

59 New Red Variable Stars

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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 J05170581+1905558	05 17 05.81, +19 05 56.0	SR	13.45	14.00	R	74.7	2451536	max		Comm. 1	1.png	chart1.png	9557998
2		2MASS J06194361+1815190	06 19 43.63, +18 15 19.1	LB	10.45	10.90	R			other		Comm. 2	2.png	chart2.png	9749416
3		2MASS J09061078+8039572	09 06 10.75, +80 39 57.3	SR	12.65	13.10	R	41.2	2451278	max		Comm. 3	3.png	chart3.png	841655 106409 721272 758144
4		2MASS J10343951+2452055	10 34 39.52, +24 52 05.6	LB	12.85	13.30	R			other		Comm. 4	4.png	chart4.png	7544239
5		2MASS J15592911-2717587	15 59 29.12, -27 17 58.8	SR:	12.65	13.20	R	59.6:	2451632	max		Comm. 5	5.png	chart5.png	19106759
6		2MASS J16001544-2038441	16 00 15.45, -20 38 44.2	SR:	11.65	12.35	R	70:	2451287	max		Comm. 6	6.png	chart6.png	16312431 16313205 19106233 16312412
7		2MASS J16024713-2625237	16 02 47.15, -26 25 23.7	LB	11.30	11.70	R			other	M7	Comm. 7	7.png	chart7.png	19110215
8		2MASS J16051916-2602083	16 05 19.17, -26 02 08.4	SR:	11.30	11.75	R	86:	2451617	max		Comm. 8	8.png	chart8.png	19113044
9		2MASS J16052324-2846338	16 05 23.24, -28 46 33.8	LB	12.5	13.05	R			other		Comm. 9	9.png	chart9.png	19113545
10		2MASS J16071257-2812551	16 07 12.58, -28 12 55.1	SR:	12.50	12.90	R	45:	2451619	max		Comm. 10	10.png	chart10.png	19115536
11		2MASS J16075931-2101123	16 07 59.31, -21 01 12.3	SR:	13.20	13.70	R	76	2451303	max		Comm. 11	11.png	chart11.png	19115455 16320364
12		2MASS J16102498-2754173	16 10 24.97, -27 54 17.5	LB	11.30	11.70	R			other	M 6/7	Comm. 12	12.png	chart12.png	19119038
13		2MASS J16113759-2645287	16 11 37.58, -26 45 28.7	LB:	10.45	11.05	R			other		Comm. 13	13.png	chart13.png	19120288
14		2MASS J16115985-1703141	16 11 59.85, -17 03 14.3	LB:	9.80	12.00	R			other		Comm. 14	14.png	chart14.png	16324671
15		2MASS J16122076-1949568	16 12 20.77, -19 49 57.0	LB:	12.50	14.50	R			other		Comm. 15	15.png	chart15.png	16324859
16		2MASS J16132633-2807281	16 13 26.33, -28 07 28.1	SR:	12.45	12.85	R	77:	2451276	max		Comm. 16	16.png	chart16.png	19122252 19122328
17		2MASS J16145193-2814376	16 14 51.94, -28 14 37.6	LB	11.95	12.30	R			other		Comm. 17	17.png	chart17.png	19123829
18		2MASS J16151724-2835529	16 15 17.24, -28 35 53.0	SR:	11.22	11.47	R	33:	2451369	max		Comm. 18	18.png	chart18.png	19124251
19		2MASS J16152249-2718207	16 15 22.49, -27 18 20.6	LB:	11.75	12.15	R			other		Comm. 19	19.png	chart19.png	19124290
20		2MASS J16154913-2643536	16 15 49.15, -26 43 53.7	LB:	12.30	12.65	R			other		Comm. 20	20.png	chart20.png	19124703
21		2MASS J16164871-2011275	16 16 48.71, -20 11 27.6	LB:	13.50	14.10	R			other		Comm. 21	21.png	chart21.png	16329544
22		2MASS J16185962-1143548	16 18 59.63, -11 43 54.8	LB	12.30	12.70	R			other		Comm. 22	22.png	chart22.png	16366131
23		2MASS J16185998-2836552	16 18 59.99, -28 36 55.4	SR	11.08	12.07	R	51.2:	2451285	max		Comm. 23	23.png	chart23.png	19161111 19127616 19210780
24		2MASS J16191746-1850358	16 19 17.47, -18 50 35.8	SR	12.05	12.5:	R	115	2451352	max		Comm. 24	24.png	chart24.png	16332319

