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PHOTOELECTRIC UBV OBSERVATIONS OF CEPHEID
 VARIABLE BE MONOCEROTIS

The variable star BE Mon (BD+7^o1394) was discovered by Hoffmeister (1). Soloviev (2) observed that star visually by means of Nijland-Blashko method during the period Feb. 1935 - April 1936 with a 125 mm Zeiss refractor. Assuming RR Lyrae variability, he computed elements by the least squares method as:

$$\text{Max.Hel. J.D.} = 2427863.^d_{.244} + 0.^d_{.4210568} E$$

His observations were published later (3). The next series of observations were made by Ahnert (4), reduced and discussed with the assumption of RR Lyrae type variability. However, in the next paper Ahnert (5) rediscussed his and the Soloviev observations and classified the star as cepheid variable with elements:

$$\text{Max.Hel.J.D.} = 2427892.^d_{.78} + 2.^d_{.705503} E$$

The Cepheid type for BE Mon confirmed by spectral observations of Götz and Wenzel (6) who observed a spectral range F3 - F9 for that star. Wisniewski observed the star photoelectrically during 1963-1965 on the UBV system. The data are given in Table 1 and plotted in Fig.1, where phases were computed with formula: cycles + Phases = (J.D.-2438000)/P. The precision of photoelectric observations and 30 years time span between visual and photoelectric observations permit us to improve the period. From the Soloviev observations we computed normal points with 0.03 phase interval. The new elements are:

$$\text{Max.Hel.J.D.} = 2438741.^d_{.75} + 2.^d_{.705512} E$$

Comparing the observed colours at min. with intrinsic colours of supergiant F9 from Johnson (7), we find the following excesses:

	U-V	B-V
BE Mon	2 ^m .15	1 ^m .26
F9 I	1.12	0.62
Excess	1.03	0.64

which for $R = A_V/E(B-V) = 3.2$ gives us 2.05^m of absorption in visual region. Such absorption has an additional support from B. Lynds (8) Catalogue of Dark Nebulae, where near Equator for $l = 200^\circ - 210^\circ$ dark nebulae are a common feature.

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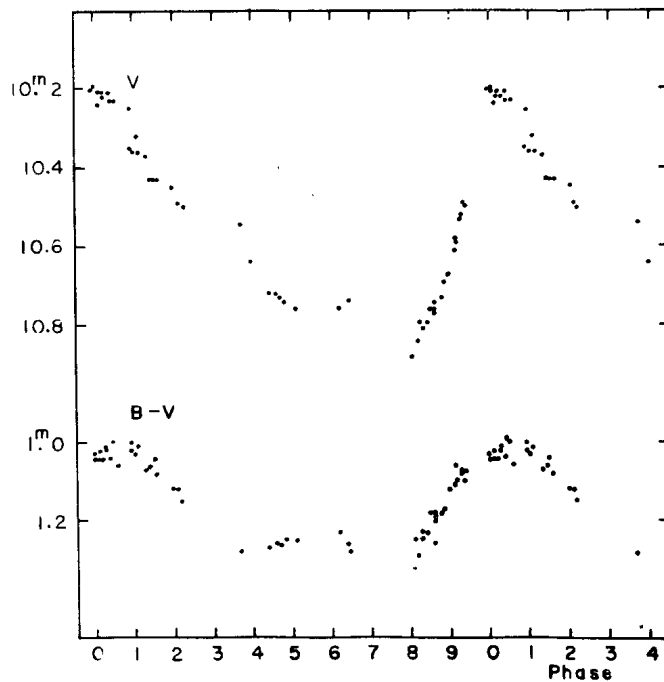


TABLE I
Observations of BE Mon

2438000+	V	B-V	U-B	2438000+	V	B-V	U-B
370.859	10 ^m .58	1 ^m .10	0 ^m .80	773.750	10 ^m .81	1 ^m .23	0 ^m .78
370.888	10.53	1.08	0.79	773.844	10.76	1.26	0.82
370.900	10.52	1.07	0.78	784.630	10.76	1.18	0.87
370.916	10.50	1.07	0.77	784.663	10.74	1.19	
475.641	10.74	1.26		784.709	10.69	1.17	0.86
475.650	10.74	1.28		784.749	10.67	1.12	0.78
703.905	10.24	1.02		784.795	10.58	1.11	0.90
703.919	10.24	1.04		784.855	10.49	1.10	0.94
725.926	10.43	1.04		792.622	10.88	1.25	0.84
725.935	10.43	1.08		792.649	10.84	1.29	0.90
729.883	10.76	1.23		792.726	10.79	1.23	0.70
741.739	10.20	1.03	0.75	792.758	10.76	1.18	0.92
741.753	10.19	1.04	0.68	809.625	10.35	1.00	0.75
741.765	10.21	1.04	0.73	809.661	10.36	1.03	0.70
741.787	10.21	1.04	0.64	809.740	10.37	1.07	0.74
741.798	10.22	1.04	0.64	810.584	10.72	1.27	
741.812	10.22	1.02	0.68	810.632	10.72	1.26	0.92
741.823	10.22	1.01	0.69	810.658	10.73	1.26	0.91
741.845	10.21	1.04	0.64	810.693	10.74	1.25	
741.860	10.23	0.99	0.67	810.762	10.76	1.25	
741.874	10.23	1.00	0.68	811.626	10.79	1.25	0.90
741.905	10.23	1.06	0.63	811.720	10.77	1.20	
742.756	10.54	1.28		811.756	10.73	1.18	
742.815	10.64			811.853	10.61	1.06	
744.746	10.32	1.01		812.618	10.45	1.12	0.76
744.835	10.43	1.06		812.665	10.49	1.12	
771.759	10.25	1.02		812.680	10.50	1.15	
771.809	10.36	1.01					