

## New Variable Stars in Lacerta: Area of $2^{\circ}.3 \times 2^{\circ}.3$ , Centered at $\alpha=22^{\text{h}}50^{\text{m}}$ , $\delta=50^{\circ}00'$ (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		USNO-A2.0 1350-17311383	22 46 44.71, +50 47 11.4	EW	16.25	16.67		0.52971	2455802.387	Min		<a href="#">Comm. 1</a>	<a href="#">lc52830.png</a>	<a href="#">ch_52830.png</a>	<a href="#">out52830.txt</a>
2		USNO-A2.0 1350-17312153	22 46 46.30, +50 41 17.9	EA	13.69	13.91		2.4396	2455790.131	Min			<a href="#">lc28535.png</a>	<a href="#">ch_28535.png</a>	<a href="#">out28535.txt</a>
3		USNO-A2.0 1350-17312592	22 46 47.24, +49 51 50.2	EW	16.05	16.32		0.34142	2455819.568	Min		<a href="#">Comm. 3</a>	<a href="#">lc2121.png</a>	<a href="#">ch_2121.png</a>	<a href="#">out2121.txt</a>
4		USNO-A2.0 1350-17316655	22 46 55.53, +50 07 22.8	SR:	13.36	13.59				other		<a href="#">Comm. 4</a>	<a href="#">lc16525.png</a>	<a href="#">ch_16525.png</a>	<a href="#">out16525.txt</a>
5		USNO-A2.0 1350-17318917	22 47 00.08, +49 51 54.7	EA	14.13	14.27		1.4976	2455823.689	Min		<a href="#">Comm. 5</a>	<a href="#">lc12881.png</a>	<a href="#">ch_12881.png</a>	<a href="#">out12881.txt</a>
6		USNO-A2.0 1350-17322488	22 47 07.19, +50 01 16.6	DSCT	12.99	13.03		0.089485	2455823.287	Max		<a href="#">Comm. 6</a>	<a href="#">lc15059.png</a>	<a href="#">ch_15059.png</a>	<a href="#">out15059.txt</a>
7		USNO-A2.0 1350-17324338	22 47 10.82, +48 57 50.5	EW	15.72	15.88		0.41846	2455824.918	Min		<a href="#">Comm. 7</a>	<a href="#">lc01040.png</a>	<a href="#">ch_01040.png</a>	<a href="#">out01040.txt</a>
8		USNO-A2.0 1350-17324387	22 47 10.93, +50 22 57.9	EW	15.61	15.96		0.5177	2455802.105	Min		<a href="#">Comm. 8</a>	<a href="#">lc22687.png</a>	<a href="#">ch_22687.png</a>	<a href="#">out22687.txt</a>
9		USNO-A2.0 1350-17326437	22 47 15.01, +49 36 01.1	BY:	12.27	12.32		4.65		Max		<a href="#">Comm. 9</a>	<a href="#">lc09253.png</a>	<a href="#">ch_09253.png</a>	<a href="#">out09253.txt</a>
10		USNO-A2.0 1350-17327772	22 47 17.83, +48 56 11.7	EW	15.43	15.76		0.30170	2455824.246	Min		<a href="#">Comm. 10</a>	<a href="#">lc00670.png</a>	<a href="#">ch_00670.png</a>	<a href="#">out00670.txt</a>
11		USNO-A2.0 1350-17328550	22 47 19.42, +50 22 08.3	EW	15.93	16.81		0.3538	2455823.235	Min		<a href="#">Comm. 11</a>	<a href="#">lc22861.png</a>	<a href="#">ch_22861.png</a>	<a href="#">out22861.txt</a>
12		USNO-A2.0 1350-17328682	22 47 19.71, +50 53 43.8	EA	14.96	15.67		2.661	2455820.046	Min		<a href="#">Comm. 12</a>	<a href="#">lc3124.png</a>	<a href="#">ch_3124.png</a>	<a href="#">out3124.txt</a>
13		USNO-A2.0 1350-17330819	22 47 23.93, +50 29 14.1	EW	15.25	15.50		0.39135	2455823.222	Min		<a href="#">Comm. 13</a>	<a href="#">lc31367.png</a>	<a href="#">ch_31367.png</a>	<a href="#">out31367.txt</a>
14		USNO-A2.0 1350-17330878	22 47 24.05, +48 55 07.5	EW:	16.62	17.04		0.21264	2455825.496	Min		<a href="#">Comm. 14</a>	<a href="#">lc1112.png</a>	<a href="#">ch_1112.png</a>	<a href="#">out1112.txt</a>
15		USNO-A2.0 1350-17332146	22 47 26.54, +50 33 14.8	DSCTC	12.66	12.67		0.068477	2455795.303	Max			<a href="#">lc30324.png</a>	<a href="#">ch_30324.png</a>	<a href="#">out30324.txt</a>
16		USNO-A2.0 1350-17332724	22 47 27.71, +50 51 11.2	EA	16.57	17.50		1.447	2455823.109	Min		<a href="#">Comm. 16</a>	<a href="#">lc3125.png</a>	<a href="#">ch_3125.png</a>	<a href="#">out3125.txt</a>
17		USNO-A2.0 1350-17332770	22 47 27.82, +50 03 30.6	DSCTC	12.09	12.12		0.109376	2455837.179	Max			<a href="#">lc47209.png</a>	<a href="#">ch_47209.png</a>	<a href="#">out47209.txt</a>
18		USNO-A2.0 1350-17333415	22 47 29.10, +49 56 05.0	RRC	13.91	14.25		0.23297	2455836.211	Max			<a href="#">lc13869.png</a>	<a href="#">ch_13869.png</a>	<a href="#">out13869.txt</a>
19		USNO-A2.0 1350-17336178	22 47 34.73, +49 30 45.0	BY:	12.12	12.18		6.64		Max		<a href="#">Comm. 19</a>	<a href="#">lc08040.png</a>	<a href="#">ch_08040.png</a>	<a href="#">out08040.txt</a>
20		USNO-A2.0 1350-17336456	22 47 35.32, +49 45 04.5	EW	15.54	15.70		0.47908	2455790.290	Min		<a href="#">Comm. 20</a>	<a href="#">lc11356.png</a>	<a href="#">ch_11356.png</a>	<a href="#">out11356.txt</a>
21		USNO-A2.0 1350-17336993	22 47 36.35, +49 05 23.0	DSCTC	12.73	12.76		0.096296	2455802.272	Max			<a href="#">lc02546.png</a>	<a href="#">ch_02546.png</a>	<a href="#">out02546.txt</a>

