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**PHOTOELECTRIC OBSERVATIONS OF X PERSEI**

X Persei (HD 24534) is the optical counterpart of X-ray transient source 4U 0352+30. The system consists of a neutron star secondary accreting from an O9.5IIIe primary via stellar wind processes. To investigate whether the last fading phase of X Persei beginning in 1990 is going on, we observed the system. The present observations were made in Johnson's UBV bands with the 30-cm Maksutov telescope of Ankara University Observatory. In the observations, BD+31°0655 was used as comparison star while BD+29°0632 and BD+30°0582 were chosen as the check stars. The magnitude differences between check stars and comparison star were constant within probable errors of  $\pm 0.026$  in V band. The individual differential observations were corrected for atmospheric extinction and light time effect of Earth's motion, and the V band differential magnitude determinations were transformed to the standard system.

Since the end of 19th century X Persei has been known to be a variable on a long time-scale. Roche et al. (1993) presented the most comprehensive optical light curve over the period 1964-1992. During this period the Be star has undergone two extended faint, non-variable phases, seen in 1974-1977 and 1990-1992. After this study, Zamanov and Zamanova (1995) have observed X Persei in the period 1992-1994. Their data are shown as (+) in the figures and are evaluated together with our data. Their observations showed the optical low state that began in the mid-1990 finished in the spring of 1993. After this, the star has entered the optical high state. Our observations between 1994-1996 (see Table 1) indicate that the brightness of the system decreased again in 1995 and the star was still in a low state during our last observations in 1996 (Figure 1).

Figure 1 presents the V band light curve over the period 1991-1996. Our observations shown as open circles have completed the missing data in the vicinity of maximum after the 1990-1993 low state. The magnitude at maximum obtained at the end of October 1994 is found of 6.23 close to the values of the previous maxima. Also the current low state is similar to the previous ones ( $V \approx 6.6 - 6.7$ ), and only the minimum in 1990-1993 is deeper than others ( $V \approx 6.8$ ). If these minima are due to the loss of the Be star circumstellar disk, the current low phase must be associated with a new partial (or complete) disk-loss state.

The B–V and U–B colour changes are shown in Figures 2 and 3. Although the observed B–V and U–B colour index values show a large amount of scatter, it is seen that during the rapid brightening that followed the 1990-1993 low state, the B–V colour became redder as expected. At 1990-1993 low state the observed U–B index is between  $-0.65$  and  $-0.7$ . This value is consistent with a B0 star which has a colour excess  $E(B-V)=0.39$  given by Fabregat et al. (1992). During the stage of high luminosity the observed U–B increased to about  $-0.85$  suggesting that the disk radiation contributes to the observed Balmer excess.

