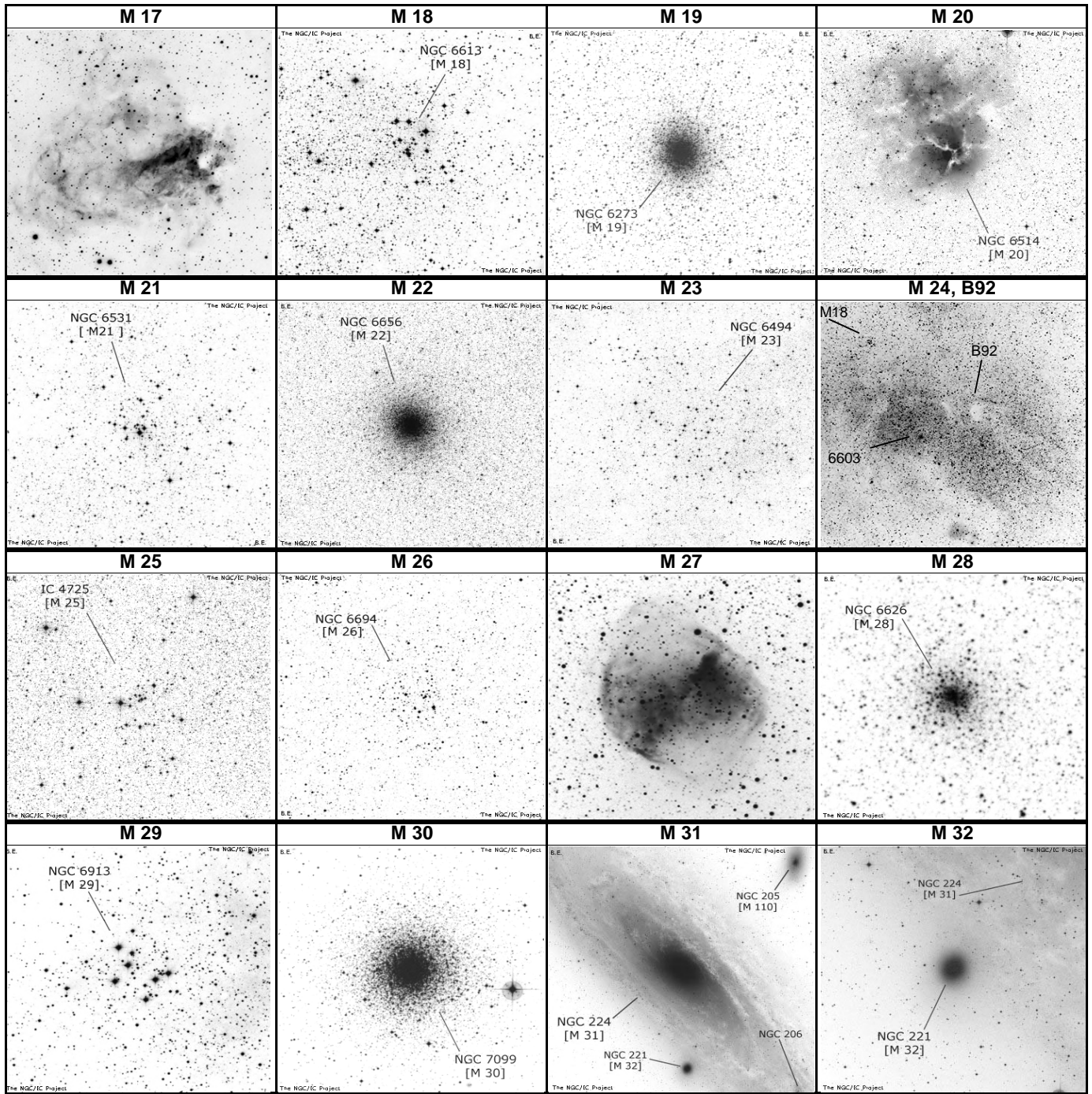
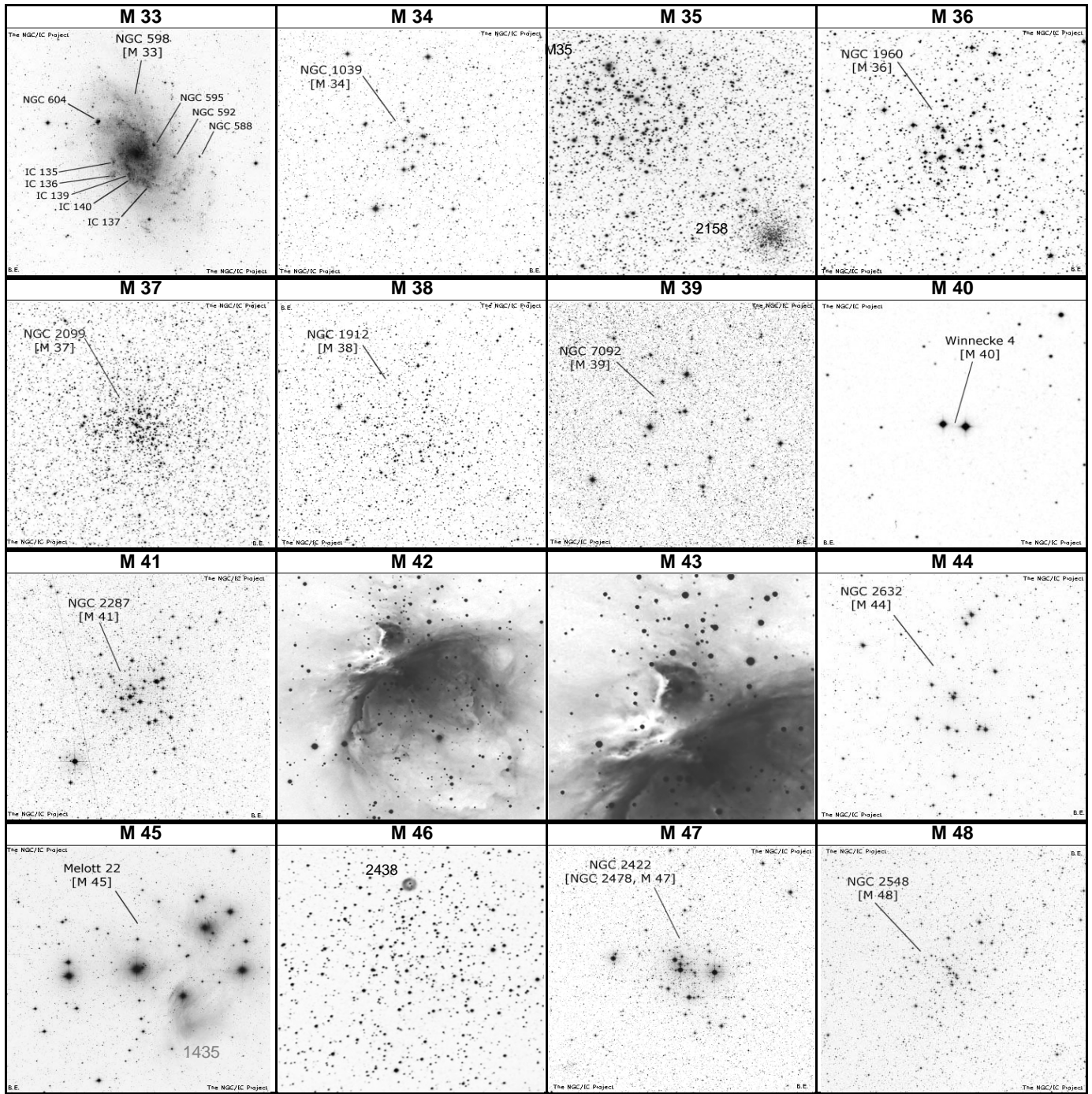


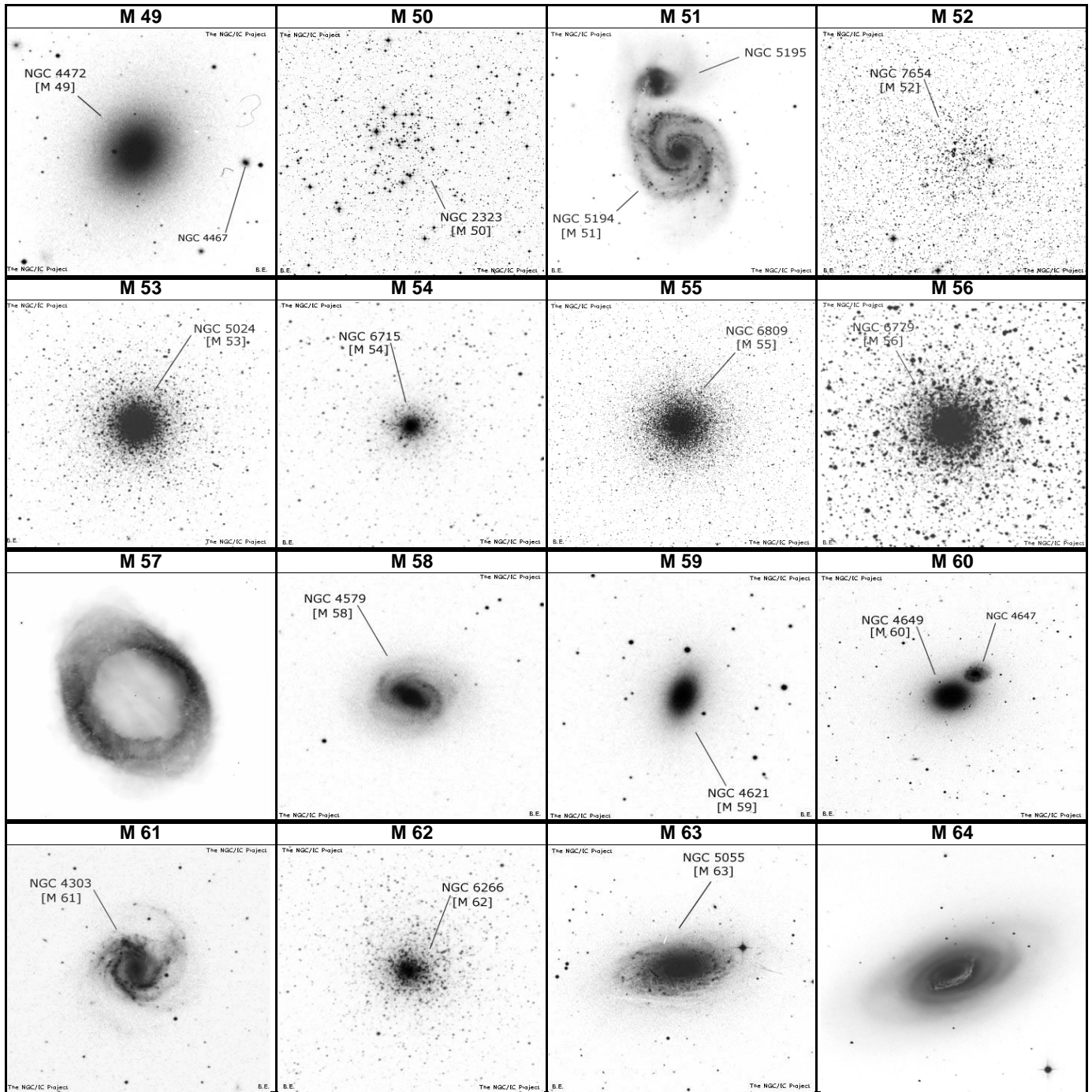
NAME	OTHER	TYPE	CON	MAG	S.B.	SIZE	RA	DEC	U2K	Class	ns	bs	Dist	SAC NOTES
M 1	NGC 1952	SN Rem	TAU	8.4	11	8'	05 34.5	+22 01	135				6.3k	Crab Nebula , filaments;pulsar 16m;3C144
M 2	NGC 7089	Glob CL	AQR	6.5	11	11.7'	21 33.5	-00 49	255	II			36k	Lord Rosse-Dark area near core,* mags 13...
