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PHOTOELECTRIC OBSERVATIONS OF THE LOW-AMPLITUDE CEPHEID V1726 Cyg

V1726 Cyg (=BD + 48^o3398=SAO 050939=SVS 2299) was discovered and classified as a cepheid variable with low amplitude and sinusoidal light curve in the course of a detailed investigation of the open cluster M39 by one of the authors (I.P., 1979). Our previous photographic photometry revealed the basic properties of the variable V1726 Cyg, i.e. the form of the light curve, period, amplitude and colour indices. It, however, became clear that more precise photometry was desirable in view of the possible membership of the cepheid V1726 Cyg to an anonymous open cluster (I.P., 1979).

The cepheid V1726 Cyg was observed photoelectrically using the 0.6 m Zeiss reflector equipped with an uncooled photomultiplier EMI 6256s and filter combination reasonable close to the standard UBV system at the Crimean station of the Sternberg Astronomical Institute. Several observations were made with an analogous reflector but with another photometer at Maydanak, the high-mountain expedition of the Tashkent Astronomical Institute. All the observations were converted to the UBV system. The comparison star was the standard star N^o9=BD + 47^o3439 (Johnson, 1953) and it was monitored both before and after every observation of the cepheid. The results of our BV photoelectric photometry of the cepheid V1726 Cyg are listed in Table I. Observations made at zenith distances greater than 51^o are marked by colon. In Figure 1 the composite V and (B-V) curves versus phase are plotted according to the revised elements,

$$\text{Max}_V \text{ JD hel} = 2444105.39 + 4.^d2359 \cdot E$$

Table I.

B,V observations of the cepheid V1726 Cyg

JD hel (2444000+)	V	B-V	JD hel (2444000+)	V	B-V
021.507	8.960	0.904	032.519	8.928	0.885
022.382	9.049	0.952	033.340	8.885	0.846
022.525	9.050	0.936	033.473	8.877	0.872
023.387	9.022	0.931	034.368	8.975	0.941
023.517	9.016	0.909	034.515	8.997	0.925
024.357	8.892	0.893	035.430	9.063	0.952
024.511	8.895	0.849	035.516	9.059	0.942
025.359	8.909	0.889	037.441	8.888	0.857
027.484	9.023	0.934	037.523	8.873	0.865
027.492	9.022	0.920	039.441	9.060	0.944
028.364	8.923	0.879	039.526	9.061	0.957
028.515	8.924	0.876	457.397	8.894	0.887
030.368	8.987	0.927	461.173	8.859	0.865
030.521	9.032	0.930	464.155	8.992	0.912
031.355	9.060	0.938	464.161	8.989	0.929
031.518	9.054	0.956	465.157	8.869	0.865
032.469	8.947	0.892	466.160	8.900	0.902

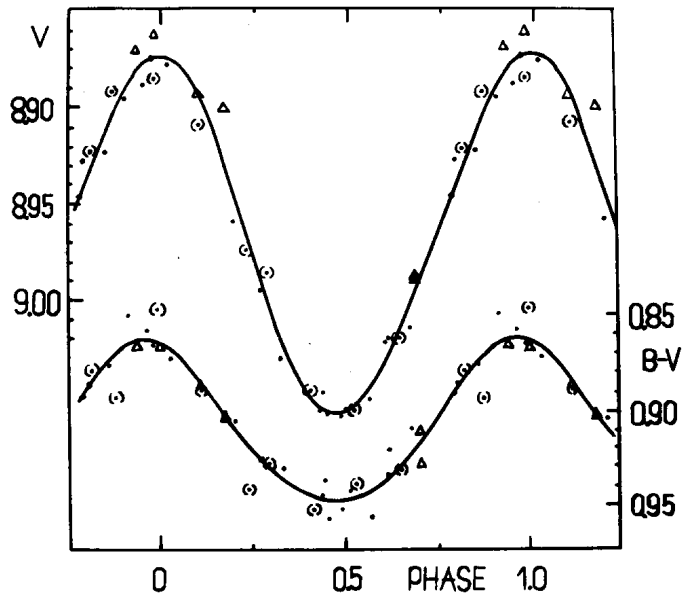


Figure 1: Composite V and (B-V) curves of V1726 Cyg. Dots-Crimean observations, dots in bracket-Crimean observations at $z > 51^\circ$, triangles-Maydanak observations.

In addition we performed a Fourier analysis for the composite light and colour curves (the solid curves in Figure 1), using the algorithm of Schaltenbrand and Tammann (1971). The extreme and intensity averaged values of the cepheid V1726 Cyg magnitudes in V,B and (B-V) are shown in Table II. The (U-B) variations are marginal (probably less than $0^m.04$) and as we failed to match the two different sets of observations in U-light it is not reasonable to present these observations.

Table II.

The light curve parameters of V1726 Cyg

Period = 4. ^d 2359		
Log P = 0.6269		
V _{max} = 8.872	V _{min} = 9.061	ΔV = 0.189
B _{max} = 9.736	B _{min} = 10.007	ΔB = 0.271
<V> = 8.967	 = 9.872	<B-V> = 0.908

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I. PLATAIS

Main Astronomical Observatory
Pulkovo, Leningrad, U.S.S.R.

S. SHUGAROV

Sternberg State Astronomical
Institute, Moscow, U.S.S.R.

References:

- Johnson, H.L., 1953, *Astrophys. J.*, 117, 353
 Platais, I., 1979, *Astron. Circ.*, No. 1049, 4
 Schaltenbrand, R., Tammann, G.A., 1971, *Astr. Astrophys. Suppl.*, 4, 265