COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
Number 1612

Konkoly Observatory
Budapest
1979 May 28

SPIKE FLARES OF UV Ceti

During 2-9 December 1975 the flare star UV Ceti [R.A. = $01^h36^m24^s$, declination = $-18^o13'$ (1950), visual magnitude 12,9 at minimum, spectral type dM5,5e] was monitored at Boyden Observatory with the 41 cm Nishimura reflector. A Johnson B filter and an uncooled EMI 6256 A photomultiplier tube were used in the observations. The two flares of $\frac{I_{0+f}-I_o}{I_o}$ equal to 14,20 and 3,09 were visually confirmed on the night of 2/3 December in the 15cm finder.

Of the 38 other flares recorded during this period 36 were spike flares, either single flares or in the form of a spike complex. Their $\frac{I_{0+f}-I_o}{I_o}$ values were between 1,00 and 2,17 with durations generally between 3 and 12 seconds.

The data is presented in the table, following the proposals to flare star observers (1). Examples of light curves representing a selection of the flares are shown in Figures 1-16.

On past occasions we have reported similar spike flares from UV Ceti (references 2-5), using the terminology suggested by Moffett (6).

Our data reduction has been greatly facilitated by the kindness of Prof. F.D.I. Hodgson, Director of the Institute of Groundwater Studies at the Universtiy, in making available his institutes' Hewlett Packard Model 9825 microcomputer and digitizer.

A.H. JARRETT and J. VAN ROOYEN

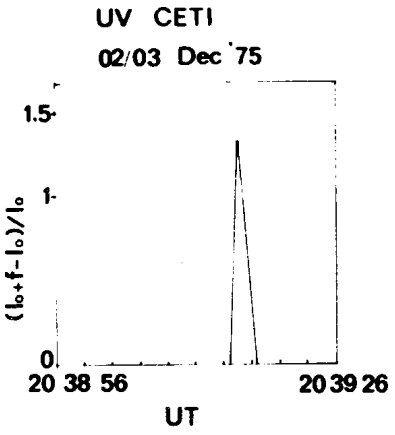
Boyden Observatory
Astronomy Department
University of The Orange Free State
Bloemfontein
Republic of South Africa

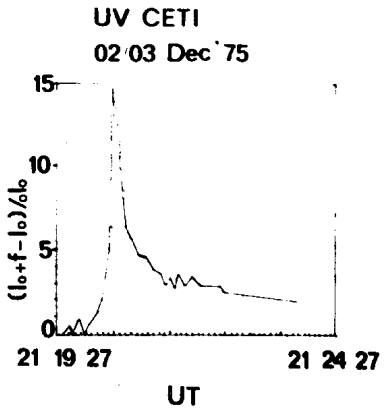
DATE 1975	MONITORING TIME U.T.	FLARE MAXIMUM U.T.	$\frac{I_{o+f}-I_o}{I_o}$	$2.5 \log[\frac{I_{o+f}-I_o}{I_o}]$	$\sigma(\text{mag}) = -2.5 \log \frac{\lvert\sigma\rvert}{I_o}$	$m_{lim}-m_o = \sigma(\text{mag})-1.19$
2 December	$18^h05^m29^s$ - $18^h27^m06^s$	* $19^h37^m17^s$	1,14	0,15	2,10	0,91
	18 31 24 - 18 53 12	* 19 56 13	1,18	0,18	1,90	0,71
	18 57 12 - 19 05 06	* 20 00 42	1,22	0,21	1,90	0,71
	19 07 54 - 22 00 00	* 20 01 12	1,14	0,14	1,90	0,71
		* 20 39 16	1,29	0,27	2,13	0,95
		x 21 20 30	14,20	2,88	2,04	0,85
		x 21 45 07	3,09	1,23	1,98	0,79
3 December	18 01 18 - 18 45 28	* 18 29 25	1,13	0,13	1,98	0,79
	18 49 32 - 19 01 00	** 19 25 52	1,23	0,23	2,03	0,84
	19 04 12 - 22 00 15	19 28 55	1,37	0,34	2,03	0,84
		* 19 50 05	1,57	0,49	1,87	0,68
		* 20 39 42	1,39	0,36	2,03	0,84
		* 20 44 43	1,63	0,53	2,03	0,84
		* 20 49 43	1,42	0,38	2,03	0,84
		** 20 56 18	1,49	0,43	2,03	0,84
		** 21 16 45	1,07	0,07	2,03	0,84
		* 21 31 58	1,48	0,43	1,93	0,74
		* 21 35 44	1,55	0,48	1,93	0,74
		** 21 38 41	1,03	0,03	1,93	0,74
		* 21 42 02	1,29	0,28	1,93	0,74

