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New Variable Stars in Cygnus

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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 1200-16748430	21 00 10.14, +33 59 43.3	EW	16.20	16.67		0.407	2455014.5297	Min		Comm. 1	01_PC-R.png	01_chart.jpg	01_data.txt
2		USNO-A2.0 1200-16756385	21 00 18.57, +34 21 38.2	EW	17.30	17.84		0.31453	2455126.2540	Min		Comm. 2	02_PC-R.png	02_chart.jpg	02_data.txt
3		USNO-A2.0 1200-16762272	21 00 24.82, +34 09 42.8	EW	15.74	15.88		0.37669	2455015.4534	Min		Comm. 3	03_PC-R.png	03_chart.jpg	03_data.txt
4		USNO-A2.0 1200-16770622	21 00 33.71, +33 30 08.4	EW	15.34	15.80		0.2612	2455126.2224	Min		Comm. 4	04_PC-R.png	04_chart.jpg	04_data.txt
5		USNO-A2.0 1200-16776017	21 00 39.46, +33 33 30.9	EW	15.42	15.61		0.22961	2455074.2447	Min		Comm. 5	05_PC-R.png	05_chart.jpg	05_data.txt
6		USNO-A2.0 1200-16776665	21 00 40.18, +34 01 02.4	EW	16.67	17.29		0.37727	2455131.2217	Min		Comm. 6	06_PC-R.png	06_chart.jpg	06_data.txt
7		USNO-A2.0 1200-16776800	21 00 40.36, +33 56 49.3	EW	17.62	17.92		0.46586	2455071.3285	Min		Comm. 7	07_PC-R.png	07_chart.jpg	07_data.txt
8		USNO-A2.0 1200-16777635	21 00 41.26, +34 17 39.5	BY:	15.54	15.64		10.8	2455024.87	Max		Comm. 8	08_PC-R.png	08_chart.jpg	08_data.txt
9		USNO-A2.0 1200-16778371	21 00 42.05, +33 47 09.2	EW	17.94	18.71		0.26854	2455071.3199	Min		Comm. 9	09_PC-R.png	09_chart.jpg	09_data.txt
10		USNO-A2.0 1200-16781851	21 00 45.88, +33 38 01.5	EB	17.45	17.81		0.39237	2455073.3822	Min		Comm. 10	10_PC-R.png	10_chart.jpg	10_data.txt
11		USNO-A2.0 1200-16784735	21 00 48.95, +33 31 36.5	EA	17.76	18.85		0.7646	2455129.248	Min		Comm. 11	11_PC-R.png	11_chart.jpg	11_data.txt
12		USNO-A2.0 1200-16785571	21 00 49.87, +34 01 33.9	EW	17.83	18.42		0.39854	2455073.3142	Min		Comm. 12	12_PC-R.png	12_chart.jpg	12_data.txt
13		USNO-A2.0 1200-16789904	21 00 54.39, +34 11 18.9	EW	16.91	17.33		0.30944	2455038.3843	Min		Comm. 13	13_PC-R.png	13_chart.jpg	13_data.txt
14		USNO-A2.0 1200-16792267	21 00 56.92, +34 11 13.4	EW	17.74	18.10		0.34537	2455129.1997	Min		Comm. 14	14_PC-R.png	14_chart.jpg	14_data.txt
15		USNO-A2.0 1200-16795264	21 01 00.17, +34 15 57.8	DCEP:	15.66	16.12		8.1	2455018.4	Max		Comm. 15	15_PC-R.png	15_chart.jpg	15_data.txt
16		USNO-A2.0 1200-16801352	21 01 06.75, +34 23 57.3	EA	15.29	15.93		0.6916	2455038.3487	Min		Comm. 16	16_PC-R.png	16_chart.jpg	16_data.txt
17		USNO-A2.0 1200-16806671	21 01 12.62, +33 42 03.3	EB	17.67	18.71		0.43823	2455073.2641	Min		Comm. 17	17_PC-R.png	17_chart.jpg	17_data.txt
18		USNO-A2.0 1200-16813071	21 01 19.66, +33 54 11.8	BY:	15.92	16.08		0.42851	2455014.4640	Max		Comm. 18	18_PC-R.png	18_chart.jpg	18_data.txt
19		USNO-A2.0 1200-16813316	21 01 19.96, +33 38 28.4	EW	13.80	13.83		0.21568	2455132.2399	Min		Comm. 19	19_PC-R.png	19_chart.jpg	19_data.txt
20		USNO-A2.0 1200-16820520	21 01 27.93, +33 39 48.9	EW	15.24	15.65		0.3783	2455014.4698	Min		Comm. 20	20_PC-R.png	20_chart.jpg	20_data.txt
21		USNO-A2.0 1200-16820822	21 01 28.20, +33 53 54.2	EA	17.43	18.35		1.477:	2455025.3309	Min		Comm. 21	21_PC-R.png	21_chart.jpg	21_data.txt
22		USNO-A2.0 1200-16825717	21 01 33.51, +34 20 34.2	EA	16.57	16.78		1.1506	2455074.3629	Min		Comm. 22	22_PC-R.png	22_chart.jpg	22_data.txt
23		USNO-A2.0 1200-16828327	21 01 36.39, +34 22 33.4	EA	16.70	17.16		0.7857	2455024.3403	Min		Comm. 23	23_PC-R.png	23_chart.jpg	23_data.txt
24		USNO-A2.0 1200-16832698	21 01 40.99, +33 32 23.8	GDOR	14.62	14.69		0.6256	2455071.2996	Max		Comm. 24	24_PC-R.png	24_chart.jpg	24_data.txt