22	USNO-A2.0 1350-17338929	22 47 40.44, +49 05 44.9	EA	14.79	15.35		5.5874:	2455843.724	Min		<a href="#">Comm. 22</a>	<a href="#">lc02686.png</a>	<a href="#">ch_02686.png</a>	<a href="#">out02686.txt</a>
23	USNO-A2.0 1350-17341661	22 47 46.12, +49 40 10.1	BY:	12.68	12.77		9.78		Max		<a href="#">Comm. 23</a>	<a href="#">lc10170.png</a>	<a href="#">ch_10170.png</a>	<a href="#">out10170.txt</a>
24	USNO-A2.0 1350-17345172	22 47 53.29, +50 30 22.2	EW	13.98	14.12		0.26334	2455829.065	Min		<a href="#">Comm. 24</a>	<a href="#">lc49452.png</a>	<a href="#">ch_49452.png</a>	<a href="#">out49452.txt</a>
25	USNO-A2.0 1350-17347252	22 47 57.55, +50 23 15.2	EB	15.18	15.40		0.53045	2455829.269	Min		<a href="#">Comm. 25</a>	<a href="#">lc22684.png</a>	<a href="#">ch_22684.png</a>	<a href="#">out22684.txt</a>
26	USNO-A2.0 1350-17349765	22 48 02.93, +50 33 57.2	LB:	12.58	13.05				other		<a href="#">Comm. 26</a>	<a href="#">lc42448.png</a>	<a href="#">ch_42448.jpg</a>	<a href="#">out42448.txt</a>
27	USNO-A2.0 1350-17349916	22 48 03.24, +50 01 52.5	LB:	14.35	14.49				other		<a href="#">Comm. 27</a>	<a href="#">lc42957.png</a>	<a href="#">ch_42957.png</a>	<a href="#">out42957.txt</a>
28	USNO-A2.0 1350-17357431	22 48 19.00, +50 42 02.9	EW	13.56	13.95		0.90827	2455828.014	Min		<a href="#">Comm. 28</a>	<a href="#">lc28481.png</a>	<a href="#">ch_28481.png</a>	<a href="#">out28481.txt</a>
29	USNO-A2.0 1350-17358577	22 48 21.48, +49 29 04.9	EW	16.23	16.63		0.38604	2455819.410	Min		<a href="#">Comm. 29</a>	<a href="#">lc1114.png</a>	<a href="#">ch_1114.png</a>	<a href="#">out1114.txt</a>
30	USNO-A2.0 1350-17361658	22 48 27.92, +50 06 06.8	EW	14.45	14.56		0.32512	2455825.298	Min		<a href="#">Comm. 30</a>	<a href="#">lc16085.png</a>	<a href="#">ch_16085.png</a>	<a href="#">out16085.txt</a>
31	USNO-A2.0 1350-17365531	22 48 35.91, +50 49 06.4	EW	14.48	14.96		0.26638	2455837.245	Min		<a href="#">Comm. 31</a>	<a href="#">lc26908.png</a>	<a href="#">ch_26908.png</a>	<a href="#">out26908.txt</a>
32	USNO-A2.0 1350-17369393	22 48 44.06, +49 02 43.4	EW	15.53	15.66		0.34879	2455823.550	Min		<a href="#">Comm. 32</a>	<a href="#">lc1113.png</a>	<a href="#">ch_1113.png</a>	<a href="#">out1113.txt</a>
33	USNO-A2.0 1350-17374119	22 48 53.90, +49 16 21.2	EW	16.16	16.39		0.35271	2455802.093	Min		<a href="#">Comm. 33</a>	<a href="#">lc04914.png</a>	<a href="#">ch_04914.png</a>	<a href="#">out04914.txt</a>
34	USNO-A2.0 1350-17380555	22 49 07.02, +49 13 04.5	EA	14.63	16.17		0.68196	2455789.996	Min		<a href="#">Comm. 34</a>	<a href="#">lc1123.png</a>	<a href="#">ch_1123.png</a>	<a href="#">out1123.txt</a>
35	USNO-A2.0 1350-17382751	22 49 11.68, +50 41 31.8	EA	15.03	15.67		3.419	2455825.628	Min		<a href="#">Comm. 35</a>	<a href="#">lc28665.png</a>	<a href="#">ch_28665.png</a>	<a href="#">out28665.txt</a>
36	USNO-A2.0 1350-17387725	22 49 22.00, +49 06 34.2	LB:	12.27	12.56				other		<a href="#">Comm. 36</a>	<a href="#">lc02621.png</a>	<a href="#">ch_02621.png</a>	<a href="#">out02621.txt</a>
37	USNO-A2.0 1350-17393480	22 49 34.11, +49 18 12.5	EW	16.62	17.37		0.25306	2455790.143	Min		<a href="#">Comm. 37</a>	<a href="#">lc1115.png</a>	<a href="#">ch_1115.png</a>	<a href="#">out1115.txt</a>
38	USNO-A2.0 1350-17398894	22 49 46.00, +50 31 35.0	BY:	15.69	15.99		11.7		Max		<a href="#">Comm. 38</a>	<a href="#">lc30996.png</a>	<a href="#">ch_30996.png</a>	<a href="#">out30996.txt</a>