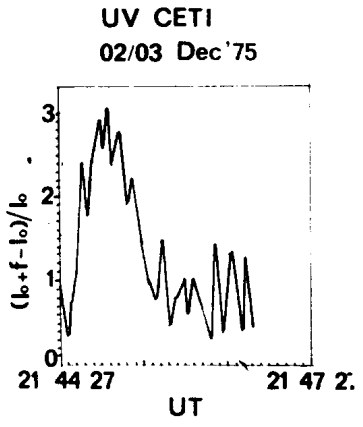
x Visually Confirmed
* Spike
** Spike Complex

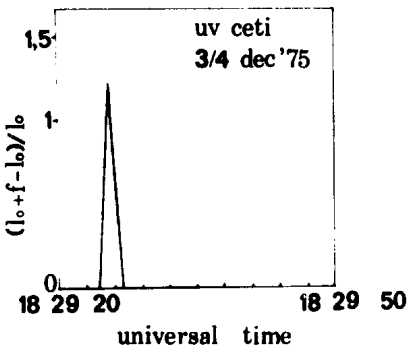
DATE 1975	MONITORING TIME U.T.	FLARE MAXIMUM U.T.	$\frac{I_{o+f}-I_o}{I_o}$	$2.5 \log[\frac{I_{o+f}-I_o}{I_o}]$	$\sigma(mag) = -2.5 \log \frac{\lvert\sigma\rvert}{I_o}$	$m_{lim}-m_o = \sigma(mag)-1.19$
7 December	$18^h17^m15^s$ - $18^h45^m04^s$	* $18^h56^m03^s$	1,38	0,35	1,78	0,59
	18 49 02 - 18 36 01	** 19 58 52	1,38	0,35	1,78	0,59
	18 39 06 - 22 01 14	20 17 58	1,56	0,48	1,81	0,62
		** 20 22 26	1,26	0,25	1,81	0,62
		* 20 33 45	1,42	0,38	1,81	0,62
		* 21 02 46	1,28	0,27	1,68	0,49
		* 21 06 32	1,84	0,66	1,68	0,49
		* 21 12 46	2,17	0,84	1,68	0,49
		** 21 22 45	2,04	0,78	1,68	0,49
		** 21 22 55	1,79	0,63	1,68	0,49
		* 21 23 38	1,53	0,46	1,68	0,49
		* 21 24 18	1,28	0,27	1,68	0,49
		* 21 45 30	1,82	0,65	1,68	0,49
		* 21 49 20	1,45	0,40	1,68	0,49
8 December	18 24 26 - 18 34 18	* 20 55 16	1,13	0,13	2,00	0,81
	18 38 00 - 18 41 18	* 21 01 08	1,18	0,18	1,81	0,62
	18 45 06 - 22 00 18	* 21 02 38	1,00	0,00	1,81	0,62
		* 21 39 12	1,44	0,40	1,81	0,62
		* 21 48 09	1,50	0,44	1,81	0,62
		* 21 53 27	1,39	0,36	1,81	0,62
9 December	18 04 14 - 18 36 14	NO FLARES RECORDED				
	18 42 00 - 19 07 36					
	19 12 18 - 23 00 10					

