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ON THE PERIOD OF BS HERCULIS

BS Her was discovered by von Reinmuth (1930) on Heidelberg plates, its light variation ranging from 14^m0 to 16^m5 ph. In the General Catalogue of Variable Stars (Kukarkin et al., 1970) this star is classified as a possible Mira variable of M6e-type with light variation from 13^m2 to 16^m5 ph.

In the phases close to maximum (when the star is brighter than 14^m ph) the light of BS Her was estimated from 228 photographic and 25 photovisual sky photographs of the Plate Depository of Odessa Astronomical Observatory. The comparison stars used are shown in the chart of BS Her (Fig.1). Their photographic magnitudes $a=11^m84$, $b=12^m27$, $c=12^m56$, $d=12^m83$, $f=13^m26$, $k=13^m50$, $l=13^m84$, $m=14^m04$ were determined with reference to the magnitudes of stars of area III in the "Catalogue of photographic, photovisual and photored magnitudes of 22 000 stars" (Voroshilov et al., 1962). Measurements were made with the M ϕ -2 photometer. As the variable star and the standards are considerably spaced apart, the zero-point of magnitudes of comparison stars may be shifted.

Observations of 12 observational seasons are shown in Figure 2.

The moments of maxima have been observed as well:

Max J.D.	m_{ph}	E	O-C
2436108	13.00	-1	+18.3
36444	12.00	0	- 7.2
36804	13.02	+1	- 8.6
37168	12.92	+2	- 6.1
37530	12.39	+3	- 5.8
37892	12.70	+4	- 5.4
38266	12.72	+5	+ 7.2
38628	13.05	+6	+ 7.5
38986	12.72	+7	+ 4.0
39702*	-	+9	- 3.2

Photovisual maximum is marked by an asterisk. A certain part of the light curve is plotted to the photovisual degree scale:
 $y=0.^{\text{st}}0$, $z=5.^{\text{st}}9$, $t=10.^{\text{st}}7$, $b=17.^{\text{st}}6$, $c=24.^{\text{st}}6$, $f=31.^{\text{st}}6$.

The elements are found:

Max.J.D. 2436451.2 + 361.6·E.

E and O-C are calculated with respect to these elements.

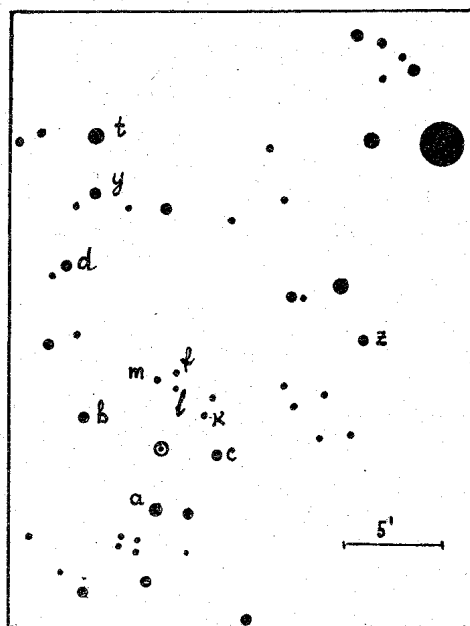


Fig.1

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References:

- Kukarkin, B.V. et al., 1970, The General Catalogue of Variable Stars, Moscow
Reinmuth von, 1930, AN 238, 333
Voroshilov, V.I. et al., 1962, "Catalogue of photographic, photovisual and photored magnitudes of 22 000 stars", "Naukova dumka", Kiev

