



THE ASTRONOMICAL LEAGUE'S ARP PECULIAR GALAXY CLUB



By John Wagoner

Texas Astronomical Society of Dallas

Introduction

The Astronomical League, realizing that the face of amateur astronomy is changing, and wanting to stay on the cutting edge of technology, is pleased to announce its new CCD imaging program. This new club is based on the 338 objects found in the Arp Catalog of Peculiar Galaxies. 100 of the 338 Arp galaxies must be imaged with a CCD camera to qualify for the Club's certificate.

Just because this is a CCD imaging program, doesn't mean that we want to exclude the observers and astrophotographers from this club. Those amateurs either observing or photographing 100 of the 338 Arp galaxies will also qualify for the Club's certificate. Please remember, though, before you start this program, that this program was developed for advanced amateurs, and may not be suitable for beginners. This is because CCD imaging requires quite a lot of equipment including a telescope, a computer, a CCD camera, imaging program, and atlases and databases. For observers and astrophotographers, a majority of the 338 galaxies fall in the 12th. to 18th. magnitude range. However, there are over 100 Arp objects below magnitude 13.5.

We feel that this new program will challenge even the most serious of amateur astronomers. We sincerely hope that you find this program rewarding, and will look forward to your completion of the Club.

Rules and Regulations

To qualify for the AL's Arp Peculiar Galaxy Club Certificate, you need only be a member of the Astronomical League, either through an affiliated club or as a Member-at-Large, and image 100 of the 338 objects in the Arp Peculiar Galaxy Catalog. You may select which 100 objects that you want to image. Any CCD camera may be used, whether commercial or home-built. Since many of the Arp objects are multiple galaxies, only the brightest member of the group need be imaged, but it would be nice if you could image the entire group. Also, photo enhancing of your image is not required, but, again, if you choose to do so then that will be accepted. The images should be submitted in the GIF, JPG, BMP, TIFF, or PCX formats. When properly compressed or archived, 100 of these images in the 25-28KB range should fit on two 1.44MB floppy disks. Use more if you require it. For locating the Arp galaxies, it is recommended that you use a good star atlas such as the "Uranometria 2000.0", Volumes I & II published by Willmann-Bell, Inc., or a good computer atlas like Emil Bonanno's "MegaStar" by E.L.B. Software (elb@ix.netcom.com). After submission of your images, with your permission, we will try to place the images on a Web page so that other amateur astronomers may access them.

For observers, you may select any 100 of the 338 galaxies in the catalog, and observe only the brightest member of the group if you so choose. Since this is an advanced observing program for light buckets, it is recommended that you use a telescope with an aperture of 12.5 inches or larger, and observe from a dark sky site. To record your observations, you may use log sheets similar to those found in the back of the Astronomical League's manual *Observe: A Guide to the Messier Objects*. You can order the *Observe* manual through Marion Bachtell, Astronomical League Sales, P.O. Box 572, West Burlington, Ia. 52655-9998. The price is \$4.50, including postage. If you use your own log sheets, they should include: object, date, time, power, seeing, type of instrument, and observing notes.

If you need to become a member of the Astronomical League as a Member-at-Large, contact Linda Sensenig, M.A.L. Chairperson, 345 Douglass St., Wyomissing, Pa. 19610, (215) 375-9062.

To receive your Arp Peculiar Galaxy Club Certificate, simply send your images/observations/astrophotos along with your name, address, phone number, and club affiliation to: John Wagoner, A.L. Binocular Co-ordinator, 1409 Sequoia Dr., Plano, Tx. 75023, (214) 422-1886. Upon verification, your certificate will be forwarded either to you or your club's Award's Co-ordinator, whomever you choose. Each certificate will be numbered and lettered according to how it was acquired, either through CCD imaging, observation, or astrophotography.

The List

The list is provided in Arp Catalog number order. Because of the size of the catalog (338 objects), only a limited amount of information can be provided. In addition to the Arp number, you are given additional catalog names that the object is known under, and the Right Ascension and Declination of each object (Epoch 2000). For more information, we recommend a good catalog such as the "Deep Sky Field Guide to the Uranometria 2000.0" published by Willmann-Bell, Inc., or a computer catalog (I used The Arizona Database V. 8.0). Finally, for those of you that like to do constellation mopping or would like to plan your program around what is visible in the sky at certain times of the year, we have provided the Arp Peculiar Galaxy Catalog by constellation. I wish all of you the best of luck in this new program.

