

40 Red Variable Stars: Variability Types and Light Elements

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#	Name	Other	Coord (J2000)	Type	Max	Min	System	Period	Epoch (JD)	type	Sp	Comment	L.Curve	Find.Chart	Data
1		2MASS 17433740-4043165	17 43 37.40, -40 43 16.6	M	13.0	<16.5	V	212	2454950	max			1lc.jpg	1ch.jpg	ASAS 174337-4043.3
2		2MASS 18063887-4137025	18 06 38.88, -41 37 02.5	M	12.5	<14.8	V	191	2453844	max			2lc.jpg	2ch.jpg	ASAS 180639-4137.0
3	NSV 10232	S 9864	18 07 31.53, +04 15 32.4	SR	12.5	14.2	V	540	2453900	max		Comm. 3	10232lc.jpg	10232ch.jpg	ASAS 180731+0415.5
4	NSV 10237	HV 7220	18 08 34.27, -36 40 57.8	SR	12.3	13.2	V	860	2454500	max		Comm. 4	10237lc.jpg	10237ch.jpg	ASAS 180834-3641.0
5		2MASS 18092874-3407406	18 09 28.75, -34 07 40.6	M	12.4	<15.0	V	227	2454371	max			5lc.jpg	5ch.jpg	ASAS 180929-3407.7
6	NSV 10285	HD 166105	18 09 43.05, -15 16 56.9	LB	7.6	8.8	V			other	M1Iab		10285lc.jpg	10285ch.jpg	ASAS 180943-1517.0
7	NSV 10348	HV 9788	18 13 03.02, -49 40 31.7	SR	12.15	13.6	V	218	2454917	max			10348lc.jpg	10348ch.jpg	ASAS 181303-4940.5
8	NSV 10387	S 9870	18 13 15.14, +03 46 02.6	SR	10.8	11.5	V	420	2454760	max			10387lc.jpg	10387ch.jpg	ASAS 181315+0346.1
9	NSV 10402	GSC 6843-00455	18 14 36.04, -23 58 01.9	SR	11.9	12.7	V	590	2454572	max	M5:		10402lc.jpg	10402ch.jpg	ASAS 181436-2358.0
10		GSC 9055-02486	18 15 17.99, -61 15 38.9	SR	12.3	13.5	V	57.7	2454763	max			10lc.jpg	10ch.jpg	ASAS 181518-6115.6
11	NSV 10643	GSC 6852-05091	18 20 33.13, -28 02 54.0	SR	12.5	14.0	V	120	2454994	max			10643lc.jpg	10643ch.jpg	ASAS 182033-2802.9
12	NSV 10667		18 21 28.14, -23 53 33.6	SR:	13.0	<15	V	192	2455013	max	M7	Comm. 12	10667lc.jpg	10667ch.jpg	ASAS 182128-2353.6
13	NSV 10700		18 22 36.03, -24 30 48.7	M	13.1	<15.4	V	287	2454306	max		Comm. 13	10700lc.jpg	10700ch.jpg	ASAS 182236-2430.8
14	NSV 10711	GSC 6844-01565	18 23 09.55, -24 21 55.8	SR	12.1	13.1	V	96.4	2455040	max	M2		10711lc.jpg	10711ch.jpg	ASAS 182310-2421.9
15	NSV 10740	S 9891	18 23 58.65, +07 26 59.2	SR	11.1	11.9	V	432	2454725	max		Comm. 15	10740lc.jpg	10740ch.jpg	ASAS 182359+0727.0
16	NSV 10728	HV 9890	18 25 11.64, -58 09 31.6	SR	10.6	12.5	V	156	2454769	max		Comm. 16	10728lc.jpg	10728ch.jpg	ASAS 182512-5809.5
17	NSV 10830	HV 9440	18 28 32.97, -45 59 27.7	SR	10.3	12.8	V	184	2455005	max		Comm. 17	10830lc.jpg	10830ch.jpg	ASAS 182833-4559.5
18	NSV 10838	S 5045	18 29 03.33, -52 54 05.3	SR	9.5	10.6	V	469	2455100	max	M2III	Comm. 18	10838lc.jpg	10838ch.jpg	ASAS 182903-5254.1
19	NSV 10974	HV 9459	18 32 05.18, -17 02 01.8	M	12.9	<15.5	V	239	2454590	max			10974lc.jpg	10974ch.jpg	ASAS 183205-1702.0
20	NSV 10949	HV 9451	18 32 20.27, -44 50 53.2	M	13.7	<17.2	V	493:	2454585	max		Comm. 20	10949lc.jpg	10949ch.jpg	ASAS 183220-4450.9
21	NSV 11027	HV 9465	18 33 14.00, -29 54 58.7	M	12.9	<15.6	V	290	2454667	max			11027lc.jpg	11027ch.jpg	ASAS 183314-2955.0
22	NSV 11011		18 33 32.00, -22 47 36.5	SR	13.0	13.9:	V	334	2454250	max			11011lc.jpg	11011ch.jpg	ASAS 183332-2247.6
23	NSV 10990	HV 9454	18 33 32.62, -49 12 43.0	SR	12.6	14.0	V	465	2454680	max		Comm. 23	10990lc.jpg	10990ch.jpg	ASAS 183332-4912.7
24	NSV 11026	HV 9464	18 34 08.12, -26 44 59.2	M	12.6	<16.6	V	273	2454906	max		Comm. 24	11026lc.jpg	11026ch.jpg	ASAS 183408-2645.0

