

New Variable Stars in Perseus

[T. Kryachko](#)^{#1}, [A. Samokhvalov](#)^{#2}, [B. Satovskiy](#)^{#1}

#1. Astrotel Observatory, Karachay-Cherkessia, Russia;
#2. Surgut, Russia.

Received: 17.03.2013; accepted: 8.04.2013

(E-mail for contact: bredfld@mail.ru, sav@surgut.ru, bs25@mail.ru)

#	Name	Other	Coord (J2000)	Type	Max	Min	System	Period	Epoch (JD)	type	Sp	Comment	L.Curve	Find.Chart	Data
1		USNO-A2.0 1200-02251226	04 25 45.99, +31 51 38.8	EW	13.55	13.69	*	0.28827	2455906.3605	Min		Comm. 1	01_PC-R.png	01_chart.jpg	01_data.txt
2		USNO-A2.0 1200-02262058	04 26 38.95, +31 52 27.7	EW	16.17	16.39	*	0.3376	2455870.4074	Min		Comm. 2	02_PC-R.png	02_chart.jpg	02_data.txt
3		USNO-A2.0 1200-02262578	04 26 41.42, +32 15 13.2	EW	17.75	18.38	*	0.3884	2455826.864	Min		Comm. 3	03_PC-R.png	03_chart.jpg	03_data.txt
4		USNO-A2.0 1200-02265349	04 26 55.74, +32 11 05.6	EW	16.15	17.00	*	0.34098	2455906.453	Min		Comm. 4	04_PC-R.png	04_chart.jpg	04_data.txt
5		USNO-A2.0 1200-02267599	04 27 06.71, +32 15 09.4	EW	15.51	15.93	*	0.2981	2455870.4054	Min		Comm. 5	05_PC-R.png	05_chart.jpg	05_data.txt
6		USNO-A2.0 1200-02275043	04 27 44.54, +32 15 17.7	EW	15.91	16.12	*	0.3373	2455906.896	Min		Comm. 6	06_PC-R.png	06_chart.jpg	06_data.txt
7		USNO-A2.0 1200-02275382	04 27 46.27, +31 57 40.9	E+RS:	14.31:	14.55	*	0.9442	2455906.4973	Min			07_PC-R.png	07_chart.jpg	07_data.txt
8		USNO-A2.0 1200-02278822	04 28 03.39, +32 27 46.7	EW	12.83	12.97	*	0.38445	2455906.3521	Min		Comm. 8	08_PC-R.png	08_chart.jpg	08_data.txt
9		USNO-A2.0 1200-02283324	04 28 26.68, +32 28 10.3	DSCT	13.69	13.77	*	0.10943	2455906.4655	Max		Comm. 9	09_PC-R.png	09_chart.jpg	09_data.txt
10		USNO-A2.0 1200-02287405	04 28 46.86, +32 00 40.0	EW:	17.9	18.5	*	0.3275:	2455869.3330	Min		Comm. 10	10_PC-R.png	10_chart.jpg	10_data.txt
11		USNO-A2.0 1200-02287503	04 28 47.31, +32 08 40.7	EA	16.04	16.54	*	1.385	2455907.190	Min		Comm. 11	11_PC-R.png	11_chart.jpg	11_data.txt
12		USNO-A2.0 1200-02293226	04 29 15.76, +32 06 32.7	SR:	12.92	13.14	*	45:	2455872.5	Max		Comm. 12	12_PC-R.png	12_chart.jpg	12_data.txt

Comments:

1. Type DSCT and period 0^d.1441 are also possible. Primary minima:

HJD(TT)	±
2455870.3295	0.0004
2455906.3605	0.0009

Min_{II} = 13^m.68.

2. Primary minima:

HJD(TT)	\pm
2455870.4074	0.0007
2455906.536	0.001

Min_{II} = 16^m.37.

3. Min_{II} = 18^m.24.

4. Primary minimum: HJD(TT) 2455906.453±0.005.

5. Primary minima:

HJD(TT)	\pm
2455870.4054	0.0003
2455906.4754	0.0007

Min_{II} = 15^m.85.

6. A close pair of two stars: USNO-A2.0 1200-02275043 and 2MASS 04274467+3215128, USNO-A2.0 1200-02275043 varies. Min_{II} = 16^m.10.

8. Primary minimum: HJD(TT) 2455906.3521±0.0004. Min_{II} = 12^m.95.

9. Maxima:

HJD(TT)	\pm
2455869.360	0.001
2455870.3700	0.0007
2455906.3718	0.0004
2455906.4655	0.0006

10. Primary minimum: HJD(TT) 2455869.3330±0.0009.

11. Min_{II} = 16^m.49.

12. Infrared colors J–H = 0.986, H–K = 0.423, J–K = 1.409 (2MASS) are consistent with the M spectral type (Bessell and Brett 1988) and SR: classification. Maximum: HJD(TT) 2455872.5±0.6.

Remarks:

During observations of a field in Perseus, we discovered 12 new variable stars. Our observations were carried out at the Astrotel-Caucasus observatory located at the Astronomical station of the Kazan Federal university using the 300-mm Ritchey-Chretien telescope, equipped with an unfiltered Apogee Alta U9000 CCD camera. A total of 256 images with 5-minute exposures were obtained on JD 2455826–2455906. For basic reductions for dark current, flat fields, bias and for removing cosmic-ray hits we used IRAF routines. For search and photometry of new variable stars, we applied VaST software by Sokolovsky and Lebedev (2005). The comparison star was USNO-A2.0 1200-02275475 = USNO-B1.0 1224-0079451 ($\alpha = 04^{\text{h}}27^{\text{m}}46^{\text{s}}.76$, $\delta = +32^{\circ}25' 34''.2$ (J2000, 2MASS)), $R_1 = 13^{\text{m}}.97$ $R_2 = 13^{\text{m}}.60$ (USNO-B1.0). Unfiltered magnitudes were calibrated using the comparison star, assuming $R_{\text{comp}} = 13^{\text{m}}.785$. The coordinates of the variable stars in the table were drawn from the 2MASS catalogue (Skrutskie et al. 2006) except for a star USNO-A2.0 1200-02287405; their coordinates were drawn from the USNO-A2.0

catalogue (Monet et al. 1998). For search for periods and epochs of extrema we use [Peranso](#) software.

Acknowledgements: We would like to thank S. V. Antipin and N. N. Samus for helpful discussion.

References:

Bessell, M.S., Brett, J.M., 1988, Publ. Astron. Soc. Pacific, 100, 1134

Monet, D., Bird, A., Canzian, B., et al., 1998, USNO-A2.0, A Catalog of Astrometric Standards (U.S. Naval Observatory, Washington, DC), Centre de Donnees Astronomiques de Strasbourg, I/252

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

Sokolovsky, K., Lebedev, A., 2005, in 12th Young Scientists' Conference on Astronomy and Space Physics, Kyiv, Ukraine, April 19-23, 2005, eds.: Simon, A.; Golovin, A., p.79