

## SEVEN LONG PERIOD VARIABLES IN SAGITTARIUS

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Abstract

Updated periods are given for five known long period variables; and two new discoveries are presented.

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At the Maria Mitchell Observatory this summer I studied seven long period variable stars in the region of  $\lambda$  Sagittarii. The periods of five of these stars had already been determined from Harvard plates taken between 1924 and 1953. Using the Nantucket plates, which cover the years from 1957 to 1978, my objective was to verify these stars' periods. No significant change was observed (Table I). Finder charts for these stars have been published (Hoffleit 1978).

TABLE I

Seven Mira-Type Variables in Sagittarius

Star	R.A. (1900)	Dec.	Max (pg)	Min (pg)	Period GCVS	New Period	Epoch - 2400000 JD
V1676	18 <sup>h</sup> 25 <sup>m</sup> 36 <sup>s</sup>	-23°48'9"	13 <sup>m</sup> .4	16 <sup>m</sup> .4	256 <sup>d</sup>	257 <sup>d</sup>	41140
1678	25 52	-22 26.2	13.7	16.2	213	212	42650
1681	26 38	-23 41.8	13.9	(16.4)	223	222	41100
1682	26 44	-23 55.6	13.8	16.0	192.25	same	42310
1688	28 30	-23 32.4	14.0	(16.5)	320	321	42250
Anon. 1	18 30 31	-25 29.5	14.6	(16.0)	-	232	42270
Anon. 2	25 26	-26 42.8	13.3	(15.2)	-	283	37105

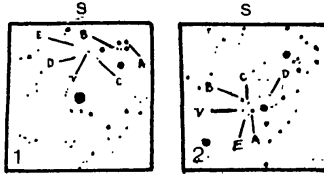
Two new variables were discovered while using the blink comparator to compare two Nantucket plates taken on JD 2,443,339.682 and 2,443,695.715. Their coordinates, magnitudes, and periods are listed in Table I. Finder charts are shown in Figure 1. The adopted magnitudes of the comparison stars shown are given in Table II.

TABLE II

Adopted Magnitudes of Comparison Stars Shown in Figure 1

<u>For Star #1</u>		<u>For Star #2</u>	
A	13 <sup>m</sup> .7 (pg)	A	12 <sup>m</sup> .3 (pg)
B	14.3	B	13.5
C	14.7	C	13.9
D	15.3	D	14.5
E	16.1	E	15.2

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Figures 1 and 2. Finder charts (approximately 20' x 20') for the new variable stars. In the field of star #1 the bright star at the center is CoD -25°13281. In the field of star #2 the three brightest stars from left to right are respectively, CoD -26°13231, 13243 and 13244.

#### REFERENCE

Hoffleit, D. 1978, I.B.V.S., No. 1431.

#### Footnote to paper by Sara Beck

At the end of the season Miss Beck also rediscovered S4268 (see Figure 3), originally announced by Luyten (1938) as HV9493, 15.2 - (16. pg, at  $\alpha = 18^{\text{h}}33^{\text{m}}24^{\text{s}}$ ,  $\delta = -25^{\circ}08'$  (1900). I examined this star on the Nantucket plates for 1957-1978. It is usually close to or fainter than the plate limits. The well defined maxima are satisfactorily represented by

$$\text{JD (max)} = \text{JD}2,443,700 + 198n.$$

Dorrit Hoffleit

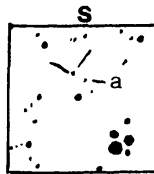


Figure 3. S4268, approximately 10' x 10'. The two bright stars at lower right are CoD -25°13318 and 13320. At maximum the variable is somewhat brighter than star a.

#### REFERENCE

Luyten, W. J. 1938, Publ. Astron. Obs. Univ. Minnesota, 2, 79.