25	NSV 11019	S 7394	18 34 23.67, -44 27 22.2	M	13.0	<16.2	V	303	2454921	max			11019lc.jpg	11019ch.jpg	ASAS 183424-4427.4
26	NSV 11063	HV 9477	18 35 57.03, -29 14 31.9	M	12.0	<14.7	V	196.5	2455093	max			11063lc.jpg	11063ch.jpg	ASAS 183557-2914.5
27	NSV 11030	S 7118	18 36 05.21, -63 33 06.3	M	11.7	<14.9	V	269	2454607	max			11030lc.jpg	11030ch.jpg	ASAS 183605-6333.1
28	NSV 11174	GSC 6280-01223	18 40 16.15, -15 13 43.6	SRA	12.4	13.9	V	395	2455078	max	M7	Comm. 28	11174lc.jpg	11174ch.jpg	ASAS 184016-1513.7
29	NSV 11186	HV 9499	18 40 48.98, -28 37 39.9	M	12.0	<15.0	V	433	2455049	max		Comm. 29	11186lc.jpg	11186ch.jpg	ASAS 184048-2837.8
30	NSV 11226	BV 1704	18 42 37.21, -18 26 31.0	M	12.4	<16.2	V	205	2454942	max			11226lc.jpg	11226ch.jpg	ASAS 184237-1826.5
31	NSV 11232	HV 9506	18 43 24.58, -46 19 06.5	M	12.3	<15.6	V	203	2455014	max		Comm. 31	11232lc.jpg	11232ch.jpg	ASAS 184325-4619.1
32	NSV 11242	BV 1254	18 45 08.27, -65 27 31.3	SR	10.2	10.85	V	338	2454780	max		Comm. 32	11242lc.jpg	11242ch.jpg	ASAS 184508-6527.5
33	NSV 11285	HV 9518	18 45 08.44, -25 16 21.8	M	13.0	<16.6	V	280	2454266	max			11285lc.jpg	11285ch.jpg	ASAS 184508-2516.4
34	NSV 11277	Innes 59	18 45 17.33, -33 32 15.1	M	12.6	<14.2	V	334	2454967	max			11277lc.jpg	11277ch.jpg	ASAS 184517-3332.3
35	NSV 11371	S 9639	18 48 18.45, +40 17 55.1	SR	11.85	12.95	*	123.8	2455105	max		Comm. 35	11371lc.jpg	11371ch.jpg	11371dat.txt
36	NSV 11392		18 49 57.30, +20 32 12.9	M	12.5	<15.5	V	316	2454208	max	Me	Comm. 36	11392lc.jpg	11392ch.jpg	ASAS 184957+2032.2
37	NSV 11403	224.1930	18 50 14.14, +15 20 38.1	M	13.0	<15.4	V	302	2454691	max			11403lc.jpg	11403ch.jpg	ASAS 185014+1520.6
38	NSV 11394	HV 9543	18 50 28.65, -16 36 56.0	M	12.0	<14.0	V	269.5	2454973	max			11394lc.jpg	11394ch.jpg	ASAS 185029-1636.9
39	NSV 11415	BV 1709	18 51 20.86, -14 26 06.8	SR	13.1	14.5	V	144	2454663	max			11415lc.jpg	11415ch.jpg	ASAS 185121-1426.1
40	NSV 11398	BV 813	18 51 21.93, -43 05 55.4	SR	10.9	11.9	V	328	2454880	max		Comm. 40	11398lc.jpg	11398ch.jpg	ASAS 185122-4306.0

