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ON THE VARIABLE STAR BE HERCULIS

This star was observed by us on photovisual and photographic plates of the Odessa Sky-patrol collection within JD 2436350-2442650. Observations have been reduced to the photometric system close to V and B. Moments of maxima (Table 1) and minima (Table 2) have been determined.

Based upon these data it was shown that at different intervals the star's light variations were periodical, the period values being variable. The set of elements is as follows:

Max. JD	Min. JD	Period	Des.
2436728.4	2436769.4	74 ^d .21	A
7050.2	7089.9	71.51	B
7811.5	7845.4	71.41	C
8856.2	8886.9	72.52	D
9973.7	40024.5	72.64	E
41034.4	1088.8	67.46	F

Residuals of these elements are given in the corresponding columns of Tables 1 and 2.

Seasonal light and colour curves have been plotted (Fig.1). The amplitude is variable. The amplitude decrease is fairly pronounced throughout seasons E and F.

Within the first four seasons when the light variation amplitude was marked, colour index changed in antiphase with light variation. The moments of maximum light and minimum colour index do not precisely coincide. The star became red at maximum light. In the seasons E and F colour index fluctuations nearly ceased.

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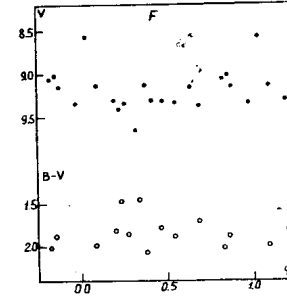
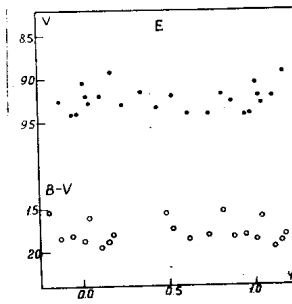
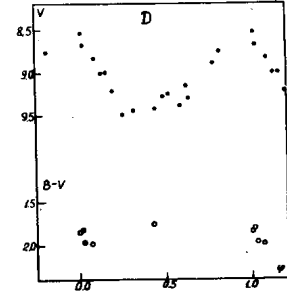
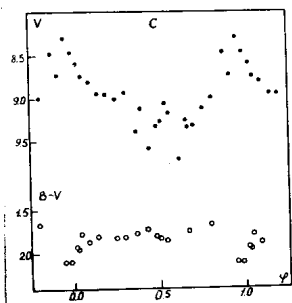
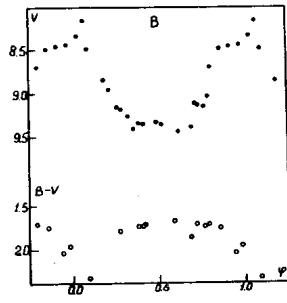
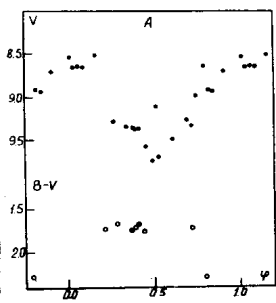


Table 1

BE Her. Moments of maxima.

Max. JD	E _A	O-A	Max. JD	E _D	O-D
2436363	-5	+5.6	2438858	0	+1.8
6648	-1	-6.2	8927	1	-1.8
6730	0	+1.6			
Max. JD	E _B	O-B	Max. JD	E _E	O-E
2437048	0	-2.2	2439980	0	+6.3
7122	1	+0.3	40040	1	-6.3
7405	5	-2.8			
7484	6	+5.7			
Max. JD	E _C	O-C	Max. JD	E _F	O-F
2437749	-1	+8.9	2441040	0	+5.6
7808	0	-3.5	1113	1	+11.1
7875	1	-7.9	1430	6	-9.2
8105	4	+7.9	1510	7	+3.4
8168	5	-0.5	1833	12	-10.9
8235	6	-4.9			

Table 2

BE Her. Moments of minima.

Min. JD	E _A	O-A	Min. JD	E _D	O-D
2436393	-5	-5.4	2438887	0	0.0
6700	-1	+4.8	8959	1	-0.5
6769	0	-0.4	9250	5	+0.4
Min. JD	E _B	O-B	Min. JD	E _E	O-E
2437084	0	-6.0	2439957	-1	+5.2
7163	1	+1.5	40017	0	+7.5
7378	4	+2.0	0390	5	-2.3
Min. JD	E _C	O-C	Min. JD	E _F	O-F
2437770	-1	-4.0	2441082	0	-6.8
7846	0	+0.6	1161	1	+4.8
8135	4	+3.9	1462	6	-31.6
8202	5	-0.5	1797	10	-33.8