25		USNO-A2.0 1200-16832901	21 01 41.23, +33 49 41.5	EW	16.54	17.20		0.40473	2455125.2410	Min		Comm. 25	25_PC-R.png	25_chart.jpg	25_data.txt
26		USNO-A2.0 1200-16833650	21 01 42.09, +34 11 42.2	EW	17.31	17.94		0.38358	2455073.3429	Min		Comm. 26	26_PC-R.png	26_chart.jpg	26_data.txt
27		USNO-A2.0 1200-16833932	21 01 42.33, +34 12 35.8	EW	16.90	17.16		0.48064	2455074.365	Min		Comm. 27	27_PC-R.png	27_chart.jpg	27_data.txt
28		USNO-A2.0 1200-16842187	21 01 51.30, +34 00 02.7	EA	13.95	14.39		1.9879	2455038.3099	Min		Comm. 28	28_PC-R.png	28_chart.jpg	28_data.txt
29		USNO-A2.0 1200-16843637	21 01 52.90, +34 25 01.7	EW	12.99	13.45		0.3155	2455021.3798	Min		Comm. 29	29_PC-R.png	29_chart.jpg	29_data.txt
30		USNO-A2.0 1200-16847441	21 01 57.16, +34 00 32.0	EW	13.51	13.76		0.48712	2455025.3700	Min		Comm. 30	30_PC-R.png	30_chart.jpg	30_data.txt
31		USNO-A2.0 1200-16848839	21 01 58.75, +34 07 41.2	EW	17.43	17.96		0.32177	2455032.4164	Min		Comm. 31	31_PC-R.png	31_chart.jpg	31_data.txt
32		USNO-A2.0 1200-16850050	21 02 00.05, +34 01 13.5	EA	16.57	17.08		1.4117	2455013.3701	Min		Comm. 32	32_PC-R.png	32_chart.jpg	32_data.txt
33		USNO-A2.0 1200-16853871	21 02 04.23, +34 01 29.9	EW	16.13	16.47		0.32846	2455032.3408	Min		Comm. 33	33_PC-R.png	33_chart.jpg	33_data.txt
34		USNO-A2.0 1200-16858686	21 02 09.50, +34 12 24.9	EW	17.35	17.99		0.3305	2455014.3042	Min		Comm. 34	34_PC-R.png	34_chart.jpg	34_data.txt
35		USNO-A2.0 1200-16860633	21 02 11.63, +34 00 07.0	EA	14.71	15.16		2.0131	2455025.3854	Min		Comm. 35	35_PC-R.png	35_chart.jpg	35_data.txt
36		USNO-A2.0 1200-16864963	21 02 16.35, +34 12 21.2	RRAB	16.40	17.50		0.53681	2455072.5414	Max		Comm. 36	36_PC-R.png	36_chart.jpg	36_data.txt
37		USNO-A2.0 1200-16868204	21 02 19.87, +33 42 05.5	EW	14.85	15.13		0.4002	2455020.4176	Min		Comm. 37	37_PC-R.png	37_chart.jpg	37_data.txt
38		USNO-A2.0 1200-16869128	21 02 20.85, +34 16 59.8	EW	15.02	15.72		0.3090	2455038.3350	Min		Comm. 38	38_PC-R.png	38_chart.jpg	38_data.txt
39		USNO-A2.0 1200-16877697	21 02 30.36, +33 46 12.7	EW	16.45	16.91		0.28538	2455074.2637	Min		Comm. 39	39_PC-R.png	39_chart.jpg	39_data.txt
