

## New Variable Stars in Taurus

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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-A2.0 1050-01422292	04 46 59.93, +22 16 03.8	EW	18.37	19.00		0.28856	2455189.6363	Min		<a href="#">Comm. 1</a>	<a href="#">01_PC-R.png</a>	<a href="#">01_chart.jpg</a>	<a href="#">01_data.txt</a>
2		USNO-A2.0 1125-01799553	04 47 04.60, +22 41 59.6	EA	15.73	16.03		2.1561	2455126.8869	Min		<a href="#">Comm. 2</a>	<a href="#">02_PC-R.png</a>	<a href="#">02_chart.jpg</a>	<a href="#">02_data.txt</a>
3		USNO-A2.0 1050-01424625	04 47 14.68, +22 12 37.4	EW	16.56	16.85		0.36764	2455131.5734	Min		<a href="#">Comm. 3</a>	<a href="#">03_PC-R.png</a>	<a href="#">03_chart.jpg</a>	<a href="#">03_data.txt</a>
4		USNO-A2.0 1125-01807840	04 47 49.84, +23 02 03.4	BY	16.25	16.42		0.4321	2455189.4851	Max		<a href="#">Comm. 4</a>	<a href="#">04_PC-R.png</a>	<a href="#">04_chart.jpg</a>	<a href="#">04_data.txt</a>
5		USNO-A2.0 1125-01809057	04 47 56.34, +23 01 57.9	EW	15.71	16.23		0.28515	2455146.6091	Min		<a href="#">Comm. 5</a>	<a href="#">05_PC-R.png</a>	<a href="#">05_chart.jpg</a>	<a href="#">05_data.txt</a>
6		USNO-A2.0 1125-01816100	04 48 35.83, +22 47 04.3	EW	17.10	17.29		0.31609	2455159.5006	Min		<a href="#">Comm. 6</a>	<a href="#">06_PC-R.png</a>	<a href="#">06_chart.jpg</a>	<a href="#">06_data.txt</a>
7		USNO-A2.0 1125-01826235	04 49 30.60, +22 39 59.9	EB	15.46	15.71		0.42405	2455159.5731	Min		<a href="#">Comm. 7</a>	<a href="#">07_PC-R.png</a>	<a href="#">07_chart.jpg</a>	<a href="#">07_data.txt</a>
8		USNO-A2.0 1125-01828421	04 49 42.07, +22 50 52.5	EW	17.75	18.49		0.23430	2455146.6032	Min		<a href="#">Comm. 8</a>	<a href="#">08_PC-R.png</a>	<a href="#">08_chart.jpg</a>	<a href="#">08_data.txt</a>

### Comments:

1.  $\text{Min}_{\text{II}}=18^{\text{m}}.83$ .

2.  $\text{Min}_{\text{II}}=15^{\text{m}}.83$ .

3. Primary minimum: HJD(TT)  $2455131.5734 \pm 0.0005$ .  $\text{Min}_{\text{II}}=16^{\text{m}}.80$ .

4. Infrared colors J-H=0.645, H-K=0.130 and J-K=0.775 (2MASS) are consistent with the dK spectral type (Bessell and Brett 1988) and BY classification.

5. O'Connell effect. Primary minima:

HJD(TT)	$\pm$
2455146.6091	0.0003
2455159.440	0.001

2455229.3011	0.0005
2455257.2455	0.0007

Min<sub>I</sub>=16<sup>m</sup>.07.

6. A close pair of two stars, not found in any catalogues separately. The angular resolution of our telescope is insufficient to determine which of the two stars varies. Primary minima:

HJD(TT)	±
2455159.5006	0.0007
2455191.424	0.002

Min<sub>I</sub>=17<sup>m</sup>.29.

7. Primary minima:

HJD(TT)	±
2455159.5731	0.0003
2455205.3694	0.0006

Min<sub>I</sub>=15<sup>m</sup>.61.

8. Primary minima:

HJD(TT)	±
2455128.5618	0.0006
2455146.6032	0.0003
2455159.4917	0.0008
2455189.4841	0.0007

Min<sub>I</sub>=18<sup>m</sup>.49.

### Remarks:

During observations of a field in Taurus, we discovered 8 new variable stars. Our observations were carried out at the Astrotel-Caucasus observatory using the 300-mm Ritchey-Chretien telescope, equipped with an unfiltered Apogee Alta U9000 CCD camera. A total of 612 images with 5-minute exposures were obtained on JD 2455125 - 2455257. For basic reductions for dark current, flat fields, and bias, 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 1050-01424022 = USNO-B1.0 1122-0073209 ( $\alpha=04^h47^m11^s.17$ ,  $\delta=+22^\circ15'43''.4$  J2000, 2MASS);  $R_1=14^m.21$ ,  $R_2=14^m.35$  (USNO-B1.0). Unfiltered magnitudes were calibrated using the comparison star, assuming  $R_{\text{comp}}=14^m.28$ . The coordinates of the variable stars in the table were drawn from the 2MASS catalogue (Skrutskie et al. 2006). For search for periods and epochs of extrema, we use Peranso software ([www.peranso.com](http://www.peranso.com)).

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### References:

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