

COMMISSION 27 OF THE I. A. U.
 INFORMATION BULLETIN ON VARIABLE STARS
 Number 3338

Konkoly Observatory
 Budapest
 13 June 1989
 HU ISSN 0374 - 0676

FLARE OBSERVATIONS OF UV CETI

In order to study the structure of the flare light curves, synchronous photoelectric observations were made on UV Ceti at Maydanak high-mountain station of Tashkent Astronomical Institute, using two 60-cm telescopes. During 12 hours of observations 15 flares were detected in U-band, in October and November 1987. The synchronization of the two telescopes was as precise as 0.001 sec. The measurements were made by the photon counting method. The duration of each measurement was 2 seconds, and the time interval between two measurements was 0.4 s.

The results of the observations are presented in Table I: number of flare, date of flare in UT, the beginning moment of the flare (in UT), the rise time and the decay time (in seconds), and the amplitudes of the flares as measured with the two telescopes (ΔU_1 and ΔU_2 , respectively) are given. The light curves of the flares No.14 and No.15 are presented in Figure 1 for the illustration, where I_0 is the stellar intensity in normal state, and I_f is the additional intensity.

Table I

N	Date of flare (UT)	Beginning of the flare (UT)	Rise time (s)	Decay time (s)	ΔU_1	ΔU_2
1	18 Oct. 1987	21 ^h 08 ^m 21 ^s	3	51	0 ^m .80	1 ^m .00
2	19 Oct. 1987	17 58 24	6	120	0.78	0.80
3	19 Oct. 1987	18 27 57	21	354	1.04	1.10
4	19 Oct. 1987	18 47 09	6	51	1.06	1.16
5	19 Oct. 1987	19 47 48	3	36	2.35	2.35
6	19 Oct. 1987	19 53 00	-	420	2.05	2.19
7	16 Nov. 1987	16 04 54	15	144	1.38	1.53
8	16 Nov. 1987	16 21 12	30	135	1.34	1.19
9	16 Nov. 1987	16 49 30	48	465	2.91	2.86
10	16 Nov. 1987	18 25 09	33	198	1.26	1.16
11	16 Nov. 1987	18 30 15	27	255	1.70	1.63
12	16 Nov. 1987	18 36 33	9	198	3.04	2.94
13	16 Nov. 1987	18 56 00	15	105	1.75	1.79
14	16 Nov. 1987	19 05 21	30	187	1.66	1.70
15	17 Nov. 1987	16 25 03	12	435	1.68	1.66

