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RAPID VARIATIONS OF THE X-RAY SOURCE KR AURIGAE IN U COLOUR

It was shown that flickering in cataclysmic variables is caused by mass transfer and accretion process (Robinson, 1976). The absence of flickering at minimum light observed in 1980 in MV Lyr was interpreted as censing of the mass transfer (Robinson et al. 1981), because flickering is typical for maximum light in this star. With regard to explain the presence of occasional deep minima in the light curves of some other binaries with orbital periods also near the period gap ($2^h - 3^h$) it is worthwhile more information about the flickering activity of these stars and the changes of its rate with time to be obtained.

KR Aur, with an orbital period of 3^h54^m (Shafter, 1983) is one of the stars in this group. It was the first one, characterized according to its light curve with the term "anti-nova" (Popova, 1974). Taking, besides, into account the spectral features, Bond (1980) proposed this subtype of cataclysmic variables to be named "anti-dwarf novae".

Here we present results from observations of short time-scale variations of KR Aur at National Astronomical Observatory of Bulgarian Academy of Sciences. The observations were made on the night 3 Nov. 1986 using a photon counting photometer (Panov et al. 1982) attached to the 60 cm Cassegrain telescope. The integration time was 10 sec in U. The star was in maximum light during the observations.

Figure 1 shows the light curve beginning at UT $00^h52^m03^s$. The differences Δu in instrumental system are obtained with respect to the comparison star "c" from Popova's (1965) sequence. The standard deviation is $\pm 0^m06$.

The rapid variations in U colour of KR Aur are quite similar to the flickering displayed at maximum light in MV Lyr. So, the flickering activity of KR Aur indicates that mass transfer was taking place at the time of observations. It is very important to follow the changes of the rate of flickering activity of the object with the changes of the brightness, especially during the minimum light.

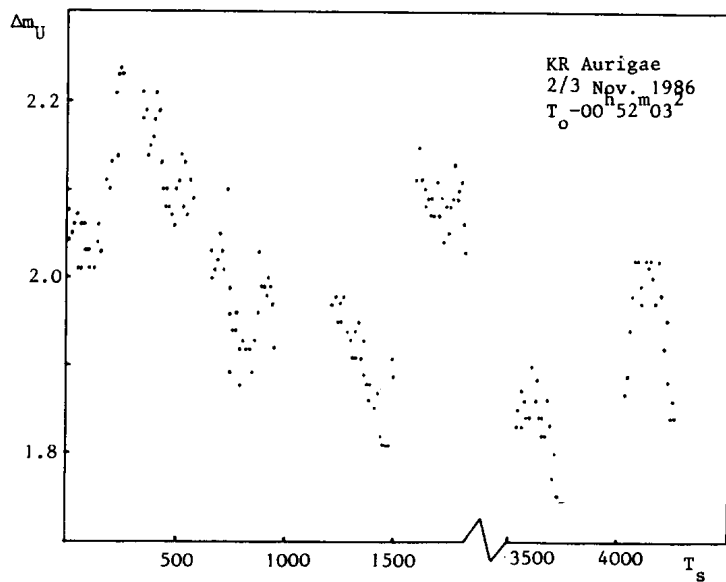


Figure 1

If the character of the photometric behaviour of KR Aur is continuing to be the same as in the last decades, the next deep minimum can be expected in the next 1-2 years.

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