

COMMISSIONS 27 AND 42 OF THE IAU
 INFORMATION BULLETIN ON VARIABLE STARS

Number 3843

Konkoly Observatory
 Budapest
 12 February 1993
 HU ISSN 0324 - 0676

A NEW VARIABLE IN SAGITTARIUS

Estimating the photographic infrared magnitude (m_I) of the long period variable V3935 Sgr, a new variable star was discovered. The provisional name of the variable is M313, following the progressive numerations adopted by Maffei (1975). The position is: $\alpha(1950.0)=18^h21^m26^s$; $\delta(1950)=-17^\circ4'25''$. Figure 1 shows the infrared finding chart and the comparison stars.

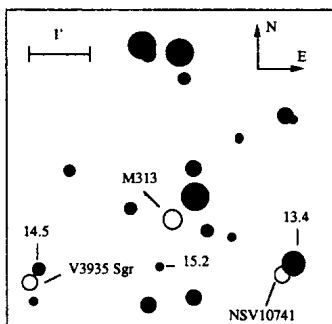


Figure 1. Finding chart

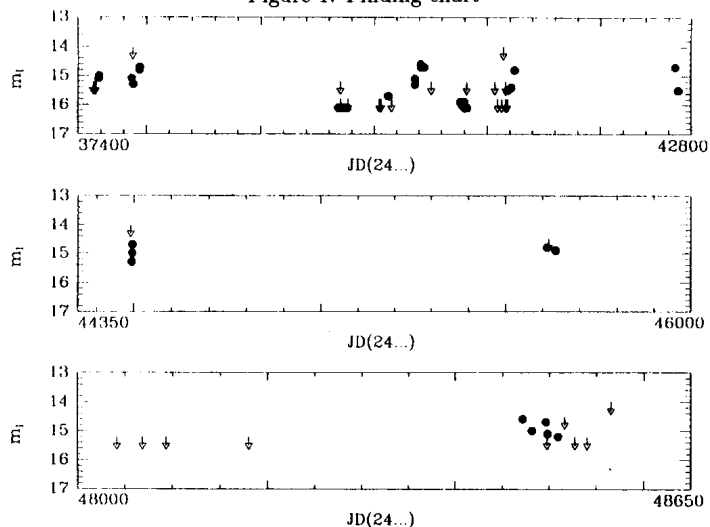


Figure 2. The light curve of the new variable

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Table I

JD (24.....)	m_I	JD (24.....)	m_I	JD (24.....)	m_I
37529.40610	<15.2	37544.32360	<15.2	37549.34880	<15.2
37552.33540	<15.2	37578.30590	15.1	37583.30260	15.0
37870.40210	15.1	37880.43510	<14.0	37883.41170	15.3
37940.27980	14.8	37942.27820	14.7	39681.44020	16.1
39699.39910	<15.2	39701.39690	<15.8	39703.36910	16.1
39739.33840	16.1	39759.27980	16.1	39767.27900	<15.8
40042.48760	<15.8	40043.36550	<15.8	40053.36270	<15.8
40057.38290	<15.8	40058.42530	<15.8	40060.49180	<15.8
40124.31040	15.7	40153.24120	<15.8	40362.60070	15.1
40364.57780	15.3	40415.49570	14.6	40417.48050	14.7
40448.50000	14.7	40508.25170	<15.2	40765.46610	15.9
40778.39790	16.0	40780.44500	15.9	40799.34980	15.9
40801.34480	<15.8	40803.33560	<15.8	40805.39580	16.1
40809.35940	<15.8	40821.40790	<15.2	40824.32120	16.1
41068.62440	<15.2	41093.54590	<15.8	41129.49250	<15.8
41143.37700	<14.0	41160.34630	<15.2	41162.37620	<15.8
41163.35470	<15.8	41177.32590	<15.8	41181.37130	15.5
41213.30760	15.4	41215.29690	15.4	41244.25820	14.8
42663.40020	14.7	42688.25690	15.5	42691.24750	15.5
44491.34640	<14.0	44494.36070	15.3	44495.38980	15.0
44496.33970	14.7	45612.25750	14.8	45612.31660	14.8
45616.31230	<14.5	45635.22870	14.9	48041.53150	<15.2
48068.53230	<15.2	48093.41680	<15.2	48180.29570	<15.2
48471.34470	14.6	48481.42310	15.0	48496.34630	14.7
48497.40030	<15.2	48498.33770	15.1	48509.39300	15.2
48516.31310	<14.5	48527.33850	<15.2	48540.25690	<15.2
48565.22270	<14.0				

The photographic infrared plates (I–N(hypers.)+RG5) were taken with the:

- 40/50 cm Schmidt telescope at the Asiago Observatory (12 plates the in years 1961, 1962, plus one in 1969);
- 65/90 cm Schmidt telescope at the Asiago Observatory (58 plates in the years 1967÷1971, 1975, 1990);
- 40/60 cm Schmidt telescope at the Catania Astrophysical Observatory (78 plates in the years 1980, 1983, 1991).

The star M313 is in the field only 79 of all the plates obtained. The estimated m_I shows that the star varies over the observed range of 1.5 magnitudes. The m_I light curve is drawn in Figure 2 (the down arrows indicate when the magnitude of the star is below the limit of the plate). Table I details the values. Search for periodicity was performed with Deeming's method (1975) but no period is supported by a phase diagram. Therefore, at present, the variability type of M313 remains unknown.

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- Maffei, P., 1975, *IBVS*, No. 985