M 3	NGC 5272	Glob CL	CVN	6.3	11	18.6'	13 42.2	+28 23	110	VI			31k	Lord Rosse-sev dark marks within 5' of center
M 4	NGC 8121	Glob CL	SCO	5.4	12	26.3'	18 23.8	-26 32	336	IX			7k	Look for central bar structure
M 5	NGC 5904	Glob CL	SER	5.7	11	19.9'	15 18.6	+02 05	244	V			23k	st mags 11...;superb cluster
M 6	NGC 6405	Opn CL	SCO	4.2	10	20'	17 40.3	-32 15	377	III 2 p	80	6	2k	Butterfly cluster ;51 members to 10.5 mag incl var
M 7	NGC 6475	Opn CL	SCO	3.3	12	80'	17 53.9	-34 48	377	II 2 r	80	6	1k	80 members to 10th mag;Fine naked eye cluster
M 8	NGC 6523	CL+Neb	SGR	5	13	45'	18 03.7	-24 23	339	E			6.5k	Lagoon Nebula ;NGC 6530 invl;dark lane crosses
M 9	NGC 6333	Glob CL	OPH	7.9	11	5.5'	17 19.2	-18 31	337	VIII			26k	Dark neb B64 prominent to west
M 10	NGC 6254	Glob CL	OPH	6.6	12	12.2'	16 57.1	-04 06	247	VII			13k	Lord Rosse reported dark lane in cluster
M 11	NGC 6705	Opn CL	SCT	5.8	9	14'	18 51.1	-06 16	295	I 2 r	500	8	6k	500 stars to 14th mag; Wild duck cluster
M 12	NGC 6218	Glob CL	OPH	6.1	12	14.5'	16 47.2	-01 57	246	IX			18k	Somewhat loose structure
M 13	NGC 6205	Glob CL	HER	5.8	12	23.2'	16 41.7	+36 28	114	V			22k	Hercules cluster ;Messier said nebula, no stars
M 14	NGC 6402	Glob CL	OPH	7.6	12	6.7'	17 37.6	-03 15	248	VIII			27k	Many vF stars 14...
M 15	NGC 7078	Glob CL	PEG	6.4	11	12.3'	21 30.0	+12 10	210	IV			33k	Stars mags 13...
M 16	NGC 6611	CL+Neb	SER	6	12	7'	18 18.8	-13 47	294	II 3 m n	60	11	7k	Star Queen or Eagle Nebula ;stars mags 8...



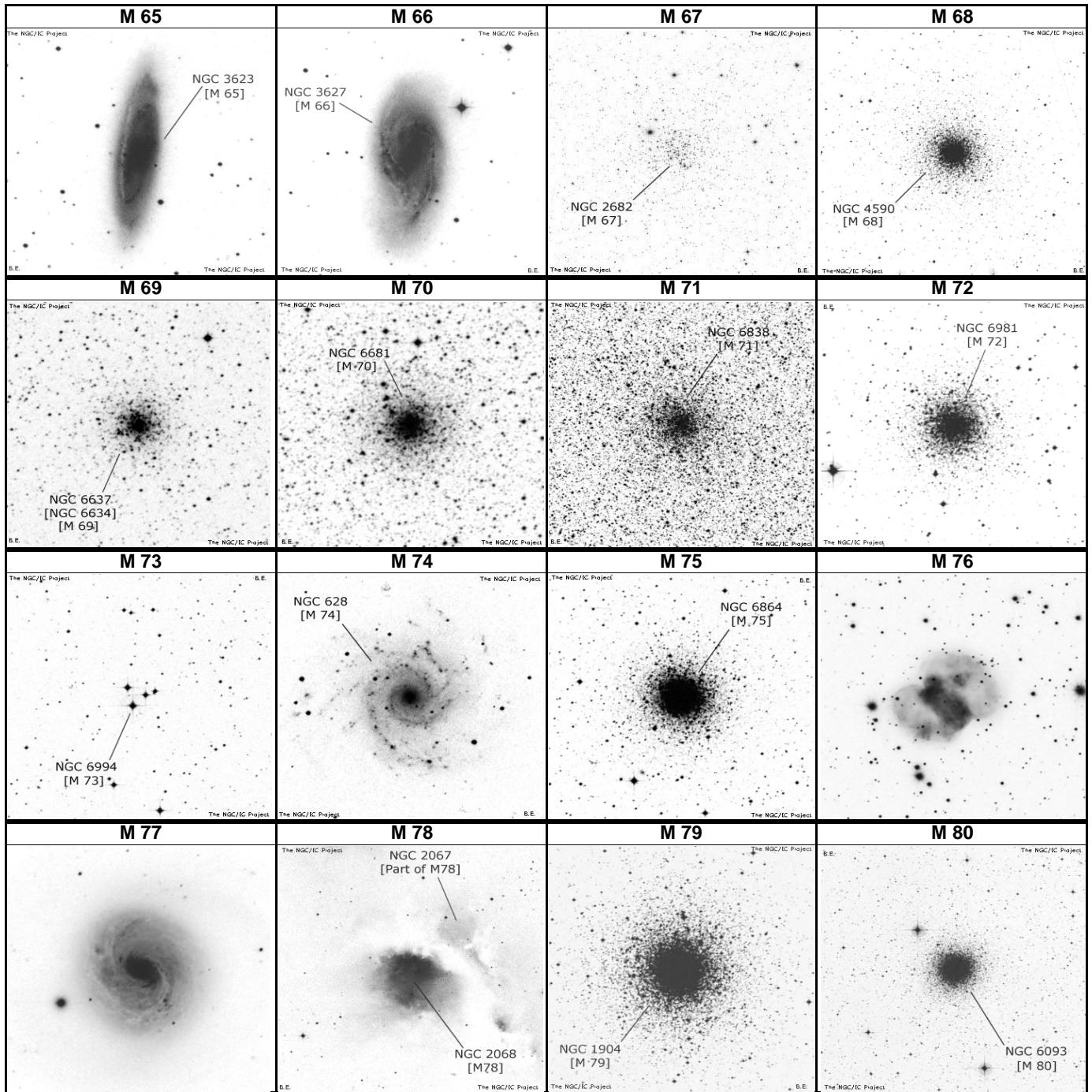
