

## New Elements for 34 NSV and GCVS Stars

[E. V. Kazarovets](#), [E. N. Pastukhova](#)

*Institute of Astronomy, Russian Academy of Sciences, Moscow, Russia*

Received: 17.03.2017; accepted: 6.12.2017

(E-mail for contact: [helene@inasan.ru](mailto:helene@inasan.ru), [pastukhova@sai.msu.ru](mailto:pastukhova@sai.msu.ru))

#	Name	Other	Coord (J2000)	Type	Max	Min	System	Period	Epoch (JD)	type	Sp	Comment	L.Curve	Find.Chart	Data
1	EM Cet	HIP 015728	03 22 37.88, -00 31 42.7	EA	9.67	10.3	V	10.5240	2454783.709	min	F8	<a href="#">Comm. 1</a>	<a href="#">EMCETlc.jpg</a>	<a href="#">EMCETch.jpg</a>	<a href="#">ASAS 032238-0031.7</a>
2	OV CMa	GSC 5371-02056	06 15 51.82, -12 08 37.1	SRB	11.0	12.3	V	126.9	2454808	max		<a href="#">Comm. 2</a>	<a href="#">OVCMAlc.jpg</a>	<a href="#">OVCMAch.jpg</a>	<a href="#">ASAS 061552-1208.6</a>
3	OY CMa	GSC 5372-02416	06 28 55.84, -11 51 00.4	M	9.7	<15.5	V	500	2454580	max	S-*2e		<a href="#">OYCMAlc.jpg</a>	<a href="#">OYCMAch.jpg</a>	<a href="#">ASAS 062856-1151.9</a>
4	OP CMa		06 54 06.59, -15 07 10.3	M	13.1	<15.0	V	480	2454686	max		<a href="#">Comm. 4</a>	<a href="#">OPCMAlc.jpg</a>	<a href="#">OPCMAch.jpg</a>	<a href="#">ASAS 065407-1507.2</a>
5	OR CMa		06 55 40.03, -12 04 54.5	M	12.9	<14.8	V	299	2454754	max		<a href="#">Comm. 5</a>	<a href="#">ORCMAlc.jpg</a>	<a href="#">ORCMAch.jpg</a>	<a href="#">ASAS 065540-1204.9</a>
6	QT CMa	GSC 5406-01823	07 09 54.67, -14 31 41.2	M	11.8	<13.4	V	482	2454462	max		<a href="#">Comm. 6</a>	<a href="#">QTCMAlc.jpg</a>	<a href="#">QTCMAch.jpg</a>	<a href="#">ASAS 070955-1431.7</a>
7	MS CMa	HIP 035168	07 16 06.97, -30 26 09.3	EA	7.14	7.26	V	3.085418	2453813.641	min	B2III/IV	<a href="#">Comm. 7</a>	<a href="#">MSCMAlc.jpg</a>	<a href="#">MSCMAch.jpg</a>	<a href="#">ASAS 071607-3026.2</a>
8	V340 CMa	GSC 6549-01216	07 21 36.66, -28 57 43.4	SRA	11.4	12.6	V	478.0	2455130	max	C	<a href="#">Comm. 8</a>	<a href="#">340CMAlc.jpg</a>	<a href="#">340CMAch.jpg</a>	<a href="#">ASAS 072137-2857.7</a>
9	CE CMi		07 25 28.52, +00 35 12.5	M	12.6	<15.2	V	414	2454216	max			<a href="#">CECMlcl.jpg</a>	<a href="#">CECMlchl.jpg</a>	<a href="#">ASAS 072529+0035.2</a>
10	CN CMi		07 45 51.36, +00 55 39.5	M	12.1	<15.0	V	418	2453822	max			<a href="#">CNCMlcl.jpg</a>	<a href="#">CNCMlchl.jpg</a>	<a href="#">ASAS 074551+0055.7</a>
11	CP CMi	GSC 0185-00987	07 56 56.51, +03 22 28.4	M	13.2	<14.8	V	362	2452923	max			<a href="#">CPCMlcl.jpg</a>	<a href="#">CPCMlchl.jpg</a>	<a href="#">ASAS 075657+0322.5</a>
12	NSV 12345	NSVS 8382439	19 43 20.90, +30 51 10.2	M:	11.9	<13.2	*		2451330	max	M7	<a href="#">Comm. 12</a>	<a href="#">12345lc.jpg</a>	<a href="#">12345ch.jpg</a>	<a href="#">12345dat.txt</a>
