

ROYAL ASTRONOMICAL SOCIETY OF NEW ZEALAND

VARIABLE STAR SECTION

CIRCULAR No. 197

T MICROSCOPII

Frank M. Bateson & A.F. Jones.

SUMMARY: Observed maxima and minima of the semi-regular variable, T Mic, are listed for the interval JD 2,437,410 to 2,440,185. The mean visual range is 7.60 to 8.57 in a mean period of 335.5 days.

.....

DISCUSSION: Observers used the comparison stars on charts 207 and 208 (1) for which V and B-V magnitudes were published in Circ. 187 (2). T Mic is not a popular star with observers because of its small range. Therefore the observations are not numerous and throughout the interval averaged one observation every fifteen days except in the months January to March inclusive. T Mic cannot be observed in January or February, whilst observations in March are few in number.

Table 1 lists observed maxima and minima for the interval JD 2,437,410 (1961 April 20) to 2,440,185 (1968 Nov. 24). The mean period derived is 335.5 days (From maxima 343 days; from minima 328 days). The mean range is 7.60v to 8.57v with the extremes of 7.3v to 8.8v. The variations are smooth at times, e.g. 2,438,100 to 2,439,100, whilst at other times both secondary maxima and minima appear to occur, e.g. 2,437,500 to 2,438,000. Following a minimum on 2,437,724 three secondary minima appear to have taken place at intervals of 100 days with secondary maxima at a slightly shorter average cycle. This section of the curve preceded a long interval during which the fluctuations were smooth and slow.

Kanda (3) noted secondary maxima. However we have excluded these from Table 1 because of the variable's small range and its colour make it undesirable to attach too much importance to small changes recorded visually.

Gaposchkin (4) gives the photographic range as:- Mean Max: 8.16 ± 0.24 ; Mean Min. 9.18 ± 0.10 . His period is 347 ± 25 days; Kanda's period is 338 days. The θ -C residuals for maxima in Table 1 are large when compared to either Kanda's epoch (2,425,904) or Gaposchkin's (2,430,100). These obviously do not fit the present series. Previous investigators have noted that the cycle appears to be halved on occasions. This seems to have occurred once in the present records.

ACKNOWLEDGEMENTS: We thank observers for their records and the Trustees of the Auckland Observatory for allocation of telescope time which enabled Gordon and Menzies to determine the magnitudes of the sequence stars.

1972 December 30

18 POOLES ROAD,
GREERTON.
TAURANGA.
NEW ZEALAND.

REFERENCES:-

- (1) 1970 Bateson, F.M., Jones, A.F. & Stranson, I. "Charts for Southern Variables--Series 6." Published by F.M. Bateson.

V.S.S. CIRCULAR No. 197 (cont).

REFERENCES (cont).

- (2) 1972. Circ. 187, VSS, RASNZ.
- (3) 1930 Tokyo Bull. 45
- (4) 1947 H.A. 115, 11.

TABLE 1.

OBSERVED MAXIMA & MINIMA OF T MICROSCOPII.

<u>MAXIMA</u>				<u>MINIMA</u>			
<u>J.D.</u>	<u>MAG.</u> v	<u>INT.</u> d	<u>Wt.</u>	<u>J.D.</u>	<u>MAG.</u> v	<u>INT.</u> d	<u>Wt.</u>
2,437,518	7.3	...	3	2,437,724	8.6	...	3
912	7.8	394	4	2,438,091	8.5	367	4
2,438,255	7.5	343	5	395	8.6	304	1
568	7.6	313	4	787	8.4	392	3
983	7.6	415	4	2,439,118	8.7	331	3
2,439,380	7.9	397	3	500?	8.4?	382	1
561	7.6	181	2	706	8.8	206	4
918	7.5	357	3	2,440,022	8.6	316	4

.....