NAME	OTHER	TYPE	CON	MAG	S.B.	SIZE	RA	DEC	U2K	Class	ns	bs	Dist	SAC NOTES
M 17	NGC 6618	CL+Neb	SGR	6	13	11'	18 20.8	-16 11	294	III 3 m r	40	9	5k	Omega nebula; Swan Nebula ; many F outer loops
M 18	NGC 6613	Opn CL	SGR	6.9	12	9'	18 19.9	-17 08	339	II 3 p n	20	9	6k	12 * mag 9-10; 1 deg S of M17
M 19	NGC 6273	Glob CL	OPH	6.8	11	5.3'	17 02.6	-26 16	337	VIII			27k	One of the most oblate globulars
M 20	NGC 6514	CL+Neb	SGR	6.3	13	28'	18 02.7	-22 58	339	E+*	67	6	2.2k	Trifid nebula ; sev dark lanes; H IV 41 & V 10; D* HN
M 21	NGC 6531	Opn CL	SGR	5.9	11	13'	18 04.2	-22 29	339	I 3 m	70	7	3k	In Sgr OB1; 36 members to 12th mag
M 22	NGC 6656	Glob CL	SGR	5.2	11	24'	18 36.4	-23 54	340	VII			10k	Stars mags 11...; one of finest globs
M 23	NGC 6494	Opn CL	SGR	5.5	13	27'	17 57.1	-18 59	339	III 1 m	150	9	4.5k	100 members to 13th mag
M 24	IC 4715	Opn CL	SGR	3.1	4.3	95'	18 26.6	-18 23	339				10k	Small Sagittarius Star Cloud ; dark neb , 6603 inv
M 25	IC 4725	Opn CL	SGR	4.6	12	29'	18 31.8	-19 07	340	I 2 p	30	7	3k	Contains U Sgr; Stars mags 6...10
M 26	NGC 6694	Opn CL	SCT	8	12	15'	18 45.2	-09 24	295	I 1 m	30	10	5k	Finderscope will show why Messier included it; 70*, 1
M 27	NGC 6853	Pln Neb	VUL	7.3	11.2	480"	19 59.8	+22 43	162	3(2)		14	1.3k	dumbbell neb. PK60-3.1; Lord Rosse drew 18* inv
M 28	NGC 6626	Glob CL	SGR	6.9	11	15'	18 24.5	-24 52	340	IV			18k	45' NW from Lambda Sgr; * mags 14...
M 29	NGC 6913	Opn CL	CYG	6.6	11	7'	20 23.9	+38 32	120	III 3 p n	50	9	7.2k	About 20 stars mags 8...