40		USNO-A2.0 1200-16886017	21 02 39.50, +34 19 31.7	EW	15.41	15.76		0.45070	2455073.2543	Min		Comm. 40	40_PC-R.png	40_chart.jpg	40_data.txt
41		USNO-A2.0 1200-16891189	21 02 45.30, +33 43 09.3	EW	16.48	16.97		0.3454	2455014.6026	Min		Comm. 41	41_PC-R.png	41_chart.jpg	41_data.txt
42		USNO-A2.0 1200-16901817	21 02 57.27, +33 41 58.8	EW	15.32	15.94		0.37450	2455129.2046	Min		Comm. 42	42_PC-R.png	42_chart.jpg	42_data.txt
43		USNO-A2.0 1200-16904655	21 03 00.37, +33 51 39.7	EB	14.93	15.62		0.57069	2455086.4149	Min		Comm. 43	43_PC-R.png	43_chart.jpg	43_data.txt
44		USNO-A2.0 1200-16904973	21 03 00.78, +33 55 43.2	EW	15.57	15.97		0.36224	2455074.2637	Min		Comm. 44	44_PC-R.png	44_chart.jpg	44_data.txt
45		USNO-A2.0 1200-16906327	21 03 02.30, +34 10 20.5	EW	16.49	16.90		0.37686	2455074.3697	Min		Comm. 45	45_PC-R.png	45_chart.jpg	45_data.txt
46		USNO-A2.0 1200-16917851	21 03 15.22, +34 16 34.5	EW	14.60	14.74		0.49179	2455086.9120	Min		Comm. 46	46_PC-R.png	46_chart.jpg	46_data.txt
47		USNO-A2.0 1200-16923006	21 03 21.01, +33 43 14.0	EA	15.91	16.07		2.817	2455086.4094	Min		Comm. 47	47_PC-R.png	47_chart.jpg	47_data.txt
48		USNO-A2.0 1200-16924022	21 03 22.07, +33 47 27.9	EB	15.13	15.38		0.4417	2455073.2701	Min		Comm. 48	48_PC-R.png	48_chart.jpg	48_data.txt
49		USNO-A2.0 1200-16930450	21 03 29.41, +34 14 23.3	EB	16.04	16.49		0.48200	2455128.2162	Min		Comm. 49	49_PC-R.png	49_chart.jpg	49_data.txt
50		USNO-A2.0 1200-16942303	21 03 42.53, +33 53 25.2	EA	15.09	15.35		4.844	2455018.9164	Min		Comm. 50	50_PC-R.png	50_chart.jpg	50_data.txt
51		USNO-A2.0 1200-16945819	21 03 46.45, +33 59 47.3	EW	16.27	16.49		0.27642	2455072.5178	Min		Comm. 51	51_PC-R.png	51_chart.jpg	51_data.txt
52		USNO-A2.0 1200-16956374	21 03 58.07, +33 47 43.7	BY:	14.04	14.10		4.7	2455072.2	Max		Comm. 52	52_PC-R.png	52_chart.jpg	52_data.txt
53		USNO-A2.0 1200-16961530	21 04 03.89, +33 33 06.8	EW	14.68	14.94		0.4522	2455074.4680	Min		Comm. 53	53_PC-R.png	53_chart.jpg	53_data.txt
54		USNO-A2.0 1200-16978324	21 04 22.81, +33 32 21.1	EA	14.50	14.64		1.79	2455086.4021	Min		Comm. 54	54_PC-R.png	54_chart.jpg	54_data.txt
55		USNO-A2.0 1200-16984216	21 04 29.29, +34 13 43.8	EW	15.42	15.56		0.3548	2455129.2235	Min		Comm. 55	55_PC-R.png	55_chart.jpg	55_data.txt