25	2MASS J16200837-2000228	16 20 08.38, -20 00 22.9	LB	12.55	13.05	R				other	Comm. 25	25.png	chart25.png	16333107
26	2MASS J16213768-2000369	16 21 37.69, -20 00 37.0	LB	13.80	15.10	R				other	Comm. 26	26.png	chart26.png	16334628
27	2MASS J16245026-1839215	16 24 50.27, -18 39 21.6	LB	13.60	14.25	R				other	Comm. 27	27.png	chart27.png	16337900
28	2MASS J16251506-1931213	16 25 15.06, -19 31 21.2	SR:	12.52	12.90	R	63:	2451308	max		Comm. 28	28.png	chart28.png	16338183
29	2MASS J16254552-2833313	16 25 45.53, -28 33 31.4	LB	12.65	13.25	R				other	Comm. 29	29.png	chart29.png	19168688 19215698
30	2MASS J16255679-2831415	16 25 56.79, -28 31 41.5	SR	12.16	13.15	R	53	2451326	max		Comm. 30	30.png	chart30.png	19168927 19168927
31	2MASS J16263997-1950170	16 26 39.97, -19 50 16.9	SR:	12.85	13.30	R	80:	2451616	max		Comm. 31	31.png	chart31.png	16339422 16413157
32	2MASS J16265901-1853568	16 26 59.01, -18 53 56.7	LB	12.20	12.75	R				other	Comm. 32	32.png	chart32.png	16339732 16413262
33	2MASS J16273458-1641202	16 27 34.59, -16 41 20.1	LB	13.15	13.65	R				other	Comm. 33	33.png	chart33.png	16340393 16413439
34	2MASS J16291872-2111551	16 29 18.72, -21 11 54.9	LB	12.80	13.60	R				other	Comm. 34	34.png	chart34.png	16341263 16415343 19218798
35	2MASS J16295349-2833497	16 29 53.49, -28 33 49.7	LB:	12.60	13.25	R				other	Comm. 35	35.png	chart35.png	19173679 19218694
36	2MASS J16305822-1753537	16 30 58.22, -17 53 53.7	LB:	12.10	12.60	R				other	Comm. 36	36.png	chart36.png	16416386 16343078
37	2MASS J16315492-2842437	16 31 54.93, -28 42 43.7	LB	12.25	12.65	R				other	Comm. 37	37.png	chart37.png	19176198 19220451
38	2MASS J16315906-1932099	16 31 59.07, -19 32 09.9	LB:	13.40	13.90	R				other	Comm. 38	38.png	chart38.png	16417507
39	2MASS J16343124-2832362	16 34 31.24, -28 32 36.3	LB:	11.77	12.07	R				other	Comm. 39	39.png	chart39.png	19179645 19222938
40	2MASS J16350101-1837444	16 35 01.01, -18 37 44.5	BY	13.70	14.40	R	2.25	2451306	max		Comm. 40	40.png	chart40.png	16346414 16420356
41	2MASS J16372367-2851187	16 37 23.69, -28 51 18.8	LB	11.60	12.15	R				other	Comm. 41	41.png	chart41.png	19183131 19225897
42	2MASS J16372766-2021102	16 37 27.67, -20 21 10.2	LB	13.70	14.70	R				other	Comm. 42	42.png	chart42.png	16423145
43	2MASS J16380183-1840089	16 38 01.84, -18 40 08.9	LB:	12.80	13.35	R				other	Comm. 43	43.png	chart43.png	16423574
44	2MASS J16390302-2106386	16 39 03.03, -21 06 38.7	LB	12.15	12.60	R				other	Comm. 44	44.png	chart44.png	16424972 19229592
45	2MASS J16393716-1752592	16 39 37.16, -17 52 59.0	SR	10.00	10.50	R	84.5	2451325	max		Comm. 45	45.png	chart45.png	16425230
46	2MASS J16410001-2827183	16 41 00.02, -28 27 18.4	SR:	11.35	11.65	R	86.2	2451291	max		Comm. 46	46.png	chart46.png	19187867 19230233
47	2MASS J16414441-1258564	16 41 44.42, -12 58 56.6	SR:	12.80	13.40	R	126	2451339	max		Comm. 47	47.png	chart47.png	16394601
48	2MASS J18005718+0136443	18 00 57.19, +01 36 44.5	SR:	12.30	13.00	R	97.8:	2451361	max		Comm. 48	48.png	chart48.png	13836622
49	2MASS J18441953+1854267	18 44 19.54, +18 54 26.9	LB	12.40	12.90	R				other	Comm. 49	49.png	chart49.png	11060471
50	2MASS J18493184+2139298	18 49 31.84, +21 39 29.9	SR	11.95	12.40	R	47.8	2451482	max		Comm. 50	50.png	chart50.png	11068800
51	2MASS J18525966+2410572	18 52 59.66, +24 10 57.3	LB	12.10	12.45	R				other	Comm. 51	51.png	chart51.png	8196064 11074354 8196065
52	2MASS J18565321+2434524	18 56 53.21, +24 34 52.4	SR:	11.80	12.35	R	125:	2451303	max		Comm. 52	52.png	chart52.png	8201621
53	2MASS J18595818+2349329	18 59 58.18, +23 49 33.0	LB	11.90	12.35	R				other	Comm. 53	53.png	chart53.png	11084907 8206464 11186740
54	2MASS J19002257+1849294	19 00 22.57, +18 49 29.5	SR:	13.10	13.65	R	156.1	2451456.18	max		Comm. 54	54.png	chart54.png	11187344
55	2MASS J19011455+2201465	19 01 14.57, +22 01 46.5	SR	12.80	13.40	R	159	2451461	max		Comm. 55	55.png	chart55.png	11188765
56	2MASS J19073349+2115548	19 07 33.51, +21 15 55.0	SRB:	10.00:	11.35	R	286:	2451525	max		Comm. 56	56.png	chart56.png	11198534
57	2MASS J19191057+2059244	19 19 10.07, +20 59 54.2	M:	13.60	<16.0	R				max	Comm. 57	57.png	chart57.png	11215771
58	2MASS J19373673-0619360	19 37 36.73, -06 19 36.0	SR:	12.70	13.15	R	137:	2451489	max		Comm. 58	58.png	chart58.png	14142672 16963505
59	2MASS J19373980-0622333	19 37 39.82, -06 22 33.5	SR	11.90	12.30	R	69	2451351	max		Comm. 59	59.png	chart59.png	14142769 16963595