Acknowledgement

I and the Astronomical League wish to gratefully acknowledge Dennis Webb of the Houston Astronomical Society for his suggestion to create this program, and for the wonderful work that he has put into the Arp Peculiar Galaxy Catalog as reflected in this program.

John Wagoner - Plano, Tx - February 27, 1997

Arp	Object	RA	Dec
1	NGC 2857	09 24.63	49 21.4
2	UGC 10310	16 16.30	47 02.8
3	MCG-01-57-016	22 36.57	-02 54.3
4	MCG-02-05-50 + A	01 48.43	-12 22.9
5	NGC 3664	11 24.41	03 19.6
6	NGC 2537	08 13.24	45 59.5
7	MCG-03-23-009	08 50.29	-16 34.6
8	NGC 0497	01 22.39	-00 52.5
9	NGC 2523	08 14.99	73 34.8
10	UGC 01775	02 18.44	05 39.2
11	UGC 00717	01 09.39	14 20.2
12	NGC 2608	08 35.29	28 28.4
13	NGC 7448	23 00.04	15 59.4
14	NGC 7314	22 35.76	-26 03.0
15	NGC 7393	22 51.66	-05 33.5
16	MESSIER 66	11 20.25	12 59.3
17	UGC 03972	07 44.55	73 49.8
18	NGC 4088	12 05.59	50 32.5
19	NGC 0145	00 31.75	-05 09.2
20	UGC 03014	04 19.90	02 05.7
21	CGCG 155-056	11 04.98	30 01.6
22	NGC 4027	11 59.51	-19 15.8
23	NGC 4618	12 41.54	41 09.0
24	NGC 3445	10 54.61	56 59.4
25	NGC 2276	07 27.22	85 45.3
26	MESSIER 101	14 03.21	54 21.0
27	NGC 3631	11 21.04	53 10.3
28	NGC 7678	23 28.46	22 25.3
29	NGC 6946	20 34.87	60 09.2
30	NGC 6365A + B	17 22.72	62 10.4
31	IC 0167	01 51.14	21 54.8
32	UGC 10770	17 13.13	59 19.4
33	UGC 08613	13 37.40	06 26.2
34	NGC 4615 + 13 + 14	12 41.62	26 04.3
35	UGC 00212 + comp	00 22.38	-01 18.2
36	UGC 08548	13 34.25	31 25.5
37	MESSIER 77	02 42.68	00 00.8
38	NGC 6412	17 29.60	75 42.3
39	NGC 1347	03 29.70	-22 16.7
40	IC 4271	13 29.34	37 24.5
41	NGC 1232 + A	03 09.76	-20 34.7
42	NGC 5829 + IC 4526	15 02.70	23 19.9
43	IC 0607	10 24.26	16 44.6
44	IC 0609	10 25.55	-02 13.3
45	UGC 09178	14 19.85	51 54.3
46	UGC 12665	23 33.69	30 02.6
47	CGCG 105-026	14 47.21	18 51.5
48	CGCG 436-026	01 19.94	12 20.7
49	NGC 5665	14 32.43	08 04.8
50	IC 1520	23 57.97	-14 01.8
51	MCG-02-01-24	00 06.28	-13 26.9
52	CGCG 421-027	05 19.73	03 43.0
53	NGC 3290	10 35.29	-17 16.5
54	MCG-01-07-007	02 24.03	-04 41.6
55	UGC 04881	09 15.93	44 19.9
56	UGC 01432	01 57.43	17 13.0
57	MCG+03-34-012	13 16.67	14 26.2
58	UGC 04457	08 31.97	19 12.8
59	NGC 0341	01 00.76	-09 11.1
60	ARP 060	13 14.79	26 05.1
61	UGC 03104	04 36.70	-02 17.2
62	UGC 06865	11 53.60	43 27.3
63	NGC 2944	09 39.28	32 18.6
64	UGC 09503	14 45.43	19 27.9
65	NGC 0091	00 21.86	22 24.0
66	UGC 10396	16 26.88	51 33.3
67	UGC 00892	01 21.28	-00 32.7
68	NGC 7757(56)	23 48.75	04 10.4
69	NGC 5579 + 80	14 20.44	35 11.3
70	UGC 00934	01 23.47	30 47.1
71	NGC 6045	16 05.13	17 45.4
72	NGC 5994 + 96	15 46.89	17 52.3
73	IC 1222	16 35.15	46 12.8
74	UGC 01626	02 08.36	41 28.8
75	NGC 0702	01 51.31	-04 03.3
76	MESSIER 90	12 36.83	13 09.8
77	NGC 1097	02 46.32	-30 16.5
78	NGC 0772	01 59.34	19 00.4
79	NGC 5490C	14 10.12	17 36.9
80	NGC 2633	08 48.11	74 06.0
81	NGC 6621 + 22	18 12.91	68 21.8
82	NGC 2535 + 36	08 11.23	25 12.4
83	NGC 3800 + 3799	11 40.22	15 20.6
84	NGC 5395 + 94	13 58.64	37 25.5
85	MESSIER 51	13 29.87	47 11.9