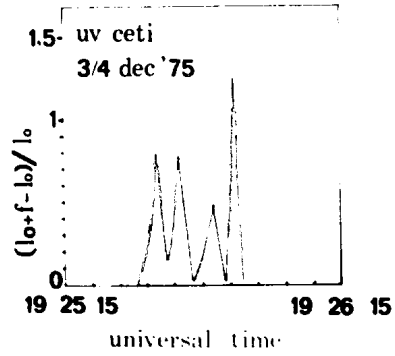
x
* Visually Confirmed
** Spike
Spike Complex

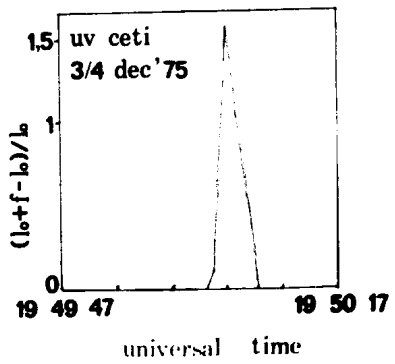

UV CETI
02/03 Dec '75
1.5
1
0
$(I_o+f-I_o)/I_o$
20 38 56
20 39 26
UT

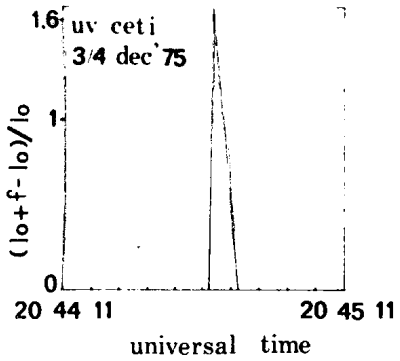

UV CETI
02/03 Dec '75
15
10
5
0
$(I_o+f-I_o)/\sigma I_o$
21 19 27
21 24 27
UT

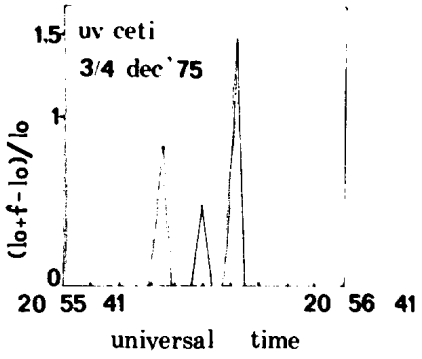

UV CETI
02/03 Dec '75
3
2
1
0
$(I_o+f-I_o)/I_o$
21 44 27
21 47 2.
UT

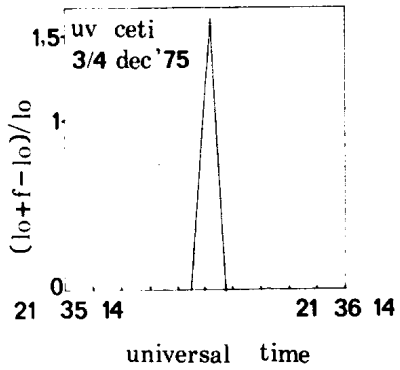

uv ceti
3/4 dec '75
1,5
1
0
$(I_o+f-I_o)/I_o$
18 29 20
18 29 50
universal time


uv ceti
3/4 dec '75
1.5
1
0
$(I_o+f-I_o)/I_o$
19 25 15
19 26 15
universal time

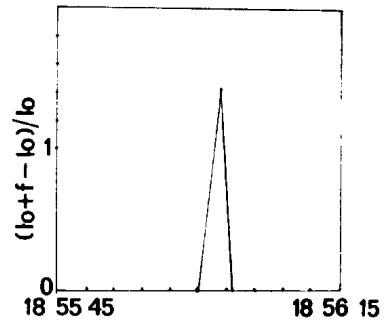

