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SIMULTANEOUS TWO-COLOUR OBSERVATION OF THE
FLARE STAR EV Lac IN SEPTEMBER 1987

Photoelectric monitoring of the flare star EV Lac has been carried out with the help of two-channel photoelectric photometer attached to the 40 cm Cassegrain reflector of the Byurakan Astrophysical Observatory. The photometer gives us the possibility to record flares in both U and B colours simultaneously with time resolution equal to 0.01 sec (Zalinian and Tovmasian, 1987).

On 15 September 1987 a flare of 40 min duration was recorded with time resolution of 0.1 sec. The light curve and colours of the flare are given in Figures 1 and 2. In Fig.2 the light curve of the flare is averaged over 5 points.

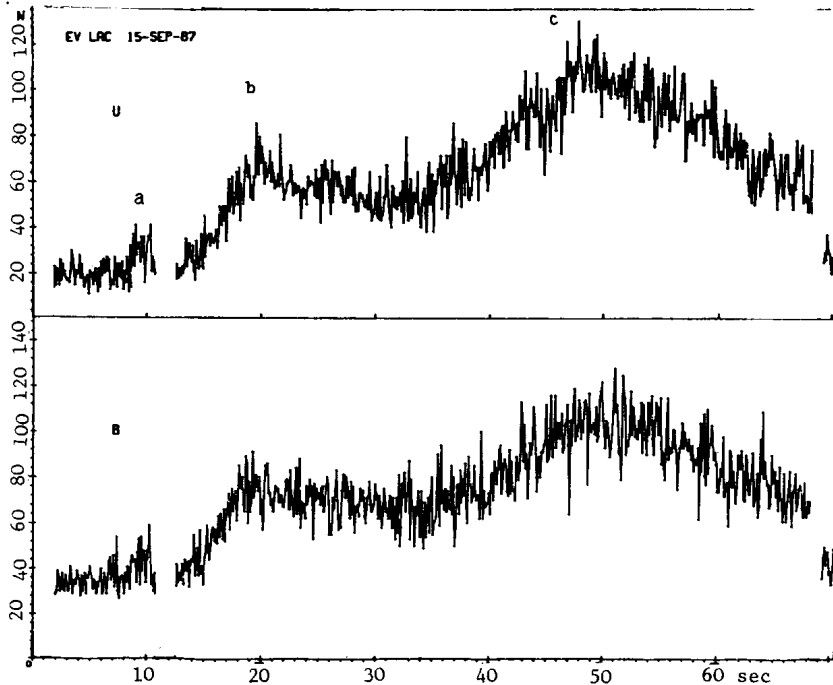


Figure 1

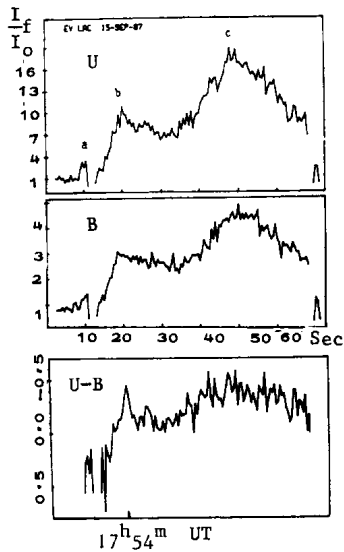


Figure 2

The light curve shows, that the flare obviously consists of two maxima "b" and "c", and that the flare is preceded by a faint precursor of 2 s duration. A similar preflare of 1.5 s duration and $\Delta m_U = 1.1^m$ was recorded on 8 August 1985 at 5 s before the beginning of the main flare with an amplitude of $\Delta m_U = 2.2^m$ (Zalinian and Tovmassian, 1986).

The durations of preflares in both cases are small (in both cases < 3 s). If such preflares really occur before each large flare they could not be recorded in observations with larger integration time.

Table I

max	T (sec)	Δm_U	Δm_S	U - B	Duration (min)
a		1.2	0.4	0.3	
b	63	2.6	1.1	-0.4	
c	27	3.1	1.6	-0.5	40

The main characteristic features of the observed flare are given in Table I in which T is the time interval between maxima "a" and "b", and "b" and "c"; Δm_U , Δm_B ; amplitudes of flares in U and B colours; U - B: colour of the star during the flare.

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References:

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Zalinian V.P., Tovmassian H.M., 1987, IBVS, No. 2992.