39	USNO-A2.0 1350-17403927	22 49 56.57, +49 50 05.1	SR:	12.23	12.40		51:		other		<a href="#">Comm. 39</a>	<a href="#">lc12174.png</a>	<a href="#">ch_12174.png</a>	<a href="#">out12174.txt</a>
40	USNO-A2.0 1350-17408341	22 50 06.02, +50 42 25.2	EW	15.36	15.54		0.28336	2455825.279	Min		<a href="#">Comm. 40</a>	<a href="#">lc28496.png</a>	<a href="#">ch_28496.png</a>	<a href="#">out28496.txt</a>
41	USNO-A2.0 1350-17409250	22 50 08.04, +51 10 30.8	BY:	14.23	14.32		6.3		Max		<a href="#">Comm. 41</a>	<a href="#">lc18264.png</a>	<a href="#">ch_18264.png</a>	<a href="#">out18264.txt</a>
42	USNO-A2.0 1350-17414334	22 50 18.82, +50 15 22.3	EW	14.71	14.94		0.41077	2455823.213	Min		<a href="#">Comm. 42</a>	<a href="#">lc24539.png</a>	<a href="#">ch_24539.png</a>	<a href="#">out24539.txt</a>
43	USNO-A2.0 1350-17417634	22 50 25.98, +49 21 37.6	EW	12.92	13.21		0.88416	2455790.096	Min		<a href="#">Comm. 43</a>	<a href="#">lc05796.png</a>	<a href="#">ch_05796.png</a>	<a href="#">out05796.txt</a>
44	USNO-A2.0 1350-17419946	22 50 30.95, +50 26 55.4	EW	17.02	17.65		0.34281	2455821.519	Min		<a href="#">Comm. 44</a>	<a href="#">lc3211.png</a>	<a href="#">ch_3211.png</a>	<a href="#">out3211.txt</a>
45	USNO-A2.0 1350-17419977	22 50 31.02, +49 11 06.7	GDOR	13.66	13.70		0.7723	2455819.305	Max			<a href="#">lc03546.png</a>	<a href="#">ch_03546.png</a>	<a href="#">out03546.txt</a>
46	USNO-A2.0 1350-17423185	22 50 37.92, +49 48 29.1	EB	12.80	12.93		0.76985	2455819.116	Min		<a href="#">Comm. 46</a>	<a href="#">lc11781.png</a>	<a href="#">ch_11781.png</a>	<a href="#">out11781.txt</a>
47	USNO-A2.0 1350-17428473	22 50 48.68, +50 18 10.8	EW	15.20	15.67		0.37721	2455829.015	Min			<a href="#">lc24145.png</a>	<a href="#">ch_24145.png</a>	<a href="#">out24145.txt</a>
48	USNO-A2.0 1350-17429119	22 50 50.02, +49 58 10.8	EB	17.34	17.95		0.51839	2455819.505	Min		<a href="#">Comm. 48</a>	<a href="#">lc2211.png</a>	<a href="#">ch_2211.png</a>	<a href="#">out2211.txt</a>
49	USNO-A2.0 1350-17432949	22 50 58.18, +49 13 35.4	EW	16.07	16.55		0.36104	2455835.123	Min		<a href="#">Comm. 49</a>	<a href="#">lc45311.png</a>	<a href="#">ch_45311.png</a>	<a href="#">out45311.txt</a>
50	USNO-A2.0 1350-17432974	22 50 58.22, +48 58 24.0	EA	13.71	13.83		3.8936:	2455789.473	Min		<a href="#">Comm. 50</a>	<a href="#">lc00703.png</a>	<a href="#">ch_00703.png</a>	<a href="#">out00703.txt</a>
51	USNO-A2.0 1350-17433733	22 50 59.82, +49 50 04.0	EB	15.17	15.55		0.46190	2455820.904	Min		<a href="#">Comm. 51</a>	<a href="#">lc12154.png</a>	<a href="#">ch_12154.png</a>	<a href="#">out12154.txt</a>
52	USNO-A2.0 1350-17434248	22 51 00.95, +50 04 30.1	EA	14.70	14.89		0.8753	2455820.122	Min		<a href="#">Comm. 52</a>	<a href="#">lc15469.png</a>	<a href="#">ch_15469.png</a>	<a href="#">out15469.txt</a>
53	USNO-A2.0 1350-17435007	22 51 02.52, +50 40 26.8	GDOR	12.99	13.02		0.65699	2455795.277	Max			<a href="#">lc29061.png</a>	<a href="#">ch_29061.png</a>	<a href="#">out29061.txt</a>
54	USNO-A2.0 1350-17435071	22 51 02.66, +48 58 05.3	EA	13.56	13.62		2.216	2455832.284	Min		<a href="#">Comm. 54</a>	<a href="#">lc00648.png</a>	<a href="#">ch_00648.png</a>	<a href="#">out00648.txt</a>
55	USNO-A2.0 1350-17438429	22 51 09.74, +49 25 50.1	RRC	14.36	14.79		0.30005	2455832.241	Max			<a href="#">lc06696.png</a>	<a href="#">ch_06696.png</a>	<a href="#">out06696.txt</a>
56	USNO-A2.0 1350-17442621	22 51 18.78, +49 58 20.0	LB:	14.03:	14.32:				other		<a href="#">Comm. 56</a>	<a href="#">lc13985.png</a>	<a href="#">ch_13985.png</a>	<a href="#">out13985.txt</a>

