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**NEW VARIABLE STARS DISCOVERED IN THE MISAO PROJECT**

**IV: MisV0201–MisV0250**

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This report describes 50 new variable stars (MisV0201-MisV0250) discovered in the course of the MISAO Project.

These objects are detected automatically by the PIXY system as candidates of variable stars from unfiltered CCD images taken by Kadota between 1999 April and July, and a few in 1998 November, then confirmed by Yoshida and Kadota. Further details are same as described in Yoshida and Kadota (1999).

Table 1 lists 50 new variable stars. The positions and magnitudes were measured using USNO-A1.0 catalog. The magnitude is based on a preliminary  $V$  magnitude calculated from  $R$  and  $B$  magnitude in the catalog based on Kato's (1998) equation:

$$V = R + 0.375(B - R)$$

The finding charts are available electronically as 4780-f[*nnn*].eps where [*nnn*] refers to the serial number assigned to the star in the first column of Table 1.

V393 Cyg is 3.4 arcmin from MisV0205, that was detected on our unfiltered CCD image as a 10 mag star. MisV0205 is thus another new variable star.

BL Sct is 4.1 arcmin from MisV0212. No star brighter than 14.7 mag was detected at the position of BL Sct on our unfiltered CCD images on Apr. 14 and May 20. However, considering the large angular distance, MisV0212 is probably another variable object.

NSV 12624 is 1.0 arcmin from MisV0217. No star brighter than 14.8 mag was detected at the position of NSV 12624 on Apr. 30 and July 24. Therefore, MisV0217 may be identified with NSV 12624.

NSV 12646 is 2.9 arcmin from MisV0231, that was detected on our unfiltered CCD image as a 8.5 mag star. Therefore, MisV0231 is another new variable star.

NSV 11612 is 4.6 arcmin from MisV0244, that was detected on our unfiltered CCD image. It was fainter than 14.7 mag on Apr. 14, but 11.5 mag on July 24. Therefore, MisV0244 is another new variable star.

Table 1: List of New Variable Stars

Code	R.A. (J2000.0) Decl.		Unfiltered		Type	Identified with
			CCD Mag. Max	Min		
MisV0201	19 <sup>h</sup> 00 <sup>m</sup> 03 <sup>s</sup> .67	+13°28′09″.5	14.1	14.9	?	USNO-A1.0 0975.14031654 IRAS 18577+1323
MisV0202	18 58 55.45	+13 09 54.2	13.1	14.0	?	USNO-A1.0 0975.13981491 IRAS 18566+1305
MisV0203	18 58 43.65	+12 56 12.6	14.2	[15.0	?	IRAS 18564+1252
MisV0204	19 56 10.87	+45 20 58.4	11.4	13.5	?	USNO-A1.0 1350.11536931 IRAS 19545+4512
MisV0205	19 58 47.87	+43 14 18.1	12.8	14.0	?	IRAS 19571+4305
MisV0206	20 01 19.86	+41 18 35.5	12.8	14.6	?	USNO-A1.0 1275.13311186 IRAS 19596+4110
MisV0207	20 01 55.39	+41 24 46.5	12.4	13.9	?	USNO-A1.0 1275.13343377 IRAS 20001+4116
MisV0208	17 57 25.99	-27 46 05.1	12.4	13.4	?	IRAS 17542-2745
MisV0209	18 01 10.56	-29 30 37.5	12.4	13.2	?	IRAS 17579-2930
MisV0210	17 30 29.18	-04 34 50.8	14.0	14.8	?	IRAS 17278-0432
MisV0211	21 01 15.36	+47 56 14.1	13.1	14.0	?	IRAS 20595+4744
MisV0212	18 58 32.73	-14 06 42.6	12.1	12.9	?	USNO-A1.0 0750.15949786 IRAS 18556-1410
MisV0213	18 57 40.72	-13 13 36.5	12.8	13.6	?	IRAS 18548-1317
MisV0214	18 58 09.43	-10 41 02.8	13.9	[15.2	?	USNO-A1.0 0750.15910558 IRAS 18553-1045
MisV0215	19 02 41.98	+12 45 59.3	13.8	15.1	?	IRAS 19003+1241
MisV0216	18 57 06.07	+12 58 33.8	10.5	11.5	?	IRAS 18547+1254
MisV0217	19 58 09.99	+10 47 03.5	12.0	13.0	?	IRAS 19557+1038
MisV0218	19 59 13.54	+11 29 30.9	12.5	16.1	?	IRAS 19568+1121
MisV0219	19 59 56.42	+11 51 45.5	11.7	13.4	?	USNO-A1.0 0975.17729028 IRAS 19575+1143
MisV0220	20 00 38.54	+13 31 33.6	11.0	11.8	?	IRAS 19583+1323
MisV0221	19 57 25.57	+21 47 07.3	12.9	14.3	?	USNO-A1.0 1050.16159620 IRAS 19552+2138
MisV0222	19 57 47.27	+24 12 22.5	13.4	14.5	?	IRAS 19556+2404
MisV0223	20 00 33.55	+24 06 05.5	13.4	15.1	?	IRAS 19584+2357
MisV0224	20 02 05.63	+24 14 19.5	11.4	13.0	?	IRAS 19599+2405
MisV0225	19 57 23.74	+25 21 07.0	12.4	13.4	?	IRAS 19552+2512
MisV0226	19 59 01.12	+24 41 29.9	11.1	12.3	?	USNO-A1.0 1125.15025417 IRAS 19569+2433
MisV0227	19 59 52.20	+24 38 54.4	13.4	15.1	?	IRAS 19577+2430
MisV0228	20 01 06.14	+25 14 02.1	13.3	14.8	?	IRAS 19589+2505
MisV0229	20 00 11.19	+25 16 26.1	12.8	14.0	?	USNO-A1.0 1125.15075844 IRAS 19580+2508
MisV0230	19 59 27.61	+21 34 15.2	11.2	12.3	?	GSC 1628.3082 USNO-A1.0 1050.16313718 IRAS 19572+2126