M 30	NGC 7099	Glob CL	CAP	6.9	11	8.9'	21 40.4	-23 11	346	V			25k	Wm. Herschel saw very elliptical shape
M 31	NGC 224	Galaxy	AND	3.4	13.5	189'	00 42.7	+41 16	60	Sb			2.6m	Andromeda Galaxy ; Local Group; nearest spiral
M 32	NGC 221	Galaxy	AND	8.1	12.4	8.5'	00 42.7	+40 52	60	E2			2.6m	Companion to M31 ; Member of Local Group



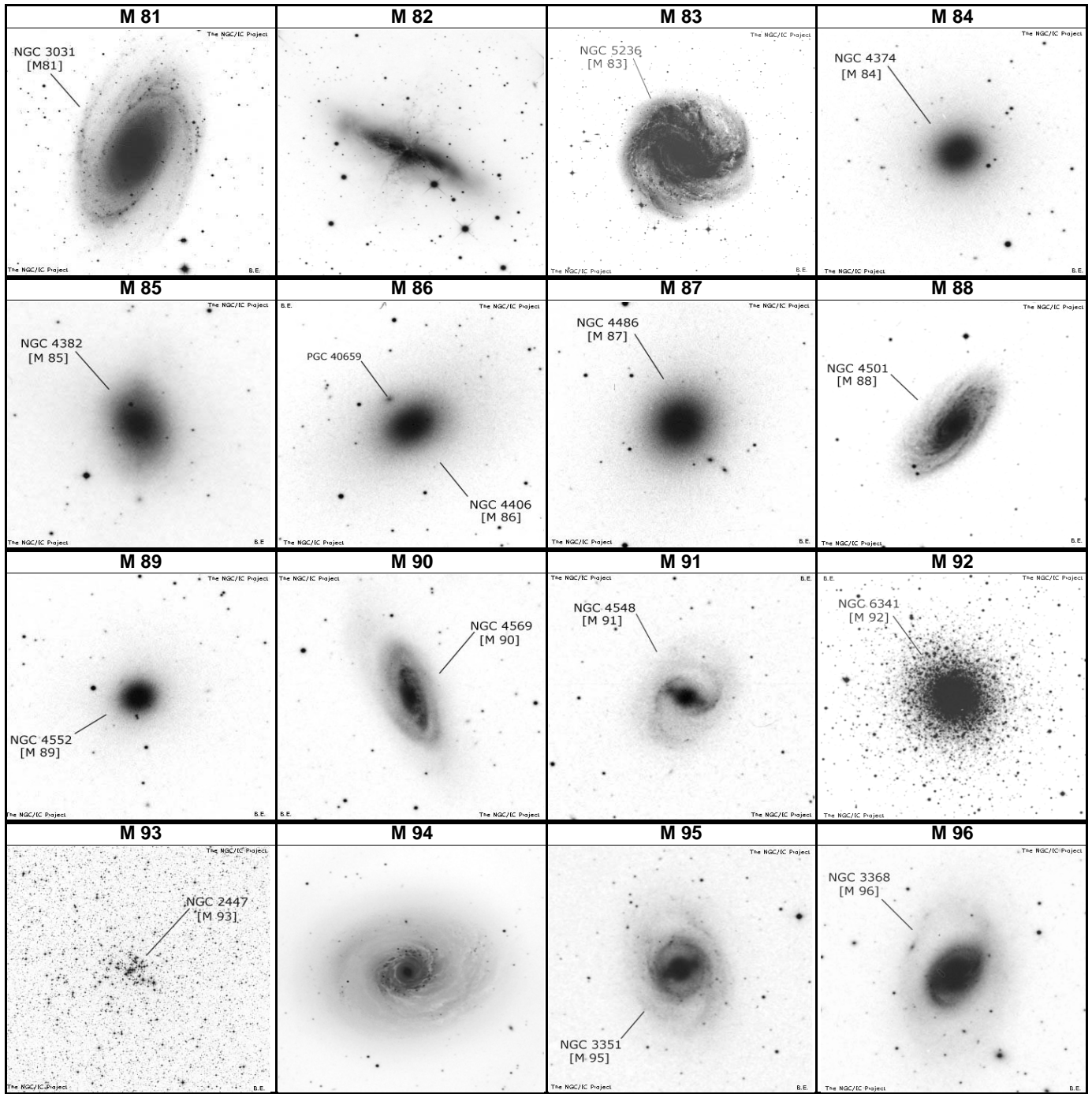
NAME	OTHER	TYPE	CON	MAG	S.B.	SIZE	RA	DEC	U2K	Class	ns	bs	Dist	SAC NOTES
M 33	NGC 598	Galaxy	TRI	5.7	14.2	68.7'	01 33.9	+30 39	91	Sc			3m	Pinwheel Galaxy ; Local Group; H V 17
M 34	NGC 1039	Opn CL	PER	5.2	-	35'	02 42.1	+42 47	62	II 3 m	100	7	1.4k	At least 80 true members; sev D* incl h1123 & O Stv
M 35	NGC 2168	Opn CL	GEM	5.1	12	28'	06 08.9	+24 21	137	III 2 m	200	8	2.8k	Lord Rosse counted 300*; Orange * invl; NGC 2158
M 36	NGC 1960	Opn CL	AUR	6	12	12'	05 36.3	+34 08	97	II 3 m	60	9	4.1k	in Aur OB1; incl Struve 737 10.7" sep
M 37	NGC 2099	Opn CL	AUR	5.6	11	24'	05 52.3	+32 33	98	II 1 r	150	9	4.6k	Total population 500*; dark area near center
M 38	NGC 1912	Opn CL	AUR	6.4	12	21'	05 28.7	+35 51	97	III 2 m	100	10	4.2k	in Aur OB1; Burnham-shaped like Greek letter Pi
M 39	NGC 7092	Opn CL	CYG	4.6	11	32'	21 32.2	+48 26	86	III 2 p	30	7	0.3k	Large but loose cluster
M 40	Winnecke 4	2 Stars	UMA	9	-		12 21.9	+58 06	47					D* 9 & 9.3 mag 50" sep; No nebulae
M 41	NGC 2287	Opn CL	CMA	4.5	12	38'	06 46.0	-20 45	318	II 3 m	80	7	2.4k	150 members to 13 mag; orange * near center