uv ceti
3/4 dec '75
1,5
1
0
$(I_o+f-I_o)/I_o$
19 49 47
19 50 17
universal time



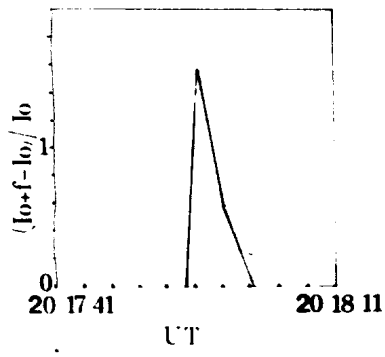




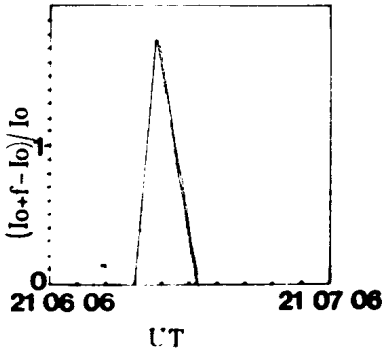
UV CETI
7/8 Dec '75

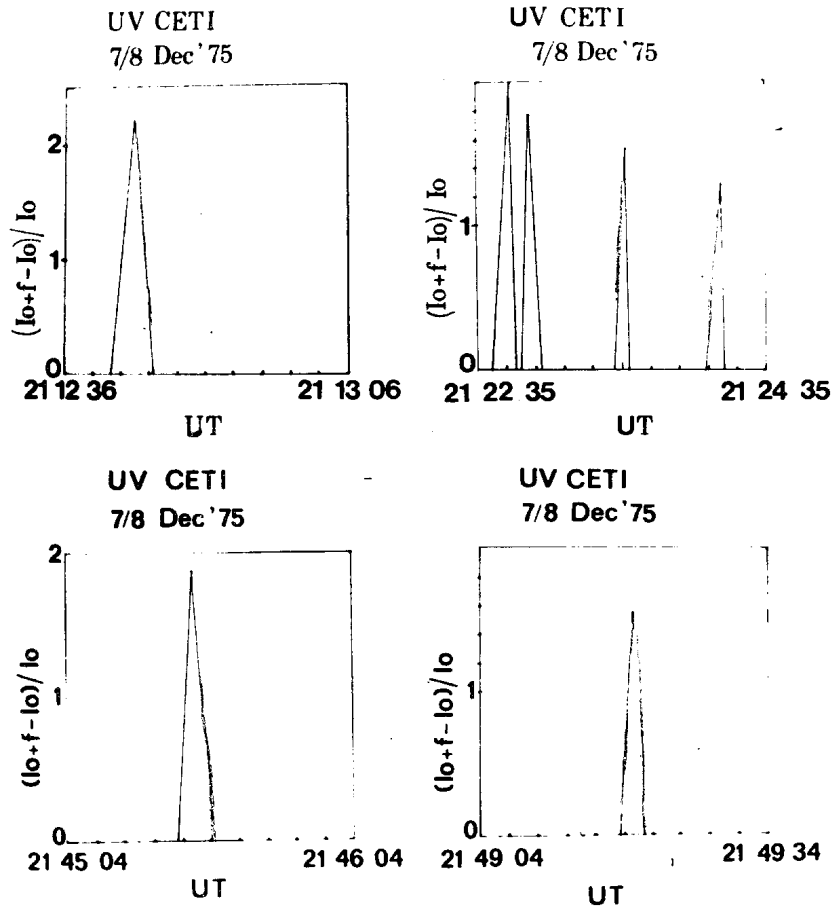


UV CETI
7/8 Dec'75



UV CETI
7/8 Dec'75





References:

1) Andrews, A.D., Chugainov, P.F., Gershberg, R.E. and Oskanian, V.S., 1969, I.B.V.S. No. 326

2) Jarrett, A.H. and Gibson, J.B., 1975, I.B.V.S. No. 979

3) Jarrett, A.H. and Gibson, J.B., 1975, I.B.V.S. No.1017

4) Jarrett, A.H. and Gibson, J.B., 1976, I.B.V.S. No.1105

5) Jarrett, A.H. and J. van Rooyen, 1979,I.B.V.S. No.1585

6) Moffett, T.J., 1974, Sky and Telescope, 48, 94