

**THE LIGHT VARIABILITY OF THE MAGNETIC AP STAR
52 HERCULIS (HD 15207)**

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ABSTRACT

The Ap star HB 152107 (=BS 6254 = 52 Her) is one of the small number of magnetic CP stars with long time or long periodic variability. Only for this star both a long time variability (magnetic field) and a short rotational period (about 4 days) have significantly been detected. 30 observations in the U band of the Vilnius seven colour system (1975, 1976), 25 observations in B and V (1975), and 16 ANS observations in the UV allow a new discussion of the photometric properties of HB 152107. The period obtained by Wolff, Preston (1978) has been confirmed. The elements of variability are

$$\begin{aligned} \text{JD}(\text{Ca II K line max.}, \text{U max}) &= \\ &= 2\,439\,255.55 + 3.8575 E \\ &\quad \pm 0.00015 \end{aligned}$$

No indications for changes of the period have been found. The amplitude - wavelength - relation for HB 152107 is similar to that of some other cooler CP 2 stars and suggests that the physical conditions in its atmosphere are not disturbed by the mechanism producing the long time magnetic variations. The brightness around 4100 Å and at wavelengths shorter than 3000 Å varies in antiphase with respect to the remaining wavelengths (u, U, b, y, V). After absolute calibration, a variability of the integral flux between 1550 Å and 5500 Å with an amplitude (peak to peak) of about 0.0085 mag has been found. The integral flux is the smallest at the phase of V maximum. It means that in integral light the peculiar region is darker than the remaining surface of the star. This result is in a good agreement with that found and discussed by Musielok (1978) for ϵ^2 CVn, ϵ UHa, HB 119213, and HB 188041. The very heterogeneous observational data which can be used for the determination of the period are not suitable for the investigation of

amplitude variations which are possibly expected in connection with long time variability. The detailed paper will be published in the *Astronomische Nachrichten*.

REFERENCES:

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