M 42	NGC 1976	CL+Neb	ORI	4	11	90'	05 35.3	-05 23	225	E+R			1.8k	Orion neb Trapezium* 6.7-7.7m; >50 var* invl
M 43	NGC 1982	Brt Neb	ORI	7	13	20'	05 35.5	-05 16	225	E			1.8k	H III 1 ?; detached part of Orion Nebula
M 44	NGC 2632	Opn CL	CNC	3.1	13	95'	08 40.0	+19 40	141	II 2 m	50	6	0.5k	Beehive Cluster ; 200 memb to 14 mag
M 45	Mel 22	CL+Neb	TAU	1.2	11	100'	03 47.0	+24 07	132	I 3 r n	100	3	0.4k	Pleiades ; nebs NGC 1432 and 1435 involved
M 46	NGC 2437	Opn CL	PUP	6.1	13	27'	07 41.8	-14 49	274	III 2 m	100	9	5.4k	PLNNB NGC 2438 on N edge; 150 * 10-13 mag
M 47	NGC 2422	Opn CL	PUP	4.4	11	30'	07 36.6	-14 29	274	III 2 m	30	6	1.6k	H VIII 38; Messier gave poor position; Stv 1121, 1120
M 48	NGC 2548	Opn CL	HYA	5.8	13	54'	08 13.7	-05 45	275	I 2 m	80	8	1.5k	Messier wrong position by 4 deg in dec; 50* 9-13ma



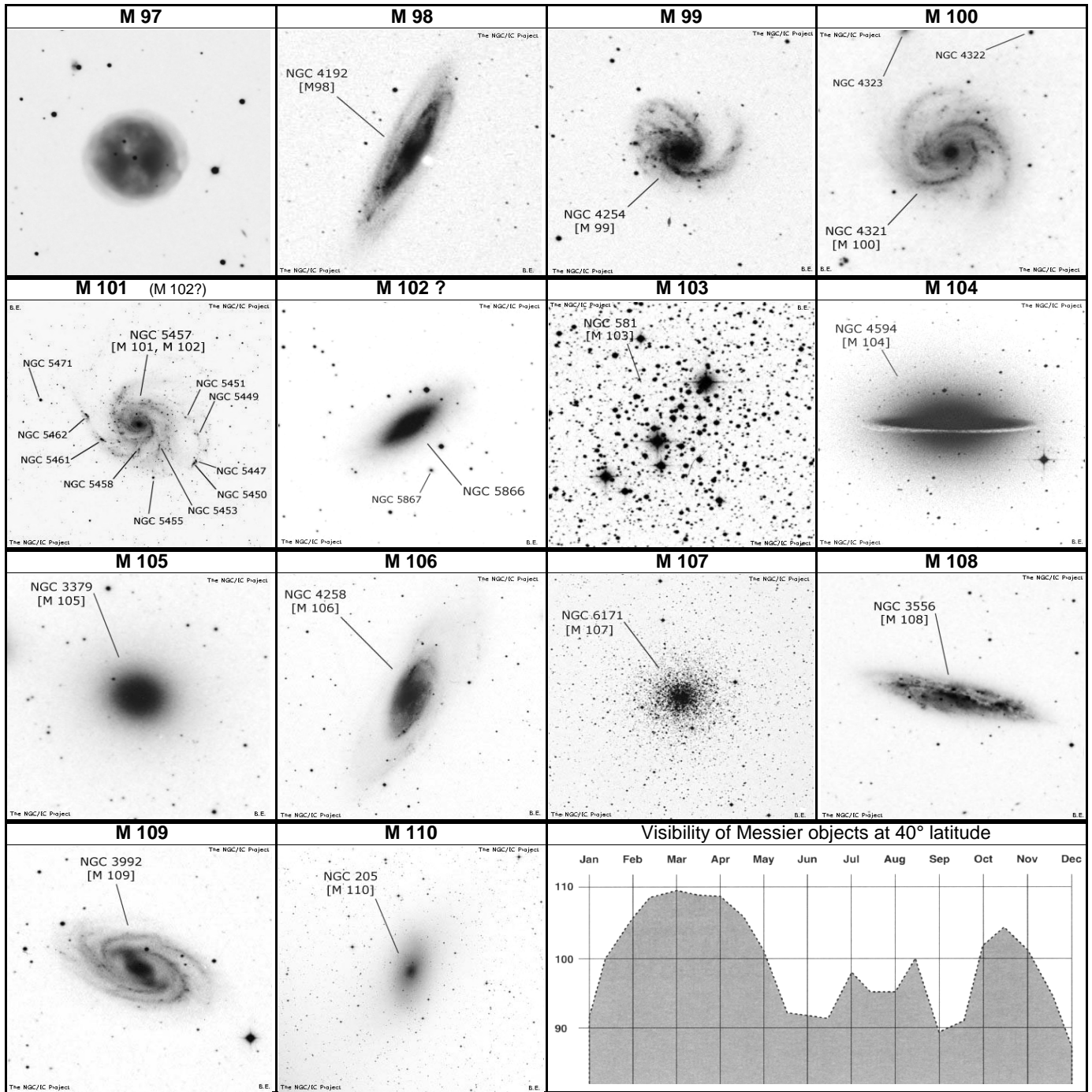
NAME	OTHER	TYPE	CON	MAG	S.B.	SIZE	RA	DEC	U2K	Class	ns	bs	Dist	SAC NOTES
M 49	NGC 4472	Galaxy	VIR	8.4	13.2	9.8'	12 29.8	+08 00	193	E4			60m	NGC 4467 @ 4.2'; NGC 4470 @ 10.5'; NGC 4465 @
M 50	NGC 2323	Opn CL	MON	5.9	12	16'	07 02.5	-08 23	273	II 3 m	80	8	3k	About 100 stars mags 9...14
M 51	NGC 5194	Galaxy	CVN	8.4	12.9	10.8'	13 29.9	+47 12	76	Sbc			37m	Whirlpool Gal; inter. pair; classic spiral, inc ngc5195
M 52	NGC 7654	Opn CL	CAS	6.9	12	13'	23 24.2	+61 35	15	I 2 r	200	8	7k	Messier saw neby there is none
M 53	NGC 5024	Glob CL	COM	7.7	12	14.4'	13 12.9	+18 10	150	V			56k	1 deg NE of Alpha Comae Berenices
M 54	NGC 6715	Glob CL	SGR	7.7	11	9.1'	18 55.1	-30 29	378	III			83k	* mags 15...