Arp	Object	RA	Dec
86	NGC 7753 + 52	23 47.08	29 29.0
87	NGC 3808 + A	11 40.74	22 25.7
88	VV 445	01 19.09	12 28.7
89	NGC 2648 + comp	08 42.67	14 17.1
90	NGC 5930 + 29	15 26.13	41 40.5
91	NGC 5953 + 54	15 34.54	15 11.7
92	NGC 7603 + comp	23 18.94	00 14.6
93	NGC 7284 + 85	22 28.60	-24 50.6
94	NGC 3226 + 27	10 23.45	19 53.9
95	IC 4461 + 62	14 35.03	26 32.6
96	UGC 03528A	07 03.01	86 36.2
97	UGC 07085A	12 05.76	31 03.6
98	UGC 01095 + comp	01 32.28	32 05.4
99	NGC 7550 + 49	23 15.27	18 57.7
100	IC 0018 + 19	00 28.64	-11 34.4
101	UGC 10169 + 164	16 04.53	14 49.1
102	UGC 10814	17 19.24	48 58.8
103	UGC 10586 (3 gal.)	16 49.43	45 27.5
104	NGC 5218 + 16	13 32.18	62 46.0
105	NGC 3561A&B	11 11.22	28 41.7
106	NGC 4211 + A	12 15.60	28 10.6
107	UGC 05984	10 52.31	30 04.0
108	ESO 547-G002/G003	03 03.09	-22 13.0
109	UGC 10053	15 48.13	69 27.5
110	MCG-03-58-011	22 54.15	-15 14.2
111	NGC 5421	14 01.68	33 49.7
112	NGC 7805 + 06	00 01.45	31 26.0
113	NGC 0070	00 18.37	30 04.8
114	NGC 2300+2276	07 32.33	85 42.5
115	UGC 06678	11 43.05	26 16.6
116	MESSIER 60	12 43.66	11 33.2
117	IC 0982 + 983	14 09.98	17 41.8
118	NGC 1144 + 43	02 55.19	00 10.6
119	UGC 00849	01 19.40	12 26.8
120	NGC 4438	12 27.76	13 00.5
121	MCG-01-03-051	00 59.39	-04 48.2
122	NGC 6040A + B	16 04.45	17 45.0
123	NGC 1888 + 89	05 22.54	-11 29.7
124	NGC 6361	17 18.68	60 36.4
125	UGC 10491	16 38.23	41 55.8
126	UGC 01449	01 58.09	03 06.0
127	NGC 0191	00 38.99	-09 00.1
128	UGC 00827	01 17.41	14 41.8
129	UGC 05146	09 39.41	32 21.7
130	IC 5378	00 02.63	16 38.6
131	MCG-03-08-25	02 47.3	-14 48.1
132	CGCG 011-053	11 19.35	-03 05.4
133	NGC 0541	01 25.74	-01 22.8
134	MESSIER 49	12 29.77	07 59.8
135	NGC 1023	02 40.40	39 03.8
136	NGC 5820	14 58.67	53 53.2
137	NGC 2914	09 34.05	10 06.5
138	NGC 4015	11 58.71	25 02.2
139	MCG+05-31-135	13 07.40	26 43.1
140	NGC 0275 + 74	00 51.08	-07 03.8
141	UGC 03730	07 14.35	73 28.8
142	NGC 2936 + 37	09 37.74	02 45.6
143	NGC 2444	07 46.88	39 01.9
144	NGC 7828	00 06.45	-13 25.0
145	ARP 145	02 23.13	41 22.2
146	VV 790	00 06.74	-06 38.2
147	IC 0298	03 11.31	01 18.8
148	MCG+07-23-019	11 04.00	40 50.8
149	IC 0803	12 39.71	16 35.5
150	NGC 7609	23 19.50	09 30.5
151	MRK 0040	11 25.60	54 22.9
152	MESSIER 87	12 30.82	12 23.5
153	NGC 5128	13 25.46	-43 01.1
154	NGC 1316	03 22.69	-37 12.6
155	NGC 3656	11 23.64	53 50.5
156	UGC 05814	10 42.63	77 29.7
157	NGC 0520	01 24.59	03 47.6
158	NGC 0523	01 25.33	34 01.5
159	NGC 4747	12 51.76	25 46.5
160	NGC 4194	12 14.17	54 31.7
161	UGC 06665	11 42.21	00 20.0
162	NGC 3414	10 51.27	27 58.5
163	NGC 4670	12 45.28	27 07.5
164	NGC 0455	01 15.95	05 10.7
165	NGC 2418	07 36.63	17 53.1
166	NGC 0750 + 51	01 57.54	33 12.6
167	NGC 2672	08 49.37	19 04.5
168	MESSIER 32	00 42.70	40 51.9
169	NGC 7236 + 37	22 14.75	13 50.8
170	NGC 7578A + B	23 17.20	18 42.0

