

New Variable Stars in the Field of V585 Lyr

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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 1275-10904537	19 11 31.33, +40 46 53.2	BY:	16.68	16.88		25.8	2455282.0349	Max		Comm. 1	01_PC-R.png	01_chart.jpg	01_data.txt
2		USNO-A2.0 1275-10905367	19 11 33.04, +40 24 10.2	EW	17.24	17.76		0.33135	2455370.3055	Min		Comm. 2	02_PC-R.png	02_chart.jpg	02_data.txt
3		USNO-A2.0 1275-10925631	19 12 16.36, +40 26 00.4	RRAB	16.39	17.50		0.60507	2455347.4156	Max		Comm. 3	03_PC-R.png	03_chart.jpg	03_data.txt
4		USNO-A2.0 1275-10925664	19 12 16.42, +40 30 22.0	BY:	14.65	14.70		8.099	2455265.4367	Max		Comm. 4	04_PC-R.png	04_chart.jpg	04_data.txt
5		USNO-A2.0 1275-10926016	19 12 17.23, +40 47 12.5	EW	15.04	15.68		0.36296	2455349.3110	Min		Comm. 5	05_PC-R.png	05_chart.jpg	05_data.txt
6		USNO-A2.0 1275-10928817	19 12 23.30, +40 49 53.4	EW	15.15	15.58		0.36413	2455292.5621	Min		Comm. 6	06_PC-R.png	06_chart.jpg	06_data.txt
7		USNO-A2.0 1275-10933133	19 12 32.50, +40 09 57.7	EA/RS	16.67	16.95		2.56166	2455257.6757	Min		Comm. 7	07_PC-R.png	07_chart.jpg	07_data.txt
8		USNO-A2.0 1275-10937935	19 12 42.65, +40 45 48.9	BY:	15.09	15.16		10.084	2455266.5611	Max		Comm. 8	08_PC-R.png	08_chart.jpg	08_data.txt
9		USNO-A2.0 1275-10940292	19 12 47.66, +40 53 35.1	EA	16.83	17.53		3.3202:	2455361.351	Min		Comm. 9	09_PC-R.png	09_chart.jpg	09_data.txt
10		USNO-A2.0 1275-10944424	19 12 56.41, +40 36 22.9	EW	16.16	16.42		0.28314	2455341.3695	Min		Comm. 10	10_PC-R.png	10_chart.jpg	10_data.txt
11		USNO-A2.0 1275-10945660	19 12 59.21, +40 54 47.8	EB	15.20	15.49		0.44978	2455349.3761	Min		Comm. 11	11_PC-R.png	11_chart.jpg	11_data.txt
12		USNO-A2.0 1275-10953601	19 13 15.78, +40 08 28.4	SR:	13.74	13.79		22.2:	2455339.05	Max		Comm. 12	12_PC-R.png	12_chart.jpg	12_data.txt
13		USNO-A2.0 1275-10955809	19 13 20.34, +40 45 27.8	EW	16.84	17.08		0.27023	2455345.3211	Min		Comm. 13	13_PC-R.png	13_chart.jpg	13_data.txt
14		USNO-A2.0 1275-10965696	19 13 40.40, +40 49 13.0	EW	17.29	17.56		0.31430	2455336.3866	Min		Comm. 14	14_PC-R.png	14_chart.jpg	14_data.txt
15		USNO-A2.0 1275-10970011	19 13 49.32, +40 54 47.9	EA	17.04	17.77		1.599:	2455258.5226	Min		Comm. 15	15_PC-R.png	15_chart.jpg	15_data.txt
16		USNO-A2.0 1275-10970392	19 13 50.04, +40 55 36.1	EW	16.82	17.53		0.29474	2455361.3029	Min		Comm. 16	16_PC-R.png	16_chart.jpg	16_data.txt
17		USNO-A2.0 1275-10973155	19 13 55.90, +40 23 50.9	EW	17.17	17.65		0.32020	2455306.6728	Min		Comm. 17	17_PC-R.png	17_chart.jpg	17_data.txt
18		USNO-A2.0 1275-10973990	19 13 57.68, +40 45 08.9	EW	19.47	20.10		0.23632	2455275.5533	Min		Comm. 18	18_PC-R.png	18_chart.jpg	18_data.txt
19		USNO-A2.0 1275-10976053	19 14 02.17, +40 26 44.9	EW	15.66	16.27		0.29087	2455358.3029	Min		Comm. 19	19_PC-R.png	19_chart.jpg	19_data.txt
20		USNO-A2.0 1275-10979017	19 14 08.40, +40 20 34.8	EW	17.40	17.83		0.26978	2455257.7279	Min		Comm. 20	20_PC-R.png	20_chart.jpg	20_data.txt
21		USNO-A2.0 1275-10982091	19 14 14.50, +40 08 10.1	SR:	15.60	15.65		57.4:	2455333.47	Max		Comm. 21	21_PC-R.png	21_chart.jpg	21_data.txt