Comments:

1. J-K=1.36 (2MASS).

2. J-K=2.21 (2MASS). IRAS 06168+1816. Carbon star CGCS 1232.
3. J-K=0.82 (2MASS).
4. J-K=1.14 (2MASS).
5. J-K=1.17 (2MASS).
6. J-K=1.29 (2MASS).
7. J-K=1.37 (2MASS). IRAS Z15597-2617.
8. J-K=1.31 (2MASS).
9. J-K=1.22 (2MASS).
10. J-K=1.32 (2MASS).
11. J-K=1.26 (2MASS).
12. J-K=1.41 (2MASS). CRL 1830.
13. J-K=1.42 (2MASS). IRAS F16085-2637. Note added in proof: After submission of this paper, the star's variability was announced in the [VSX](#) by A. Ditkovsky.
14. J-K=1.86 (2MASS). IRAS 16091-1655, 1RXS J161146.7-170559. Note added in proof: After submission of this paper, the star's variability was announced in the [VSX](#) by A. Ditkovsky.
15. J-K=1.41 (2MASS). IRAS Z16094-1942.
16. J-K=1.34 (2MASS).
17. J-K=1.43 (2MASS).
18. J-K=1.31 (2MASS). IRAS Z16121-2828.
19. J-K=1.43 (2MASS).
20. J-K=1.36 (2MASS).
21. J-K=0.95 (2MASS).
22. J-K=1.21 (2MASS).
23. J-K=1.54 (2MASS).
24. J-K=1.08 (2MASS).
25. J-K=1.84 (2MASS).
26. J-K=2.29 (2MASS).
27. J-K=1.30 (2MASS).
28. J-K=1.98 (2MASS). IRAS Z16223-1924.
29. J-K=1.48 (2MASS).
30. J-K=1.42 (2MASS).

31. J-K=1.64 (2MASS).
32. J-K=1.46 (2MASS).
33. J-K=1.64 (2MASS).
34. J-K=1.55 (2MASS). IRAS F16263-2105. Note added in proof: After submission of this paper, the star's variability was announced in the [VSX](#) by A. Ditkovsky.
35. J-K=1.48 (2MASS). IRAS Z16267-2827.
36. J-K=1.41 (2MASS).
37. J-K=1.19 (2MASS).
38. J-K=1.76 (2MASS).
39. J-K=1.15 (2MASS).
40. J-K=0.59 (2MASS).
41. J-K=1.44 (2MASS). IRAS 16342-2845.
42. J-K=1.44 (2MASS).
43. J-K=1.60 (2MASS). IRAS Z16351-1834.
44. J-K=1.34 (2MASS).
45. J-K=1.45 (2MASS).
46. J-K=1.44 (2MASS). IRAS 16378-2821.
47. J-K=1.35 (2MASS).
48. J-K=1.37 (2MASS).
49. J-K=1.40 (2MASS). IRAS F18421+1851.
50. J-K=1.40 (2MASS).
51. J-K=0.91 (2MASS).
52. J-K=1.34 (2MASS). IRAS Z18548+2430.
53. J-K=1.30 (2MASS).
54. J-K=1.37 (2MASS).
55. J-K=1.55 (2MASS). IRAS 18591+2157.
56. J-K=1.48 (2MASS). IRAS 19054+2111.
57. J-K=1.68 (2MASS). IRAS 19170+2053, MSX6C G054.7053+03.6124. R < 16.0 from GSC2.3.
58. J-K=1.42 (2MASS).
59. J-K=1.31 (2MASS). IRAS F19349-0629.

Remarks:

We present 59 new variables discovered by data mining in the publicly available data of the [Northern Sky Variability Survey](#) (Woźniak et al. 2004). These observations were analyzed using the period search software developed by Dr. V.P. Goranskij for Windows environment. We are grateful to I. Adamin and S. Dubrovskij for the software and the data used for our research.

References:

Woźniak, P.R., Vestrand, W.T., Akerlof, C.W., et al., 2004, Astron. J., 127, 2436