

## CIRCULAR No. 165.

## Observations of Recurrent Novae.

Frank M. Bateson.

SUMMARY: Observations of recurrent novae are summarised as well as observations of stars suspected to belong to this class.

.....

T Pyx (Recurrent Nova).

Observations were published in Circulars 121 (1966); 122 (1966); 123 (1967) and 125 (1967). These carried published results to J.D. 2,439,589. Since then several hundred observations have been made as T Pyx was followed down to minimum. After 2,439,835 the star has been generally invisible at <13.5. It is being carefully watched by several observers in case of a further outburst.

The positive observations between 2,439,589 and 2,439,835 will be published as soon as V magnitudes have been determined for the faint comparison stars.

RS Car. (Nova Car 1895).

Some old references suggest that RS Car might be a recurrent nova but there appears to be no reason to regard it as such. Observations to 1967 June 30 were published in Circular 133. From that date to 1970 August 31 a total of 129 observations, all negative, have been made. RS Car was fainter than 14.5 visual during this time.

U Sco. (Recurrent nova).

Results were published in Circular 171.

RS Oph. (Recurrent nova).

Observations to 1967 June 30 were published in Circular 133. Results from 1967 July 1 to 1970 September 6 are listed below, in the usual form. Observers' abbreviations are as listed in Circular 147.

OBSERVATIONS.

2,439,000 +

<u>J.D.</u>	<u>MAG</u>	<u>OBS.</u>	<u>J.D.</u>	<u>MAG.</u>	<u>OBS</u>	<u>J.D.</u>	<u>MAG.</u>	<u>OBS</u>	<u>J.D.</u>	<u>MAG.</u>	<u>OBS.</u>
676.9	10.7	Bt	791.9	5.5	Mt	797.9	7.1	Jn	806.9	8.0	Jn
677.8	10.8	Bt	792.9	5.1	Jo	798.8	7.5	Wk	.9	7.8	Sb
679.1	11.0	Bt	.9	5.8	Mt	.8	7.3	Wk	808.9	8.3	Jn
679.9	10.8	Bt	793.9	5.5	Jo	.9	7.0	Sh	910.2	11.6	Jo
680.9	10.8	Bt	.9	6.0	Mt	.9	7.2	Mt	926.3	12.3	Jn
682.8	10.8	Bt	.9	5.6	Bt	.9	7.4	Jn	931.1	<10.9	Wk
683.9	10.8	Bt	.9	5.7	Sh	799.9	7.5	Jn	940.0	11.8	Bt
708.8	10.8	Bt	794.9	5.9	Jo	.9	7.4	Mt	945.1	12.2	Mm
736.9	10.8	Bt	.9	6.0	Sh	800.9	7.7	Ld	952.2	12.0	Mm
740.9	10.7	Bt	795.9	6.7	Jo	801.9	7.1	Sh	954.2	11.5	Sb
761.9	11.3	Bt	.9	6.8	Mt	804.9	7.4	Sh	958.1	12.2	Wk
781.9	11.0	Sh	796.9	7.0	Jo	.9	7.8	Jn	966.1	<12.0	Mm
786.9	10.7	Sh	.9	6.9	Jn	.9	6.0	Hi	973.1	<12.4	Mm
790.9	4.9	Mt	797.9	6.7	Sh	805.9	6.3	Mb	975.0	12.5	Bt
791.9	5.3	Jo	.9	6.9	Mt	.9	6.1	Tr	976.1	11.5	Bt
									984.0	<11.5	Tr
									988.1	<11.5	Wk
									995.0	12.3	Jn
									996.0	12.1	Mm

RS Oph. OBSERVATIONS (cont).