13	NSV 12352	S 9990	19 44 22.06, -04 22 35.5	SR	12.97	14.2:	V	465	2454740	max			<a href="#">12352lc.jpg</a>	<a href="#">12352ch.jpg</a>	<a href="#">ASAS 194422-0422.6</a>
14	NSV 12361	AN 51.1905	19 44 31.90, +07 35 04.4	M	12.3	13.3	*	188	2451360	max		<a href="#">Comm. 14</a>	<a href="#">12361lc.jpg</a>	<a href="#">12361ch.jpg</a>	<a href="#">12361dat.txt</a>
15	NSV 12350	S 7219	19 44 57.96, -37 26 47.7	RRC	14.25	14.65	CV	0.3209905	2456182.513	max		<a href="#">Comm. 15</a>	<a href="#">12350lc.jpg</a>	<a href="#">12350ch.jpg</a>	<a href="#">12350dat.txt</a>
16	NSV 12377	NSVS 8385081	19 45 09.15, +28 32 14.8	M:	12.5	<14.0	*		2451418	max	M5-M7	<a href="#">Comm. 16</a>	<a href="#">12377lc.jpg</a>	<a href="#">12377ch.jpg</a>	<a href="#">12377dat.txt</a>
17	NSV 12375	AN 318.1943	19 45 31.04, +11 36 31.1	EA	12.9	13.4	V	5.6870	2454746.50	min		<a href="#">Comm. 17</a>	<a href="#">12375lc.jpg</a>	<a href="#">12375ch.jpg</a>	<a href="#">ASAS 194531+1136.5</a>
18	NSV 12395	HV 5465	19 46 43.33, +14 26 24.3	M:	13.6	<14.6	V	378	2454725	max		<a href="#">Comm. 18</a>	<a href="#">12395lc.jpg</a>	<a href="#">12395ch.jpg</a>	<a href="#">ASAS 194643+1426.4</a>
19	NSV 12406	NSVS 8387715	19 47 13.14, +29 04 05.9	M:	12.4	<13.1	*		2451450	max	C	<a href="#">Comm. 19</a>	<a href="#">12406lc.jpg</a>	<a href="#">12406ch.jpg</a>	<a href="#">12406dat.txt</a>
20	NSV 12409	AN 54.1905	19 47 34.56, +09 22 57.6	M	13.0	<14.5	V	430	2453157	max		<a href="#">Comm. 20</a>	<a href="#">12409lc.jpg</a>	<a href="#">12409ch.jpg</a>	<a href="#">ASAS 194735+0923.0</a>
21	NSV 12403	S 5087	19 48 01.81, -26 15 50.0	SR	10.8	12.2	V	48.7	2454725	max		<a href="#">Comm. 21</a>	<a href="#">12403lc.jpg</a>	<a href="#">12403ch.jpg</a>	<a href="#">ASAS 194802-2615.8</a>
22	NSV 12473	S 9957	19 50 52.40, +20 04 52.9	M:	13.2	<14.2	V	353:	2454654	max			<a href="#">12473lc.jpg</a>	<a href="#">12473ch.jpg</a>	<a href="#">ASAS 195052+2004.9</a>
23	NSV 12471	S 10004	19 51 18.70, +00 25 49.8	SR	10.0	10.6	V	338	2454230	max	M0	<a href="#">Comm. 23</a>	<a href="#">12471lc.jpg</a>	<a href="#">12471ch.jpg</a>	<a href="#">ASAS 195119+0025.9</a>
24	NSV 12478	AN 39.1928	19 51 24.28, +18 41 09.5	RVA:	12.07	12.60	V	284	2455072	min	M5	<a href="#">Comm. 24</a>	<a href="#">12478lc.jpg</a>	<a href="#">12478ch.jpg</a>	<a href="#">ASAS 195124+1841.2</a>
25	NSV 12483	HV 9658	19 52 26.37, -23 06 36.6	EW	13.44	14.34	CV	0.3215815	2456156.025	min		<a href="#">Comm. 25</a>	<a href="#">12483lc.jpg</a>	<a href="#">12483ch.jpg</a>	<a href="#">12483dat.txt</a>
26	NSV 12508	AN 185.1937	19 53 18.98, -19 04 44.3	RR(B)	15.33	15.90	CV	0.407886	2456049.184	max		<a href="#">Comm. 26</a>	<a href="#">12508lc.jpg</a>	<a href="#">12508ch.jpg</a>	<a href="#">12508dat.txt</a>

