

VARIABLE STAR SECTION.

CIRCULAR No. 183.

W CHAMAELOINIS.

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SUMMARY: Ten day means, from visual observations, are listed together with details of seven maxima determined. Elements are:- Epoch (Max) J.D. 2,439,317 \pm 286.3 days. Mean Max. mag. 11.73v. Min. <14.0v.

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INTRODUCTION: W Cha is assigned to Mira class in the GCVS (1970) with a range of 12 to 16 ptg on the basis of Hoffmeister's investigations (1). No period is listed.

CHARTS & SEQUENCE: Hoffmeister (2) published an identification chart. Charts 82 and 83(3) have been published with faint comparison stars identified by letters. Magnitudes for these stars have now been published (4).

OBSERVATIONS: The writer commenced observing W Cha on J.D. 2,438,976 (1965 Aug. 3) and from mid 1967 his records were supplemented by other observers.

Observations, in ten day means, are listed in Table 1 in the usual manner with observers' abbreviations omitted. As W Cha was invisible for much of the time Table 1 lists only the observations around maxima. The interval covered by the records is 2,438, 976 to 2,440,917 (1970 Nov. 27).

DISCUSSION: Seven maxima have been derived from the observations. These are listed in Table 2 in the usual form. The final column gives the O-C residuals calculated from:-

$$\text{Epoch (Max). } 2,439, 317 \pm 286^d.3.$$

Mean maximum magnitude is 11.73v (11.5 to 12.1). Only a small segment of the light curve could be observed with the instruments employed and at minima W Cha is <14.0. Minima are probably 14.5 to 15.0v. W Cha is a typical Mira variable for the period derived.

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REFERENCES:-

- (1) 1949. Hoffmeister, C. Erg. A.N. 12, 1.
- (2) 1957. Hoffmeister, C. M.V.S. 320.
- (3) 1966. Bateson, F.M., Jones, A.F. & Stranson, I. "Charts for Southern Variables" Series 3. Published by F.M. Bateson.
- (4).1971. Bateson, F.M. & Gordon, P & Menzies, B. Circ. 177, VSS, RASNZ.

V.S.S. CIRCULAR No. 183 (cont).

TABLE 1.

W Cha---TEN DAY MEANS.

<u>MEAN J.D.</u>	<u>MEAN MAG.</u>	<u>Wt.</u>	<u>MEAN J.D.</u>	<u>MEAN MAG.</u>	<u>Wt.</u>	<u>MEAN J.D.</u>	<u>MEAN MAG.</u>	<u>Wt.</u>
2,438,976	14.2	1	2,439,834	13.5	1	2,440,440	11.90	2
990	13.6	1	842	<12.4	-	466	11.5	1
2,439,000	12.8	1	852	12.63	3	480	<11.8	-
024	12.35	4	861	11.7	1	508	<11.5	-
029	12.20	5	878	11.50	4			
048	12.05	5	886	11.5	1	693	<12.4	-
064	12.4	1	901	11.75	4	711	12.20	3
153	13.90	5	911	12.22	5	734	11.60	3
157	<13.0	-	917	12.40	5	741	11.7	1
174	<13.4	-	928	12.95	5	748	11.35	2
			940	13.0	1	762	<11.8	-
204	13.6?	1	945	<13.4	-	773	12.7	1
233	<13.4	-				784	<11.5	-
236	13.85	2	2,440,096	<13.4	-			
266	13.60	2	124	<12.8	-			
284	13.00	4	128	13.25	3			
291	12.57	5	142	12.8	-			
296	12.3	1	154	<11.8	-			
320	11.92	5	158	<11.8	-			
329	12.06	5	172	11.80	3			
344	12.30	5	179	11.95	2			
350	12.60	4	187	11.60	2			
357	12.77	5	202	12.6	1			
415	<13.0	-	209	12.90	4			
418	<13.4	-	217	<13.0	-			
			225	13.4	1			
523	13.4	1	239	<12.8	-			
533	13.4	1	250	<13.4	-			
540	<12.6	-	261	13.53	2			
553	13.4	1	270	<13.4	-			
563	12.70	3	275	14.30	3			
582	11.90	4						
593	11.80	5	331	14.2	1			
596	11.80	5	338	13.83	3			
615	12.0	1	353	<13.0	-			
623	12.13	4	358	<13.4	-			
628	12.35	5	366	13.50	3			
642	12.50	5	380	<14.0?	-			
650	12.80	5	410	<12.4	-			
656	12.9	1	418	12.65	3			
670	<13.0	-	434	12.2	1			

TABLE 2.

W Cha--OBSERVED MAXIMA.

<u>No.</u>	<u>J.D.</u>	<u>MAG_v</u>	<u>Int._d</u>	<u>Wt.</u>	<u>Q-C_d</u>
-1	2,439,045	12.1	...	2	+14
+0	317	12.0	272	3	+ 0
+1	591	11.8	274	4	-12
2	880	11.5	289	4	-10
3	2,440,183	11.7	303	3	+ 7
4	470	11.5	287	2	+ 8
5	755	11.5	285	2	+ 6