

New Variable Stars in Cepheus: Area of $2^{\circ}.3 \times 2^{\circ}.3$, Centered at $\alpha=22^{\text{h}}00^{\text{m}}$, $\delta=60^{\circ}00'$ (2000.0). Part III

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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-B1.0 1506-0313459	21 50 43.19, +60 37 22.3	SR	14.9	15.4		102	2456560.189	max		Comm. 1	lc39523.png	39523.png	out39523.txt
2		USNO-A2.0 1500-08466252	21 50 45.18, +60 47 39.5	EA	15.8	16.4		1.14635	2456624.511	min		Comm. 2	lc36278.png	36278.png	out36278.txt
3		USNO-A2.0 1500-08481409	21 51 33.65, +60 29 44.2	EW	15.4	16.2		0.31958	2456205.153	min		Comm. 3	lc41600.png	41600.png	out41600.txt
4		USNO-A2.0 1500-08484277	21 51 42.70, +61 04 29.2	HADS:	14.9	15.3		0.202219	2456529.237	max			lc75422.png	75422.png	out75422.txt
5		USNO-A2.0 1500-08500194	21 52 33.47, +60 48 03.4	EW	15.5	15.9		0.28848	2456624.257	min		Comm. 5	lc36471.png	36471.png	out36471.txt
6		USNO-A2.0 1500-08504197	21 52 45.40, +60 10 12.3	EW	15.8	16.4		0.42372	2456529.218	min		Comm. 6	lc34013.png	34013.png	out34013.txt
7		USNO-A2.0 1500-08506374	21 52 51.99, +60 31 22.1	EA	15.17	15.40		0.76162	2456567.028	min		Comm. 7	lc41373.png	41373.png	out41373.txt
8		USNO-A2.0 1500-08506519	21 52 52.44, +60 11 40.4	EW	14.55	15.12		0.38528	2456624.071	min		Comm. 8	lc33294.png	33294.png	out33294.txt
9		USNO-A2.0 1500-08517859	21 53 26.59, +60 14 33.3	EW	15.00	15.35		0.32509	2456567.144	min		Comm. 9	lc32487.png	32487.png	out32487.txt
10		USNO-A2.0 1500-08523776	21 53 44.66, +60 30 33.6	EW	14.6	14.7		0.26386	2456560.134	min		Comm. 10	lc41569.png	41569.png	out41569.txt
11		USNO-A2.0 1500-08537437	21 54 26.08, +60 13 20.3	SR	13.7	14.15		112:	2456539	max		Comm. 11	lc33141.png	33141.png	out33141.txt
12		USNO-A2.0 1500-08551829	21 55 09.86, +60 43 51.8	SR	13.65	13.75		37.4	2456560.281	max		Comm. 12	lc38246.png	38246.png	out38246.txt
13		USNO-A2.0 1500-08554865	21 55 19.03, +60 10 46.4	LB	12.40	12.62				other		Comm. 13	lc34235.png	34235.png	out34235.txt
14		USNO-A2.0 1500-08566615	21 55 53.90, +60 26 41.9	EW	16.0	16.8		0.33179	2456205.142	min		Comm. 14	lc42595.png	42595.png	out42595.txt
15		USNO-A2.0 1500-08585233	21 56 50.52, +60 52 14.4	EA	15.60	16.45		0.77224	2456624.188	min		Comm. 15	lc35889.png	35889.png	out35889.txt
16		USNO-B1.0 1505-0319747	21 56 55.26, +60 34 14.8	SR:	13.65	13.8		61.4	2456560	max		Comm. 16	lc41116.png	41116.png	out41116.txt
17		USNO-A2.0 1500-08598056	21 57 28.94, +60 30 06.3	EA	12.69	12.77		3.1079	2456529.919	min		Comm. 17	lc42113.png	42113.png	out42113.txt
18		USNO-A2.0 1500-08599961	21 57 34.69, +60 54 10.2	EW	15.00	15.25		0.378389	2456567.285	min		Comm. 18	lc35588.png	35588.png	out35588.txt
19		USNO-A2.0 1500-08606041	21 57 53.28, +60 17 07.3	SR	12.75	13.0		95.1	2456554	max		Comm. 19	lc32327.png	32327.png	out32327.txt
20		USNO-A2.0 1500-08632491	21 59 12.26, +60 46 35.8	EA	14.36	14.74		1.7708:	2456545.614	min		Comm. 20	lc37865.png	37865.png	out37865.txt

