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IS UX Dra A CARBON BINARY STAR?

The carbon star UX Dra, usually classified as a semiregular variable, was observed photoelectrically at Brno Observatory during the time period between August 1979 and October 1982. Simultaneous high dispersion spectra of this star were taken with the 2m telescope at the Ondřejov Observatory.

The light curve obtained in three colour expresses a strong regularity in alternating one deep and one shallow minima which suggests the light changes of a photometric binary. The radial velocity curve based on the measurements of details of the Swan molecular bands $C_2(1,0)$ and $C_2(0,1)$ is in conformity with the hypothesis of the binary nature of UX Dra. The half-amplitude of the radial velocity changes found is 2.2 km/s, the period is about 340 days, i.e. twice as long as the mean period declared for the semiregular light changes of UX Dra. If UX Dra is really a photometric binary then the confrontation of both light and radial velocity curves leads to the conclusion that the smaller and warmer component of the system is occulted by a substantially more massive carbon star during the primary minimum.

Could anybody verify the alternation of the deep and shallow minima in this star on the basis of some observations made closely before 1979?

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