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X PERSEI

The Be/X-ray binary X Persei is the optical counterpart of X-ray pulsar 4U 0352+30. Possible orbital period of the system is the 580 day periodicity detected in the radial velocities of the Balmer lines (Hutchings, 1977), in spite of existence of some doubts (Penrod & Vogt, 1985). The star is a known optical variable on time scales from minutes to years. The most comprehensive optical light curve over the past decades is presented by Roche et al. (1993).

X Per has been observed with 60 cm telescope and photon counting photometer of the National Astronomical Observatory Rozhen. HR 1197 ($V=6.25$, $B-V=0.20$, $U-B=0.14$) served as the comparison star. The APR software (Kirov et al., 1993) was used during the data reduction.

Our data are summarized in Table 1. Figure 1 presents the V band light curve over the period 1986-1995. Our observations showed the optical low state that began in the mid-1990 finished in the spring of 1993. Since this time the star has been in optical high state. A clear similarity between the light maximum in 1987-1988 and that in 1993-1994 is visible. The displacement is about 2400 days, i.e. 4 times larger than the supposed orbital period.

The last observations indicate that the optical high state is almost over and X Per is going to a new low state now. May be the star will lose its circumstellar disk again as it was observed in 1990 (Norton et al., 1991; Roche et al., 1993).

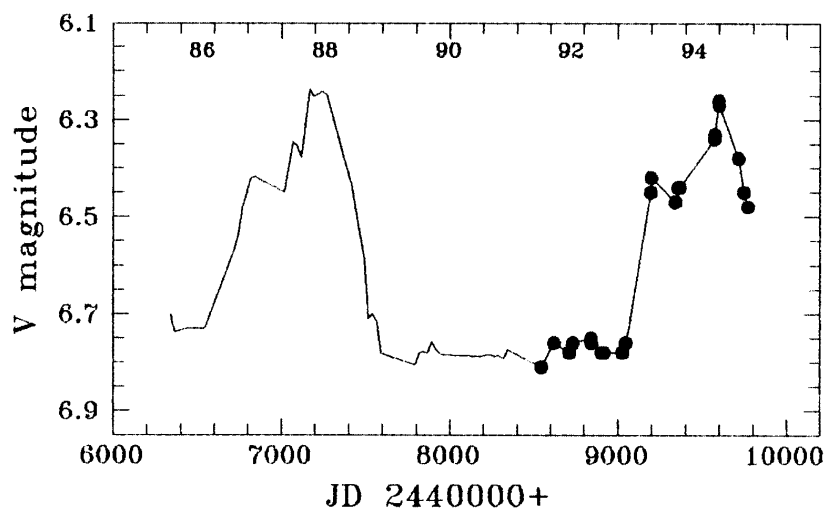


Figure 1. V band light curve of X Per. Circles indicate our data. The light curve before JD 2448500 is taken from Roche et al. (1993).

Table 1

JD 2440000+	V	B-V	U-B	JD 2440000+	V	B-V	U-B
8545.57	6.81	0.09	-0.68	9341.27	6.47	0.18	-0.78
8620.52	6.76	0.08	-0.64	9343.42	6.47	0.19	-0.78
8712.29	6.78	0.11	-0.73	9357.43	6.44	0.20	-0.78
8734.26	6.76	0.05	-0.68	9366.46	6.44	0.19	-0.78
8841.52	6.75	0.13	-0.66	9572.51	6.34	0.26	-0.73
8842.56	6.76	0.11	-0.67	9573.52	6.33	0.26	-0.73
8905.56	6.78	0.09	-0.70	9597.50	6.26	0.26	-0.73
8916.42	6.78	0.09	-0.70	9598.48	6.27	0.24	-0.73
9028.22	6.78	0.05	-0.66	9715.32	6.38	0.21	-0.75
9046.26	6.76	0.06	-0.66	9748.23	6.45	0.21	-0.81
9195.55	6.45	0.21	-0.75	9772.23	6.48	0.21	-0.83
9197.54	6.42	0.21	-0.76				
9340.28	6.47	0.18	-0.79				

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