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**NEW VARIABLE STARS DISCOVERED IN THE MISAO PROJECT
VIII: MisV0401–MisV0500**

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This report describes 100 new variable stars (MisV0401-MisV0500) 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 September, then confirmed by Yoshida and Kadota. Further details are the same as described in Yoshida and Kadota (1999).

Table 1 lists the 100 new variable stars. The position and magnitude are measured using the 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 4854-f[*nnn*].eps where [*nnn*] refers to the serial number assigned to the star in the first column of Table 1.

NSV 11613 is 3.1 arcmin from MisV0438. No star brighter than 15.0 mag was detected at the position of NSV 11613 on Kadota's unfiltered CCD images. However, considering the large angular distance, MisV0438 is probably another new variable object.

TY Oph is 2.1 arcmin from MisV0471, that was detected as a 7.5 mag star. Therefore, MisV0471 is another new variable star.

MisV0476 is identified with a carbon star CS3906 (Stephenson 1989).

MisV0481 is identified with a star at R.A. 17^h58^m7, Decl. –28°12' (2000.0) whose spectral type is M8III (Buscombe 1995).

MisV0498 is identified with an S-type star GCSS1018 (Stephenson 1984).

References:

Buscombe, W., 1995, *Twelfth General Catalogue of MK Spectral Classification*, Northwestern Univ., Evanston, Illinois

Kato, T., 1998,

<http://www.kusastro.kyoto-u.ac.jp/vsnet/Mail/vsnet-chat/msg00700.html>

Stephenson, C. B., 1984, *General Catalogue of Galactic S Stars*

Stephenson, C. B., 1989, *A General Catalog of Cool Carbon Stars*, 2nd edition

Yoshida, S., Kadota, K., 1999, *IBVS*, No. 4746

Table 1: List of New Variable Stars

Code	R.A. (J2000.0) Decl.		Unfiltered		Type	Identified with
			Max	Min		
MisV0401	17 ^h 58 ^m 22 ^s .11	−11°45′12″.8	12.3	15.8	M?	USNO-A2.0 0750.12421932 IRAS 17555-1145
MisV0402	17 58 23.26	−13 36 29.0	13.0	14.1	SR?	IRAS 17555-1336
MisV0403	17 58 29.32	−16 14 01.2	13.4	[15.0	?	IRAS 17555-1613
MisV0404	17 58 37.49	−15 45 19.3	12.8	14.8	SR?	IRAS 17557-1545
MisV0405	17 58 42.38	−18 15 06.0	10.5	12.8	M?	USNO-A2.0 0675.23660643 IRAS 17557-1814
MisV0406	17 59 11.29	−16 20 34.8	13.2	[14.5	?	IRAS 17562-1620
MisV0407	17 59 20.99	−16 48 32.0	13.6	15.2	SR?	IRAS 17564-1648
MisV0408	17 59 46.98	−18 20 33.9	12.5	[14.1	?	USNO-A2.0 0675.23735711 IRAS 17568-1820
MisV0409	17 59 51.35	−18 21 40.4	13.4	[14.1	?	
MisV0410	17 59 58.65	−14 47 18.4	13.2	15.5	?	IRAS 17571-1447
MisV0411	18 00 27.43	−14 33 23.4	12.6	14.6	?	IRAS 17575-1433
MisV0412	18 00 37.85	−14 59 20.7	13.1	[14.6	?	IRAS 17577-1459
MisV0413	18 01 13.65	−18 00 26.2	12.5	14.1	?	USNO-A2.0 0675.23831404 IRAS 17582-1800
MisV0414	18 01 11.09	−18 00 26.8	14.7	[16.5	M?	USNO-A2.0 0675.23828578
MisV0415	18 01 14.93	−15 23 37.5	13.2	16.3	?	USNO-A2.0 0675.23832779 IRAS 17583-1523
MisV0416	18 01 20.01	−12 04 21.8	11.9	13.5	?	USNO-A2.0 0750.12521222 IRAS 17585-1204
MisV0417	18 01 40.01	−17 44 23.5	13.2	[14.1	?	USNO-A2.0 0675.23859393 IRAS 17587-1744
MisV0418	18 01 56.15	−17 06 41.8	13.2	[14.3	SR?	IRAS 17590-1706
MisV0419	18 02 01.68	−16 07 23.9	12.8	[14.5	?	IRAS 17591-1607
MisV0420	18 02 17.60	−15 53 47.8	13.1	[14.5	?	IRAS 17594-1553
MisV0421	18 02 43.65	−17 07 51.0	13.2	14.3	?	IRAS 17598-1707
MisV0422	18 02 48.56	−15 41 24.6	13.0	[14.4	SR?	IRAS 17599-1541
MisV0423	18 02 33.63	+10 11 22.5	11.2	13.5	?	USNO-A2.0 0975.10277873 IRAS 18001+1011
MisV0424	18 28 52.38	+01 50 15.1	11.5	12.4	?	IRAS 18263+0148
MisV0425	18 29 31.18	+04 21 57.3	10.9	12.5	?	USNO-A2.0 0900.12977228 IRAS 18270+0419
MisV0426	18 32 18.41	+03 57 54.2	11.7	13.4	?	GSC 0454.0294 USNO-A2.0 0900.13094993 IRAS 18298+0355
MisV0427	18 32 30.27	+08 46 55.5	12.1	13.4	?	USNO-A2.0 0975.12049981 IRAS 18301+0844
MisV0428	18 41 47.12	−09 03 58.9	12.9	13.8	?	IRAS 18390-0906
MisV0429	18 42 31.88	−01 46 31.2	12.8	13.7	?	IRAS 18399-0149
MisV0430	18 43 39.03	−00 04 29.2	13.0	13.9	?	USNO-A2.0 0825.12758131 IRAS 18410-0007
MisV0431	18 57 21.56	−11 00 20.5	12.0	[14.7	?	USNO-A2.0 0750.15772026 IRAS 18545-1104
MisV0432	18 57 23.48	−15 49 55.5	10.5	11.8	?	USNO-A2.0 0675.30789735 IRAS 18545-1553

