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PHOTOELECTRIC OBSERVATIONS OF UV CETI

The results of photoelectric monitoring of the flare star UV Ceti are herein reported. The star was monitored as part of a collaborative programme for a total of 11^h38^m spread over 5 nights during December 1975, using the Sampurnanand 104 cm reflector equipped with a refrigerated EMI 6094S photomultiplier. A total of 17 flares were detected.

The observed flare light curves (Figs. 1-17), monitoring intervals (Table I) and flare characteristics (Table II) are presented.

For energy estimates quiescent state luminosity of the star UV Ceti in B band is taken to be 7.31×10^{27} ergs sec⁻¹.

The peak of flare No. 8 was lost while taking sky measures and peak of flare No. 15 could not be covered for a very small interval due to instrumental limitations.

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Reference:

Cristaldi, S. and Rodono, M., 1973, Astron. Astrophys. Suppl. 10, 47

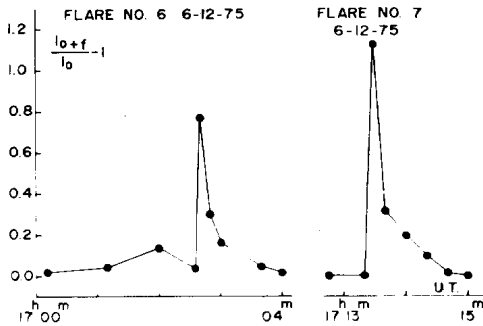
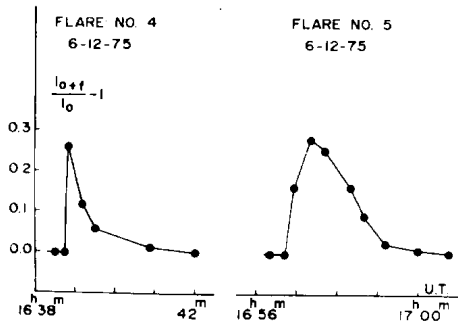
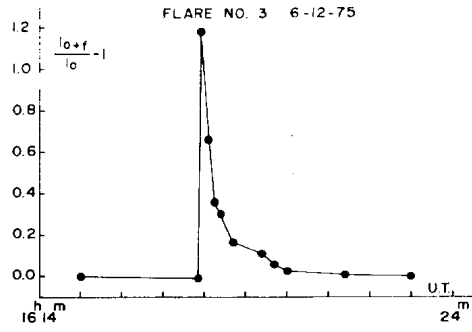
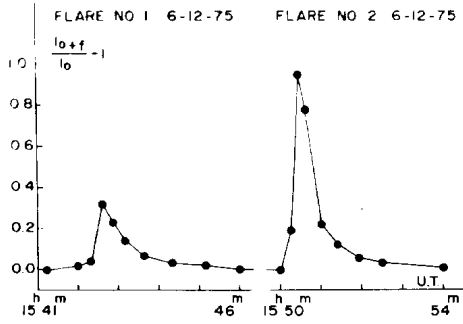
Table I
Monitoring Intervals
(Times rounded off to nearest minute of U.T.)

Date	15h22m	16h25m	16h32m	17h24m	17h32m	17h54m	18h11m	18h56m
Dec. 1975								
6	15 11 - 16 37	16 42 - 17 15	17 18 - 17 36	17 49 - 18 25				
7	14 03 - 15 41	16 13 - 17 05	17 11 - 18 11	18 14 - 18 27				
8	18 30 - 18 39							
9	16 22 - 17 23	17 25 - 17 51	17 53 - 18 26					
10	17 44 - 18 13	18 25 - 18 36	18 43 - 18 53					

Table II
Characteristics of the Flare Events on UV Ceti (dM4.5e: V=11.95;B-V=1.76)

Flare No.	Date Dec. 1975	U.T.max.	Flare duration (in minutes)		$\frac{I_{O+f}}{I_0}$	Δm_B	$\frac{c}{X_s}$	P (min)	F(z)Energy*		Total emission**
			Before max t _b	After max t _a							
1	6	15h42m50	1.40	3.40	1.321	0.302	.020	0.300	1.023	0.96	1.31
2	6	15 50.25	0.40	3.50	1.925	0.726	.023	0.625	1.026	1.43	2.74
3	6	16 18.00	0.15	5.40	2.172	0.842	.018	0.565	1.047	1.59	2.48
4	6	16 38.80	0.17	3.17	1.256	0.247	.022	0.233	1.071	0.92	1.02
5	6	16 57.30	0.67	2.67	1.279	0.267	.031	0.370	1.101	0.93	1.62
6	6	17 02.66	0.10	1.33	1.767	0.618	.051	0.303	1.109	1.29	1.33
7	6	17 13.45	0.13	1.58	2.127	0.819	.018	0.171	1.133	1.55	0.75
8	8	-	-	-	-	-	.016	-	-	-	-
9	8	16 21.00	0.60	4.00	1.296	0.281	.018	0.255	1.059	0.95	1.12
10	8	16 31.30	1.53	7.33	1.529	0.461	.031	0.737	1.072	1.12	3.32
11	8	17 17.03	0.73	15.00	1.408	0.368	.022	1.366	1.160	1.03	5.99
12	9	16 42.66	0.33	5.66	1.468	0.417	.041	0.537	1.096	1.07	2.35
13	9	16 58.83	1.00	4.00	1.195	0.280	.037	0.426	1.127	0.95	1.87
14	9	17 26.63	0.20	8.13	1.372	0.343	.030	0.255	1.197	1.00	1.11
15	9	17 54.41	0.166	4.50	4.777	1.698	.017	2.800	1.293	3.49	12.28
16	10	18 00.83	0.26	6.33	1.365	0.338	.033	0.488	1.304	0.99	2.14
17	10	18 08.00	0.26	5.33	1.170	0.017	.033	0.200	1.370	0.85	0.88

* Energy released at flare maximum 10^{29} ergs/s.
**Total emission during the event 10^{29} ergs.



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