

ROYAL ASTRONOMICAL SOCIETY OF NEW ZEALAND.

VARIABLE STAR SECTION.

CIRCULAR No. 137.

THE FLARE STAR V645 (Proxima) CENTAURI.

Frank M. Bateson.

SUMMARY:- V645 Cen was selected for monitoring by the Section in 1969 March. Coverage was only 15 hours because of general bad weather. Four suspected flares were observed. The results are discussed.

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INTRODUCTION:- 1969 March 11 -25 was selected as the period for monitoring V 645 Cen. Visual observers took part using the same methods as in previous flare star programmes.

Charts 154 and 155(1) were used with the sequence shown thereon.

OBSERVERS:-

Table 1 lists those who contributed visual observations. For each observer is shown his location, instrument, abbreviation, and the number of estimates made.

COVERAGE:-

Table 2 shows the times of coverage for each night observations were possible and the abbreviations of the observers. The effective coverage was 15h 11m, from a total observing time of 16h 16m. Of this latter total 1h 5m was common to two or more observers.

SUSPECTED FLARES:-

Table 3 lists the four suspected flares recorded. For each is given:- the time (U.T.) of maximum; difference in magnitude; duration; observer and remarks, if any.

DISCUSSION.

The selected period unfortunately coincided with general bad weather throughout the country. It appears that the only first class photometric nights were March 15 (En) and March 18 (Bt). Much of the flickering recorded by the other observers was undoubtedly due to poor transparency.

The four suspected flares are depicted on the diagrams attached. It is probable that flare activity had commenced when Bateson resumed observed on March 18 at 1235 and recorded a flare shortly afterwards. Menzies too may have missed the commencement of the flare he recorded on March 15.

The Auckland observers appeared on March 14 and 15 to see V645 Cen fainter than normal at times because of sky conditions. There is insufficient material for a detailed discussion considering the poor weather throughout the period.

V.S.S. CIRCULAR No. 137 (cont).

ACKNOWLEDGEMENTS:-

I would like to thank the observers for their observations and the Auckland Observatory Trust Board for the use of their Zeiss 50cm Zeiss reflector.

1969 May 17

Lake Takapo,
New Zealand.

REFERENCE:-

- (1) BATESON, F.M., JONES, A.F. & Stranson, I. 1968. "Charts for Southern Variables" Series 5. Published by F.M. Bateson, Lake Tekapo.

TABLE 1--OBSERVERS.

<u>OBSERVER.</u>	<u>LOCATION.</u>	<u>INSTRUMENT.</u>	<u>ABB.</u>	<u>ESTIMATES</u>
BATESON, F.M.	LAKE TEKAPO, N.Z.	20cm refractor	Bt	382
CHRISTIE, G.W.	AUCKLAND, N.Z.	50cm reflector	Ci	155
CLEMENTS, S.	do	15cm do	Ce	83
EVANS, R.W.	CHRISTCHURCH, N.Z.	27cm do	En	177
HOVELL, S.R.	AUCKLAND, N.Z.	50cm do	Hv	150
MARINO, B.F.	do	29cm do	MA	102
MCCALLUM, G.	do	15cm do	MJ	210
MENZIES, B.	do	50cm do	Mf	151
WALKER, W.S.G.	do	20cm do	Wk	<u>502</u>
TOTAL				<u>1,912.</u>

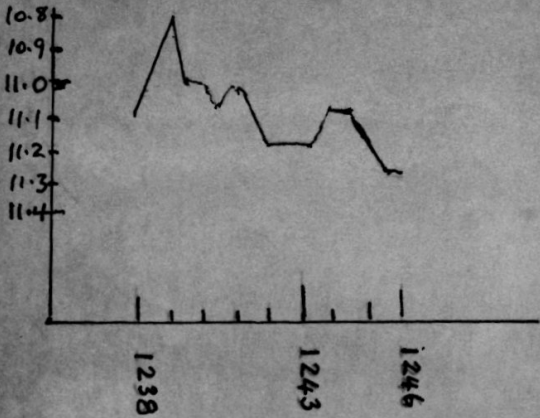
TABLE 2--COVERAGE.