22	USNO-A2.0 1275-10988270	19 14 27.15, +40 20 00.9	BY:	17.25	17.37		0.7592	2455258.0797	Max	Comm. 22	22_PC-R.png	22_chart.jpg	22_data.txt
23	USNO-A2.0 1275-10994373	19 14 39.57, +40 39 58.6	EA	15.66	15.87		2.3268	2455259.5147	Min	Comm. 23	23_PC-R.png	23_chart.jpg	23_data.txt
24	USNO-A2.0 1275-11003916	19 14 58.54, +40 52 46.3	EW	16.46	16.59		0.23077	2455347.4264	Min	Comm. 24	24_PC-R.png	24_chart.jpg	24_data.txt
25	USNO-A2.0 1275-11010668	19 15 11.82, +40 49 10.5	EW	19.31	20.15		0.24020	2455275.6128	Min	Comm. 25	25_PC-R.png	25_chart.jpg	25_data.txt
26	USNO-A2.0 1275-11014337	19 15 18.90, +40 45 51.3	EW	16.35	16.49		0.30232	2455306.5251	Min	Comm. 26	26_PC-R.png	26_chart.jpg	26_data.txt
27	USNO-A2.0 1275-11020063	19 15 30.20, +40 23 43.8	EW	17.25	17.56		0.37885	2455317.4206	Min	Comm. 27	27_PC-R.png	27_chart.jpg	27_data.txt
28	USNO-A2.0 1275-11023380	19 15 36.92, +40 46 15.6	EW	14.96	15.18		0.62500	2455349.6696	Min	Comm. 28	28_PC-R.png	28_chart.jpg	28_data.txt
29	USNO-A2.0 1275-11023602	19 15 37.34, +40 10 08.7	EW:	17.21	17.51		0.58805	2455258.0591	Min	Comm. 29	29_PC-R.png	29_chart.jpg	29_data.txt
30	USNO-A2.0 1275-11023965	19 15 38.05, +40 42 31.8	EB	15.64	15.90		0.85730	2455257.9702	Min	Comm. 30	30_PC-R.png	30_chart.jpg	30_data.txt
31	USNO-A2.0 1275-11024863	19 15 39.92, +40 42 25.3	EW	16.36	16.66		0.38056	2455341.3868	Min	Comm. 31	31_PC-R.png	31_chart.jpg	31_data.txt
32	USNO-A2.0 1275-11026206	19 15 42.41, +40 49 36.0	DSCT	15.09	15.15		0.052632	2455257.5602	Max	Comm. 32	32_PC-R.png	32_chart.jpg	32_data.txt
33	USNO-A2.0 1275-11027945	19 15 45.96, +40 28 00.8	EW	17.13	17.32		0.34008	2455258.1838	Min	Comm. 33	33_PC-R.png	33_chart.jpg	33_data.txt
34	USNO-A2.0 1275-11030061	19 15 50.11, +40 29 55.5	BY:	15.86	15.93		4.067	2455258.9519	Max	Comm. 34	34_PC-R.png	34_chart.jpg	34_data.txt
35	USNO-A2.0 1275-11033635	19 15 56.96, +40 15 08.2	EW	17.57	18.19		0.410262	2455336.3503	Min	Comm. 35	35_PC-R.png	35_chart.jpg	35_data.txt
36	USNO-A2.0 1275-11040810	19 16 11.31, +40 39 10.3	EB:	14.52	14.97		6.5256	2455267.2601	Min	Comm. 36	36_PC-R.png	36_chart.jpg	36_data.txt

Comments:

1. Infrared colors J-H=0.603, H-K=0.121, J-K=0.724 (2MASS) are consistent with the dK spectral type (Bessell and Brett 1988) and BY: classification.