57	USNO-A2.0 1350-17443276	22 51 20.17, +50 31 46.5	EA	12.53	12.94		8.305	2455798.18	Min		<a href="#">Comm. 57</a>	<a href="#">lc30939.png</a>	<a href="#">ch_30939.png</a>	<a href="#">out30939.txt</a>
58	USNO-A2.0 1350-17444612	22 51 23.11, +49 40 14.4	BY:	14.49	14.58		1.729		Max		<a href="#">Comm. 58</a>	<a href="#">lc09919.png</a>	<a href="#">ch_09919.png</a>	<a href="#">out09919.txt</a>
59	USNO-A2.0 1350-17451547	22 51 38.26, +50 33 14.8	EA:	15.53	15.71		0.66508	2455849.968	Min		<a href="#">Comm. 59</a>	<a href="#">lc30707.png</a>	<a href="#">ch_30707.png</a>	<a href="#">out30707.txt</a>
60	USNO-A2.0 1350-17452970	22 51 41.49, +50 10 00.2	SR	14.39	14.86		32.7	2455838.2	Max		<a href="#">Comm. 60</a>	<a href="#">lc16692.png</a>	<a href="#">ch_16692.png</a>	<a href="#">out16692.txt</a>
61	USNO-A2.0 1350-17453060	22 51 41.67, +50 46 34.8	L	13.48	13.53				other		<a href="#">Comm. 61</a>	<a href="#">lc27868.png</a>	<a href="#">ch_27868.png</a>	<a href="#">out27868.txt</a>
62	USNO-A2.0 1350-17456490	22 51 49.22, +50 41 31.9	EW	14.94	15.49		0.40349	2455800.312	Min		<a href="#">Comm. 62</a>	<a href="#">lc28820.png</a>	<a href="#">ch_28820.png</a>	<a href="#">out28820.txt</a>