Table 1: cont.

Code	R.A. (J2000.0) Decl.		Unfiltered		Type	Identified with
			Max	Min		
MisV0433	18 ^h 57 ^m 27 ^s .70	-10°57'30"8	12.7	14.0	?	IRAS 18546-1101
MisV0434	18 57 30.87	-16 10 03.9	12.8	14.3	?	USNO-A2.0 0675.30800506 IRAS 18546-1614
MisV0435	18 57 47.40	-14 52 08.1	12.6	14.2	?	USNO-A2.0 0750.15819499 IRAS 18549-1456
MisV0436	18 58 26.17	-16 09 23.7	13.3	14.3	?	IRAS 18555-1613
MisV0437	18 59 05.37	-15 15 48.4	11.7	14.8	M?	USNO-A2.0 0675.30924356 IRAS 18562-1519
MisV0438	18 59 32.50	-14 29 37.6	11.2	12.1	?	USNO-A2.0 0750.16000107 IRAS 18567-1433
MisV0439	19 01 21.18	-16 16 36.3	11.3	13.1	?	IRAS 18584-1620
MisV0440	19 02 05.82	-12 36 47.5	10.8	12.2	?	IRAS 18593-1241
MisV0441	19 02 55.86	-14 15 02.7	10.8	11.8	?	GSC 5719.0056 USNO-A2.0 0750.16309019 IRAS 19000-1419
MisV0442	19 57 29.63	+33 29 08.3	12.8	13.8	?	USNO-A2.0 1200.13947329 IRAS 19555+3321
MisV0443	18 01 25.16	-17 24 55.7	13.2	14.2	?	USNO-A2.0 0675.23843703
MisV0444	18 27 32.62	+03 13 49.6	13.3	[14.9	?	USNO-A2.0 0900.12881463
MisV0445	18 59 01.44	-16 51 56.2	11.3	12.6	SR?	GSC 6282.0758 USNO-A2.0 0675.30919054
MisV0446	18 58 44.75	-13 32 38.3	11.8	13.3	?	USNO-A2.0 0750.15920630
MisV0447	17 58 51.75	-15 43 32.7	13.0	14.8	?	
MisV0448	17 59 01.76	-17 41 40.6	12.9	[14.5	?	USNO-A2.0 0675.23682768
MisV0449	17 59 11.95	-15 04 44.8	12.0	15.3	?	USNO-A2.0 0675.23693973
MisV0450	17 59 57.23	-16 11 37.5	13.2	14.7	?	
MisV0451	18 01 15.53	-16 13 02.3	12.5	14.7	?	USNO-A2.0 0675.23833403
MisV0452	18 01 59.95	-17 16 17.7	12.0	13.4	?	USNO-A2.0 0675.23880747
MisV0453	18 02 15.86	-17 16 30.9	13.0	15.1	?	
MisV0454	18 57 26.37	-18 36 23.9	13.3	14.5	?	USNO-A2.0 0675.30793930
MisV0455	18 57 45.26	-18 02 52.8	13.1	14.3	?	USNO-A2.0 0675.30818962
MisV0456	19 01 58.61	-15 45 06.9	12.4	[15.0	?	
MisV0457	19 02 55.24	-16 29 39.5	12.7	13.6	?	USNO-A2.0 0675.31243498
MisV0458	16 59 20.53	-08 07 03.4	12.7	14.6	?	GSC 5643.0225 USNO-A2.0 0750.10236068
MisV0459	17 59 12.66	-14 52 04.7	12.5	13.7	?	USNO-A2.0 0750.12450133
MisV0460	18 00 44.28	-14 50 36.8	13.0	[15.2	?	IRAS 17578-1450
MisV0461	18 42 16.62	-08 59 50.1	12.9	14.5	?	USNO-A2.0 0750.14168377
MisV0462	18 57 18.13	-10 01 51.1	11.4	13.0	?	GSC 5710.1495
MisV0463	18 57 18.55	-13 45 32.0	12.9	14.1	?	USNO-A2.0 0750.15766616
MisV0464	18 59 01.23	-14 50 31.1	12.7	14.1	?	USNO-A2.0 0750.15948920
MisV0465	18 59 09.75	-11 02 32.6	11.2	13.4	?	USNO-A2.0 0750.15963807
MisV0466	18 59 55.55	-10 40 22.8	12.5	13.6	?	USNO-A2.0 0750.16036252
MisV0467	19 00 22.08	-14 31 50.4	12.5	13.9	?	USNO-A2.0 0750.16079439
MisV0468	16 57 29.81	+00 00 01.0	12.5	13.5	?	USNO-A2.0 0900.09141650

Table 1: cont.

