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Investigation and New Light Elements of 15 Variable Stars

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#	Name	Other	Coord (J2000)	Type	Max	Min	System	Period	Epoch (JD)	type	Sp	Comment	L.Curve	Find.Chart	Data
1		GSC 7955-01282	20 02 30.84, -41 59 47.6	RRC	14.84	15.18	CV	0.335429	2456219.941	max		Comm. 1	1lc.jpg	1ch.jpg	1.txt
2		GSC 9090-01465	20 07 55.69, -63 19 16.5	DSCT	13.66	13.87	V	0.0443598	2458303.8367	max		Comm. 2	2lc.jpg	2ch.jpg	2.txt
3		IRAS 20052-1457	20 08 01.34, -14 48 19.0	SR	14.2	15.0	V	214	2458193	max		Comm. 3	3lc.jpg	3ch.jpg	3.txt
4	NSV 12877	AN 380.1933	20 10 45.33, +47 29 55.8	SR	11.7	13.4	V	128	2457264	max		Comm. 4	4lc.jpg	4ch.jpg	4.txt
5	NSV 12885	AN 444.1934	20 10 50.05, +52 19 23.6	M	12.3	15.2	V	227	2458207	max			5lc.jpg	5ch.jpg	5.txt
6	NSV 12876	S 7320	20 12 24.28, -37 32 39.3	RRAB	15.85	16.36	CV	0.64475	2456155.043	max		Comm. 6	6lc.jpg	6ch.jpg	6.txt
7	NSV 12895	S 7324	20 13 29.41, -37 48 40.4	RRC	15.83	16.28	CV	0.331772	2456219.910	max		Comm. 7	7lc.jpg	7ch.jpg	7.txt
8	NSV 12964	S 7887	20 14 31.98, +61 04 25.6	SR	12.2	13.4	V	575	2457631	max		Comm. 8	8lc.jpg	8ch.jpg	8.txt
9		UCAC3 231-243155	20 34 50.79, +25 24 40.8	EB	12.58	12.92	V	1.214390	2457973.92	min		Comm. 9	9lc.jpg	9ch.jpg	9.txt
10		ASAS J203921+1746.2	20 39 20.86, +17 46 11.8	EW	10.72	10.96	V	0.375574	2457112.124	min	F8	Comm. 10	10lc.jpg	10ch.jpg	ASAS 203921+1746.2
11		GSC 2696-02866	20 56 05.54, +35 10 07.7	EW	12.22	12.47	V	0.77455	2458345.037	min		Comm. 11	11lc.jpg	11ch.jpg	11.txt
12		GSC 2190-02019	21 16 26.84, +25 17 36.7	EW	14.07	14.48	V	0.217408	2458281.959	min		Comm. 12	12lc.jpg	12ch.jpg	12.txt
13		USNO-A2.0 1425-12617201	21 59 08.17, +59 13 16.1	EA	13.80	14.32	V	20.3285	2458337.94	min		Comm. 13	13lc.jpg	13ch.jpg	13.txt
14	NSV 13999	GSC 8001-01103	22 02 18.88, -43 05 18.9	UGZ:	13.4	16.6	V			other			14lc.jpg	14ch.jpg	14.txt
15		GSC 3632-01337	22 39 58.33, +50 54 26.0	EB	11.62	12.13	V	0.626955	2457935.072	min		Comm. 15	15lc.jpg	15ch.jpg	15.txt

Comments:

1. The star was independently discovered by us and by the ASAS-SN patrol patrol team. Our results from the Table were obtained using the CRTS archive data (SSS_J200226.6-415932) for interval JD 2453556–2456460. The ASAS-SN Catalog of Variable Stars (Jayasinghe et al. 2018) gives light elements HJD 2456912.61015 + 0.3354747d x E, range V = 14.77–15.10 for interval JD 2456790–2458187. Period strongly varies.

2. We discovered the star using the CRTS archive data (SSS_J200755.7-631916). M–m = 0.44 P.

3. The star was included in the ASAS-SN Catalog of Variable Stars with a wrong P, $155^{d}.0$.

4. The star was included in the ASAS-SN Catalog of Variable Stars without period, type L.

6. M–m = 0.22 P.

7. M–m = 0.40 P.

8. The star was included in the ASAS-SN Catalog of Variable Stars without period, type L.

9. MinII = 12.84 V. The star was included in the ASAS-SN Catalog of Variable Stars with a wrong type RRAB and P, $0^d.6071846$.

10. MinII = 10.94 V. Period from the International Variable Star Index according to Watson et al. (2007) is erroneous: P = $0^d.316057$.

11. MinII = 12.46 V.

12. MinII = 14.46 V. A SuperWASP variable object 1SWASP J211625.31+251755.4 (Lohr et al. 2013) is at 30" NW from the real variable star.

13. MinII = 14.17 V, MinII–MinI = 0.55 P, D = 0.02 P. Lapukhin et al. (2015) published a wrong period of $5^d.756$:.

15. MinII = 11.91 V. The International Variable Star Index gives a wrong type and an erroneous P, $0^d.62690100$. The coordinates point 25" SE from the real variable star.

Remarks:

While working on compiling of the Name-List No. 82 for Version 5.1 of GCVS (Samus et al. 2017), we determined or improved light elements, types, and coordinates for 9 new variable stars and 6 stars from the NSV catalogue (Kukarkin et al. 1982). The study of the variables was made using the publicly available electronic archives of CCD observations of the ASAS-3 project (Pojmanski 2002), ASAS-SN project (Shappee et al. 2014, Kochanek et al. 2017) and the Catalina Sky Survey (CRTS) photometric data (Drake et al. 2009). To find periods we applied the WinEfk software provided by Dr. V.P. Goranskij.

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