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1988 AND 1989 PHOTOMETRY OF UZ LIBRAE

UZ Librae (= #102 in the catalog of Strassmeier et al. 1988) is most likely an FK Comae star with a 4.75 day rotational period and a low mass companion. Bopp et al. (1984) report 1983 photometry and spectroscopy. Grewing et al. (1989) deduce the properties of individual components of the UZ Lib system from spectroscopic and photometric data and update both the photometric and orbital periods.

We present UBV photometry of UZ Lib from May 1988 and May through July 1989. We used the 24" telescope operated by San Diego State University at Mt. Laguna, CA. Our comparison and check stars are BD -07°4044 and BD -08°3998. The data are in the Johnson UBV system and in the sense star - comp. We computed the orbital phase using $\phi = 2445428.88 + 4.767885E$ after Grewing et al. (1989).

The ΔV light curves (see Figures 1 and 2) for both years have a double peaked structure, indicating the existence of two starspot groups. The starspot group at phase 0.2 appears to be the larger because the minimum on the light curve is deeper. The ΔV light curves show an amplitude of variability of about 0.2 magnitudes in 1988 and 0.3 magnitudes in 1989. The minimum light at phase 0.2 is fainter in 1989 than in 1988; therefore, that spot group grew between 1988 and 1989. In addition, the fainter maximum light in 1988 indicates that the starspots were distributed more evenly over the surface of the star in 1988 than in 1989. The large amplitude of variability combined with the changes from 1988 to 1989 suggest that UZ Lib has a high level of chromospheric activity and changes rapidly.

The double peaked light curves are similar to the double peaked curves seen

UZ LIBRAE - 1988

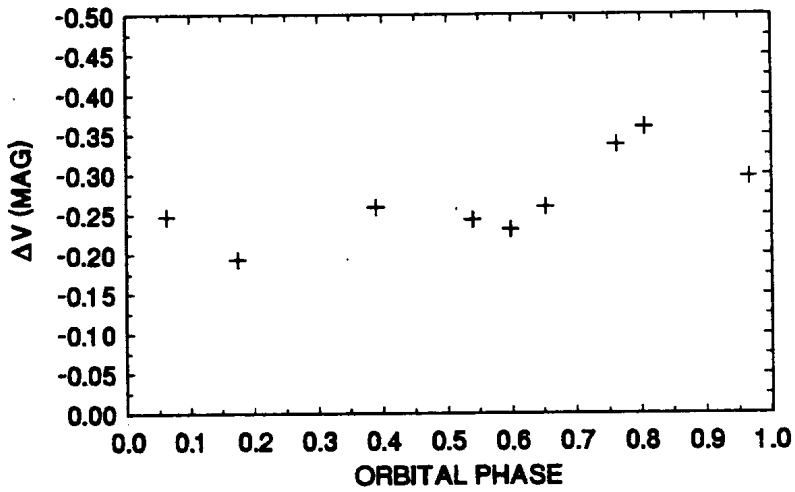


FIGURE 1

UZ LIBRAE - 1989

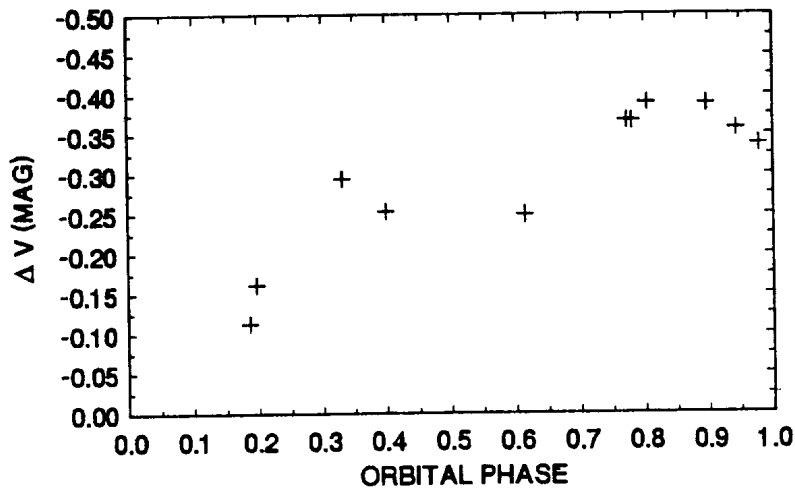


FIGURE 2

UZ LIBRAE - 1988

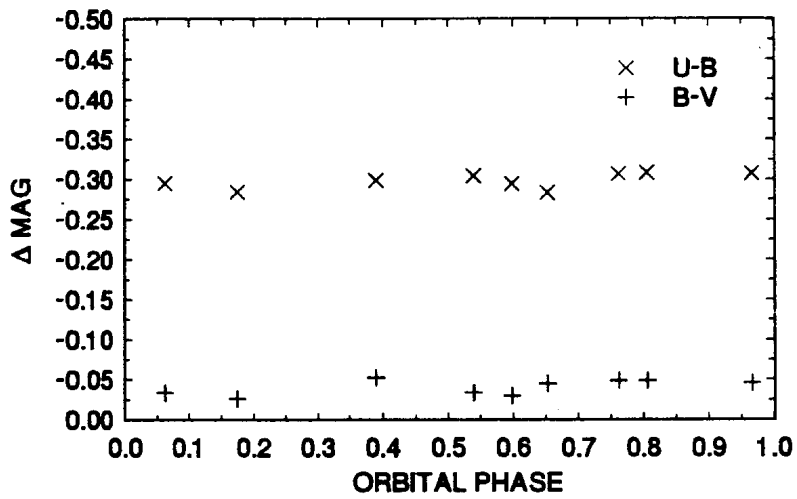


FIGURE 3

UZ LIBRAE - 1989

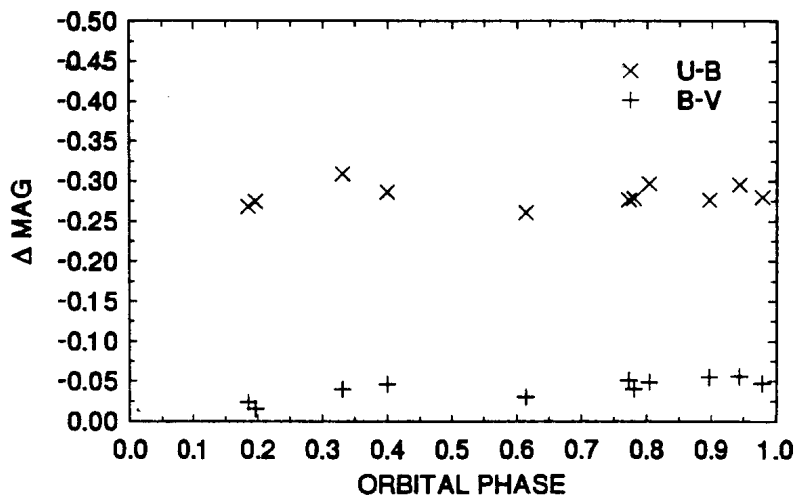


FIGURE 4

for the particularly active chromosphere star, BD+61°1211 during 1981 and 1982. For BD+61°1211, these double peaked curves represent a transition period when one spot group was breaking up and a new spot group was forming (Heckert 1990). Continued annual light curves will tell us if these double peaked light curves in UZ Librae also represent the transition period between two spot groups.

Little color change is seen in either AU-B or in AB-V (See Figures 3 and 4). While the changes are small and therefore difficult to interpret, both indices show UZ Lib becoming more red during minimum light as one would expect if cooler starspots cause the photometric variations.

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