Obj	Object	RA	Dec
171	NGC 5719	14 40.72	03 27.2
172	IC 1179	16 05.55	17 36.1
173	UGC 09561	14 51.44	09 19.7
174	NGC 3068A	09 58.67	28 52.6
175	IC 3481+A + 83	12 32.87	11 24.2
176	NGC 4933A + B	13 03.91	-11 30.4
177	MCG+04-35-017	14 55.81	24 35.9
178	NGC 5613	14 24.10	34 53.5
179	NPM1G -04.0134	03 01.68	-04 40.3
180	MCG-01-13-034	04 53.37	-04 48.1
181	NGC 3212	10 28.28	79 49.4
182	NGC 7674	23 27.95	08 46.7
183	UGC 08560	13 34.92	31 23.5
184	NGC 1961	05 42.07	69 22.8
185	NGC 6217	16 32.67	78 11.9
186	NGC 1614	04 34.00	-08 34.7
187	MCG-02-13-040A	05 04.88	-10 14.9
188	UGC 10214	16 06.06	55 25.3
189	NGC 4651	12 43.71	16 23.7
190	UGC 02320	02 50.33	12 53.3
191	UGC 06175	11 07.34	18 25.9
192	NGC 3303	10 36.99	18 08.2
193	IC 0883	13 20.59	34 08.3
194	UGC 06945	11 57.88	36 23.3
195	UGC 04653	08 53.84	35 08.6
196	Herzog 21	13 14.63	26 07.4
197	IC 0701	11 31.01	20 28.2
198	UGC 06073	10 59.76	17 38.9
199	NGC 5544 + 45	14 17.04	36 34.3
200	NGC 1134	02 53.69	13 00.9
201	UGC 00224	00 23.56	-00 29.4
202	NGC 2719 + A	09 00.26	35 43.6
203	NGC 3712	11 31.15	28 34.0
204	UGC 08454	13 22.83	84 30.4
205	NGC 3448	10 54.65	54 18.4
206	NGC 3432	10 52.52	36 37.2
207	UGC 05050	09 31.11	76 27.9
208	MCG+08-31-010	16 51.05	47 13.2
209	NGC 6052	16 05.21	20 32.5
210	NGC 1569	04 30.82	64 50.9
211	MCG+07-26-034	12 37.32	38 43.5
212	NGC 7625	23 20.50	17 13.5
213	IC 0356	04 07.79	69 48.8
214	NGC 3718	11 32.59	53 04.0
215	NGC 2782	09 14.09	40 06.8
216	NGC 7679 + 82	23 28.78	03 30.7
217	NGC 3310	10 38.77	53 30.1
218	CGCG 107-052	15 53.54	18 36.2
219	UGC 02812	03 39.7	-02 06.8
220	IC 4553	15 34.95	23 30.3
221	MCG-02-25-006	09 36.4	-11 19.7
222	NGC 7727	23 39.90	-12 17.5
223	NGC 7585	23 18.04	-04 38.9
224	NGC 3921	11 51.11	55 04.7
225	NGC 2655	08 55.65	78 13.5
226	NGC 7252	22 20.75	-24 40.7
227	NGC 0474	01 20.11	03 25.0
228	IC 0162	01 48.89	10 31.3
229	NGC 0508 + 07	01 23.68	33 16.8
230	IC 0051	00 46.40	-13 26.5
231	IC 1575	00 43.56	-04 07.1
232	NGC 2911	09 33.78	10 09.1
233	UGC 05720	10 32.53	54 24.0
234	NGC 3738	11 35.81	54 31.5
235	NGC 0014	00 08.77	15 48.9
236	IC 1623	01 07.79	-17 30.4
237	UGC 05044	09 27.73	12 17.2
238	UGC 08335	13 15.49	62 07.7
239	NGC 5278 + 79	13 41.66	55 40.1
240	NGC 5257 + 58	13 39.88	00 50.4
241	UGC 09425	14 37.85	30 28.9
242	NGC 4676A + B	12 46.17	30 44.0
243	NGC 2623	08 38.40	25 45.3
244	NGC 4038 + 39	12 01.88	-18 51.9
245	NGC 2992 + 93	09 45.70	-14 19.6
246	NGC 7838	00 06.90	08 21.0
247	IC 2338 + 39	08 23.54	21 20.3
248	Wild's Triplet	11 46.75	-03 50.8
249	UGC 12891	00 00.32	22 59.4
250	IRAS F07327+3529	07 36.00	35 22 5
251	VV 674	00 53.78	-13 51.7
252	ESO 566-IG007	09 44.97	-19 43.5
253	UGCA 173 + 174	09 43.41	-05 16.8
254	NGC 5917	15 21.54	-07 22.6
255	UGC 05304	09 53.15	07 52.8