2,440,000 +

J.D.	MAG	OBS	J.D.	MAG	OBS	J.D.	MAG	OBS	J.D.	MAG	OBS	
001.2	<10.9	Hn	100.9	<11.5	Wk	736.0	10.9	Cm	818.9	10.4	Jn	
002.0	12.3	Mm	123.8	12.1	Wk	764.9	10.4	Cb	819.9	10.4	Jn	
	.0	<10.9	Hn	129.8	12.2	Wk	.9	10.9	Ca	821.0	10.4	Jn
	.9	12.7	Mf	132.8	12.0	Wk	.9	10.4	Ag	822.9	11.1	Jn
003.0	12.6	Wk	133.8	12.2	Wk	791.9	10.6	Jn	823.0	10.6	Ld	
	.1	11.8	Hn	277.1	11.0	Bt	792.9	10.3	Jn	830.0	11.1	Cm
008.0	12.4	Mm	338.0	11.3	Wk	793.9	10.3	Jn	831.9	10.4	Jn	
	.2	11.8	Hn	354.0	11.5	Wk	795.9	10.5	Jn	832.9	10.4	Jn
017.0	<11.5	Wk	363.0	11.3	Wk	796.9	10.5	Jn	833.9	10.3	Jn	
037.0	12.1	Mm	366.0	11.9	Wk	797.9	10.3	Jn	835.9	10.4	Jn	
057.0	13.5?	Wk	367.0	11.4	Wk	798.9	10.4	Jn	837.0	10.4	Jn	
	.0	13.5?	Ci	369.0	11.4	Wk	799.9	10.4	Jn			
064.1	12.1	Mm	376.0	11.7	Wk	801.9	10.5	Jn				
079.9	12.2	Wk	378.0	11.2	Mm	802.9	10.4	Jn				
	.9	12.4	Mm	379.0	11.4	Bt	803.9	10.4	Jn			
085.0	12.5	Mm	389.9	12.2	Wk	804.9	10.6	Jn				
090.0	12.5	Mm	405.0	11.8	Wk	813.9	10.5	Jn				
091.1	<11.5	Hn	458.9	11.4	Wk	814.9	10.4	Jn				
095.9	12.9	Wk	494.9	12.2	Wk	816.9	10.4	Jn				
099.0	<11.5	Hn	738.1	10.5	Mm	817.9	10.4	Jn				

V1017 Sgr. (Recurrent nova).

Between 1954 Apl. 14 and 1970 Nov. 30 a total of 383 observations have been made of V1017 Sgr. The majority were negative as the star was invisible in the instruments used. Extreme care should be taken in correctly identifying V1017 Sgr. Several observers submitted definite observations but their estimates were not supported by the more experienced observers and it is obvious that the former misidentified V1017 Sgr and their records have been rejected.

Listed below are a few definite observations as well as those when the star was seen <13.8 but too faint to estimate. These are marked with "T."

OBSERVATIONS.

2,430,000 +

J.D.	MAG.	J.D.	MAG.	J.D.	MAG.	J.D.	OBS	J.D.	OBS
4,896	<13.8T	6,008	<13.8T	6,673	<13.8T	8,142	14.1	9,953	<13.8T
5,298	<13.8T	022	14.1	716	14.1	222	14.3	968	14.5
304	14.1	257	14.0	7,146	<13.8T	233	<13.8T	975	<13.8T
307	<13.8T	320	14.3	344	<13.8T	472	13.8	988	<13.8T
328	<13.8T	334	<13.8T	402	<13.8T	863	<13.8T	2,440,000+	
362	<13.8T	425	<13.8T	555	<13.8T	9,002	<13.8T	015	<13.8T
526	<13.8T	456	<13.8T	768	<13.8T	267	<13.8T	066	<13.8T
984	<13.8T	651	<13.8T	8,123	14.2	708	<13.8	338	14.8?
								338	14.0
								338	14.3

V1017 Sgr is probably variable at minimum around magnitude 14.0.

POSSIBLE RECURRENT NOVAE.

Five stars taken from a list of suspected recurrent novae kindly supplied by Ch. Bertaud have been observed. All observations of these show the stars invisible and <13.0 with a few observations at <14.5. The stars with dates covered and number of records are:-  
 V999 Sgr. 1968 March 24 to 1970 Nov. 30. 115 observations  
 FM Sgr. 1959 Aug. 25 to 1970 Nov. 30. 157 do  
 V1016 Sgr. 1955 June 9 to 1970 Nov. 30. 396 do  
 V441 Sgr. 1968 March 24 to 1970 Nov. 30. 130 do  
 HS Sgr. 1968 March 24 to 1970 Nov. 30. 106 do