21	USNO-A2.0 1500-08634712	21 59 19.15, +60 26 30.1	EW	13.34	13.58		0.440056	2456560.120	min		Comm. 21	lc43187.png	43187.png	out43187.txt
22	USNO-A2.0 1500-08646368	21 59 54.58, +60 49 01.5	SR:	14.15	14.25		52.8	2476222	max		Comm. 22	lc37300.png	37300.png	out37300.txt
23	USNO-A2.0 1500-08655368	22 00 21.17, +60 33 42.1	RRC:	13.75	13.90		0.29480	2456580.101	max		Comm. 23	lc41508.png	41508.png	out41508.txt
24	USNO-A2.0 1500-08656485	22 00 24.31, +60 12 51.9	RR:	12.96	13.02		0.58960	2456545.109	max			lc34126.png	34126.png	out34126.txt
25	USNO-A2.0 1500-08659415	22 00 32.60, +60 37 23.6	LB	13.35	13.6				other		Comm. 25	lc40624.png	40624.png	out40624.txt
26	USNO-A2.0 1500-08673720	22 01 13.80, +60 31 21.4	LB	12.32	12.42				other		Comm. 26	lc42189.png	42189.png	out42189.txt
27	USNO-A2.0 1500-08678703	22 01 27.73, +60 22 26.8	EW	12.61	12.78		0.64925	2456560.037	min		Comm. 27	lc44279.png	44279.png	out44279.txt
28	USNO-A2.0 1500-08684725	22 01 44.63, +60 21 40.6	LB	12.45	12.75				other		Comm. 28	lc31094.png	31094.png	out31094.txt
29	USNO-A2.0 1500-08689801	22 01 58.45, +60 50 08.4	SR	12.75	12.85		59.6	2456203	max		Comm. 29	lc37097.png	37097.png	out37097.txt
30	USNO-A2.0 1500-08702048	22 02 32.16, +60 41 12.0	BY	15.0	15.2		2.2619	2456560.521	max			lc39548.png	39548.png	out39548.txt
31	USNO-A2.0 1500-08702550	22 02 33.50, +60 31 33.1	SR	15.0	15.7		80.6	2456560	max		Comm. 31	lc42200.png	42200.png	out42200.txt
32	USNO-A2.0 1500-08704006	22 02 37.41, +60 11 44.3	EA	12.81	12.88		1.61896	2456182.558	min		Comm. 32	lc34804.png	34804.png	out34804.txt
33	USNO-B1.0 1508-0317946	22 03 18.47, +60 48 06.4	LB	12.63	12.80				other		Comm. 33	lc37676.png	37676.png	out37676.txt
34	USNO-A2.0 1500-08725291	22 03 35.38, +60 44 51.4	EA	14.32	14.48		3.012	2456528.261	min		Comm. 34	lc38600.png	38600.png	out38600.txt
35	USNO-A2.0 1500-08739544	22 04 16.37, +60 34 54.1	DSCT	14.4	14.5		0.171729	2456197.108	max			lc41591.png	41591.png	out41591.txt
36	USNO-A2.0 1500-08757980	22 05 10.16, +61 10 18.2	LB	13.3	13.6				other		Comm. 36	lc73804.png	73804.png	out73804.txt
37	USNO-A2.0 1500-08768036	22 05 38.65, +60 43 34.3	EW	15.7	16.1		0.75043	2456553.904	min		Comm. 37	lc39213.png	39213.png	out39213.txt
38	USNO-A2.0 1500-08773290	22 05 53.33, +60 14 35.7	BCEP:	13.90	13.96		0.39941	2456205.283	max			lc33983.png	33983.png	out33983.txt
39	USNO-A2.0 1500-08782168	22 06 18.88, +60 50 51.5	EB	15.2	15.7		1.11979	2456218.958	min		Comm. 39	lc37133.png	37133.png	out37133.txt
40	USNO-A2.0 1500-08789594	22 06 40.69, +60 14 14.8	LB	12.6	12.8				other		Comm. 40	lc34199.png	34199.png	out34199.txt
41	USNO-B1.0 1504-0330073	22 06 42.08, +60 24 59.4	EA	12.73	12.90		3.537::	2456227.208	min		Comm. 41	lc30708.png	30708.png	out30708.txt
42	USNO-A2.0 1500-08799669	22 07 10.64, +60 45 21.0	EA	15.55	16.0		1.12795	2456227.124	min		Comm. 42	lc33551.png	33551.png	out33551.txt
43	USNO-A2.0 1500-08813506	22 07 51.68, +60 29 10.5	EW	12.84	13.04		0.697580	2456529.202	min		Comm. 43	lc30127.png	30127.png	out30127.txt
44	USNO-A2.0 1500-08826537	22 08 30.71, +60 56 12.0	BY:	14.9	15.1		2.0849	2456201.313	max			lc35250.png	35250.png	out35250.txt
45	USNO-A2.0 1500-08832105	22 08 48.40, +60 57 03.1	EW	12.91	13.30		0.2615125	2456197.316	min		Comm. 45	lc35138.png	35138.png	out35138.txt
46	USNO-A2.0 1500-08837677	22 09 06.23, +60 46 27.7	HADS	13.07	13.25		0.1623231	2456528.240	max			lc58787.png	58787.png	out58787.txt

