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SOME RECENT OBSERVATIONS OF UV CETI

Introduction

Investigation of the flare star UV Ceti (R.A. = 01^h37^m2. Dec.=$-18°08'$ (1966.0), Mag vis. 12.9, spectrum type dM5.5e) have been made from Boyden Observatory using the 40 cm aperture Nishimura (Cassegrain) Reflector. Observations have all been with a solid carbon-dioxide cooled EMI type 6256 photomultiplier tube photometer fitted with a Johnson B. filter. The photometric accuracy was considered to be just within five per cent and the associated time constant of the photometer was one second.

Observations

Details of the monitoring carried out during the recent International Co-operative period from 11th-27th October, 1971 are given in the following table.

Results

Eight flares were recorded during the observational period. The level of activity was quite high; with an average $(I_{o+f}-I_o)/I_o$ of 1.37. The flares all showed the typical characteristic flash phase of UV Ceti type flare stars followed by a gradual decline. In one (flare No.3) there is the usual rapid decline after the flash phase followed by a secondary maximum and then a slow fall off in intensity. Several similar flares have been previously recorded by Jarrett and Eksteen (1969, 1970).

Deductions

Using the data in the table along with that from UV Ceti flares observed in recent years at Boyden by Jarrett and Eksteen (1969, 1970), involving 70 flares in all, we conclude that there is a flare recurrence period of very nearly 24^h (or an integral multiple thereof as the recorded flares were not always on consecutive nights), with a probable error of ± 4 minutes.

Monitoring Table of UV Ceti

Date 1971 Oct.	U.T.	Total Hours per Night	Flare No.	U.T. of Flare	Duration	$\frac{I_{o+f}-I_o}{I_o}$
12	22^h03^m - 23^h28^m	1^h35^m	1	$23^h12^m.9$	3.1	0.86
18	19 46 - 21 58		2	19 07.6	4.4	1.77
	22 48 - 23 13	2 37	3	19 56.6	5.6	1.11
19	17 40 - 21 58		4	18 37.5	0.5	1.10
	22 20 - 23 00	4.58	5	20 10.0	8.5	2.19
20	17 39 - 19 03					
	22 18 - 23 45	2.51				
21	18 36 - 18 50					
	21 10 - 21 45					
	22 24 - 22 46	1 11				
25	18 29 - 21 20		6	19 17.1	2.9	1.14
	22 10 - 23 03	3 44				
26	18 07 - 21 16		7	18 44.3	2.0	1.10
	21 53 - 23 59	5 15	8	19 56.3	3.0	1.70
	Total	22^h11^m		Mean	$\frac{I_{o+f}-I_o}{I_o}$ = 1.37	

Note: I_o is the intensity deflection less sky background of the quiet star. I_{o+f} is the total intensity deflection less sky background of the star plus flare at maximum.

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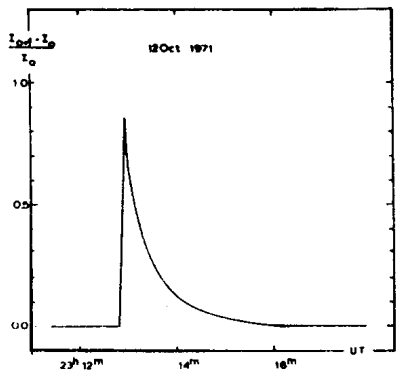
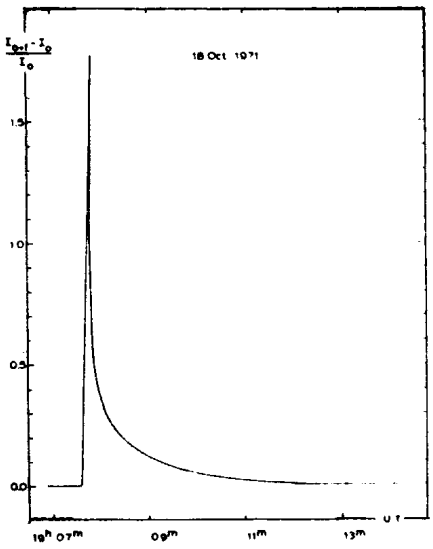
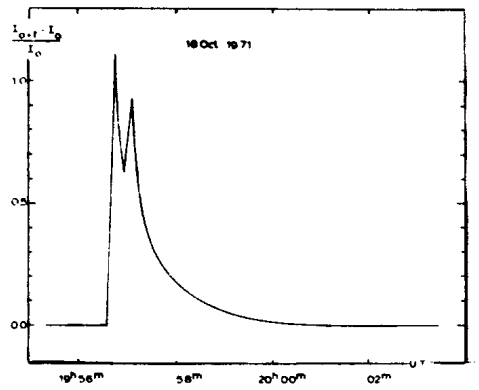
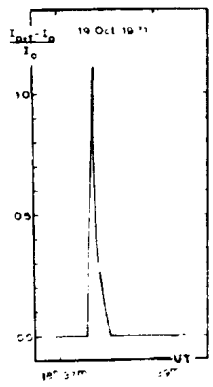
References

