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SIX VARIABLE STARS IN SAGITTARIUS

Recent results (Table) and finder charts (Figure 1, approximately 10' x 10') are given for three new and three rediscovered variable stars in Sagittarius.

No.	Name	R.A.(1900)	Dec.	Max.	Min.	Type	J.D.	Period
1		18 07	12-25	48.4	11.5	15: R CrB		
2		18 23	10-24	37.6	14.2	[16 M	26120	320
3		18 24	02-23	19.3	14.5	15.8 M	26560	210
4	IU Sgr	18 28	58-31	22.4	13.5:	17. M	41095	269
5	V1938 Sgr	18 41	43-27	44.0	13.8	[16.3 M	41180	254
6	V 963Sgr	18 43	25-31	40.5	11.0	[17.0 M	40480	261

Examining Nantucket plates with the Rodman blink microscope, Esther Hu found a new R Coronae Borealis type star (Figure 2). Deepest observed minima occurred in July 1936, July 1944 and May 1971. Notified about this discovery Dr. George Herbig at Lick Observatory kindly reports that two low dispersion spectra obtained by Harlan at the Crossley reflector on September 20 and 21, 1971 (during ascending light) show "an absorption-line spectrum without G-band that is a good match for R CrB at the same dispersion."

The second and third stars in the Table, I discovered on Harvard plates. A twelfth magnitude star is approximately one minute of arc north following the variable. V 2565 Sgr closely follows and is generally blended with this bright star. (Both variables are indicated in Figure 1 in the chart for Variable 2; the charts show South at the top, so that the bright star is below Variable 2.) These stars are in a crowded region; hence few plates besides some 50 of the Harvard A series (24-inch Bruce refractor) were useful for magnitude estimates. Likewise, the third star in the Table is too close to the bright star, CoD -23°14427, to be measurable on the Nantucket plates. The period depends upon Harvard plates taken between 1924 and 1951.

My estimates on IU Sgr (rediscovered by Miss Hu) yield a period of 269 days. This does not agree with the period of 382 days previously published by Innes (Union Obs. Cir. No.37, 1917) whose estimate of the period depended upon only 15 observations. These observations are satisfied by the new period, whereas the older period does not represent the recent observations.

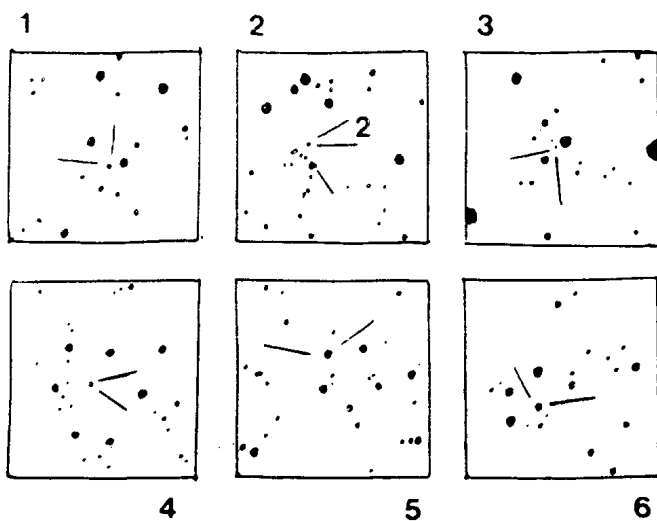


Figure 1

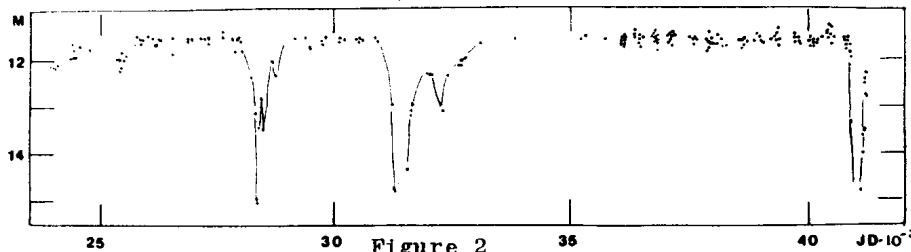


Figure 2

From Miss Hu's estimates of V1938 Sgr on Nantucket plates, I redetermined the period, confirming the earlier published value (Hoffleit, *Astron. Jour.*, Vol.63, p.78, 1964).

V963 Sgr was rediscovered by Judy Karpen who estimated its brightness on over 100 Nantucket plates for 1957-71. Innes (*loc.cit.*) had indicated a period of 258 days based on only 17 plates. Erleksove (*Ast.Cir.U.S.S.R.* No.171, p.23, 1956) published two Julian days, one for a probable, the other for a definite maximum. The General Catalogue gives this epoch of maximum and a period of 256.5 days. Neither of these periods represents the new observations, whereas the period of 261 days from the Nantucket observations also satisfies the cited published earlier observations.

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