2. O'Connell effect. Primary minimum: HJD(TT) 2455370.3055. $\text{Min}_{\text{II}}=17^{\text{m}}.72$.

3. Maxima:

HJD(TT)	\pm
2455341.3688	0.0002
2455347.4156	0.0005
2455358.3066	0.0003
2455361.3333	0.0006

4. Infrared colors J-H=0.507, H-K=0.088, J-K=0.595 (2MASS) are consistent with the dK spectral type (Bessell and Brett 1988) and BY: classification.

5. A close pair of two stars, USNO-A2.0 1275-10926016 and 2MASS 19121720+4047081. USNO-A2.0 1275-10926016 varies. Primary minima:

HJD(TT)	\pm
2455341.3266	0.0008
2455345.3188	0.0005
2455349.3110	0.0002

2455361.2873	0.0000
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Min_{II}=15^m.63.

6. O'Connell effect. Minima width and depth are variable. Primary minima:

HJD(TT)	±
2455292.5621	0.0002
2455318.4134	0.0007
2455326.4288	0.0007
2455341.3521	0.0010
2455345.357	0.002
2455349.363	0.001
2455373.394	0.001

Min_{II}=15^m.49.

7. Min_{II}=16^m.85.

8. Infrared colors J-H=0.606, H-K=0.155, J-K=0.761 (2MASS) are consistent with the dK spectral type (Bessell and Brett 1988) and BY classification.

9. Primary minimum: HJD(TT) 2455361.351 ± 0.001. Periods 2.2148 d or 2.8458 d are possible.

10. O'Connell effect. Primary minima:

HJD(TT)	±
2455341.3695	0.0003
2455345.3348	0.0010
2455360.3383	0.0010
2455362.3246	0.0010

Min_{II}=16^m.41.

11. Primary minima:

HJD(TT)	±
2455345.3285	0.0008
2455349.3761	0.0006

Min_{II}=15^m.42.

12. Infrared colors J-H=0.839, H-K=0.213, J-K=1.052 (2MASS) are consistent with the gM spectral type (Bessell and Brett 1988) and SR: classification.

13. Primary minima:

HJD(TT)	±
2455336.403	0.001

2455345.3211	0.0008
2455349.377	0.002
2455356.4029	0.0007
2455358.2944	0.0008
2455362.3448	0.0006

Min_{II}=16^m.99.

14. Primary minima:

HJD(TT)	±
2455306.5326	0.0004
2455336.3866	0.0003
2455347.393	0.002

Min_{II}=17^m.54.

15. Min_{II}=17^m.44.

16. Primary minima:

HJD(TT)	±
2455345.3864	0.0005
2455361.3029	0.0002

Min_{II}=17^m.49.

17. O'Connell effect. Min_{II}=17^m.57.

18. Min_{II}=20^m.04.

19. O'Connell effect. Primary minima:

HJD(TT)	±
2455297.5136	0.0005
2455306.5294	0.0003
2455358.3029	0.0003
2455360.339	0.001

Min_{II}=16^m.15.

20. A close pair of two stars, 2MASS 19140848+4020346 and 2MASS 19140816+4020348. The angular resolution of our telescope is insufficient for determine which of the two stars varies.

Min_{II}=17^m.83.

21. A close pair of two stars, USNO-A2.0 1275-10982091 and a fainter one (18^m.2R), USNO-B1.0 1301-0318277. Maximum: HJD(TT) 2455333.47 ± 0.05.

22. Infrared colors J-H=0.622, H-K=0.000, J-K=0.622 (2MASS) are consistent with the K spectral type (Bessell and Brett 1988) and BY: classification.