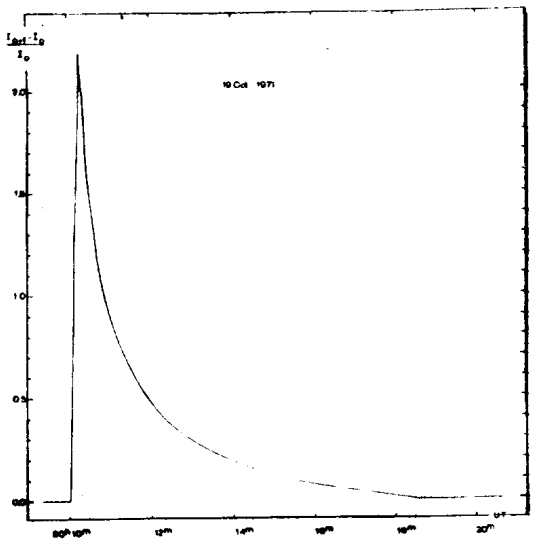
A.H.Jarrett and J.P.Eksteen, 1969, IBVS, No.349.
A.H.Jarrett and J.P.Eksteen, 1969, IBVS, No.406.
A.H.Jarrett and J.P.Eksteen, 1970, IBVS, No.412.
A.H.Jarrett and J.P.Eksteen, 1970, IBVS, No.484.
A.H.Jarrett and J.P.Eksteen, 1970, Monthly Notices of the Astronomical Society of Southern Africa, XXIX, No.8, 115.


12 Oct 1971
1.0
0.5
0.0
23h 12m
14m
16m
UT


18 Oct 1971
1.5
1.0
0.5
0.0
19h 07m
09m
11m
13m
UT


18 Oct 1971
1.0
0.5
0.0
19h 56m
58m
20h 00m
02m
UT


1.0
0.5
0.0
UT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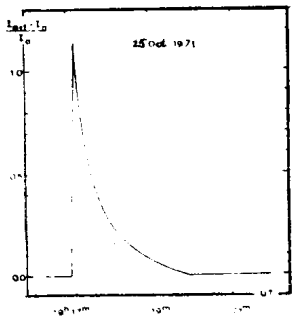
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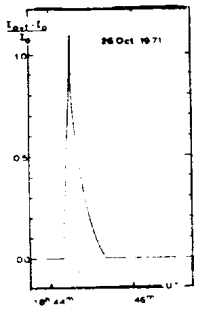
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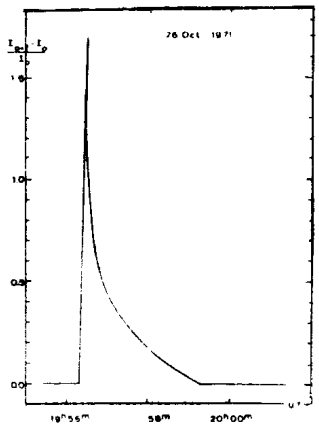
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