

New Variable Stars in Lacerta: Area of $2^{\circ}.3 \times 2^{\circ}.3$, Center $\alpha=22^{\text{h}}50^{\text{m}} \delta=54^{\circ}00'$ (2000.0). Part II

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#	Name	Other	Coord (J2000)	Type	Max	Min	System	Period	Epoch (JD)	type	Sp	Comment	L.Curve	Find.Chart	Data
1		2MASS 22484859+5318405	22 48 48.599 +53 18 40.59	EW	15.86	16.26		0.50644	2456928.181	min		Comm. 1	lc12353.png	ch12353.png	out12353.dat
2		2MASS 22485138+5501209	22 48 51.381 +55 01 20.96	DSCT	13.39	13.43		0.0929717	2456929.171	max		Comm. 2	lc34651.png	ch34651.png	out34651.dat
3		2MASS 22485457+5405219	22 48 54.570 +54 05 21.97	SR:	14.33	14.44		27.7:	2456926.3	max		Comm. 3	lc31653.png	ch31653.png	out31653.dat
4	FR Lac	2MASS 22485788+5412354	22 48 57.884 +54 12 35.46	EA	14.58	15.51		0.831921	2456927.263	min			lc40513.png	ch40513.png	out40513.dat
5		2MASS 22485911+5421379	22 48 59.120 +54 21 37.99	EA	15.03	15.35		2.37077:	2456934.259	min			lc55093.png	ch55093.png	out55093.dat
6		2MASS 22490253+5315062	22 49 02.536 +53 15 06.21	EA	16.04	16.77		2.3795:	2456934.145	min			lc10853.png	ch10853.png	out10853.dat
7		2MASS 22490279+5345336	22 49 02.797 +53 45 33.61	EW	15	15.3		0.40529	2456928.087	min		Comm. 7	lc23315.png	ch23315.png	out23315.dat
8		2MASS 22490710+5330556	22 49 07.103 +53 30 55.66	EB	16.1	16.49		2.2387:	2456893.309	min			lc17416.png	ch17416.png	out17416.dat
9		2MASS 22490859+5325355	22 49 08.600 +53 25 35.54	EW	15.08	15.28		0.63468	2456892.253	min		Comm. 9	lc15069.png	ch15069.png	out15069.dat
10		2MASS 22490968+5356408	22 49 09.681 +53 56 40.86	EW	15.55	15.78		0.37778	2456929.136	min			lc28001.png	ch28001.png	out28001.dat
11		2MASS 22491471+5328085	22 49 14.715 +53 28 08.57	LB	12.87	13.05				other		Comm. 11	lc15391.png	ch15391.png	out15391.dat
12		2MASS 22491672+5442496	22 49 16.730 +54 42 49.68	LB	13.77	13.34				other		Comm. 12	lc46726.png	ch46726.png	out46726.dat
13		2MASS 22492261+5308355	22 49 22.610 +53 08 35.52	DSCT	15.69	15.83		0.15836	2456892.295	max		Comm. 13	lc08104.png	ch08104.png	out08104.dat
14		2MASS 22492581+5445020	22 49 25.814 +54 45 02.07	LB	14.42	14.54				other		Comm. 14	lc45569.png	ch45569.png	out45569.dat
15		2MASS 22494092+5419566	22 49 40.921 +54 19 56.66	LB	13.13	13.56				other		Comm. 15	lc55954.png	ch55954.png	out55954.dat
16		2MASS 22494380+5421295	22 49 43.805 +54 21 29.55	EA	15.14	15.6		0.87521	2456894.348	min			lc55167.png	ch55167.png	out55167.dat
17		2MASS 22500123+5447406	22 50 01.232 +54 47 40.65	LB	12.56	12.74				other		Comm. 17	lc44797.png	ch44797.png	out44797.dat
18		2MASS 22500557+5424273	22 50 05.571 +54 24 27.37	EW	16.42	17.24		0.97045	2456917.192	min			lc54221.png	ch54221.png	out54221.dat
19		2MASS 22501251+5415591	22 50 12.511 +54 15 59.18	L	14.32	14.69				other		Comm. 19	lc39266.png	ch39266.png	out39266.dat
20		2MASS 22501628+5501311	22 50 16.281 +55 01 31.14	BY	13.05	13.09		0.93198	2456928.198	max			lc34827.png	ch34827.png	out34827.dat
21		2MASS 22503120+5351341	22 50 31.209 +53 51 34.14	EA	13.7	13.81		1.8013:	2456894.289	min			lc25506.png	ch25506.png	out25506.dat
22		2MASS 22503213+5451020	22 50 32.140 +54 51 02.07	EA	14.05	14.52		4.60365:	2456928.041	min			lc43517.png	ch43517.png	out43517.dat
23		2MASS 22503320+5325490	22 50 33.201 +53 25 49.07	EW	15.03	15.42		0.82147	2456928.277	min		Comm. 23	lc14791.png	ch14791.png	out14791.dat