Comments:

1. $Min_{II} = 16^{m}.61$.

2. Primary minima:

HJD(TT)	+/-

2455024.3397	0.0004
2455034.413	0.003
2455126.2540	0.0005
2455132.229	0.001

$Min_{II} = 17^{m}.84$.

3. Primary minima:

HJD(TT)	+/-
2455015.4534	0.0004
2455014.327	0.001
2455129.2054	0.0006

$Min_{II} = 15^{m}.87$.

4. Primary minima:

HJD(TT)	+/-
2455074.5136	0.0007
2455126.2224	0.0004
2455132.2282	0.0007

$Min_{II} = 15^{m}.75$.

5. Primary minima:

HJD(TT)	+/-
2455025.3387	0.0006
2455073.3304	0.0004
2455074.2447	0.0004
2455086.416	0.001
2455128.2012	0.0005

$Min_{II} = 15^{m}.58$.

6. Primary minima:

HJD(TT)	+/-
2455032.3751	0.0005
2455074.2505	0.0005
2455131.2217	0.0005

$Min_{II} = 17^{m}.29$.

7. Primary minima:

HJD(TT)	+/-
2455015.4356	0.0009
2455071.3285	0.0008

Min_{II} = 17^{m}.92.

8. Infrared colors J-H = 0.774, H-K = 0.105, J-K = 0.879 (2MASS) are consistent with the gK spectral type (Bessell and Brett 1988) and BY: classification.

9. Primary minima:

HJD(TT)	+/-
2455032.3844	0.0007
2455038.2946	0.0007
2455071.3199	0.0002
2455074.2772	0.0007
2455131.2099	0.0005

Min_{II} = 18^{m}.61.

10. A very close pair of two faint stars, not found in any catalogues separately. The angular resolution of our telescope is insufficient to determine which of the two stars varies. Primary minimum: HJD(TT) 2455073.3822 +/- 0.0007. Min_{II}= 17^{m}.63.

11. Primary minimum: HJD(TT) 2455129.248 +/- 0.001. Min_{II} = 18^{m}.16.

12. Primary minima:

HJD(TT)	+/-
2455071.325	0.001
2455072.5217	0.0009
2455073.3142	0.0006

Min_{II} = 18^{m}.33.

13. Primary minima:

HJD(TT)	+/-
2455038.3843	0.0003
2455073.3508	0.0007
2455074.2798	0.0006
2455126.2658	0.0006
2455131.2156	0.0006

Min_{II} = 17^{m}.28.

14. Primary minima:

HJD(TT)	+/-
2455038.3665	0.0009
2455129.1997	0.0008

Min_{II} = 18^{m}.08.

15. Infrared colors J-H = 0.700, H-K = 0.172, J-K = 0.872 (2MASS) are consistent with the gK spectral type (Bessell and Brett 1988) and DCEP: classification.