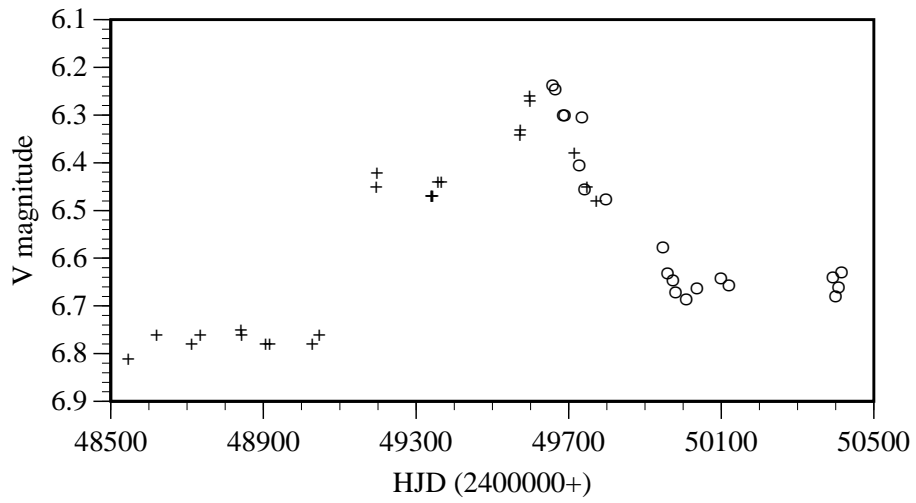


Figure 1. The long term V band light curve of X Persei

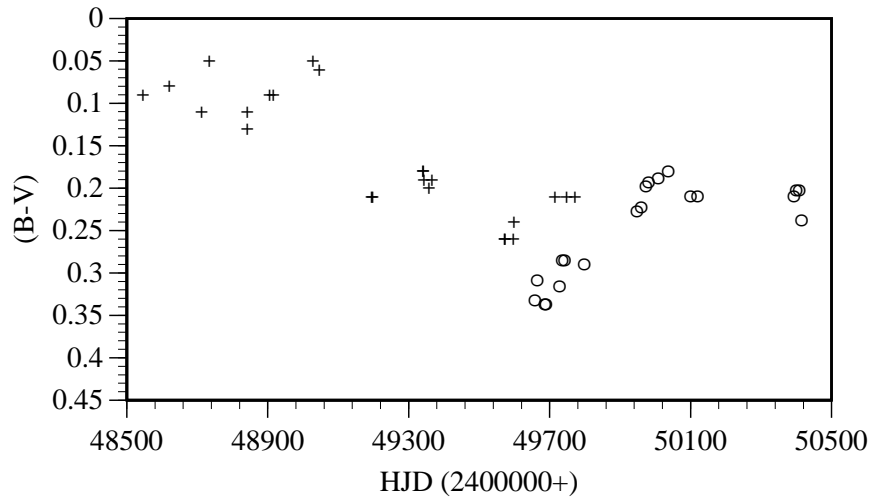


Figure 2. The B–V colour changes of X Persei over the past 4 years

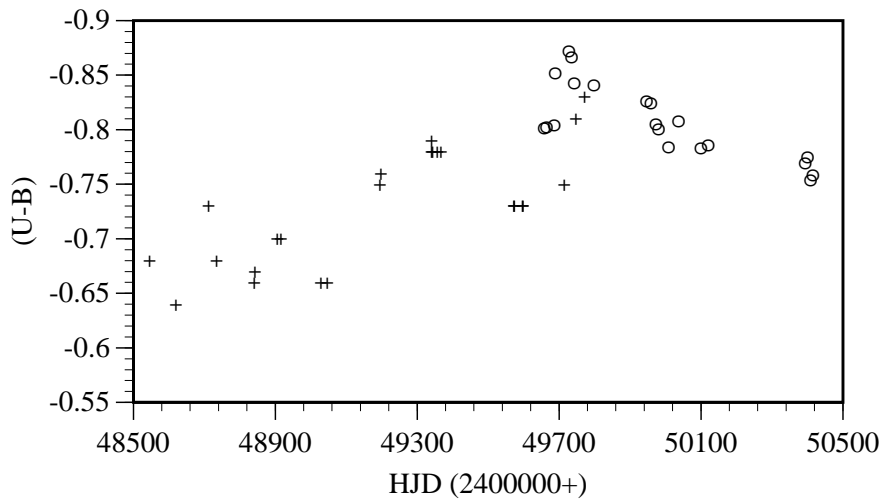


Figure 3. The U–B colour changes of X Persei over the past 4 years

HJD	V	B-V	U-B
2449655.4292	6.240	0.332	-0.801
2449662.3049	6.250	0.309	-0.802
2449683.3035	6.304	0.337	-0.805
2449686.2576	6.303	0.337	-0.852
2449725.2500	6.409	0.316	-0.872
2449732.1701	6.307	0.437	-0.867
2449739.1910	6.459	0.285	-0.842
2449795.2382	6.481	0.290	-0.841
2449943.5250	6.581	0.227	-0.826
2449956.4424	6.635	0.222	-0.824
2449970.4125	6.650	0.198	-0.805
2449977.4424	6.675	0.193	-0.800
2450005.5299	6.689	0.188	-0.784
2450033.3597	6.669	0.180	-0.808
2450096.3618	6.646	0.209	-0.783
2450117.2819	6.660	0.209	-0.786
2450390.3243	6.642	0.209	-0.770
2450397.4993	6.682	0.203	-0.775
2450404.5097	6.664	0.202	-0.754
2450411.5417	6.632	0.238	-0.759

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