

ROYAL ASTRONOMICAL SOCIETY OF NEW ZEALAND.

VARIABLE STAR SECTION.

CIRCULAR No. 181.

Z Crucis.

Frank M. Bateson & A.F. Jones.

SUMMARY: Visual observations during the interval 2,438,299 to 2,440,108 are published together with a list of observed maxima and minima. These give a faint indication of a period of about 353 days although Z Cru in general oscillates very slightly around a mean visual magnitude of 9.82.

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INTRODUCTION: Z Cru is listed in the G.C.V.S. (1970) as of type SRa with range 10.8 to 13.5 ptg, period 341 days; spectrum NO. Epoch for maximum is given as 2,418,050. These are the details originally given in H.B. 861 (1928), where a note states "The period is rather irregular; there are indications of a secondary minimum."

CHARTS & SEQUENCE: Charts 261 & 262 have been published (1) with SP_v magnitudes for the comparison stars down to 9.8 and fainter comparison stars denoted by letters. V and B magnitudes for these fainter stars have now been published (2).

OBSERVATIONS: A.F. Jones commenced observing Z Cru on J.D. 2,438,299 (1963 Sept. 26). His observations to 2,440,108 (1968 Sept. 8) appear in Table 1 in the usual form.

DISCUSSION: During the period covered by the observations, there was a slight oscillation around a mean visual magnitude of 9.82. A plot of fifty day means indicates a possible mean period of around 353 days. The range of the means (9.50 to 9.97) when there are three or more observations within a 50 day mean is so small that any suggestion of a period must be treated with reserve.

Observed maxima and minima are listed in Table 2. However, from the very nature of the small range combined with the nature of the light curve, dates of observed maxima and minima are largely subject to the personal interpretation of the investigators.

1971 August 2

18 POOLES ROAD,
GREERTON.
TAURANGA.
NEW ZEALAND.

REFERENCES:

- (1) 1970. Bateson, F.M., Jones, A.F., & Stranson, I. "Charts for Southern Variables" Series 7. Published by F.M. Bateson.
- (2) 1971. Bateson, F.M., Gordon, P. & Menzies, B. Circ. 177, V.S.S., RASNZ.

V.S.S. CIRCULAR No. 181 (cont).

TABLE 1.

Z CRUCIS---OBSERVATIONS.

2,430,000 +				2,440,000 +	
<u>J.D.</u>	<u>MAG.</u>	<u>J.D.</u>	<u>MAG.</u>	<u>J.D.</u>	<u>MAG.</u>
8,300	9.5	9,291	9.9	009	10.6
329	9.7	302	9.9	038	9.9
357	9.6	316	9.9	052	9.8
411	9.0	328	9.8	065	9.8
475	9.8	345	9.9	072	9.9
494	9.8	358	9.8	094	9.9
553	9.8	394	9.9	109	9.6
609	10.1	449	9.9		
637	9.5	467	9.9		
699	9.4	485	9.8		
709	9.4	502	9.7		
729	9.5	522	9.7		
757	9.4	534	9.6		
797	9.4	563	9.7		
813	9.4	583	9.7		
826	9.4	593	9.4		
848	9.4	610	9.9		
855	9.4	617	9.8		
873	9.5	627	9.9		
884	10.0	639	9.8		
907	9.6	649	9.5		
932	9.4	668	9.7		
940	9.5	681	9.9		
960	9.5	696	9.9		
969	9.9	709	9.8		
990	9.9	739	9.8		
9,001	9.8	761	9.8		
008	9.8	794	10.0		
023	9.9	834	9.9		
030	9.9	866	9.6		
112	9.4	897	9.4		
171	9.8	906	9.4		
188	10.0	919	9.6		
204	10.0	939	10.3		
227	9.9	946	10.6		
235	10.0	967	9.5		
246	9.7	982	10.3		
257	10.0	998	9.8		
267	10.0				
283	9.9				

TABLE 2/

Z CRUCIS---OBSERVED MAXIMA & MINIMA.

<u>J.D.</u>	<u>MAXIMA.</u> <u>MAG.</u>	<u>Int.</u> <u>d</u>	<u>Wt.</u>	<u>J.D.</u>	<u>MINIMA.</u> <u>MAG.</u>	<u>Int.</u> <u>d</u>	<u>Wt.</u>
2,438,411	9.0	...	1	2,438,554	9.8	...	1
760	9.4	349	3	877	9.8	323	2
2,439,550	9.4	...	3	2,439,274	10.0	...	2
865	9.6	315	3	621	9.9	347	2
				2,440,020	10.3	399	3