16. Primary minimum: HJD(TT) 2455038.3487 +/- 0.0003. Min_{II} = 15^{m}.88.

17. Primary minima:

HJD(TT)	+/-
2455015.4176	0.0008
2455073.2641	0.0007
2455086.4040	0.0007

$Min_{II} = 18^{m}.13$.

18. Infrared colors J-H = 0.552, H-K = 0.119, J-K = 0.671 (2MASS) are consistent with the dK spectral type (Bessell and Brett 1988) and BY: classification.

19. Primary minima:

HJD(TT)	+/-
2455072.2977	0.0005
2455073.3768	0.0004
2455129.2070	0.0004
2455132.2399	0.0009

$Min_{II} = 13^{m}.825$.

20. $Min_{II} = 15^{m}.60$.

21. Primary minimum: HJD(TT) 2455025.3309 +/- 0.0004.

22. Primary minimum: HJD(TT) 2455074.3629 +/- 0.0004. $Min_{II} = 16^{m}.75$.

23. Primary minimum: HJD(TT) 2455024.3403 +/- 0.0009.

24. Infrared colors J-H = 0.343, H-K = -0.081, J-K = 0.262 (2MASS) are consistent with F spectral type and GDOR classification.

25. A close pair of two stars: USNO-B1.0 1238-0477142 and USNO-B1.0 1238-0477136. We observed bright component USNO-B1.0 1238-0477142 = USNO-A2.0 1200-16832901. Primary minima:

HJD(TT)	+/-
2455020.414	0.001
2455086.3851	0.0010
2455125.2410	0.0006

$Min_{II} = 17^{m}.10$. O'Connell effect.

26. Primary minima:

HJD(TT)	+/-
2455015.4239	0.0007
2455020.4137	0.0008
2455025.402	0.001
2455073.3429	0.0005
2455128.1979	0.0006

Min $_{II}$ = 17^{m}.89.

27. Primary minimum: HJD(TT) 2455074.365 +/- 0.001. Min$_{II}$ = 17^{m}.16.

28. Primary minima:

HJD(TT)	+/-
2455012.4636	0.0004
2455024.3963	0.0008
2455038.3099	0.0003

Min$_{II}$ = 14^{m}.02. O'Connell effect.

29. GSC 2709-01850. Primary minimum: HJD(TT) 2455021.3798 +/- 0.0002. Min$_{II}$ = 13^{m}.39.

30. Primary minima:

HJD(TT)	+/-
2455024.3947	0.0003
2455025.3700	0.0001

Min$_{II}$ = 13^{m}.75.

31. Primary minima:

HJD(TT)	+/-
2455024.366	0.001
2455025.3348	0.0008
2455032.4164	0.0010
2455071.353	0.001
2455072.3162	0.0007
2455073.2865	0.0007
2455074.247	0.001
2455086.4675	0.0007
2455132.1671	0.0009

Min $_{II}$ = 17^{m}.79.

32. Min$_{II}$ = 16^{m}.64.

33. Primary minima:

HJD(TT)	+/-
2455032.3408	0.0004
2455032.3408	0.0003
2455074.3848	0.0007
2455129.2391	0.0006
2455131.2078	0.0006
2455132.1951	0.0005

$Min_{II} = 16^{m}.43$.

34. Primary minimum: HJD(TT) 2455014.3042 +/- 0.0008. $Min_{II} = 17^{m}.87$.

35. Primary minima:

HJD(TT)	+/-
2455021.3577	0.0009
2455025.3854	0.0003

$Min_{II} = 15^{m}.10$.

36. Three maxima:

HJD(TT)	+/-
2455072.5414	0.0002
2455086.4990	0.0007
2455126.2146	0.0009

37. Primary minimum: HJD(TT) 2455020.4176 +/- 0.0007. $Min_{II} = 15^{m}.07$.

38. Primary minima:

HJD(TT)	+/-
2455024.4281	0.0005
2455025.3524	0.0004
2455038.3350	0.0004

$Min_{II} = 15^{m}.62$.

