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COORDINATES AND IDENTIFICATIONS FOR ROSINO'S RED VARIABLES NEAR NGC 6749

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As part of a photometric study of the obscured globular cluster NGC 6749, Rosino *et al.* (1997) include a list of seventy-eight new red variables within 1° of the cluster. Although two of the stars lie near the cluster, probably none of them is related to it. Perhaps because the stars' positions were given to only 0.′1 precision, none of the stars has yet received a GCVS designation.

The table below provides accurate coordinates and identifications for all the stars, which were discovered by Leonida Rosino. Their locations were verified on charts of the region prepared by Rosino, copies of which were provided by Sergio Ortolani. In general the original coordinates are reasonably accurate, so that identification could be made through direct comparison with the IRAS and MSX infrared catalogues, and in visible light via USNO-A2.0 and GSC-2.2. Not all the stars appear in these catalogues, and there are some modest position errors, so the charts were indispensable. In addition, many fields were examined on the sky-survey plate-scans from the USNO-Flagstaff "pixel server" (Levine 2001). The POSS-II far-red IV-N plate-scans available here made locating these very red stars a simple task; the multi-epoch red and blue plates also allowed verification of variability in many cases.

Table 1 lists the stars in the same order and with the same designations given by Rosino *et al.* (1997) in their Table 3 (only the first name if two are shown). Following common convention, I suggest the acronym '[ROB97]' be used for these stars since they are not related to the globular cluster. An asterisk by the name indicates a note following the table. Many of the stars are very faint in blue light, and are thus not recorded in USNO-A2.0 (Monet *et al.* 1998): because objects were required to be detected on both plates in order to be accepted for the catalogue. Recourse was then made to GSC-2.2 (STScI 2001) since this can include stars appearing only on the POSS-II IIIa-F red-light plates. Some stars were in neither of these, but a reliable if not precise position was found in the MSX catalogue (Price *et al.* 2001), where the accuracy is $\pm 3''$–$5''$. Positions for a few stars were estimated ($\pm 2''$) using DSS images from the Goddard SkyView utility. Two stars are best recorded in the GSC-ACT (Gray 1999). The position sources are coded in column 's' of the table as follows: A = USNO-A2.0, G = GSC-ACT, g = GSC-2.2, S = SkyView, X = MSX.