27	NSV 12521	AN 81.1903	19 53 30.48, +09 22 12.0	M	13.6	<15.2	V	347	2454236	max		<a href="#">Comm. 27</a>	<a href="#">12521lc.jpg</a>	<a href="#">12521ch.jpg</a>	<a href="#">ASAS 195330+0922.2</a>
28	NSV 12555	S 8332	19 55 06.51, +15 39 25.6	M:	11.3	12.2	*	227	2451400.	max		<a href="#">Comm. 28</a>	<a href="#">12555lc.jpg</a>	<a href="#">12555ch.jpg</a>	<a href="#">ASAS 195507+1539.4</a>
29	NSV 12563	S 7266	19 56 21.91, -40 08 46.9	RRC	15.28	15.70	CV	0.350998	2455796.517	max		<a href="#">Comm. 29</a>	<a href="#">12563lc.jpg</a>	<a href="#">12563ch.jpg</a>	<a href="#">12563dat.txt</a>
30	NSV 12625	AN 66.1928	19 58 05.23, +19 14 09.2	SR	13.0	14.3	V	820	2454740.	max			<a href="#">12625lc.jpg</a>	<a href="#">12625ch.jpg</a>	<a href="#">ASAS 195805+1914.2</a>
31	NSV 12628	AN 29.1928	19 58 17.08, +18 33 38.2	SR	12.3	13.3	V	137	2455012.	max			<a href="#">12628lc.jpg</a>	<a href="#">12628ch.jpg</a>	<a href="#">ASAS 195817+1833.6</a>
32	NSV 12641	AN 37.1928	19 58 56.85, +18 06 15.7	EW	13.4	14.0:	V	0.316550	2454961.861	min		<a href="#">Comm. 32</a>	<a href="#">12641lc.jpg</a>	<a href="#">12641ch.jpg</a>	<a href="#">ASAS 195857+1806.3</a>
33	NSV 12574	AN 136.1932	19 59 39.46, -74 17 33.5	RRAB	14.6:	15.7:	CV	0.484400	2456070.158	max		<a href="#">Comm. 33</a>	<a href="#">12574lc.jpg</a>	<a href="#">12574ch.jpg</a>	<a href="#">12574dat.txt</a>
34	BL Cap	Hip 102217	20 42 39.77, -18 06 34.8	ELL	7.29	7.37	V	1.655445	2454771.5301	min	F2IV/V	<a href="#">Comm. 34</a>	<a href="#">BLCAPlc.jpg</a>	<a href="#">BLCAPch.jpg</a>	<a href="#">ASAS 204240-1806.6</a>