39. Primary minima:

HJD(TT)	+/-
2455024.3222	0.0004
2455032.3119	0.0003
2455038.3063	0.0005
2455072.2661	0.0005
2455074.2637	0.0002
2455100.2326	0.0006
2455128.1980	0.0005
2455132.1937	0.0009

$Min_{II} = 16^{m}.86$.

40. Primary minimum: HJD(TT) 2455073.2543 +/- 0.0007. $Min_{II} = 15^{m}.71$.

41. $Min_{II} = 16^{m}.93$.

42. Primary minima:

HJD(TT)	+/-
2455024.3417	0.0003
2455024.3398	0.0007
2455072.2802	0.0002
2455074.5273	0.0004
2455086.5090	0.0006
2455129.2046	0.0002
2455132.2024	0.0006

$Min_{II} = 15^{m}.92$.

43. Primary minima:

HJD(TT)	+/-
2455021.3582	0.0005
2455025.3504	0.0004
2455073.2906	0.0002
2455086.4149	0.0001
2455125.2215	0.0003
2455129.2157	0.0003

$Min_{II} = 15^{m}.18$.

44. Primary minima:

HJD(TT)	+/-
2455021.378	0.001
2455025.3616	0.0007
2455038.399	0.001
2455073.5375	0.0007
2455074.2637	0.0003
2455076.436	0.001
2455132.2233	0.0004

$Min_{II} = 15^{m}.90$.

45. Primary minima:

HJD(TT)	+/-
2455025.374	0.001
2455074.3697	0.0004
2455086.4310	0.0005

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

46. $Min_{II} = 14^{m}.72$.

47. A close pair of two faint stars, not found in any catalogues separately. The brighter component varies. Period $1.^d4088$ is also possible. Primary minimum: HJD(TT) 2455086.4094 +/- 0.0009.

48. A close pair of two stars with equal brightness, 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)	+/-
2455073.2701	0.0004
2455100.2073	0.0008

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

49. Primary minima:

HJD(TT)	+/-
2455015.4317	0.0004
2455071.3406	0.0004
2455072.3093	0.0006
2455073.2708	0.0004
2455100.2586	0.0005
2455128.2162	0.0003
2455129.1805	0.0004

$Min_{II} = 16^m.26$. O'Connell effect.

50. $Min_{II} = 15^m.21$.

51. Primary minima:

HJD(TT)	+/-
2455072.5178	0.0009
2455073.3495	0.0009
2455074.4555	0.0006
2455129.188	0.001
2455132.2273	0.0007

$Min_{II} = 16^m.43$. O'Connell effect.

52. Infrared colors J-H = 0.372, H-K = 0.079, J-K = 0.451 (2MASS) are consistent with the dG spectral type (Bessell and Brett 1988) and BY: classification.

53. Primary minimum: HJD(TT) 2455074.4680 +/- 0.0009. $Min_{II} = 14^m.94$.

54. Primary minimum: HJD(TT) 2455086.4021 +/- 0.0009.

55. Primary minimum: HJD(TT) 2455129.2235 +/- 0.0007. $Min_{II} = 15^m.54$.

Remarks:

During observations of a field in Cygnus, we discovered 55 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 790 images with 5-minute exposures were obtained on JD 2455012 - 2455132. 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 1200-16826852 = USNO-B1.0 1238-0476997 (RA=21:01:34.73, Dec=+33:49:47.9, J2000, 2MASS), $R_1 = 13.^m67$, $R_2 = 13.^m66$ (USNO-B1.0). Unfiltered magnitudes were

calibrated using the comparison star, assuming $R_{comp} = 13.^{m}665$. The coordinates of the variable stars in the table were drawn from the 2MASS catalogue (Skrutskie et al. 2006) except for a few stars missing in the 2MASS catalogue, 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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References:

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