

## New Variable Stars in the Field of V496 Aur

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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 1275-06921092	07 26 31.49, +40 24 34.6	EA	15.33	15.50		1.793:	2455537.373	Min			<a href="#">01_PC-R.png</a>	<a href="#">01_chart.jpg</a>	<a href="#">01_data.txt</a>
2		USNO-A2.0 1275-06921251	07 26 32.81, +40 51 32.6	EW	15.16	15.57		0.37135	2455521.5925	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 1275-06921371	07 26 33.59, +40 32 23.4	EA	15.70	15.97		1.5603	2455503.2907	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 1275-06944085	07 29 28.53, +40 15 11.3	BY:	14.54	14.59		15.7	2455502.4	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 1275-06949155	07 30 09.31, +40 29 17.5	EW:	14.73	14.90		0.2969	2455537.4018	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 1275-06950015	07 30 16.14, +40 57 30.6	EA	12.66	<13.41		6.226	2455503.1662	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 1275-06953990	07 30 48.19, +40 40 59.0	EW	15.39	15.69		0.32100	2455502.5442	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>

### Comments:

2. Primary minima:

HJD(TT)	±
2455520.4759	0.0006
2455521.5925	0.0002
2455537.5630	0.0005
2455563.5573	0.0003

Min<sub>II</sub> = 15<sup>m</sup>.56.

3. Min<sub>II</sub> = 15<sup>m</sup>.92.

4. The infrared colors J-H = 0.666, H-K = 0.152 and J-K = 0.818 (2MASS) are consistent with the dK spectral type (Bessell and Brett 1988) and BY: classification.

5. ELL type is also possible. Variability with  $P_1 = 0^d.2969$  is probably caused by non-spherical shapes of the stars; variability with  $P_2 = 0^d.2980$  is caused by a spotted photosphere region of one of the close binary's components.  $P_1$  differing from  $P_2$  means that, in this case, we can deal with a system whose components are not in corotation.

Primary minima:

HJD(TT)	$\pm$
2455503.5448	0.0008
2455511.5627	0.0007
2455537.4018	0.0005
2455538.5893	0.0005

$\text{Min}_{II} = 14^m.87$ .

6.  $\text{Min}_{II} = 13^m.14$ .

7. O'Connell effect. Primary minima:

HJD(TT)	$\pm$
2455502.5442	0.0004
2455503.5074	0.0004
2455510.5678	0.0005
2455538.4928	0.0006
2455563.5337	0.0003

$\text{Min}_{II} = 15^m.69$ .

### Remarks:

During observations of the field of the cataclysmic variable V496 Aur, we discovered seven 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 664 images with 5-minute exposures were obtained on JD 2455503 – 2455563. 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 1275-06936213 = USNO-B1.0 1304-0181013 ( $\alpha = 07^h28^m26^s.86$ ,  $\delta = +40^\circ25' 00''.7$ , J2000; 2MASS),  $R_1 = 13^m.87$ ,  $R_2 = 14^m.50$  (USNO-B1.0). Unfiltered magnitudes were calibrated using the comparison star, assuming  $R_{\text{comp}} = 14^m.185$ . 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.

### References:

Bessell, M.S., Brett, J.M., 1988, PASP, 100, 1134

Skrutskie, M.F., Cutri, R.M., Stiening, R., et al., 2006, AJ, 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