24		2MASS 22505128+5407477	22 50 51.282 +54 07 47.76	EA	13.75	13.93		1.0651	2456928.127	min			lc31633.png	ch31633.png	out31633.dat
25		2MASS 22510239+5400081	22 51 02.396 +54 00 08.19	EA	14.78	15.11		1.7491	2456928.332	min		Comm. 25	lc29067.png	ch29067.png	out29067.dat
26		2MASS 22510683+5326059	22 51 06.832 +53 26 05.94	SR:	12.65	12.74		43.9	2456933.2	max		Comm. 26	lc14746.png	ch14746.png	out14746.dat
27		2MASS 22511398+5426270	22 51 13.983 +54 26 27.07	EA	13.9	<14.44		2.0753:	2456927.129	min			lc53384.png	ch53384.png	out53384.dat
28		2MASS 22511431+5335287	22 51 14.318 +53 35 28.77	LB	14.17	16.29				other		Comm. 28	lc18645.png	ch18645.png	out18645.dat
29		2MASS 22511552+5455183	22 51 15.528 +54 55 18.39	LB	13.76	13.85				other		Comm. 29	lc37609.png	ch37609.png	out37609.dat
30		2MASS 22511969+5304303	22 51 19.696 +53 04 30.35	LB	11.93	12.14				other		Comm. 30	lc05840.png	ch05840.png	out05840.dat
31		2MASS 22513364+5456207	22 51 33.642 +54 56 20.74	EW	13.38	13.66		0.84019	2456928.335	min		Comm. 31	lc37254.png	ch37254.png	out37254.dat
32		2MASS 22514191+5405520	22 51 41.913 +54 05 52.08	LB	13.03	13.19				other		Comm. 32	lc31096.png	ch31096.png	out31096.dat
33		2MASS 22514326+5328205	22 51 43.269 +53 28 20.53	EA	15.81	16.9		0.74386	2456927.222	min		Comm. 33	lc15790.png	ch15790.png	out15790.dat
34		2MASS 22514494+5505441	22 51 44.949 +55 05 44.11	EA	15.08	<15.6		0.83307	2456927.717	min			lc33418.png	ch33418.png	out33418.dat
35		2MASS 22514555+5455417	22 51 45.558 +54 55 41.73	LB	13.39	13.59				other		Comm. 35	lc37536.png	ch37536.png	out37536.dat
36		2MASS 22515655+5303209	22 51 56.554 +53 03 20.95	DSCT	13.12	13.17		0.085427	2456928.241	max		Comm. 36	lc05358.png	ch05358.png	out05358.dat
37		2MASS 22515812+5426497	22 51 58.128 +54 26 49.77	DSCT	13.141	13.201		0.1908176	2456927.228	max		Comm. 37	lc53610.png	ch53610.png	out53610.dat
38		2MASS 22515854+5318505	22 51 58.540 +53 18 50.55	EA	14.85	15.03		0.727191	2456928.199	min			lc11656.png	ch11656.png	out11656.dat
39		2MASS 22522038+5335505	22 52 20.386 +53 35 50.59	EW	16.04	16.36		0.32626	2456928.272	min			lc18805.png	ch18805.png	out18805.dat
40		2MASS 22523182+5253496	22 52 31.824 +52 53 49.68	EA	15.24	15.55		1.4004	2456917.141	min			lc01612.png	ch01612.png	out01612.dat
41		2MASS 22523236+5329318	22 52 32.361 +53 29 31.85	EW	12.92	12.94		0.35313	2456894.207	min			lc15889.png	ch15889.png	out15889.dat
42		2MASS 22523396+5427303	22 52 33.964 +54 27 30.33	EA	13.82	13.96		1.22815	2456892.163	min		Comm. 42	lc53207.png	ch53207.png	out53207.dat
43		2MASS 22524069+5326228	22 52 40.690 +53 26 22.88	EW	16.3	16.71		0.26247	2456928.1	min			lc14721.png	ch14721.png	out14721.dat
44		2MASS 22524379+5355365	22 52 43.793 +53 55 36.51	EA	13.7	13.83		1.29230:	2456927.263	min			lc26282.png	ch26282.png	out26282.dat
45		2MASS 22524756+5431242	22 52 47.562 +54 31 24.21	RRAB:	14.67	14.76		0.77342	2456927.222	max			lc51885.png	ch51885.png	out51885.dat
46		2MASS 22530286+5453525	22 53 02.868 +54 53 52.52	LB	12.25	12.37				other		Comm. 46	lc42777.png	ch42777.png	out42777.dat
47		2MASS 22530429+5445300	22 53 04.299 +54 45 30.05	EA	15.09	15.33		1.03047	2456917.705	min			lc46299.png	ch46299.png	out46299.dat
48		2MASS 22530709+5435346	22 53 07.098 +54 35 34.66	LB	14.18	14.35				other		Comm. 48	lc50206.png	ch50206.png	out50206.dat
49		2MASS 22532119+5407369	22 53 21.194 +54 07 36.99	EW	15.58	15.85		0.30759	2456928.171	min			lc31794.png	ch31794.png	out31794.dat

