

BV_{Ic} Photometry for 14 Blue Variables

[L. N. Berdnikov](#)^{#1}, [E. N. Pastukhova](#)^{#2}

#1. Sternberg Astronomical Institute, Lomonosov State University, Moscow, Russia

#2. Institute of Astronomy, Russian Academy of Sciences, Moscow, Russia

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(E-mail for contact: leonid.berdnikov@gmail.com, pastukhova@sai.msu.ru)

#	Name	Other	Coord (J2000)	Type	Max	Min	System	Period	Epoch (JD)	type	Sp	Comment	L.Curve	Find.Chart	Data
1		ASAS 071413-0341.5	07 14 12.63, -03 41 30.0		10.06	10.20	V	2.54942	2454851.442	max	B8	Comm. 1	1lc.jpg	1ch.jpg	1.txt
2		ASAS 071915-1954.4	07 19 14.81, -19 54 24.3		11.55	11.72	V	1.69133	2454841.460	max		Comm. 2	2lc.jpg	2ch.jpg	2.txt
3		ASAS 073214-1843.9	07 32 14.15, -18 43 53.8		11.10	11.32	V	2.20972	2454934.560	max		Comm. 3	3lc.jpg	3ch.jpg	3.txt
4		ASAS 075503-3246.2	07 55 03.25, -32 46 10.7		9.00	9.12	V	2.50100	2454201.215	max	B9III	Comm. 4	4lc.jpg	4ch.jpg	4.txt
5		ASAS 080101-4543.6	08 01 01.15, -45 43 39.0		10.80	10.98	V	2.25469	2456056.270	max		Comm. 5	5lc.jpg	5ch.jpg	5.txt
6		ASAS 092711-4022.1	09 27 10.67, -40 22 05.3		8.72	8.90	V	3.21516	2453490.519	max	B9	Comm. 6	6lc.jpg	6ch.jpg	6.txt
7		ASAS 095355-5849.7	09 53 54.88, -58 49 41.5		10.32	10.50	V	1.52639	2453489.605	max	B5	Comm. 7	7lc.jpg	7ch.jpg	7.txt
8		ASAS 100625-5912.9	10 06 25.52, -59 12 53.7		11.65	11.85	V	1.46870	2453490.544	max		Comm. 8	8lc.jpg	8ch.jpg	8.txt
9		ASAS 103318-5255.2	10 33 18.35, -52 55 10.2		10.58	10.75	V	2.75854	2453491.558	max	A1	Comm. 9	9lc.jpg	9ch.jpg	9.txt
10		ASAS 105022-5853.4	10 50 22.10, -58 53 26.5		10.13	10.29	V	6.3807	2454096.545	max	B9	Comm. 10	10lc.jpg	10ch.jpg	10.txt
11		ASAS 112437-5959.6	11 24 37.25, -59 59 37.2		10.05	10.23	V	5.93619	2453499.602	max	A0	Comm. 11	11lc.jpg	11ch.jpg	11.txt
12		ASAS 172638-6348.9	17 26 38.18, -63 48 54.0		8.88	8.96	V	15.6947	2454211.75	max	B8/B9V	Comm. 12	12lc.jpg	12ch.jpg	12.txt
13		ASAS 173352-3637.6	17 33 52.40, -36 37 38.3		9.86	10.00	V	2.26834	2453502.860	max	B9III/IV	Comm. 13	13lc.jpg	13ch.jpg	13.txt
14		ASAS 184152-2313.4	18 41 52.11, -23 13 24.0		11.42	11.60	V	3.51306	2456047.650	max		Comm. 14	14lc.jpg	14ch.jpg	14.txt

Comments:

1. B-V = 0.07, J-K = -0.072.

2. $B-V = 0.18$, $J-K = 0.013$.

3. $B-V = 0.15$, $J-K = -0.017$.

4. $B-V = -0.08$, $J-K = -0.043$.

5. $B-V = -0.04$, $J-K = -0.001$.

6. $B-V = 0.05$, $J-K = -0.041$.

7. $B-V = 0.00$, $J-K = 0.026$.

8. $B-V = 0.02$, $J-K = -0.006$.

9. $B-V = 0.10$, $J-K = -0.012$.

10. $B-V = 0.14$, $J-K = 0.129$.

11. $B-V = 0.21$, $J-K = 0.100$.

12. $B-V = 0.28$, $J-K = 0.044$.

13. $B-V = 0.03$, $J-K = -0.050$.

14. $B-V = 0.28$, $J-K = 0.679$.

Remarks:

In 2006–2012, we performed photometric observations of selected variable stars classified as Cepheids in the ASAS-3 Catalog (Pojmanski 2002) with the 76-cm telescope of the South African Astronomical Observatory (SAAO, Republic of South Africa). Observations were made with a photoelectric photometer on JD 2454000–2454479, and a SBIG ST-10XME CCD camera was used on the rest of the days. Photoelectric observations are marked with circled dots on the light curves. We used BVI filters of the Kron–Cousins system (Cousins 1976). Analysis of observations revealed that all 14 stars were too blue for Cepheids: their mean $B-V$ colors were between -0.04 and $+0.28$ mag, and $J-H$ colors (drawn from 2MASS catalogue, Skrutskie et al. 2006) were between -0.07 and $+0.10$ mag. These variables are not identified with X-ray sources, and they have small amplitudes, which increase from B band to I band; for some of them, the time of minimum on the B-band light curve coincides with that of maximum in V and I. It is difficult to classify these variable stars according to known types of the GCVS (Samus et al. 2007–2013), hence we give one-wave periods for all objects, 1.5 to 6 days, but, most likely, these variables are eclipsing binaries. If it is so, the periods should be doubled.

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References:

Cousins, A.W.J., 1976, *Mem. R. Astron. Soc.*, 81, 25

Pojmanski, G., 2002, *Acta Astronomica*, 52, 397

Samus, N.N., Durlevich, O.V., Kazarovets, E.V., Kireeva, N.N., Pastukhova E.N., et al., 2007–2013, *General Catalogue of Variable Stars*, Centre de Données Astronomiques de Strasbourg, B/gcvs

Skrutskie, M.F., Cutri, R.M., Stiening, R., et al., 2006, *Astron. J.*, 131, 1163