

New Cepheid in Cygnus and Four New Eclipsing Variables

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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 1394-0406228	21 33 42.72, +49 28 14.8	EW	16.58	16.80	R	0.483377	2455409.3025	min		Comm. 1	1.jpg	ch1.jpg	data1.txt
2		USNO-B1.0 1394-0406268	21 33 45.07, +49 29 22.0	DCEP	12.43	12.75	R	2.13083	2455415.55	max		Comm. 2	2.jpg	ch2.jpg	data2.txt
3		USNO-B1.0 1394-0406322	21 33 49.25, +49 29 20.5	EW	16.08	16.61	R	0.336140	2455410.5710	min		Comm. 3	3.jpg	ch3.jpg	data3.txt
4		USNO-B1.0 1394-0406330	21 33 49.61, +49 29 35.2	EW	17.53	17.92	R	0.351943	2455409.8629	min		Comm. 4	4.jpg	ch4.jpg	data4.txt
5		USNO-B1.0 1272-0434009	19 51 45.07, +37 16 28.7	EA	16.04	16.17	R	1.530	2455424.327	min		Comm. 5	5.jpg	ch5.jpg	data5.txt

Comments:

1. MinII = 16.78.

2. The brightness changes from 15.35 to 15.85 in Bpg.

3. Minima:

2455765.3665 ± 0.0005 (II);

2455777.4668 ± 0.0005 (II).

MinII = 16.58.

4. MinII = 17.87.

5. Minima:

2455424.3274 ± 0.0011 (I);

2455430.4469 ± 0.0015 (I).

MinII = 16.08.

Remarks:

Several years ago, one of us (S.V.A.) discovered a new Cepheid on the plates of Moscow archive taken with the 40-cm astrograph of the Crimean laboratory of Sternberg Astronomical Institute. To confirm the discovery of variability and classification, we carried out CCD photometry of the star with the 60-cm reflector of the Crimean laboratory equipped with an Apogee AP-47p CCD camera for thirty-five nights on July 30 – August 23, 2010 (JD 2455408–2455432) and July 22 – August 8, 2011 (JD 2455765–2455782). The CCD images were taken with 60-s and 80-s exposure times in the Johnson R filter and then reduced with the MaxIM DL aperture photometry package in the standard way involving flat-field and dark-frame corrections. USNO-B1.0 1394-0406224 ($\alpha = 21^{\text{h}}33^{\text{m}}42^{\text{s}}.48$, $\delta = +49^{\circ}29'05''.9$, J2000, 2MASS; R = 12^m.83) was used for comparison. Stability of the comparison star was verified by brightness measurements with respect to several check stars. In addition to the new Cepheid, we discovered three more eclipsing variable stars on the same frames using VaST software (Sokolovsky & Lebedev 2005). The coordinates of variable stars were drawn from the 2MASS catalogue (Skrutskie et al. 2006).

In the last line of the Table, we report on the discovery of one more variable star of Algol type in the field of the cataclysmic variable RX J1951.7+3716 (the field was earlier studied by Virmina et al. 2011, but this particular star was not noticed). Detailed information on the data and the comparison star can be found in the cited paper.

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References:

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