

COMMISSION 27 OF THE I. A. U.
 INFORMATION BULLETIN ON VARIABLE STARS
 NUMBER 857

Konkoly Observatory
 Budapest
 1974 January 7

PHOTOELECTRIC OBSERVATIONS OF THE FLARE STAR UV Cet DURING
 THE 1973, SEPTEMBER 20 - OCTOBER 5 INTERNATIONAL PATROL

Preliminary results of the UV Cet photoelectric observations which were carried out at Catania Astrophysical Observatory during the observing period scheduled by the I.A.U. Working Group on Flare Stars (Chugainov, IBVS No.744, 1972) are given.

The observations were made at the 91 cm Cassegrain reflector using standard filters and an EMI 6256 (S13) photomultiplier tube matching the B colour of the standard photometric system. A DC amplifier and a strip-chart recorder with a time constant of 1 sec. f.s. were used.

In Table 1 the detailed coverage in U.T. is given. Patrol interruption longer than one minute are noted. During the 42.8 hours of effective coverage 39 flare events were observed.

Table 1. Detailed Coverage

Date	Coverage (U.T.)	$3 \sigma / I_0$
Sep. 19-20	23 ^h 12 ^m -2400, 0000-0026, 0029-0113, 0118-0126, 0208-0247, 0250-0325;	.08
20-21	2247-2257, 2259-2400, 0000-0131, 0134-0157, 0201-0232, 0251-0257, 0300-0329;	.08
21-22	2255-2342, 2346-2349, 2357-2400, 0036-0055, 0058-0105;	.09
22	2136-2153, 2157-2235, 2239-2250, 2318-2333;	.09
23-24	2341-2400, 0000-0057, 0059-0144, 0152-0237, 0247-0333;	.09
28-29	2253-2302, 2325-2348, 0003-0104, 0115-0325;	.06
29-30	2240-2334, 2338-2400, 0000-0142, 0146-0337;	.05
30-Oct.1	2147-2244, 2332-2400, 0000-0050, 0058-0130, 0140-0154, 0203-0220, 0224-0314, 0320-0331;	.05
Oct. 1-2	2126-2143, 2145-2210, 2214-2227, 2235-2400, 0002-0019, 0022-0113, 0115-0258, 0303-0315;	.05
2-3	2238-2327, 2343-2400, 0000-0148, 0152-0246, 0259-0318;	.09
4-5	2051-2105, 2110-2400, 0000-0313, 0327-0338.	.06

Some characteristics of these flares in the instrumental photometric system are given in Table 2. Also the light curves which are shown in the accompanying figures as relative intensities versus U.T. are given in the instrumental photometric system. However, those P_B values which are referred to in the figures have been reduced to the standard photometric system using a method previously indicated by the authors (Cristaldi and Rodonò, Astr.,Astrophys.Suppl.10,47,1973). The error bars indicate the maximum noise fluctuation in the relative intensity scale.

The observed flares have been attributed to the fainter component of the L 726-8 binary system. This is of course an arbitrary assumption since also the brighter component is a good flare star candidate. However, no information are at present available on the relative flare incidence on the individual components of the system.