<u>1969</u>	<u>U.T.</u>	<u>OBSERVERS.</u>
MARCH 14	1200 - 1500	Wk.
15	0906 -1440	Ci; En; Hv; Mf; MA; Wk.
18	0920-1030; 1045-1145; 1235-1336	Bt
19	0850 -0932	Ce
22	0920 -1009; 1052-1105; 1122-1304	MJ

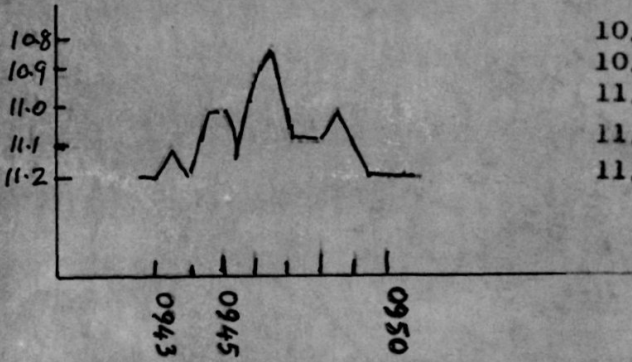
TOTAL COVERAGE:- 15h 11m.

TABLE 3.--SUSPECTED FLARES.

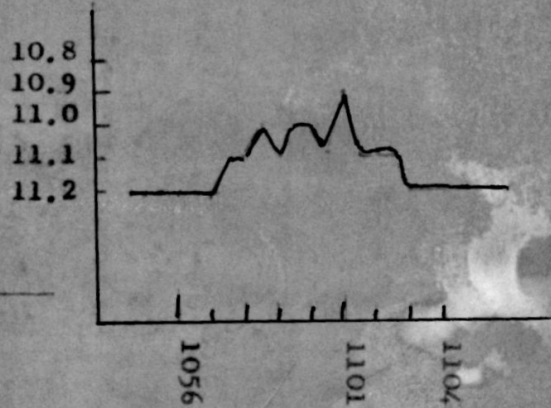
<u>1969</u>	<u>U.T. OF MAX.</u>	<u>DIFF. MAG.</u>	<u>DURATION.</u>	<u>OBSERVER.</u>
MARCH 15	12h 39.25m	0.4	7	Mf. See p. 1.
18	09 46.5	0.4	6	Bt
	11 01.0	0.3	6	Bt
	12 37.75	0.8	10	Bt. See p. 1.



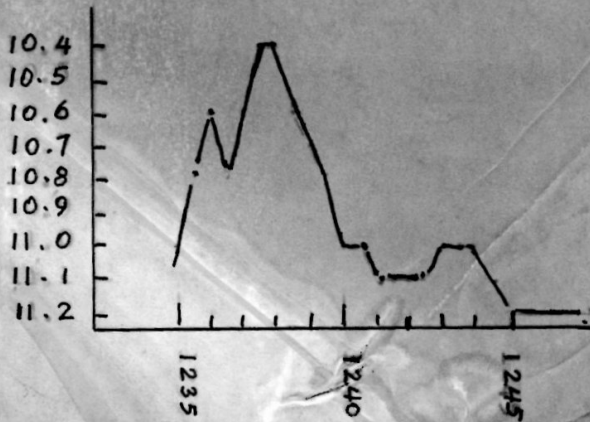
1969 March 15. Max. 1239.25UT
0.4m. Duration 7m



1969 March 18 Max. 0946.5U.T.
0.4m. Duration 6mins



1969 March 18. Mx. 1101.0U.T.
0.5m. Duration 6mins.



1969 March 18 Max. 1237.75
0.8m Duration 10mins