### Comments:

1. Min II = 9.84 V, Min II–Min I = 0.61 P. The Hipparcos and Tycho Catalogues (1997) give a wrong period of 13<sup>d</sup>.2714.
2. Variability of the star was discovered in the ASAS-3 survey. OV CMa enters their variable-star catalogue as a MISC-type star with a wrong period of 101<sup>d</sup>.7.
4. R = 18.5 on the DSS2 image of 1986-12-09.
5. R = 15.5 on the DSS2 image of 1989-01-08.
6. NE companion of 9" pair. The ASAS range is for the combined brightness of the Mira and its neighbor.
7. Min II = 7.17 V. The Hipparcos and Tycho Catalogues (1997) give a wrong period of 6<sup>d</sup>.1708.
8. Variability of the star was discovered in the ASAS-3 survey. V340 CMa enters their variable-star catalogue as a MISC-type star with a wrong period of 258<sup>d</sup>.
12. POSS I (1951-07-07) B = 16.5, POSS II (1988-07-14) B = 20.0.
14. N companion of 3" pair. The NSVS range is for the combined brightness of the Mira and its neighbor. We proved our P = 188<sup>d</sup> using the ASAS-3 data.
15. M–m = 0.44 P.
16. USNO-B1.0 magnitudes: R1 = 14.57, R2 = 17.89.
17. Min II = 13.3 V, Min II–Min I = 0.60 P.
18. HV 5465 was found, upon our request, by the late Dr. M. Hazen in Harvard Observatory's logbooks.
19. NW companion of 8" pair. The NSVS range is for the combined brightness of the Mira and its neighbor. POSS I (1951-07-07) R = 14.7.
20. We proved our P = 430<sup>d</sup> using the NSVS data. POSS I (1953-08-13) R = 15.5.
21. Variability of the star was discovered in the ASAS-3 survey. NSV 12403 enters their variable-star catalogue as a MISC-type star with a wrong period of 85<sup>d</sup>.3.
23. Superposed variations of 36<sup>d</sup>.07. Variability of the star was discovered in the ASAS-3 survey. NSV 12471 enters their variable-star catalogue as a MISC-type star with a wrong period of 282<sup>d</sup>.6.
24. Variability of the star was discovered in the ASAS-3 survey. NSV 12478 their variable-star catalogue as a MISC-type star with a wrong period of 149<sup>d</sup>.8.
25. Min II = 14.18 CV. Probably misprint coordinates for this variable by Luyten (1937a): it should read 19<sup>h</sup> 46<sup>m</sup>.5 –23° 23' (1900) instead of 19<sup>h</sup> 46<sup>m</sup>.5 –23° 33' (1900).

26.  $P_1 = 0^d.407886$ ,  $P_0 = 0^d.546995$ ,  $P_1/P_0 = 0.7457$ . The variability was suspected by Luyten (1937b), recovered by us.
27. POSS I (1953-08-13)  $R = 16.2$ .
28. We proved our  $P = 227^d$  using the ASAS-3 data.
29. Period is strongly variable.
32. Min I is possible Min II.
33.  $M-m = 0.13P$ . The ASAS-3 data confirm  $P = 0^d.484400$ .
34. Min II = 7.35 V. Variability of the star was discovered in the Hipparcos and Tycho Catalogues (1997) with a wrong period of  $0^d.8277234$ .

**Remarks:**

In the process of improving coordinates and data for variable stars in the new electronic version of NSV catalogue (Kholopov 1982) and our work on Version 5.1 of GCVS (Samus et al. 2017), we determined light elements and types of variability for 22 suspected and 12 GSVS variables. The study of the variables was made using the publicly available electronic archives of CCD observations of the [ASAS-3](#) project (Pojmanski 2002), the [Catalina Sky Survey](#) photometric data (Drake et al. 2009) and the [Northern Sky Variability Survey \(NSVS\)](#) data (Woźniak et al. 2004). We measured minimal brightness for many Mira variables using Digitized Sky Survey images (R-band) of the STScI Archive.

**References:**

- Drake, A.J., Djorgovski, S.G., Mahabal, A., et al., 2009, *Astrophys. J.*, 696, 870
- The Hipparcos and Tycho Catalogues (European Space Agency, 1997), ESA SP-1200
- Kholopov, P.N. (editor), 1982, *New Catalogue of Suspected Variable Stars*, Moscow: Nauka
- Luyten, W.J., 1937a, *Astron. Nachr.*, 261, 451
- Luyten, W.J., 1937b, *Astron. Nachr.*, 264, 63
- Pojmanski, G., 2002, *Acta Astron.*, 52, 397
- Samus, N.N., Kazarovets, E.V., Durlevich, O.V., Kireeva, N.N., Pastukhova, E.N., 2017, *General Catalogue of Variable Stars: Version GCVS 5.1*, *Astronomy Reports*, 61, No. 1, pp. 80–88
- Woźniak, P. R., Vestrand, W. T., Akerlof, C. W., et al., 2004, *Astron. J.*, 127, 2436