Table 1 (cont.)

Code	R.A. (J2000.0)	Decl.	Unfiltered CCD Mag.		Type	Identified with
			Max	Min		
MisV0231	19 <sup>h</sup> 58 <sup>m</sup> 36 <sup>s</sup> .35	+26°52'35".4	13.2	14.9	?	IRAS 19565+2644
MisV0232	20 01 57.04	+27 02 57.5	13.5	15.0	?	IRAS 19598+2654
MisV0233	19 59 36.10	+29 26 31.1	13.7	15.2	?	USNO-A1.0 1125.15050710 IRAS 19575+2918
MisV0234	19 00 04.55	-05 24 56.9	12.3	13.2	?	GSC 5136.1861 USNO-A1.0 0825.14011333
MisV0235	19 02 25.52	-07 56 50.7	11.3	13.4	SR?	USNO-A1.0 0750.16313017
MisV0236	19 02 21.06	-07 55 42.0	12.3	13.3	?	USNO-A1.0 0750.16306936
MisV0237	18 58 35.04	-07 47 57.6	12.9	13.9	?	
MisV0238	19 02 36.02	-07 01 33.6	11.1	13.2	SR?	GSC 5140.0687 USNO-A1.0 0825.14205647
MisV0239	18 59 55.06	-10 10 59.0	12.5	13.9	SR?	USNO-A1.0 0750.16083633
MisV0240	18 57 59.56	-09 24 51.0	10.6	11.6	?	USNO-A1.0 0750.15893095
MisV0241	18 58 27.07	-08 59 06.8	11.6	13.1	?	IRAS 18557-0903
MisV0242	19 59 35.26	+21 26 57.7	12.1	13.5	?	USNO-A1.0 1050.16323294
MisV0243	19 00 29.00	-06 14 57.6	12.5	13.7	?	USNO-A1.0 0825.14045646
MisV0244	18 59 30.32	-05 35 48.6	12.3	13.1	?	GSC 5123.3092 USNO-A1.0 0825.13961843
MisV0245	20 57 41.75	+38 17 33.0	11.6	12.4	?	USNO-A1.0 1275.14637874
MisV0246	20 01 46.90	+24 47 31.8	12.4	13.9	?	
MisV0247	19 01 25.83	-05 29 39.6	10.9	12.7	?	IRAS 18587-0534
MisV0248	18 58 34.53	-04 04 51.0	13.7	14.4	SR?	IRAS 18559-0408
MisV0249	18 59 53.85	-03 14 33.9	10.5	[13.1	M:	IRAS 18572-0318
MisV0250	18 57 51.03	-01 59 00.8	10.7	11.6	SR?	USNO-A1.0 0825.13815862 IRAS 18552-0203

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