1989  
*HU ISSN 0374 - 0676*

**B AND V OBSERVATIONS OF V728 HERCULIS  
AND A CALL FOR TIMINGS OF MINIMUM LIGHT**

The short period eclipsing binary system V728 Her (SVS 2086) was discovered by Kurochkin (1977). Ciardo et al. (1985) published photoelectric observations and one epoch of minimum light. An additional time of minimum light was determined by Faulkner (1986). Nelson et al. (1988) reported that they obtained both complete B,V, I light curves and spectroscopic observations. They determined a spectral type of F3 for this eleventh magnitude system, and three times of minimum light. In the same year, Agerer et al. (1988) published the first complete light curves for V728 Her and presented four photoelectric epochs of minimum light along with a period study. They also determined least square ephemerides and astrometrically determined its coordinates.

The present observations were made on 10, 12, 13 and 15 June, 1988. These were taken about a month before the observations of Agerer et al. (1988). At that time, we had no knowledge that the binary was under current study by other research groups. The 0.6-m Morgan F/13.5 reflector at Lowell Observatory in Flagstaff, Arizona was used with standard U,B,V filters and a thermoelectrically cooled EMI 6256 photomultiplier tube. The comparison and check star were those which were marked as star "d" and "b", respectively, on the finding chart provided by Kurochkin (1977). Approximately 850 observations were obtained in both B and V.

Three epochs of minimum light were determined, using an iterative technique based on the Hertzsprung method (1928), from observations made during two primary and one secondary eclipse. Our epochs along with the average of each of the B and V epochs of Agerer et al. (1988) are included in Table I.

TABLE I

JD Hel 2447300+	Cycles	(O-C) <sub>1</sub>	(O-C) <sub>2</sub>	Source
23.8030	793.5	+0.0033	+0.0003	Present Observations
26.8656	800	+0.0025	-0.0006	Present Observations
28.7507	804	+0.0025	-0.0006	Present Observations
53.4937	856.5	+0.0030	-0.0001	Agerer et al.
65.51245	882	+0.0040	+0.0009	Agerer et al.
66.4551	884	+0.0041	+0.0009	Agerer et al.
78.47295	909.5	+0.0042	+0.0010	Agerer et al.

Agerer et al. (1988) calculated two ephemerides. The first was determined from all available timings of minimum light including both photographic and photoelectric data, and the second from the photoelectric epochs only. Both are quite similar, however the second ephemeris is larger than the first by  $+0^{\text{s}}14$ , thus indicating a possible period increase. Upon applying their first ephemeris to all available photoelectric epochs of minimum light, we noted the O-C residuals for epochs determined previous to ours are negative, while the residuals of subsequent epochs are positive and apparently increasing with time. Recent visual timings of minimum light (BBSAG #89) show that this trend is continuing. Thus we calculated two ephemerides, the first (1) based on all available epochs of minimum light previous to our observations. This data covers an interval of about 80 years and will help researchers determine the future period behavior of the system. A second (2) ephemeris was also determined in order to phase our present observations. To calculate this second ephemeris, all epochs of minimum light determined from photoelectric observations (our data included) were introduced with equal weights into a least-squares solution. This data spans the observing interval 1984–1988. The two resulting ephemerides are:

$$\text{JD Hel Min. I} = 2446949.8351 + 0^{\text{d}}.4712849 \cdot E \quad (1)$$

4                      1 (p.e.)

and,

$$\text{JD Hel Min. I} = 2446949.8370 + 0^{\text{d}}.4712864 \cdot E \quad (2)$$

2                      2 (p.e.)

The first ephemeris was used in calculating the (O-C)<sub>1</sub> residuals and the second ephemeris was used in determining the (O-C)<sub>2</sub> residuals given in Table I. The second ephemeris is very similar to the second one given by Agerer et al. (1988). The (O-C)<sub>1</sub> residuals in Table I indicate that a

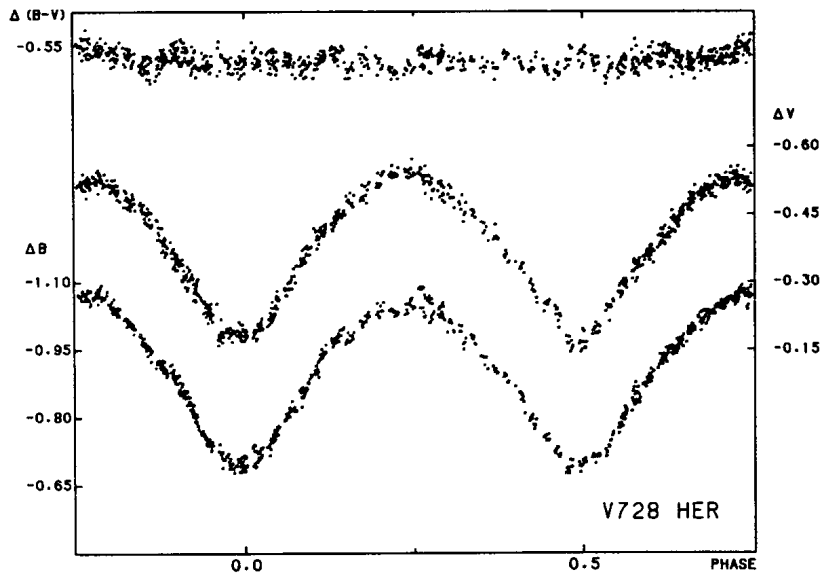


Fig. 1 - Light Curve of V728 Her defined by the individual observations.

rather substantial period increase has taken place. However since these data represent a very brief observing interval, no further details regarding the systems period behavior will be discussed here. Additional and immediate timings of minimum light are requested from all interested observers.

The B and V light curves of V728 Her defined by the individual observations are shown in Figure 1 as  $\Delta m$  versus phase. The analysis of the observations is underway.

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