Table 1: Red variables near NGC 6749

[ROB97]		RA (2000)	Dec	s	IRAS	MSX5C	*mb*	*mr*
95		19 03 36.59	+02 37 37.0	g		G036.6581–01.5062		16.5
39		19 03 40.5	+01 42 36	X	19011+0138	G035.8502–01.9408		
63		19 04 08.04	+02 41 54.4	A	19016+0237	G036.7815–01.5906	19.2	13.8
2	*	19 04 08.40	+01 58 56.1	g	19016+0154	G036.1456–01.9191		16.9
40		19 04 18.26	+01 30 41.2	g		G035.7456–02.1714		18.0
44		19 04 18.28	+02 51 12.5	g	19017+0246	G036.9392–01.5571	18.2	15.0
3		19 04 34.19	+02 06 45.9	g		G036.3107–01.9553		15.3
151b	*	19 04 39.55	+01 22 18.0	g	19021+0117	G035.6617–02.3146	18.3	13.3
17	*	19 04 42.82	+02 51 42.5	g	19022+0247	G036.9932–01.6440	19.4	17.9
19		19 04 50.52	+02 22 30.2	g	19023+0217	G036.5753–01.8953		17.7
92		19 04 51.16	+01 31 42.4	g	19023+0127	G035.8236–02.2853		15.7
17b	*	19 04 51.7	+02 54 18	X	19023+0249	G037.0486–01.6572		
5		19 04 50.78	+02 33 20.3	A	19023+0228	G036.7366–01.8133	19.4	15.6
7	*	19 04 53.17	+02 08 40.3	g	19023+0204	G036.3748–02.0111	17.0	13.5
36A		19 04 55.82	+01 21 29.5	g	19023+0116	G035.6806–02.3809		16.3
4		19 04 54.01	+02 37 47.3	g	19024+0233	G036.8080–01.7920	19.5	16.7
37		19 05 04.61	+01 16 03.9	A	19025+0111	G035.6168–02.4547	19.5	16.4
41		19 05 10.31	+01 38 02.3	A			19.6	16.7
26		19 05 09.85	+02 18 00.1	g	19026+0213	G036.5457–02.0015		15.4
6-12	*	19 05 09.7	+02 13 38	X	19026+0209	G036.4804–02.0344		
91		19 05 14.64	+01 44 52.2	A		G036.0633–02.2721	19.3	14.1
A-1	*	19 05 14.69	+01 55 51.6	A	19027+0151	G036.2267–02.1886	19.0	17.5
A-2		19 05 17.34	+01 53 31.5	g	19027+0148	G036.1965–02.2166		16.8
42		19 05 18.49	+01 39 35.9	g	19027+0134	G035.9926–02.3266	18.7	16.2
27		19 05 19.88	+02 27 41.2	g	19028+0223	G036.7083–01.9648	19.2	17.4
10		19 05 21.84	+01 42 33.0	A		G036.0428–02.3158	19.0	16.6
31b		19 05 56.40	+02 56 51.2	g	19034+0252	G037.2099–01.8761	19.4	14.5
8		19 06 01.62	+02 08 58.3	A		G036.5099–02.2616	16.5	15.5
4-3		19 06 01.48	+01 50 03.3	g	19035+0145	G036.2290–02.4058		16.5
60		19 06 07.61	+01 22 01.9	g	19035+0117	G035.8257–02.6421		15.2
9		19 06 17.11	+02 12 42.0	g	19037+0207	G036.5952–02.2906	18.6	
12	*	19 06 19.23	+01 57 02.0	g	19038+0152	G036.3667–02.4182		17.3
37h		19 06 27.9	+00 59 42	X	19039+0055	G035.5331–02.8881		
6-6		19 06 28.3	+03 10 19	X		G037.4705–01.8922		
31ter	*	19 06 39.45	+03 26 26.6	G	19041+0321	G037.7290–01.8106	15.5	
20	*	19 06 41.25	+03 02 18.1	G		G037.3769–02.0004		
6-4	*	19 06 43.08	+03 17 12.4	A			18.0	15.0
6-4b	*	19 06 45.2	+03 16 41	S		G037.5965–01.9073		
31	*	19 06 46.86	+03 25 21.7	g		G037.7275–01.8459		12.9
20c	*	19 06 58.20	+02 59 09.2	g				17.4
20b	*	19 06 55.76	+02 59 44.4	A	19044+0254	G037.3662–02.0744	18.1	13.8
51		19 07 01.16	+01 29 59.1	g	19044+0125	G036.0464–02.7801		14.8
81	*	19 07 03.16	+02 31 02.0	g		G036.9552–02.3214		18.2
80		19 07 13.23	+01 17 20.3	A	19046+0112	G035.8811–02.9211	16.3	12.3
30		19 07 12.9	+03 21 03	X	19047+0316	G037.7147–01.9748		
6-2	*	19 07 14.15	+03 25 05.8	g		G037.7769–01.9494		18.1
53b	*	19 07 19.30	+01 49 34.3	g	19047+0144	G036.3710–02.6974	18.3	16.2
X-2	*	19 07 27.08	+02 24 33.8	A		G036.9046–02.4591	19.9	15.3
X-1	*	19 07 31.27	+02 33 42.9	g	19049+0228	G037.0480–02.4031	17.4	14.8
19-II		19 07 34.10	+02 50 10.2	A		G037.2980–02.2891	18.3	16.1