### Comments:

1.  $\text{Min}_{\text{II}} = 16^{\text{m}}.60$ .
3.  $\text{Min}_{\text{II}} = 16^{\text{m}}.30$ .
4.  $J = 8.597$ ,  $H = 7.577$ ,  $K = 7.165$  (2MASS).
5.  $\text{Min}_{\text{II}} = 14^{\text{m}}.2$ : .
6. Multiperiodic. Besides the period in the table periods of  $0^{\text{d}}.145156$  and  $0^{\text{d}}.79857$  were found.
7.  $\text{Min}_{\text{II}} = 15^{\text{m}}.85$ .
8.  $\text{Min}_{\text{II}} = 15^{\text{m}}.90$ .
9.  $J = 10.340$ ,  $H = 9.799$ ,  $K = 9.632$  (2MASS).
10.  $\text{Min}_{\text{II}} = 15^{\text{m}}.75$ .
11.  $\text{Min}_{\text{II}} = 16^{\text{m}}.69$ .
12.  $\text{Min}_{\text{II}} = 15^{\text{m}}.55$ .
13.  $\text{Min}_{\text{II}} = 15^{\text{m}}.49$ .
14.  $\text{Min}_{\text{II}} = 17^{\text{m}}.02$ .
16.  $\text{Min}_{\text{II}} = 16^{\text{m}}.80$ .
19.  $J = 10.302$ ,  $H = 9.836$ ,  $K = 9.713$  (2MASS).
20.  $\text{Min}_{\text{II}} = 15^{\text{m}}.70$ .
22.  $\text{Min}_{\text{II}} = 15^{\text{m}}.15$ .
23.  $J = 10.689$ ,  $H = 10.117$ ,  $K = 9.962$  (2MASS).

24.  $\text{Min}_{\text{II}} = 14^{\text{m}}.09$ .

25.  $\text{Min}_{\text{II}} = 15^{\text{m}}.26$ .

26.  $J = 9.026$ ,  $H = 8.076$ ,  $K = 7.743$  (2MASS).

27.  $J = 11.767$ ,  $H = 10.880$ ,  $K = 10.688$  (2MASS).

28.  $\text{Min}_{\text{II}} = 13^{\text{m}}.89$ .