Table 2. Flare Characteristics

No.	t_{\max} (U.T.)	J.D.	d_b	d_a	$3\sigma/I_{Or}$	$I_f/I_{O \max}$	$I_f/I_{O \max}$	Energy P erg	f
	September	24419..							
1/c	20,0233.50	44.6115	0.5	2.9	0.21	1.24	0.98	2.18×10^{30}	0
2/c(a)	20,2306.05	46.4675	0.2	2.2	.18	3.97	1.40	3.10×10^{30}	2
3/c	20,2339.65	46.4908	0.1	3.0	.21	2.19	1.21	2.68×10^{30}	0
4/c(a)	21,0022.00	46.5184	0.05	3.7	.21	1.32	0.80	1.76×10^{30}	2
5/c	21,0034.75	46.5291	.05	1.5	.21	1.41	0.31	6.83×10^{29}	0
6/c	21,0113.85	46.5563	.25	10.6	.21	16.56	18.71	4.15×10^{31}	4
7/c	21,0137.85	46.5729	.1	2.4	.21	2.45	0.92	2.03×10^{30}	0
8/c(b)	21,0307.20	46.6350	.1	12.8	.24	147.89	61.38	1.36×10^{32}	3-4
9/c(b)	22,2218.9	48.4348	.4	13.5	.21	18.06	37.59	8.33×10^{31}	3-4-5
10/c(a)	23,2347.8	49.4965	.15	10.8	.18	15.53	112.92	2.50×10^{32}	3-4
11/c	24,0049.3	49.5393	.2	1.4	.18	0.47	0.24	5.30×10^{29}	-
12/c(a)	29,0006.60	54.5097	.18	7.2	.16	0.90	1.88	4.16×10^{30}	2
13/c	29,0034.65	54.5292	.06	3.1	.16	3.86	0.92	2.04×10^{30}	0
14/c	29,0040.50	54.5332	.10	2.2	.16	1.99	0.36	7.98×10^{29}	0
15/c	29,0105.20	54.5504	-	25.0	.16	1.05	(4.69)	(1.04×10^{31})	5
16/c	29,0226.50	54.6068	.10	1.6	.16	0.69	0.24	5.26×10^{29}	0-1
17/c	30,0010.30	55.5123	.20	1.9	.13	0.89	0.32	7.09×10^{29}	1
18/c	30,0126.45	55.5652	.15	10.0	.13	14.86	7.22	1.60×10^{31}	0
19/c	30,0153.05	55.5836	.1	1.8	.16	0.85	0.33	7.29×10^{29}	0
20/c	30,2234.60	56.4458	.10	(15.0)	.18	16.37	12.59	2.79×10^{31}	0-5
21/c	30,2355.85	56.5022	.15	10.0	.16	1.17	1.34	2.98×10^{30}	4
	October								
22/c	1,0036.25	56.5303	.25	10.6	.16	0.89	1.38	3.05×10^{30}	0
23/c	1,0309.35	56.6366	.15	1.8	.24	2.79	1.00	2.22×10^{30}	0
24/c	1,0330.00	56.6510	.05	0.10	.21	20.97	(1.12)	(2.49×10^{30})	5-1
25/c	1,2138.60	57.4069	.15	2.2	.13	1.73	0.50	1.10×10^{30}	0

Table 2 (cont.)