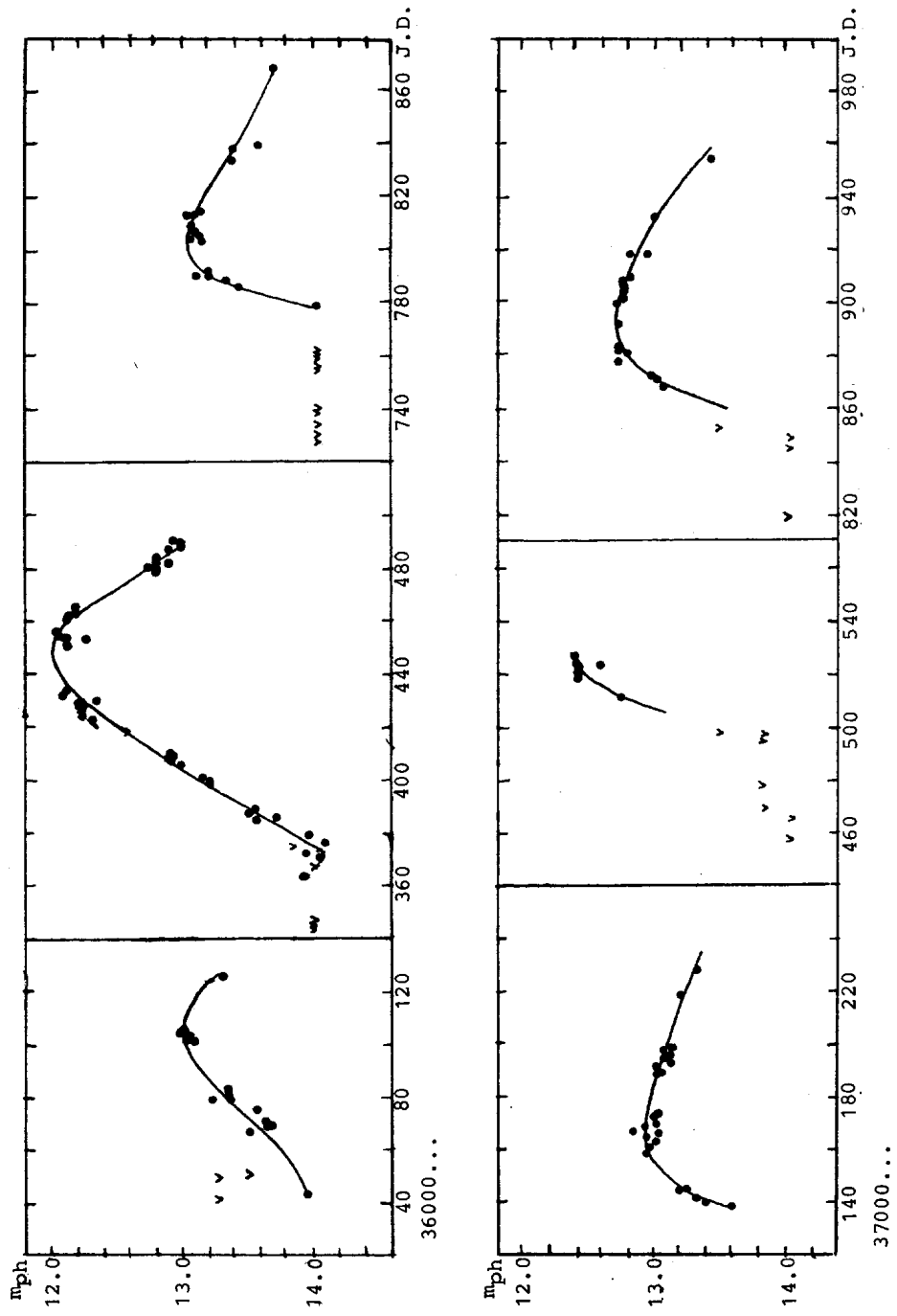


Fig.2

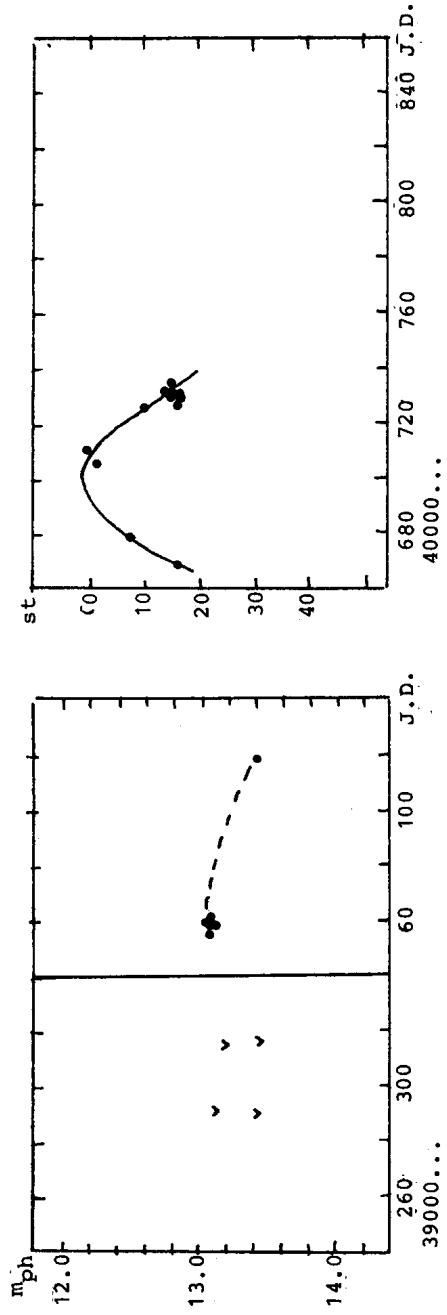
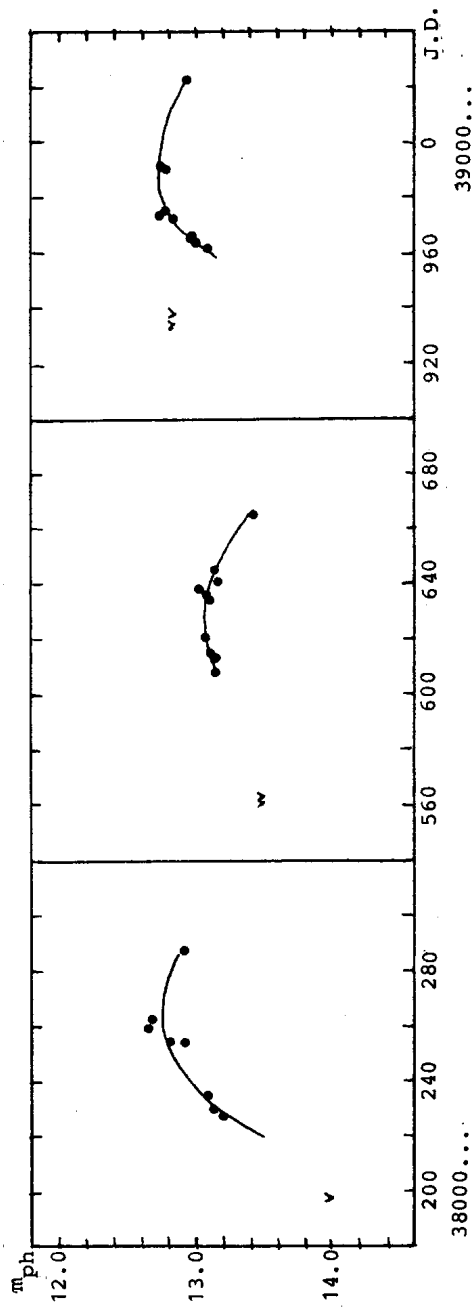


Fig. 2 (cont.)