29.  $\text{Min}_{\text{II}} = 16^{\text{m}}.62$ .

30.  $\text{Min}_{\text{II}} = 14^{\text{m}}.53$ . O'Connell effect.

31.  $\text{Min}_{\text{II}} = 14^{\text{m}}.93$ .

32.  $\text{Min}_{\text{II}} = 15^{\text{m}}.65$ .

33.  $\text{Min}_{\text{II}} = 16^{\text{m}}.36$ .

34.  $\text{Min}_{\text{II}} = 14^{\text{m}}.82$ .

35.  $\text{Min}_{\text{II}} = 15^{\text{m}}.5$ : .

36.  $J = 8.719$ ,  $H = 7.784$ ,  $K = 7.479$  (2MASS).

The star in the NSVS database: [NSVS ID 6175317](#). The NSVS data confirm the star's type.

37.  $\text{Min}_{\text{II}} = 17^{\text{m}}.34$ .

38.  $J = 13.725$ ,  $H = 13.065$ ,  $K = 12.900$  (2MASS).

39.  $J = 8.911$ ,  $H = 7.977$ ,  $K = 7.680$  (2MASS).

40.  $\text{Min}_{\text{II}} = 15^{\text{m}}.50$ .

41.  $J = 12.608$ ,  $H = 12.110$ ,  $K = 11.973$  (2MASS).

42. A close pair of stars; which of the components varies is unknown. Component A: 2MASS 22501902+5015238,  $14^{\text{m}}.8\text{V}$  (GSC 2.3). Component B: 2MASS 22501864+5015189,  $15^{\text{m}}.5\text{V}$  (GSC 2.3).  $\rho = 6''$ ,  $\theta = 217^\circ$ , 1998.

$\text{Min}_{\text{II}} = 14^{\text{m}}.92$ .

43.  $\text{Min}_{\text{II}} = 13^{\text{m}}.18$ .

44.  $\text{Min}_{\text{II}} = 17^{\text{m}}.57$ .

46. O'Connell effect.

48.  $\text{Min}_{\Pi} = 17^{\text{m}}.69.$

49.  $\text{Min}_{\Pi} = 16^{\text{m}}.51.$

50.  $\text{Min}_{\Pi} = 13^{\text{m}}.79:.$

51.  $\text{Min}_{\Pi} = 15^{\text{m}}.35.$

52.  $\text{Min}_{\Pi} = 14^{\text{m}}.81.$

54.  $\text{Min}_{\Pi} = 13^{\text{m}}.61.$

56.  $J = 10.383, H = 9.411, K = 9.035$  (2MASS).

57.  $\text{Min}_{\Pi} = 12^{\text{m}}.88.$

58.  $J = 12.692, H = 12.158, K = 12.040$  (2MASS).

59.  $\text{Min}_{\Pi} = 15^{\text{m}}.70: .$

60.  $J = 12.234, H = 11.482, K = 11.317$  (2MASS).

61.  $J = 11.726, H = 11.185, K = 11.099$  (2MASS).

62.  $\text{Min}_{\Pi} = 15^{\text{m}}.48.$

### Remarks:

On August 16 – October 30, 2011, we obtained about 1600 images with 30- second exposures of a field in Lacerta for discovery and investigation of new variables stars.

The field has coordinates  $\alpha = 22^{\text{h}}50^{\text{m}}$ ,  $\delta = +50^{\circ}00'$  and size of  $2.3^{\circ} \times 2.3^{\circ}$ . Here the second part of our results is presented.

Our observations were performed in the city of Krasnoyarsk with a Hamilton telescope (D = 400 mm, F = 915 mm) equipped with an unfiltered FLI ML-9000 CCD camera (3056×3056 pixels, pixel size 12  $\mu\text{m}$ ).

For basic reductions for dark current, flat fields, bias, and for removing cosmic-ray hits, we used MaxIm DL software.

The magnitudes were referred to red magnitudes of comparison stars from the USNO-A2.0 catalog (Monet et al. 1998).

For most new variable stars we applied [VaST](#) software (developed by K. Sokolovsky and A. Lebedev, described by Kolesnikova et al. 2008) for search and photometry. Some of variable stars were found with [C-Munipack](#) package.

To search for periods, we applied [WinEfk software](#) provided by V.P. Goranskij.

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