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CHARTS AND UPDATED RESULTS FOR TWELVE SAGITTARIUS VARIABLES

Finder charts (Figures 1 and 2) and updated results are given (Table I) for twelve long-period variables in Sagittarius. Their elements as given in the GCVS had been determined prior to 1959 from observations on Harvard plates taken mainly between 1924 and 1950. The Nantucket plates taken from 1957 to 1977 were searched for maxima and the periods have been revised accordingly. In all cases the previous periods were either confirmed or only slightly altered. In general, both the old and the new observations are satisfied by the new period. Three of the stars, however, appear to have changing periods: V1658, V1667 and V1691 Sgr. Although the changes for the first two of these are small, better representations of the maxima are found when the early and the late observations are treated separately. Fig. 3 indicates a fair representation by a single constant period for all of the observations of V1658 Sgr, but the scatter is improved if the period is assumed to have changed at about JD 28000. V1667 Sgr is a similar case. Both of these stars should probably be classified as SR. The three day decrease in period of V1691Sgr is unmistakable; the period for neither group of observations will adequately satisfy the other group.

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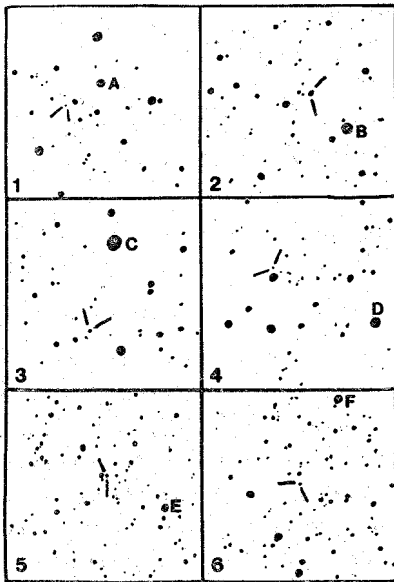


Figure 1. Finder charts for the first six variables in Table I. South at top, area of field approximately $10' \times 10'$.

1. V1651 Sgr A is Co.D.-23^o14286
2. V1658 Sgr B is Co.D.-23^o14319
3. V1663 Sgr C is Co.D.-25^o13149
4. V1665 Sgr D is B.D.-21^o5017
5. V1667 Sgr E is Co.D.-24^o14385
6. V1668 Sgr F is Co.D.-22^o13014

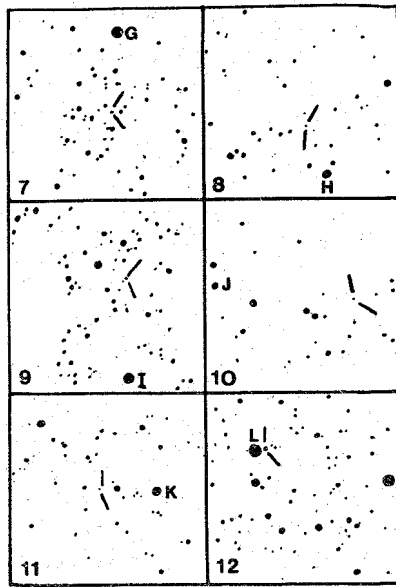


Figure 2. The last six variables in Table I.

7. V1689 Sgr G is Co.D.-22^o13095
8. V1691 Sgr H is Co.D.-22^o13101
9. V1695 Sgr I is Co.D.-22^o13119
10. V1696 Sgr J is Co.D.-25^o13271
11. V1697 Sgr K is Co.D.-22^o13135
12. V1901 Sgr L is Co.D.-26^o13247

Table I
Revised Data for Sagittarius Variables

Name Sgr	GCVS JD ₀	Per	Revised JD ₀	Per	Chart	Note
1651	24440	398 ^d	40400	400 ^d	1	a
1658	26560	105	36410	106	2	b
1663	26570	148	43000	148:	3	SR
1665	26170	297	42275	298	4	
1667	26560	158	43010	159	5	c
1668	27230	285	41530	286	6	
1689	23590	149.5	42275	149.5	7.	SR
1691	26520	235	39300	232	8	d
1695	24380	191	40090	191.5	9	SR
1696	26230	292	42585	292	10	
1697	26120	260	43010	260	11	
1901	26160	142.6	42278	142.6	12	e

a. The new period satisfies both the older Harvard and the recent Nantucket observations.

- b. The early period holds through JD 28000; thereafter 106^d is better. See Fig. 3.
- c. Period seems to be changing. 158^d holds to JD 36000, 159^d thereafter.
- d. Period seems to have changed sometime between JD 28000 and 36000. The Harvard observations were mainly for JD 23900 to 28000; the Nantucket from JD 36000 to 43000.
- e. Estimates for this star on Nantucket plates were carried out by a student, Gail Harns.

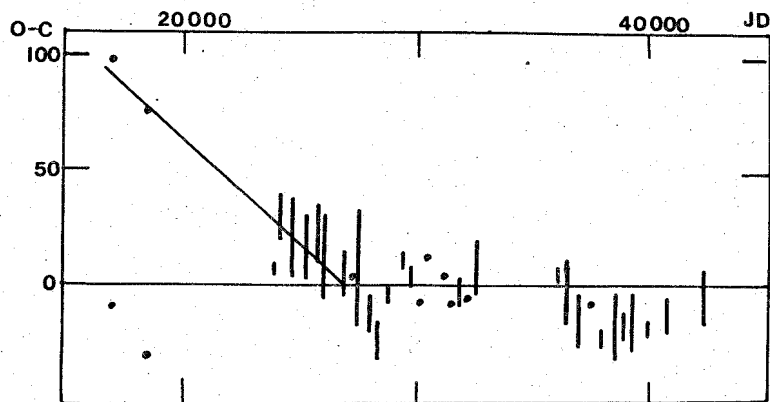


Figure 3. O - C plot of maxima for V1658 Sgr based on period of 106 days. Horizontal markers at intervals of 10,000 days, vertical intervals of 50 days. The observations near JD 18000 are plotted as computed and displaced by one cycle, thus indicating the early period of 105 days. Dots indicate single observations, vertical bars the span or duration of maxima.