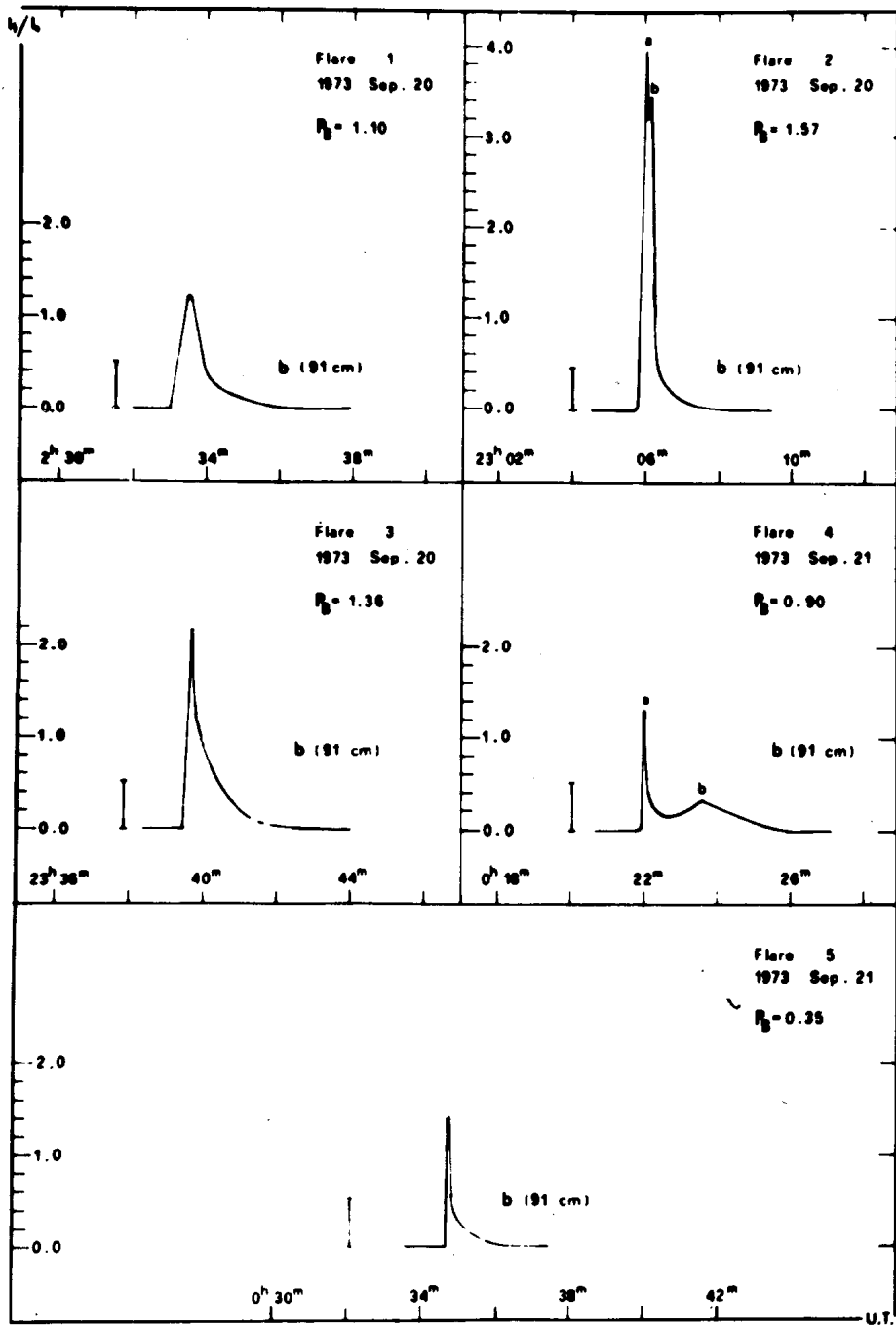
No.	t_{\max}	U.T.	J.D.	d_b	d_a	$3\sigma/I_{\text{or}}$	$I_f/I_{\text{O max.}}$	I_p/I_{O}	Energy erg	f
26/c	1,2311.72	57.4716	.05	0.4	0.13	0.44	0.07	1.58×10^{29}	1-0	
27/c	2,0149.37	57.5811	.06	.05	.13	0.88	0.04	9.72×10^{28}	1-6	
28/c(a)	2,0311.10	57.6378	.1	.9	.16	0.59	0.20	4.36×10^{29}	1-2	
29/c	2,2241.45	58.4506	.05	.6	.26	7.72	0.41	9.06×10^{29}	0	
30/c	2,2246.02	58.4538	.10	1.7	.26	2.37	0.60	1.33×10^{30}	0	
31/c(a)	2,2353.65	58.5007	.05	1.1	.21	1.38	0.32	7.18×10^{29}	2	
32/c	3,0227.80	58.6078	.15	.50	.21	0.88	0.14	3.18×10^{29}	0-1	
33/c	4,2128.20	60.3997	.10	.90	.21	1.81	0.33	7.27×10^{29}	0	
34/c	4,2144.20	60.4108	.10	2.80	.16	0.60	0.48	1.06×10^{30}	0-1	
35/c	4,2310.37	60.4707	.05	2.50	.12	2.48	0.54	1.41×10^{30}	4	
36/c(a)	5,0042.22	60.5345	.20	6.00	.10	1.39	2.40	5.33×10^{30}	3	
37/c(a)	5,0200.32	60.5887	.25	8.50	.12	1.49	2.39	5.30×10^{30}	3	
38/c(a)	5,0208.77	60.5946	.10	.90	.13	0.63	0.18	3.96×10^{29}	1-3	
39/c(a)	5,0259.07	60.6295	.10	2.4	.15	1.16	0.52	1.15×10^{30}	2	

