

COMMISSION 27 OF THE I. A. U.  
 INFORMATION BULLETIN ON VARIABLE STARS  
 Number 1113

Konkoly Observatory  
 Budapest  
 1976 March 9

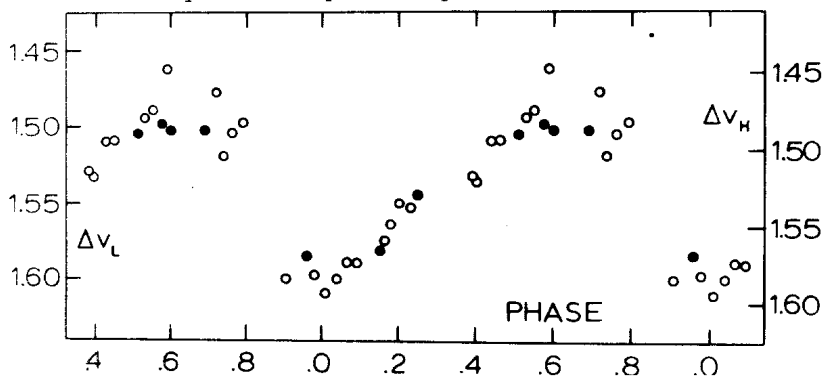
BS 1099: A BRIGHT VARIABLE SIMILAR TO THE RADIO STAR UX ARIETIS

Photoelectric observations of BS 1099 (= ADS 2644 AB = CSVS 6039) have shown it to be a variable. We (along with Larry P. Lovell at the Hickox Observatory in Chagrin Falls, Ohio) plan to continue observing this variable until it sets and then publish our observations together elsewhere.

Between JD 2,442,748.5 and JD 2,442,808.5 Landis obtained 21 observations with his 10-inch (25-cm) Newtonian reflector, and between JD 2,442,816.5 and JD 2,442,831.5 Hall obtained 7 with the 24-inch (60-cm) Seyfert reflector of the Dyer Observatory. Both observers used a visual filter, included both components of the visual binary system, and used 10 Tauri as a comparison star. Extra-terrestrial instrumental differential magnitudes are plotted in the Figure, where the  $0^m.015$  shift between those of Landis ( $\Delta v_L$ ) and those of Hall ( $\Delta v_H$ ) allows for the difference in transformation to the UBV system. Phase is computed with the ephemeris

$$JD (\text{hel.}) = 2,442,770.65 + 2^d.822 E$$

for minimum light. The UBV photometry of Cousins (1963) made him suspect that BS 1099 was a variable with an amplitude of  $\Delta V = 0^m.11$ , which is exactly what our photometry shows.



We are extremely grateful to Dr. Bernard W. Bopp for drawing our attention to the fact that BS 1099 resembles UX Arietis spectroscopically. According to him it shows a pronounced H and K reversal similar to that seen in other RS CVn-type binaries and it seems to be a spectroscopic binary with an orbital period in the neighborhood of 3 days. Now, comparing our Figure with Figure 1 of Hall, Montle, and Atkins (1975), we see also that the light curves of BS 1099 and UX Ari are amazingly similar.

The radio astronomers will want to look for radio emission similar to that found emanating from UX Ari (Gibson, Hjellming and Owen 1975), since BS 1099 is brighter than UX Ari and even brighter than AR Lacertae. In fact, BS 1099 seems to be the brightest RS CVn-type binary known to date (Hall 1976).

In a recent phone conversation Dr. Bopp has just told us that his April-December 1975 spectroscopic observations have yielded an orbital period of  $2.8379 \pm 0.0003$  d.

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