Comments:

1. $\text{Min}_{\text{II}} = 16^{\text{m}}.21$.
2. Possible DSCT type with $P = 0.08506$ d and $\text{JD}_0 = 2456928.241$.
3. $J = 11^{\text{m}}.870$, $H = 11^{\text{m}}.199$, $K = 10^{\text{m}}.991$ (2MASS).
7. $\text{Min}_{\text{II}} = 15^{\text{m}}.26$.
9. $\text{Min}_{\text{II}} = 15^{\text{m}}.27$.
11. $J = 9^{\text{m}}.384$, $H = 8^{\text{m}}.392$, $K = 8^{\text{m}}.079$ (2MASS).
12. $J = 8^{\text{m}}.352$, $H = 7^{\text{m}}.613$, $K = 7^{\text{m}}.256$ (2MASS).
13. EW type with twice longer period is possible (0.31671 d, $\text{JD}_0 = 2456934.179$).
14. $J = 12^{\text{m}}.425$, $H = 11^{\text{m}}.904$, $K = 11^{\text{m}}.762$ (2MASS).
15. $J = 8^{\text{m}}.256$, $H = 7^{\text{m}}.217$, $K = 6^{\text{m}}.809$ (2MASS).
The object is in the NSVS database: [ID 3468452](#).

17. J = 8^m.819, H = 7^m.774, K = 7^m.414 (2MASS).
19. J = 11^m.476, H = 11^m.770, K = 11^m.541 (2MASS).
23. Min_{II} = 15^m.36.
25. Min_{II} = 15^m.07.
26. J = 9^m.648, H = 8^m.659, K = 8^m.387 (2MASS).
28. J = 10^m.214, H = 8^m.472, K = 7^m.177 (2MASS).
29. J = 8^m.760, H = 7^m.695, K = 7^m.241 (2MASS).
30. J = 6^m.969, H = 5^m.924, K = 5^m.470 (2MASS).
The object is in the NSVS database: [ID 3470780](#).
31. Min_{II} = 13^m.65.
32. J = 8^m.588, H = 7^m.616, K = 7^m.219 (2MASS).
33. Min_{II} = 16^m.03.
35. J = 9^m.788, H = 8^m.713, K = 8^m.385 (2MASS).
36. EW type with twice longer period (0.17079 d) is possible.
37. Twice longer period (0.572456 d) is possible.
42. Min_{II} = 13^m.90.
46. J = 8^m.812, H = 7^m.825, K = 7^m.439 (2MASS).
48. J = 10^m.510, H = 9^m.486, K = 9^m.074 (2MASS).

Remarks:

We present the second part of new discoveries of variable stars in Lacerta: area of 2°.3×2°.3, center $\alpha=22^{\text{h}}50^{\text{m}} \delta=54^{\circ}00'(2000.0)$. Some of the objects are newly discovered, some are already known from massive surveys like ZTF and ASAS-SN.

Our observations of an area in Lacerta were performed in the observatory of the Reshetnev Siberian State University of Science and Technology with a Hamilton telescope (D = 400 mm, F = 915 mm), equipped with an FLI ML9000 CCD chip (3056 × 3056 pixels, pixel size 12 μm). Exposures of all frames were 30 seconds. A CCD image covers 2.3 × 2.3 of the sky.

We obtained all unfiltered CCD observations during two time intervals: August–October 2012 and September–October 2014.

The magnitudes were referred to those of comparison stars (in unfiltered red band) from the UCAC4 catalog (Zacharias et al. 2013). We used [VaST](#) software (Sokolovsky & Lebedev 2018) to search for variable stars. To perform periodogram analysis, we applied WinEfK software provided by V.P. Goranskij.

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