

COMMISSION 27 OF THE I. A. U.
 INFORMATION BULLETIN ON VARIABLE STARS

Number 3392

Konkoly Observatory
 Budapest
 30 October 1989
 HU ISSN 0374 - 0676

NEW PHOTOELECTRIC OBSERVATIONS AND THE
 PERIOD BEHAVIOR OF BX PEGASI

Recently, I reported on photoelectric observations obtained in the fall of 1986 of the very short period system, BX Peg (Samec and Bookmyer 1987). The observing history for this system was summarized in that report.

The present observations were made on 20, 21 June and 11, 12, 15, and 16 October 1988. The 0.6-m Morgan F/13.5 reflector at Lowell Observatory in Flagstaff, Arizona was used with standard U, B, V filters and a thermoelectrically cooled EMI 6256 photomultiplier tube. The comparison and check stars were BD +25°4584 and BD +25°4582, respectively. The observations were transformed to the standard system from observations of eight stars in standard cluster Pleiades (Johnson and Morgan 1953, and Johnson and Mitchell 1958). More than 500 observations were obtained in both B and V.

Three epochs of minimum light were determined from observations made during one primary and two secondary eclipses. All minima were determined by an iterative technique based on the Hertzsprung method (1928). These are the last three epochs given in Table I.

TABLE I

JD_Hel 2440000+	Minimum	Cycles	O-C	Source
3790.17075	I	-6637.0	+0.0008	Zhai and Zhang 1979
5651.3219	I	0.0	+0.0001	BAV #38 1984
6701.7787	I	3746.0	+0.0011	Samec and Bookmyer 1987
6703.7409	I	3753.0	+0.0003	Samec and Bookmyer 1987
6703.8797	II	3753.5	-0.0010	Samec and Bookmyer 1987
6704.7227	II	3756.5	0.0007	Samec and Bookmyer 1987
7333.8400	I	6000.0	-0.0057	Present Observations
7450.6339	II	6416.5	-0.0070	Present Observations
7451.7556	II	6420.5	-0.0070	Present Observations

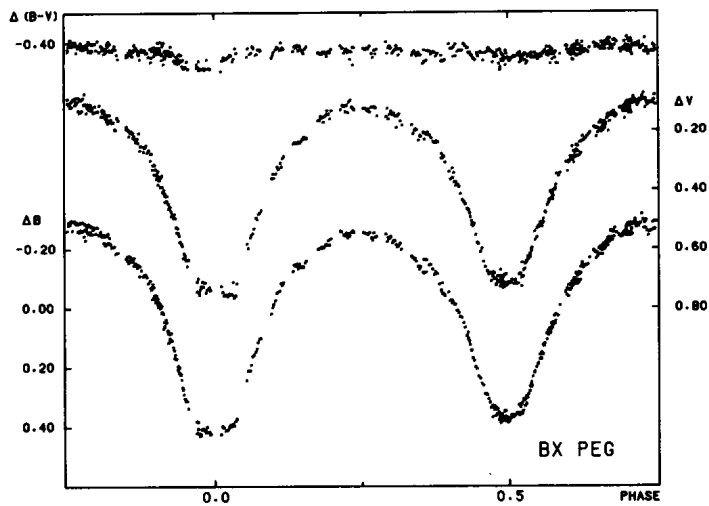


Fig. 1 - Standard Light Curves of BX Peg defined by the individual observations

All the published epochs of minimum light determined from photoelectric observations excluding the early determination by Chou (1966) and our present observations were introduced into a least squares solution to obtain the following improved ephemeris:

$$\text{JD Hel Min. I} = 2445651.3218 + 0.28042066 \cdot E$$

\pm $2 \pm$ 4 (p.e)

This was used in calculating the O-C's of the timings of minimum light included in Table I. Apparently, the period of BX Peg has remained constant for over 10400 cycles previous to our 1986 observations. Earlier timings including the one by Chou indicate that a rather major period decrease took place about the time Zhai and Zhang (1979) made their observations. Indeed, our newly determined minima may indicate that yet another period decrease has taken place! Additional timings of minimum light are needed to confirm this preliminary result. Several combinations of timings of minimum light were introduced into least squares fits to obtain periods for possible use in phasing

our observations. The period, $0^d.28042024(11)$ was found to produce the best fit. This was calculated by combining all the photoelectric epochs of minimum light subsequent to the one determined by Chou.

The B and V light curves of V728 Her defined by the individual observations are shown in Figure 1 as Δm versus phase. The analysis of the observations is underway.

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