Table 1 (cont'd.): Red variables near NGC 6749

[ROB97]		RA (2000)	Dec	s	IRAS	MSX5C	*mb*	*mr*
32		19 07 37.6	+03 29 25	X	19051+0324	G037.8860–02.0022		
82	*	19 08 06.96	+02 19 09.1	g		G036.9008–02.6471		15.9
82b	*	19 08 06.30	+02 17 41.6	g		G036.8784–02.6570	18.4	15.5
18	*	19 08 10.00	+02 31 50.2	A			17.7	14.2
53		19 08 18.3	+01 46 28	X	19057+0141	G036.4378–02.9400		
52b		19 08 33.68	+01 55 52.9	A	19060+0150	G036.6067–02.9246	19.3	14.9
25d	*	19 08 45.78	+03 16 01.9	A	19062+0311	G037.8176–02.3571	15.8	11.8
52	*	19 08 48.10	+01 39 28.8	A	19062+0134	G036.3932–03.1054	18.1	14.9
83	*	19 08 49.8	+02 50 46	X	19063+0245	G037.4513–02.5647		
25		19 09 02.79	+03 06 25.0	g		G037.7085–02.4934	17.2	13.8
33	*	19 09 17.34	+02 54 52.5	A	19067+0249	G037.5654–02.6349	18.8	15.4
25b	*	19 09 31.32	+03 03 16.4	g	19069+0258	G037.7171–02.6229	17.5	13.3
22		19 09 40.86	+02 13 25.7	g	19071+0208	G036.9955–03.0391	19.2	13.7
6-14	*	19 09 52.96	+02 54 21.0	A	19073+0249	G037.6255–02.7710	17.5	14.0
45	*	19 09 53.63	+02 46 27.1	A	19074+0241	G037.5101–02.8336	17.7	12.8
6-14b		19 09 58.89	+02 51 33.5	A	19074+0246	G037.5958–02.8137	18.2	14.6
0-2	*	19 10 02.66	+03 03 50.5	g		G037.7852–02.7342	19.3	16.1
7-1		19 10 06.6	+03 43 26	X	19076+0338	G038.3787–02.4449		
23		19 10 08.55	+02 16 29.8	g	19076+0211	G037.0943–03.1183		15.4
25e	*	19 10 06.99	+03 08 17.4	g	19075+0303	G037.8584–02.7161		
34		19 10 12.30	+02 44 37.5	A		G037.5181–02.9159	17.6	14.2
44c	*	19 10 21.83	+02 24 20.4	g			19.1	17.8
44b		19 10 23.52	+02 25 25.4	g		G037.2556–03.1049	19.4	17.6
6-14a		19 10 21.70	+02 58 07.6	g		G037.7368–02.8484	18.9	17.0
24		19 10 25.59	+02 18 32.5	g		G037.1574–03.1649	18.1	14.0
6C	*	19 11 10.88	+02 35 02.1	g		G037.4885–03.2073	19.2	15.9
6-16		19 11 30.0	+02 50 25	S				
6d		19 12 00.88	+02 34 27.9	g	19094+0229	G037.5758–03.3944	16.8	

Notes:

2	ROB $+2^s$ RA error
151b	PK 035–02 1 (not a planetary nebula)
17	ROB $-0\overset{\prime}{.}7$ Dec error
17b	crowded; northwestern star in a $\sim 5''$ trio
7	southeastern star of a $\sim 2''$ pair; companion is not red
6-12	northern star of a $\sim 2''$ pair; companion is not red
A-1	Cl* NGC 6749 ROB A-1; crowded
A-2	superposed on NGC 6749; crowded
12	ROB $-2^s/+0\overset{\prime}{.}9$ position error
31ter	GSC 0466-0506; ROB $+0\overset{\prime}{.}7$ Dec error; crowded
20	GSC 0466-2783; crowded
6-4	ROB $+1^s/-1\overset{\prime}{.}2$ position error
6-4b	ROB $-15''$ Dec error
31	crowded
20c	ROB $-2^s/-1\overset{\prime}{.}1$ position error
20b	ROB $+2^s/-0\overset{\prime}{.}6$ position error; chart ID unambiguous
81	ROB $25''$ position error (wrong star marked on chart)
6-2	ROB $-20''$ Dec error
53b	ROB $-15''$ Dec error

X-2	ROB -1^s RA error
X-1	ROB 35″ position error; crowded by star on southwest
82	ROB 15″ position error
82b	ROB 14″ position error
18	ROB -2^s RA error; not in IRAS/MSX, but chart ID unambiguous. southwestern star of a $\sim 2''$ pair
25d	ROB 27″ position error, but ID certain from mags, type M8 in Kwok *et al.* (1997)
52	crowded
83	eastern star of a $\sim 4''$ pair
33	outside IRAS position error-ellipse, but ID near-certain
25b	large IRAS position error-ellipse
6-14	ROB 18″ position error
45	IRAS position poor
0-2	southeastern star of a $\sim 2''$ pair
25e	ROB $+2^s$ RA error, southwestern star of a pair
44c	ID unambiguous on POSS-II IV-N scans
6C	ROB 19″ position error

The two columns following the coordinates show IRAS and MSX names as available. Both surveys reach to relatively faint limits in this area, evidently due to favorable infrared backgrounds. Photo-blue (*mb*) and -red (*mr*) magnitudes from either USNO-A2.0 or GSC-2.2 are shown as a rough guide in brightness. Periods and magnitude ranges in the I band are given in the source paper. At maximum the stars lie in the range $10^m < I < 13^m$. Rosino *et al.* (1997) note that the spectral classes of the stars are between M5 and M8, but types are not available for individual stars.

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