Obj	Object	RA	Dec
256	MCG-02-01-52	00 19.93	-10 21.7
257	UGC 04638	08 51.64	-02 22.7
258	UGC 02140	02 39.08	18 23.6
259	NGC 1741	05 01.63	-04 15.5
260	UGC 07230	12 13.65	16 07.3
261	MCG-02-38-016	14 49.51	-10 10.4
262	UGC 12856	23 56.75	16 48.7
263	NGC 3239	10 25.09	17 09.6
264	NGC 3104	10 03.96	40 45.4
265	IC 3862	12 53.89	36 05.2
266	NGC 4861	12 59.03	34 51.6
267	UGC 05764	10 36.71	31 32.8
268	Holmberg II	08 19.10	70 42.8
269	NGC 4490 + 85	12 30.61	41 38.4
270	NGC 3395 + 96	10 49.83	32 58.8
271	NGC 5426 + 27	14 03.42	-06 04.2
272	NGC 6054	16 05.51	17 46.1
273	UGC 01810 + 13	02 21.48	39 22.5
274	NGC 5679A + B + C	14 35.10	05 20.9
275	NGC 2881	09 25.92	-11 59.0
276	NGC 0935 + IC 1801	02 28.18	19 36.0
277	NGC 4809 + 10	12 54.85	02 39.2
278	NGC 7253A + B	22 19.44	29 23.9
279	NGC 1253 + A	03 14.15	-02 49.4
280	NGC 3769 + A	11 37.74	47 53.5
281	NGC 4631 + 27	12 42.10	32 32.4
282	NGC 0169	00 36.87	23 59.5
283	NGC 2798 + 99	09 17.38	41 60.0
284	NGC 7714 + 15	23 36.24	02 09.3
285	NGC 2854 + 56	09 24.05	49 12.2
286	NGC 5566 + 60 + 69	14 20.34	03 56.0
287	NGC 2735 + A	09 02.64	25 56.1
288	NGC 5221 + 22	13 34.94	13 49.9
289	NGC 3981	11 56.12	-19 53.7
290	IC 0195 + 196	02 03.74	14 42.5
291	UGC 05832	10 42.81	13 27.6
292	IC 0575	09 54.55	-06 51.4
293	NGC 6286	16 58.52	58 56.2
294	NGC 3786 + 88	11 39.71	31 54.5
295	MCG-01-60-021	23 41.80	-03 40.6
296	NGC 3690 + IC 694	11 28.33	58 32.5
297	NGC 5754 + 55	14 45.33	38 43.9
298	NGC 7469	23 03.26	08 52.4
299	NGC 3690	11 28.56	58 33.8
300	UGC 05029	09 28.04	68 25.3
301	UGC 06204	11 09.86	24 15.7
302	UGC 09618	14 57.02	24 37.0
303	IC 0563 + 64	09 46.34	03 02.7
304	NGC 1241 + 42	03 11.25	-08 55.3
305	NGC 4016 + 17	11 58.49	27 31.7
306	UGC 01102	01 32.49	04 35.7
307	NGC 2872 + 74	09 25.71	11 25.9
308	NGC 0545 + 47	01 25.99	-01 20.4
309	NGC 0942 + 43	02 29.17	-10 50.2
310	IC 1259	17 27.42	58 31.0
311	IC 1259 Field	17 27.29	58 29.1
312	MCG+08-31-004	16 49.81	46 43.1
313	NGC 3994 + 95	11 57.61	32 16.6
314	MCG-03-58-009	22 58.02	-03 46.1
315	NGC 2832	09 19.78	33 45.0
316	NGC 3193	10 18.42	21 53.6
317	MESSIER 65 + 66	11 18.92	13 05.6
318	NGC 0833 Group	02 09.34	-10 08.0
319	Stephan's Quintet	22 35.95	33 57.9
320	NGC 3750	11 37.86	21 58.4
321	MCG-01-25-009	09 38.89	-04 51.6
322	UGC 06527	11 32.67	52 57.0
323	NGC 7783	23 54.17	00 23.0
324	UGC 10143	16 02.21	15 54.4
325	ESO 601-G018	22 06.40	-21 04.7
326	UGC 08610	13 37.31	06 28.7
327	NGC 1875	05 21.77	06 41.3
328	UGC 09532	14 47.93	19 03.4
329	UGC 06514	11 32.12	70 48.9
330	I Zw 167	16 49.13	53 25.9
331	Pisces Cloud	01 07.42	32 24.7
332	IC 1892	03 08.47	-23 03.1
333	NGC 1024	02 39.20	10 50.8
334	UGC 08498	13 30.43	31 37.2
335	NGC 3509	11 04.40	04 49.8
336	NGC 2685	08 55.59	58 44.0
337	MESSIER 82	09 55.86	69 40.8
338	Arp 338	10 10.99	-07 54.9

