

COMMISSION 27 OF THE I. A. U.  
INFORMATION BULLETIN ON VARIABLE STARS

Number 1359

Konkoly Observatory  
Budapest  
1977 November 4

B AND V PHOTOMETRY OF X PERSEI (=2U 0352 +30?)

X Per was observed at Tallinn Observation Station beginning from 28 Dec. 1973 on 50 nights. The star HD 23478 (B3 IV,  $V=6^m.66$ ,  $B-V=+0^m.07$  - Publ. of the U.S. Naval Obs. Sec. Ser. Vol. XXI, 1968) served as a comparison star and HD 23625 as a check star. All the observations were corrected for differential extinction by using the mean coefficients and transferred to the U,B,V system as described in Tartu Astrophys. Obs. Publ., 43,96, 1975. Several consecutive measurements were averaged to obtain the normal points given in the Table and plotted in the Figure. The mean-root-square error of the normal point is  $\pm 0^m.001 \dots \pm 0^m.002$  for  $\Delta V$  and  $\pm 0^m.002 \dots \pm 0^m.004$  for  $\Delta(B-V)$ . From the extreme values of extinction coefficients in the cases of the best and worst atmospheric conditions it results that the extinction corrections can differ from the mean no more than by  $-0^m.002 \dots +0^m.004$  and  $-0^m.001 \dots +0^m.002$  for  $\Delta V$  and  $\Delta(B-V)$ , respectively. Therefore the real error of the normal point in both colours is about  $\pm 0^m.005$ .

Some conclusions: (1) From measurements made during four and half hours on 28 Dec. 1973 and seven hours on 10 Jan. 1974 (integrating time nearly 1 minute) no light variations were recorded, whereas the error of a single measurement in V was  $\pm 0^m.004$  and in B  $\pm 0.006$ .

(2) The amplitude of light variations between Dec. 1973 and March 1977 was about  $0^m.07$  in V and  $0^m.05$  in B.

(3) By Sept. 1977 the brightness of X Per has risen  $0^m.24$  in V and  $0^m.17$  in B in comparison with the mean from the last 4 years. It well may be, that there has been continuous brightening since Febr. 1977.

(4) Light variations are more pronounced in V than in B.  
 (5) 29 Sept. 1975, the time of the lowest brightness, coincides with the supposed time of increasing of anomalies in emission spectrum of hydrogen on 3.Oct. 122<sup>d</sup> (Mamatkazine, Sov.Astron. Circ., No.867, 4, 1975). Besides, only in that case consequence (4) is invalidated and the fall of brightness is accompanied by reddening of light.

J.D. 2400000+	$\Delta V$	$\Delta(B-V)$	n	J.D. 2400000+	$\Delta V$	$\Delta(B-V)$	n
42045.3721	-0.011	0.096	22	42728.4089	0.035	0.091	4
056.3951	-0.007	096	4	734.4170	0.033	084	5
057.2522	-0.004	099	6	757.4809	0.025	089	5
058.3582	-0.004	097	34	776.4849	0.015	102	4
059.3153	0.002	096	4	820.3155	-0.008	092	4
.4012	0.006	095	5	828.2923	0.014	073	5
060.3495	-0.003	088	5	831.3924	0.022	080	5
112.2373	-0.013	110	4	832.2735	0.010	080	5
113.2325	-0.003	098	4	836.3784	0.019	086	5
123.2475	0.004	088	2:	842.3209	0.030	072	5
449.3068	0.041	085	1:	43030.4804	0.061	070	5
450.2261	0.046	080	5	052.4582	0.054	074	5
453.2645	0.041	090	5	054.4235	0.056	074	4
455.2182	0.050	078	5:	067.4563	0.050	074	5
468.3004	0.041	090	4	068.4223	0.048	073	5
469.3207	0.053	082	4	069.4901	0.042	066	5
484.2738	0.042	086	4	133.3085	0.041	068	5
486.2878	0.031	095	4	172.2671	0.055	058	4
492.2749	0.039	097	4	189.2375	0.054	065	4
645.5328	0.044	090	5	209.2975	0.043	068	4
685.3100	0.069	104	3	232.2885	0.033	076	5
698.4050	0.058	072	3	411.4711	-0.202	153	6
705.4961	0.034	082	5	412.5524	-0.209	154	4
713.4056	0.056	074	4	413.4383	-0.208	149	5
716.4786	0.042	099	5	414.5027	-0.209	144	5
				425.4809	-0.215	158	4:

P. KALV

W.Struve Tartu Astrophys.Obs.  
 Tallinn Observation Station:  
 Tähetorn, Tallinn, Estonian S.S.R.  
 U.S.S.R. 200016