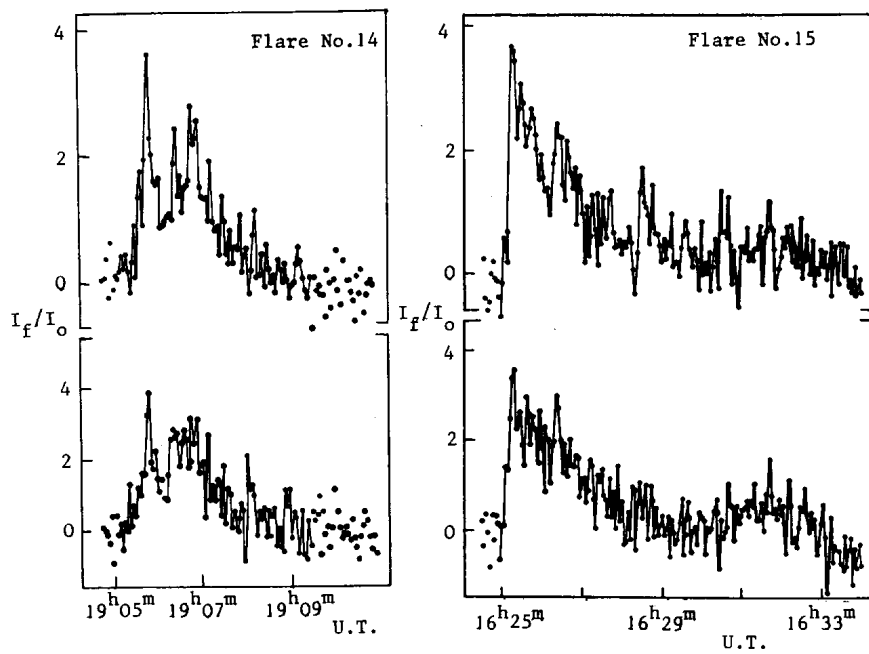


Figure 1

In addition to these 15 flares, four "spike-shaped" increases of the light were observed, duration of each one being less than or equal to two seconds. These four cases are illustrated in Figure 2. In all cases the "spike-shaped" increase of the brightness is registered only with one telescope. Such "spike-shaped" increases of the light were already detected during the EV Lac flare observations (Tovmasian and Zalinian, 1988; Tsvetkov et al., 1986a,b; and Zalinian and Tovmasian, 1986). Unlike the results for EV Lac, it seems to us that this kind of increase can be explained by the Poissonian distribution of the observational errors (the number of the points on our registrograms is more than 20000 on each telescope).

The authors are indebted to Prof. L.V. Mirzoyan for suggesting these observations.

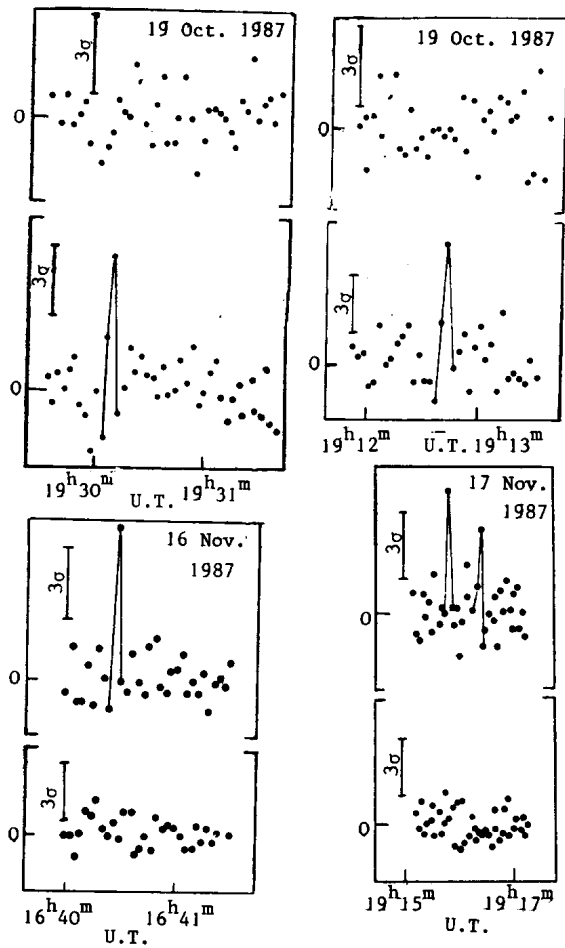


Figure 2

N.D. MELIKIAN

N.N. KILJACHKOV, V.S. SHEVCHENKO,

A.V. CHERNISHEV, D.L. PORTNOV

Byurakan Astrophysical Observatory

Tashkent Astronomical Institute

References:

- Tovmasian, H.M., and Zalinian, V.P. 1988, *Astrofizika*, 28, 131.
 Tsvetkov, M.K., Antov, A.P., Tsvetkova, A.G. 1986a, In: *Eruptive Phenomena in Stars*; Comm. Konkoly Obs., Budapest, No.86, p.423.
 Tsvetkov, M.K., Tsvetkova, K.P., Melikian, N.D. 1986b, *IBVS*, No.2954.
 Zalinian, V.P., and Tovmasian, H.M. 1986, *IBVS*, No.2992.