Comments:

1. J = 10^m.14, H = 8^m.909, K = 8^m.442 (2MASS).

2. MinII = 16^m.2.

3. MinII = 16^m.04.

5. MinII = 15^m.8.

6. MinII = 16^m.4.
7. MinII = 15^m.23.
8. MinII = 15^m.02.
9. MinII = 15^m.35.
10. MinII = 14^m.67.
11. J = 10^m.083, H = 8^m.953, K = 8^m.559 (2MASS).
12. J = 9^m.093, H = 7^m.822, K = 7^m.316 (2MASS).
13. J = 8^m.062, H = 6^m.983, K = 6^m.543 (2MASS).
The stars in the NSVS database: [NSVS ID 3376613](#) and [NSVS ID 3422774](#). The NSVS data confirm the star's type.
14. MinII = 16^m.7.
15. MinII = 15^m.71.
16. J = 9^m.423, H = 8^m.079, K = 7^m.578 (2MASS).
17. MinII = 12^m.76:.
18. MinII = 15^m.25.
19. J = 7^m.618, H = 6^m.42, K = 5^m.886 (2MASS).
20. Our observations covered one minimum only, therefore period is defined approximately.
21. MinII = 13^m.53.
22. J = 10^m.202, H = 9^m.04, K = 8^m.604 (2MASS).
23. The star is possibly multiperiodic.
25. J = 8^m.323, H = 7^m.174, K = 6^m.643 (2MASS).
26. J = 7^m.625, H = 6^m.537, K = 6^m.122 (2MASS).
The star in the NSVS database: [NSVS ID 3381168](#). The NSVS data confirm the star's type.
27. MinII = 12^m.77.
28. J = 7^m.915, H = 6^m.722, K = 6^m.188 (2MASS).
The stars in the NSVS database: [NSVS ID 3381433](#) and [NSVS ID 3427460](#). The NSVS data confirm the star's type.
29. J = 8^m.966, H = 7^m.933, K = 7^m.54 (2MASS).

31. J = 11^m.279, H = 10^m.076, K = 9^m.61 (2MASS).

32. MinII = 12^m.85. D = 0.09 P.

33. J = 8^m.242, H = 7^m.097, K = 6^m.712 (2MASS).

34. The period of 5^d.021 is possible.

36. J = 8^m.567, H = 7^m.315, K = 6^m.855 (2MASS).

The star in the NSVS database: [NSVS ID 3384383](#). The NSVS data confirm the star's type.

37. MinII = 16^m.1.

39. MinII = 15^m.35.

40. J = 7^m.846, H = 6^m.719, K = 6^m.293 (2MASS).

The stars in the NSVS database: [NSVS ID 3430905](#) and [NSVS ID 3385059](#). The NSVS data confirm the star's type.

41. Periods of 1^d.768, 6^d.683 and 12^d.03 are possible as well.

42. MinII = 15^m.65. D = 0.16 P.

43. MinII = 13^m.00. O'Connell effect.

45. MinII = 13^m.29.

Remarks:

The final - third - part of our discoveries of new variables in Cepheus on area of 2°.3×2°.3, centered at $\alpha=22^{\text{h}}00^{\text{m}}$, $\delta=60^{\circ}00'$ (2000.0), includes 46 stars. Our observations were performed in the observatory of the Reshetnev Siberian State University of Science and Technologies with a Hamilton telescope (D = 400 mm, F = 915 mm) equipped with an FLI ML9000 CCD chip (3056×3056 pixels, pixel size 12 μm). Unfiltered CCD observations cover two time intervals from September to October 2012 and from August to November 2013. Exposure times were 30 seconds for all frames. The size of the field is 2°.3×2°.3. The magnitudes were referred to red magnitudes of comparison stars from the USNO-A2.0 and USNO-B1.0 catalogs (Monet et al. 1998 and Monet et al. 2003). We used [VaST](#) (Sokolovsky & Lebedev 2018) software to search for new variable stars. To find periods, we applied WinEfk software provided by Dr. V.P. Goranskij. Observations for several stars can also be found in the ROTSE-I/NSVS survey (Woźniak et al. 2004).

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