Code	R.A. (J2000.0) Decl.		Unfiltered		Type	Identified with
			CCD Mag.			
			Max	Min		
MisV0469	17 ^h 57 ^m 50 ^s .04	+06°48'20".3	12.9	14.9	?	USNO-A2.0 0900.11058896
MisV0470	18 28 44.06	+04 31 10.5	13.1	15.5	?	USNO-A2.0 0900.12939140
MisV0471	18 31 32.19	+04 22 51.8	10.8	11.7	?	USNO-A2.0 0900.13064733
MisV0472	19 02 22.16	-18 25 18.5	11.9	13.3	SR?	GSC 6286.0089 USNO-A1.0 0675.19135029 IRAS 18594-1829
MisV0473	17 58 58.64	-29 45 32.4	12.9	14.0	SR?	GSC 6853.2916 USNO-A2.0 0600.29799560
MisV0474	17 58 09.33	-30 04 19.8	13.1	[14.3	SR?	
MisV0475	17 56 48.83	-25 48 32.2	9.8	11.9	?	USNO-A2.0 0600.29618680 IRAS 17536-2548
MisV0476	17 56 58.50	-24 06 12.2	12.5	13.4	?	IRAS 17539-2405 CS3906
MisV0477	17 57 37.53	-28 02 46.5	12.6	[14.4	?	USNO-A2.0 0600.29687396 IRAS 17544-2802
MisV0478	17 58 04.79	-27 06 55.9	10.5	13.2	?	IRAS 17549-2706
MisV0479	17 58 25.35	-27 05 56.2	10.3	12.8	?	IRAS 17552-2705
MisV0480	17 58 32.97	-26 12 16.2	12.7	13.8	?	IRAS 17554-2612
MisV0481	17 58 40.69	-28 12 25.7	9.9	11.9	SR?	IRAS 17555-2812
MisV0482	17 58 48.69	-20 46 54.2	11.8	12.9	?	IRAS 17558-2046
MisV0483	17 59 09.35	-26 38 00.6	10.1	11.9	?	IRAS 17560-2637
MisV0484	17 59 17.41	-29 50 45.7	12.9	14.1	SR?	IRAS 17561-2950
MisV0485	17 59 18.27	-20 52 37.0	11.7	13.9	SR?	USNO-A2.0 0675.23701060 IRAS 17562-2052
MisV0486	17 59 21.88	-24 59 37.2	12.4	14.4	?	IRAS 17562-2459
MisV0487	17 59 41.82	-26 16 00.7	11.3	12.2	?	USNO-A2.0 0600.29862529 IRAS 17565-2615
MisV0488	17 59 41.13	-21 05 25.4	12.0	13.2	?	USNO-A2.0 0675.23728547 IRAS 17566-2105
MisV0489	18 00 09.51	-27 47 41.7	12.2	14.1	SR?	USNO-A2.0 0600.29904984 IRAS 17570-2747
MisV0490	18 00 21.03	-28 13 38.8	11.3	13.3	?	IRAS 17571-2813
MisV0491	18 00 15.66	-21 50 49.0	12.6	14.6	?	IRAS 17572-2150
MisV0492	18 00 32.86	-24 16 20.3	9.7	11.7	?	IRAS 17575-2416
MisV0493	18 00 41.80	-27 52 58.0	10.3	13.2	?	USNO-A2.0 0600.29951868 IRAS 17575-2752
MisV0494	18 00 46.94	-27 18 31.1	12.4	[14.4	?	IRAS 17576-2718
MisV0495	18 01 02.17	-23 40 50.8	13.1	14.0	SR?	IRAS 17579-2340
MisV0496	18 01 24.84	-29 24 21.9	11.5	14.3	?	IRAS 17582-2924
MisV0497	18 01 48.38	-28 52 48.5	10.6	11.8	?	IRAS 17586-2852
MisV0498	18 02 30.49	-24 51 26.5	11.2	12.5	SR?	IRAS 17594-2451 CS3906
MisV0499	18 02 48.60	-21 17 20.4	13.3	14.0	SR?	USNO-A2.0 0675.23928622 IRAS 17598-2117
MisV0500	18 03 06.60	-26 18 08.8	12.2	[14.7	?	USNO-A2.0 0600.30146276 IRAS 17599-2618