

VRc photometry of new variable stars detected in a field from the photographic plate collection of Sternberg Institute

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#	Name	Other	Coord (J2000)	Type	Max	Min	System	Period	Epoch (JD)	type	Sp	Comment	L.Curve	Find.Chart	Data
1		USNO-B1.0 1454-0000300	00 00 24.50, +55 27 48.6	EW	16.15	16.53	Rc	0.37096	2456873.2981	min		Comm. 1	1454-0000300.jpg	1454-0000300_image.jpg	1454-0000300r.txt
2		USNO-B1.0 1466-0470221	23 37 21.08, +56 37 58.0	EW	15.33	15.60	Rc	0.36031	2456493.4236	min		Comm. 2	1466-0470221.jpg	1466-0470221_image.jpg	1466-0470221r.txt 1466-0470221v.txt
3		USNO-B1.0 1464-0465888	23 38 17.17, +56 28 33.7	DSCT	13.82	13.95	Rc	0.13100	2456500.3428	max		Comm. 3	1464-0465888.jpg	1464-0465888_image.jpg	1464-0465888r.txt 1464-0465888v.txt
4		USNO-B1.0 1448-0463974	23 46 30.49, +54 53 57.7	EW	16.12	16.44	Rc	0.3882	2456492.3736	min		Comm. 4	1448-0463974.jpg	1448-0463974_image.jpg	1448-0463974r.txt 1448-0463974v.txt
5		USNO-B1.0 1449-0464536	23 47 33.19, +54 56 46.8	EA	16.27	17.15	Rc		2456492.3649	min		Comm. 5	1449-0464536.jpg	1449-0464536_image.jpg	1449-0464536r.txt 1449-0464536v.txt
6		USNO-B1.0 1456-0471499	23 59 14.64, +55 37 05.9	EW	16.38	16.67	Rc	0.3401	2456872.3583	min		Comm. 6	1456-0471499.jpg	1456-0471499_image.jpg	1456-0471499r.txt
7		USNO-B1.0 1456-0471990	23 59 56.24, +55 41 45.5	EW:	15.90	16.25	Rc	0.408:	2456872.403	min		Comm. 7	1456-0471990.jpg	1456-0471990_image.jpg	1456-0471990r.txt

Comments:

1. MinII = 16^m.43.
2. MinII = 15^m.54.
3. M–m = 0.35 P.
4. MinII = 16^m.43.
5. We observed only one minimum and one maximum of brightness.
6. MinII = 16^m.6.
7. We observed the star on one night only. If our assumption about EW type is correct, the time interval covered and the shape of the light curve correspond to a period close to 0^d.408.

Remarks:

A field centered at β Cassiopeiae is one of those included in the program of digitizing the Sternberg Institute's plate collection (Kolesnikova et al. 2008). Several variable stars were suspected of variability in the field as a result of this program. We participate in CCD checks of suspected variables; the results will be presented elsewhere. In the course of this work, we found seven new variable stars in the field. Observations were carried out in 2013 and 2014 at Chuguev Observational Station of the Astronomical Institute of Kharkiv Karazin National University (KhNU) with the 70-cm reflector as a part of research programs for students (Shevchenko et al. 2013). The telescope is equipped with a FLI 47-10 Peltier-cooled CCD camera (1027×1056 pixels, pixel size 13×13 μ m). Images were taken in V and R bands of the Johnson–Cousins photometric system. Original CCD frames were calibrated for dark current and flat field in the standard manner. The methods of CCD observations and reductions were described by Krugly et al. (2002) and Tereschenko et al. (2010). The method for detecting variable stars was described by Zheleznyak and Kravtsov (2003). The brightness measurements of stars on CCD images were made using the aperture photometry package (ASTPHOT) developed by Mottola et al. (1995). The absolute calibrations of the magnitudes were performed with standard star sequences from Landolt (1992). The accuracy of the resultant absolute photometry is within 0.01–0.03 mag.

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