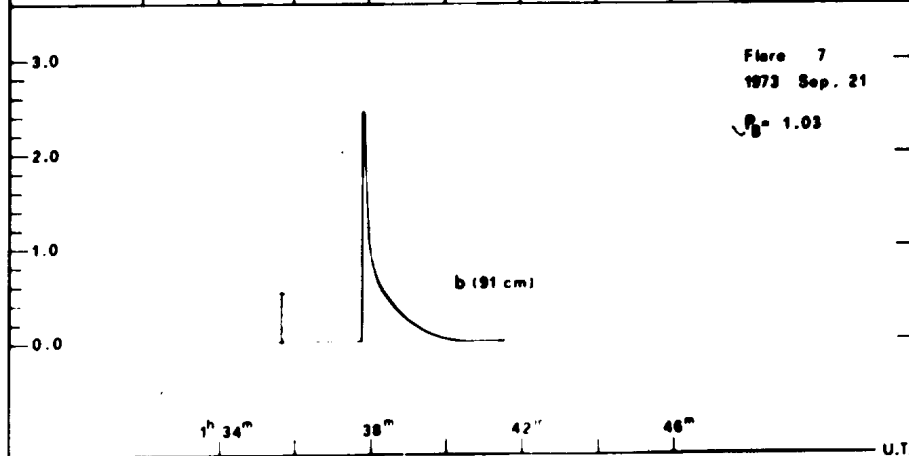
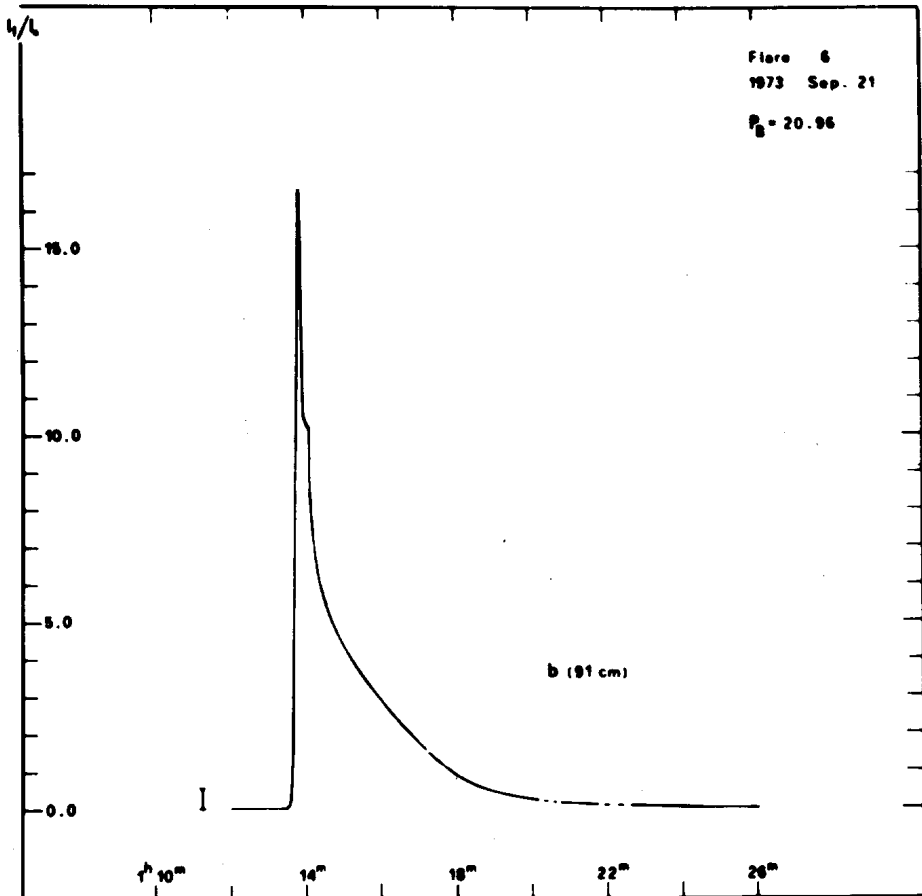
The explanation of symbols and further details on the observing equipment can be found in Cristaldi and Rodonò (loc.cit).

R. Barbagallo, C.Lo Presti, F. Spinella and M.C. Stancanelli Consoli have cooperated in this work.

December, 1973
Catania Astrophysical Observatory
95125 Catania, Italy.

S. CRISTALDI
M. RODONÒ





Flora B
1973 Sep. 21

$R_f = 66.75$