23. Twice shorter period 1.1634 d is possible. Primary minimum: HJD(TT)2455315.356±0.002. Min_{II}=15^m.81.

24. Primary minima:

HJD(TT)	±
2455345.344	0.001
2455347.4264	0.0008

Min_{II}=16^m.59.

25. Min_{II}=20^m.10.

26. O'Connell effect. Primary minima:

HJD(TT)	±
2455306.5251	0.0010
2455317.408	0.001

Min_{II}=16^m.44.

27. Primary minima:

HJD(TT)	±
2455317.413	0.001
2455336.356	0.003

Min_{II}=17^m.52.

28. Primary minimum: HJD(TT) 2455318.417±0.001. Min_{II}=15^m.16.

29. A close pair of two stars, USNO-A2.0 1275-11023602 and a faint star, not found in any catalogues. USNO-A2.0 1275-11023602 varies. Periods 0.29403 d or 0.22709 d (type RRC) are possible.

30. Min_{II}=15^m.80.

31. A close pair of two stars, USNO-A2.0 1275-11024863 and 2MASS 19153955+4042284. Presumably USNO-A2.0 1275-11024863 varies. Primary minima:

HJD(TT)	±
2455341.3868	0.0006
2455362.3150	0.0007
2455370.306	0.002

Min_{II}=16^m.62.

32. A close pair of two stars, USNO-A2.0 1275-11026206 and 2MASS 19154230+4049300. USNO-A2.0 1275-11026206 varies. Infrared colors of USNO-A2.0 1275-11026206 (J-H=0.164, H-K=0.003, J-K=0.167 (2MASS)) are consistent with the dF spectral type (Bessell and Brett 1988) and DSCT classification. 1-day alias period 0.055562 d is also possible. Maxima:

HJD(TT)	±
2455257.5602	0.0006

2455275.5580	0.0004
2455292.5115	0.0004
2455297.511	0.001
2455306.5123	0.0010
2455311.457	0.001
2455315.403	0.002
2455317.401	0.001
2455318.4023	0.0009
2455324.4567	0.0005
2455329.4613	0.0004
2455336.349	0.001
2455336.403	0.001
2455341.350	0.002
2455341.406	0.002
2455345.3502	0.0010
2455347.4048	0.0005
2455348.4031	0.0009
2455349.349	0.001
2455356.4050	0.0006
2455358.2953	0.0008
2455360.2940	0.0009
2455361.3515	0.0004
2455362.3500	0.0008
2455370.298	0.001

33. $\text{Min}_{\text{II}}=17^{\text{m}}.32$.

34. Infrared colors $J-H=0.503$, $H-K=0.089$, $J-K=0.592$ (2MASS) are consistent with the dK spectral type (Bessell and Brett 1988) and BY: classification.

35. O'Connell effect. Primary minima:

HJD(TT)	\pm
2455336.3503	0.0006
2455345.3748	0.0008
2455347.4241	0.0007
2455375.3254	0.0009

$\text{Min}_{\text{II}}=18^{\text{m}}.16.$

36. O'Connell effect. $\text{Min}_{\text{II}}=14^{\text{m}}.71.$

Remarks:

During observations of the field of the cataclysmic variable V585 Lyr, we discovered 36 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 648 images with 5-minute exposures were obtained on JD 2455257 - 2455387. 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 1275-10940607 = USNO-B1.0 1309-0324923 ($\alpha=19^{\text{h}}12^{\text{m}}48^{\text{s}}.37$, $\delta=+40^{\circ}58' 59''.9$ J2000, 2MASS); $R_1=14^{\text{m}}.49$, $R_2=14^{\text{m}}.15$ (USNO-B1.0). Unfiltered magnitudes were calibrated using the comparison star, assuming $R_{\text{comp}}=14^{\text{m}}.32$. The coordinates of the variable stars in the table were drawn from the 2MASS catalogue (Skrutskie et al. 2006) except for the stars USNO-A2.0 1275-10970011, USNO-A2.0 1275-10973990, USNO-A2.0 1275-10979017, USNO-A2.0 1275-11010668; 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 (www.peranso.com).

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