Comments:

3. Variability was discovered in the ASAS-3 survey; the star enters their variable-star catalog as a MISC-type star with a wrong period of 192^d.7.
4. Superposed variations of P = 95^d.5. HV 7220 was found, upon our request, by the late Dr. M.Hazen in Harvard Observatory's logbooks. No finding chart was available for this variable before.
12. The ASAS-3 range is for the combined brightness of the variable star and its neighbor. Variable is the SE component of 4" pair. Mira type for this variable is not excluded.
13. One well-defined maximum (JD = 2431620) observed by Hoffleit (1964) was used to improve our elements.
15. Superposed variations of P = 48^d.0. Variability was discovered in the ASAS-3 survey; the star enters their variable-star catalog as a MISC-type star with a wrong period of 168^d.5.
16. HV 9890 was found, upon our request, by the late Dr. M.Hazen in Harvard Observatory's logbooks. No finding chart was available for this variable before.
17. Variability was discovered in the ASAS-3 survey; the star enters their variable-star catalog as a MISC-type star with a wrong period of 122^d.2.
18. Superposed variations of P = 52^d.3. Variability was discovered in the ASAS-3 survey; the star enters their variable-star catalog as a MISC-type star with a wrong period of 63^d.4.
20. The ASAS-3 range is for the combined brightness of the Mira and its neighbor.
23. Variability was discovered in the ASAS-3 survey; the star enters their variable-star catalog as a MISC-type star with a wrong period of 180^d.
24. The ASAS-3 range is for the combined brightness of the Mira and its neighbor.
28. Variability was discovered in the ASAS-3 survey; the star enters their variable-star catalog as a MISC-type star with a wrong period of 183^d.7.
29. Variability was discovered in the ASAS-3 survey; the star enters their variable-star catalog as a MISC-type star with a wrong period of 142^d.1.

31. The ASAS-3 range is for the combined brightness of the Mira and its neighbor.

32. Variability was discovered in the ASAS-3 survey; the star enters their variable-star catalog as a MISC-type star with a wrong period of 41^d.6.

35. We study the variability of NSV 11371 using the [Northern Sky Variability Survey \(NSVS\)](#) unfiltered data (Woźniak et al. 2004a), but epoch of maximum brightness used is from the online publicly available [Catalina Sky Survey data](#) (2013) for CSS J184818.4+401757.

36. This star, NSVS J1849573+203211, was studied by Woźniak et al. (2004b), they gave the Mira type and a wrong period of 282^d.

40. Variability was discovered in the ASAS-3 survey; the star enters their variable-star catalog as a MISC-type star with a wrong period of 175^d.3.

Remarks:

As a part of our work on improvement of coordinates of variable stars in the NSV catalog (Samus et al. 2007–2015), we derived light elements and types for 40 red stars. We recovered the following variables suspected by W.J. Luyten: HV 9459, HV 9464, HV 9477, HV 9499, and HV 9518 (Luyten 1937); HV 9465 (Luyten 1935); HV 9454 and HV 9506 (Luyten 1936); and also the stars Innes 59 suspected by Innes (1914) and BV 813 suspected by Strohmeier et al. (1966). We measured minimal brightness for many Mira variables in Digitized Sky Survey images (R-band). We studied the variables using the publicly available electronic archives of CCD observations of the [ASAS-3](#) project (Pojmanski 2002), and images of the STScI and [US Naval Observatory Image and Catalog Archive](#). We found and investigated four new long-period variable stars: 2MASS 17433740-4043165, 2MASS 18063887-4137025, 2MASS 18092874-3407406, and GSC 9055-02486.

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