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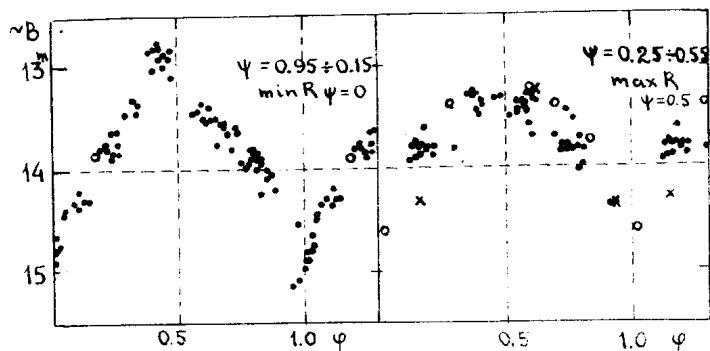
Konkoly Observatory
 Budapest
 1973 January 5

THE VARIATIONS OF THE LIGHT CURVE OF HZ HERCULIS IN THE
 35-DAY CYCLE

The features of the light curve of HZ Her at different phases of the 35^d variation in X-ray emission were investigated. 318 plates (1907-1972) of the Sternberg Institute and photoelectric observations of Lyutiy et al. (1972) were used. According to H. Gursky (1972) X-ray maxima were observed on JD 2441330.2 and JD 2441400.8. It was found that the bright optical maxima were usually observed at the middle and at the beginning of the 35^d cycle. Using the X-ray observations and the brightest optical maxima the following elements of the 35^d cycle were obtained:

$$\text{Min X-ray} = 2441347.86 + 35^{\text{d}}.396.E$$

The phases ψ of the 35^d cycle were then calculated and the light curves with $P=1^{\text{d}}.70017$ for different intervals of ψ were constructed. These light curves are essentially different for different ψ 's. The maximal amplitudes $12^{\text{m}}.8-15^{\text{m}}.1$ pg are observed at



$\psi=0.95-0.15$ left part of the Fig. as well as in the middle of the 35^d cycle at $\psi=0.55-0.65$ ($12^{\text{m}}.8-15^{\text{m}}.1$ pg). At the phases $\psi=0.25-0.55$ the light curve becomes more flat, its minimum is more broad and the range is $13^{\text{m}}.2-14^{\text{m}}.6$ pg (right part of the Fig.). There are

probably more narrow phase intervals where the amplitude is still smaller.

Therefore the X-ray maximum ($\psi=0.5$) coincides with the minimal light amplitude i.e. minimal reflecting effect as it was suggested by Cherepashchuk et al. (1972) and Lyutiy et al. (1972).

There are also humps on the light curves moving systematically with ψ . The detailed data are to be published in "Variable Stars" Vol.18, No.5 (1973).

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