This List is Epoch 2000.0

The Arp Peculiar Galaxies By Constellation

And	Cam	Cet	Dra	Hya	Lib	Psc(cont)	UMa(cont)
65	9	4	30	7	254	216	234
74	17	8	32	53	261	227	238
113	80	10	38	142		228	239
145	96	19	66	221	Lyn	229	268
158	141	37	81	245	6	246	280
168	184	50	109	252	55	284	285
273	204	51	124	275	143	306	294
282	210	54	156	321	195	323	296
	213	59	181		202	331	299
Aqr	215	67	188	Leo	250		300
3	225	75	207	5	283	PsA	313
15		100	293	16	315	14	322
93	Cnc	118	310	43			336
110	12	121	311	63	Ori	Ser	337
222	58	127	329	83	52	72	
223	82	133	330	87	327	91	UMi
226	89	140		94		101	185
295	167	144	Eri	115	Peg	218	
314	243	146	39	129	13	220	Vir
325	247	147	41	132	28		33
	257	230	61	137	46	Sex	76
Ari	287	231	108	174	86	44	116
31		236	131	191	99	253	120
56	CVn	251	179	192	112	292	134
78	23	256	180	197	130	303	152
166	36	308	186	198	150	338	161
190	40	309	187	232	169		171
200	84	318	219	237	170	Tau	175
258	85		259	255	182	20	176
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