M 55	NGC 6809	Glob CL	SGR	6.3	13	19'	19 40.0	-30 58	378	XI			17k	* mags 15...
M 56	NGC 6779	Glob CL	LYR	8.3	12	5'	19 16.6	+30 11	118	X			32k	Stars 11...
M 57	NGC 6720	Pln Neb	LYR	9.4	9.3	86"	18 53.6	+33 02	117	4(3)		16	2.3k	Ring Nebula; central* var 14 to 16 mag; PK63+13.1
M 58	NGC 4579	Galaxy	VIR	9.7	13.1	6'	12 37.7	+11 49	194	SBb			60m	fine compact spiral
M 59	NGC 4621	Galaxy	VIR	9.6	12.9	5.3'	12 42.0	+11 39	194	E3			60m	B diff N; smooth arms
M 60	NGC 4649	Galaxy	VIR	8.8	12.9	7.6'	12 43.7	+11 33	194	E1			60m	NGC 4647 @ 2.5'
M 61	NGC 4303	Galaxy	VIR	9.6	13.4	6.5'	12 21.9	+04 28	238	SBbc R			60m	SN 1926; 1961; 1964; NGC 4301 @ 10 '; H I 139; L fa
M 62	NGC 6266	Glob CL	OPH	6.4	11	14.1'	17 01.2	-30 07	376	IV			22k	Asymmetrical
M 63	NGC 5055	Galaxy	CVN	8.6	13.3	12.6'	13 15.8	+42 02	76	Sbc			37m	Sunflower, vsvB stell. N in B inner lens; many filam
M 64	NGC 4826	Galaxy	COM	8.5	12.7	10.3'	12 56.7	+21 41	149	Sab			12m	Blackeye Galaxy; dark marking near center



NAME	OTHER	TYPE	CON	MAG	S.B.	SIZE	RA	DEC	U2K	Class	ns	bs	Dist	SAC NOTES
M 65	NGC 3623	Galaxy	LEO	9.3	12.8	9'	11 18.9	+13 05	191	SBa			35m	M66 subgroup , part of leo's trio
M 66	NGC 3627	Galaxy	LEO	8.9	12.7	9.1'	11 20.2	+13 00	191	SBb			35m	brightest in group,M 65 & NGC 3628 in field
M 67	NGC 2682	Opn CL	CNC	6.9	13	30'	08 50.8	+11 49	187	II 2 m	200	10	2.3k	500 memb to 16 mag;Mallas-dark spot near center
M 68	NGC 4590	Glob CL	HYA	7.3	13	9.8'	12 39.5	-26 45	329	X			32k	
M 69	NGC 6637 [NGC 6634] [M 69]	Glob CL	SGR	7.7	11	7.1'	18 31.4	-32 21	378	V			25k	
M 70	NGC 6681 [M 70]	Glob CL	SGR	7.8	11	7.8'	18 43.2	-32 18	378	V			28k	Curved arc of stars to NE;* mags 14...
M 71	NGC 6838 [M 71]	Glob CL	SGE	8.3	12	6.1'	19 53.8	+18 47	162				12k	Arrowhead shape; stars have few metals
M 72	NGC 6981 [M 72]	Glob CL	AQR	9.2	12	5.9'	20 53.5	-12 32	299	IX			53k	3 deg WSW of NGC 7009
M 73	NGC 6994 [M 73]	Opn CL	AQR	9.7	-	2.8'	20 59.0	-12 38	299	IV 1 p	4	10		4 or 5 10th mag stars; Messier saw neb but there is
M 74	NGC 628 [M 74]	Galaxy	PSC	9.4	14.2	10'	01 36.7	+15 47	173	Sc			35m	Fine face on spiral
M 75	NGC 6864 [M 75]	Glob CL	SGR	8.6	11	6'	20 06.1	-21 55	343	I			58k	* mags 17...
