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OPTICAL BEHAVIOUR OF THE POLAR ST LEONIS MINORIS = CW 1103 + 254

ST LMi belongs to the group of AM Her type stars (Liebert and Stockman, 1984) and is a cataclysmic variable binary system containing a strongly magnetic white dwarf primary. Its finding chart is given by Shore et al. (1982).

The star was measured and inspected on 69 blue-sensitive plates (ORWO - ZU21+GG13+BG12) from 43 nights taken with the 50/70/172 cm Schmidt camera of Sonneberg Observatory covering the time interval between 30 May 1983 and 24 April 1985. On 16 nights more than one plate per night were obtained. The exposure time of the plates amounts to 20 minutes.

The identification chart is shown in Figure 1 and the sequence of the comparison stars in B is listed in Table I. The magnitudes of these stars were obtained on two plates by linking them to the UBV sequence of the Coma region given by Argue (1963).

Table I

Comparison star	m_B	Comparison star	m_B
a	$14^m.61$	e	$16^m.57$
b	15.07	f	16.88
c	15.49	g	17.10
d	16.22		

The long time-scale light curves in B from the seasons 1983/84 and 1984/85 are shown in Figures 2 and 3. Similarly to other AM Her objects, two different states of the brightness behaviour of ST LMi can be seen there. Concerning the active state, which is characterized by increased brightness caused by X-ray heating, it is remarkable that the mean brightness amounts to $\bar{m}_B \approx 15^m.75$. On the contrary, the mean brightness of the low and inactive state of the star, which was observed in the time interval between 3 December 1983 and 15 December 1983, amounted to $\bar{m}_B \approx 16^m.65$.

Both the light curve in the low state and that of the high state are influenced by occultation light changes. In order to study these influences,

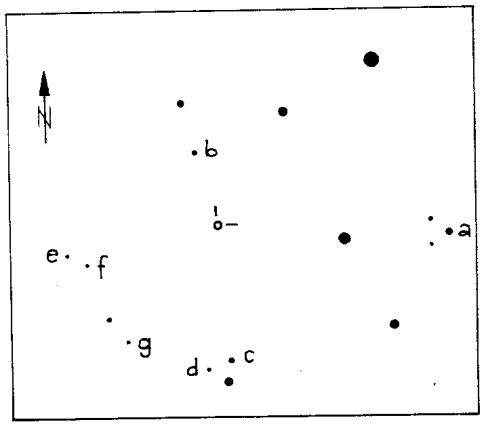

Figure 1

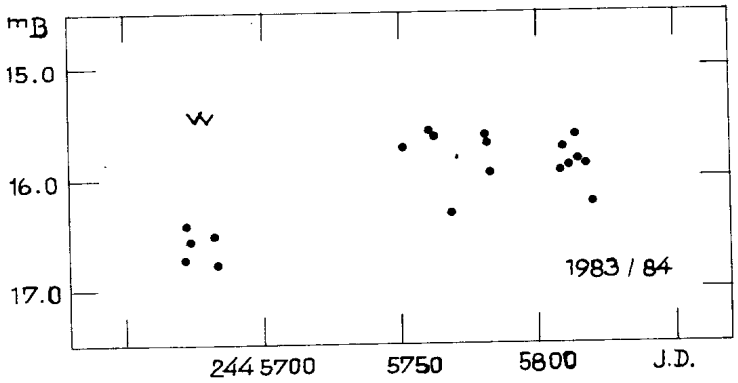

Figure 2

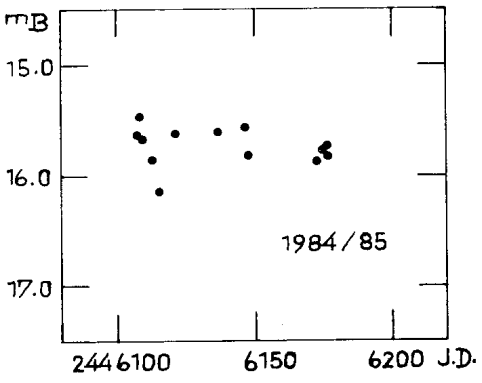

Figure 3

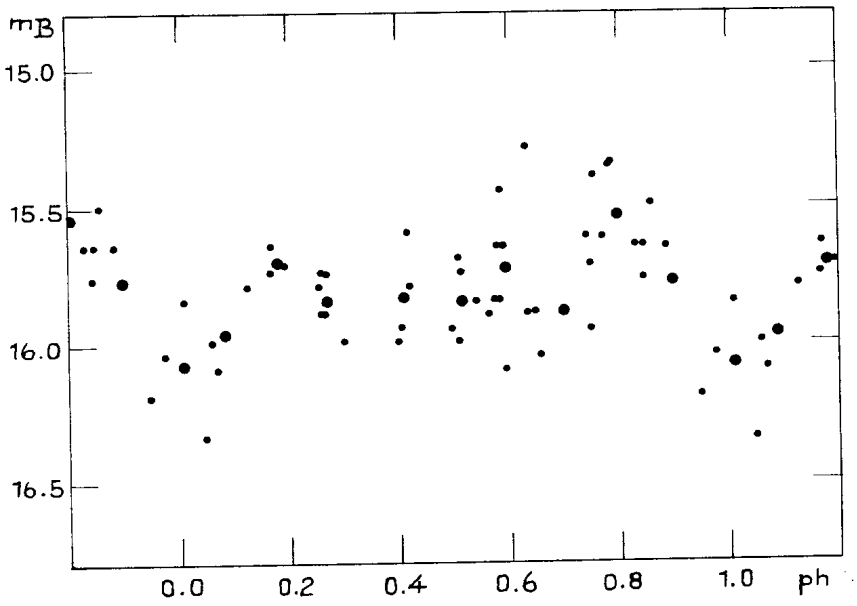

Figure 4

all observations of the high state were reduced to one common epoch by means of the preliminary orbital elements:

$$\text{Min. Hel.} = 244\,5769.531 + 0^{d}.079\,090 \cdot E$$

The result is given in Figure 4, where the individual observations (small dots) and the mean magnitudes (large dots) are plotted against the phase. More observations are needed to make statements about the behaviour of the occultation light changes in the low state. Besides, it is noticeable that the period of the occultation light changes corresponds to that given by Liebert and Stockman (1984).

The individual observations will be published in MVS.

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