M 76	NGC 6507	Pln Neb	PER	10.1	10.4	163"	01 42.3	+51 35	37	3(6)		18	3.4k	Little Dumbbell or Cork Nebula ;PK130-10.1
M 77	NGC 1068	Galaxy	CET	8.9	12.8	7.3'	02 42.7	-00 01	220	Sbp			60m	Seyfert;brtst in NGC 1068 grp
M 78	NGC 2068	Brn Neb	ORI	8	12	8'	05 46.8	+00 05	226	E			1.6k	Cornet shaped;2 10mag * invl; 53" sep
M 79	NGC 1904 [M 79]	Glob CL	LEP	7.7	12	7.8'	05 24.2	-24 31	315	V			40k	Stars vF
M 80	NGC 6093 [M 80]	Glob CL	SCO	7.3	11	5.1'	16 17.0	-22 59	336	II			27k	Extremely rich and compressed



NAME	OTHER	TYPE	CON	MAG	S.B.	SIZE	RA	DEC	U2K	Class	ns	bs	Dist	SAC NOTES
M 81	NGC 3031	Galaxy	UMA	6.9	13.2	24.9'	09 55.6	+89 04	23	Sb			11m	brightest in group, fine spiral
M 82	NGC 3034	Galaxy	UMA	8.4	12.5	10.5'	09 55.9	+89 41	23	Sd			11m	M81 group; eruptive; H IV 79
M 83	NGC 5236	Galaxy	HYA	7.5	12.8	13.1'	13 37.0	-29 52	370	SBc			10m	Fast SupNova producer-4 in 50 yrs
M 84	NGC 4374	Galaxy	VIR	9.1	13	6.7'	12 25.1	+12 53	193	E1			60m	Markarian's chain, center of Virgo cluster
M 85	NGC 4382	Galaxy	COM	9.1	12.9	7.4'	12 25.4	+18 11	148	Sa			60m	SN 1960r; P w NGC 4394 @ 7.8' foil
M 86	NGC 4406	Galaxy	VIR	8.9	13.2	9.8'	12 26.2	+12 57	193	E3			60m	Markarian's chain;
M 87	NGC 4486	Galaxy	VIR	8.6	13	8.7'	12 30.8	+12 23	193	E1p			60m	B in Virgo cluster; NGC 4486A @ 7.5' ssf;
M 88	NGC 4501	Galaxy	COM	9.6	13	6.8'	12 32.0	+14 25	193	Sbc			60m	comp @ 6.9'; mult arm spiral
M 89	NGC 4552	Galaxy	VIR	9.8	13.2	5.3'	12 35.7	+12 33	194	EO			60m	
M 90	NGC 4569	Galaxy	VIR	9.5	13.4	9.9'	12 36.8	+13 10	194	SBab			60m	IC 3583 @ 6 ' ; vseBN in B diff bar w much dark matt
M 91	NGC 4548	Galaxy	COM	10.1	13.4	5.2'	12 35.4	+14 30	194	SBb			60m	NGC 4571 @ 27 ' ; H II 120; F outer arms in S pattern
M 92	NGC 6341	Glob CL	HER	6.5	11	11.2'	17 17.1	+43 08	81	IV			26k	Lord Rosse saw spiral structure
M 93	NGC 2447	Opn CL	PUP	6.2	12	22'	07 44.5	-23 51	320	IV 1 p	80	8	4.5k	63 members to 13 mag; wedge shaped center
M 94	NGC 4736	Galaxy	CVN	8.2	13.1	12.3'	12 50.9	+41 07	75	Sb Ring			15m	
M 95	NGC 3351	Galaxy	LEO	9.7	13.5	7.3'	10 44.0	+11 42	190	SBb			38m	Leo group
M 96	NGC 3368	Galaxy	LEO	9.3	13.1	7.8'	10 46.8	+11 49	190	SBab F			38m	comp @ 3.8'; PA 205



NAME	OTHER	TYPE	CON	MAG	S.B.	SIZE	RA	DEC	U2K	Class	ns	bs	Dist	SAC NOTES
M 97	NGC 3587	Pln Neb	UMA	11	12.1	202"	11 14.8	+55 01	46	3a		14	2.8k	Owl Nebula ;PK148+57.1
M 98	NGC 4192	Galaxy	COM	10.1	13.6	9.4'	12 13.8	+14 54	193	SBb			60m	6 Comae Berenices is 30' east
M 99	NGC 4254	Galaxy	COM	9.9	13.2	5.3'	12 18.8	+14 25	193	Sc			80m	SN 1967h;Norton-diff for small scope
M 100	NGC 4321	Galaxy	COM	9.4	13.4	7.5'	12 22.9	+15 49	193	SBbc			80m	SN 1901-14-59;NGC 4322 @ 5.2";NGC 4328 @ 6.1"
M 101	NGC 5457	Galaxy	UMA	7.9	14.9	28.5'	14 03.2	+54 21	49	SBc			24m	P w NGC 5474;SN 1909;spir galax w one heavy arm
M 102	NGC 5867	Galaxy	DRA	9.9	12.2	6.5'	15 06.5	+55 46	50	Sa				vBN w dk lane and ansae;NGC 5867 small E neb;
M 103	NGC 581	Opn CL	CAS	7.4	11	6'	01 33.4	+60 39	37	III 2 p	40	11	8k	in Cas OB8;incl Struve 131 6-9m 14"
M 104	NGC 4594	Galaxy	VIR	8	11.6	8.6'	12 40.0	-11 37	284	Sab			50m	Sombrero Galaxy ; H I 43;dark equatorial lane;
M 105	NGC 3379	Galaxy	LEO	9.3	12.8	5.3'	10 47.8	+12 35	190	E1			38m	P w NGC 3384 @ 7.2";NGC 3389 @ 10 ";Leo Group
M 106	NGC 4258	Galaxy	CVN	8.4	13.6	17.4'	12 19.0	+47 18	74	SBbc			25m	H V 43
M 107	NGC 6171	Glob CL	OPH	7.8	12	3.3'	16 32.5	-13 03	291	X			20k	H VI 40
M 108	NGC 3556	Galaxy	UMA	10	13.1	8.6'	11 11.5	+55 40	46	SBc			45m	H V 46;M 97 is 48' SE;nearly edge-on
M 109	NGC 3992	Galaxy	UMA	9.8	13.6	7.5'	11 57.6	+53 22	47	SBbc			55m	H IV 61;theta struc barred sp;Gamma Uma 40' NW
M 110	NGC 205	Galaxy	AND	8.1	14	19.5'	00 40.4	+41 41	60	SA0			2.8m	M31 Companion ;UGC 426; Member Local Group