

Messier Objects

by Ken Graun

The Messier Object catalogue represents the cream-of-the-crop deep sky objects that can be seen from the mid-latitudes of the northern hemisphere. It was compiled at the end of the 1700s by Charles Messier from Paris, France, using telescopes around 3 to 4-inches in diameter. This catalogue is historically significant because it is the very first catalogue ever compiled of deep sky objects. And, since it lists the biggest and brightest objects in the sky, it has become a logical “next step” for amateurs wanting to go beyond observing the Moon and Planets.

An interesting point about this catalogue is that it has at least one example of every type of deep sky object that exists, so it represents a good sample of the objects that can be found in the heavens.

There is a quirk of nature that allows viewing all of the Messier objects in one night. This can be accomplished around New Moon during March. This event has become known as a Messier Marathon and many astronomy clubs sponsor “parties” to accomplish this dusk to dawn task.

Charles Messier was born in Badonviller, France in 1730. His father held a mayoral-type position in the town but passed away when Messier was 11. Hyacinthe, Charles’s brother, trained Charles as an administrator’s assistant and eventually found Charles a job in Paris as an assistant to an astronomer.

Messier did exceedingly well at his job, advanced, and became, during his time, the leading observational astronomer in the world. He eventually acquired his boss’s position as Astronomer of the Navy. During his career, he wrote numerous articles that spanned the field of astronomy and were published in the leading scientific journals. One of

his most notable life-long achievements was discovering about 20 comets, which lead to his induction into almost every European science academy.

Messier never would have believed that his namesake would be defined by his little catalogue—he would have thought it would have been his comet discoveries. He catalogued deep sky objects because he

realized that such a catalogue was missing in the field of astronomy (astronomy and most sciences were just starting to get organized during this time in history). To start the catalogue, he used a few short lists of deep sky objects compiled by other astronomers and quickly added objects he found exploring the night sky. Three editions of his catalogue were published, each growing in size, with the last published in 1781, listing 103 objects. He stopped adding objects because in 1785, William Herschel, inspired by Messier’s catalogue, published a catalogue listing about 1,000 objects using a 18.7-inch diameter telescope. Messier knew he could not compete!

Although Messier’s last catalogue listed just 103 objects, seven additional objects have been added—objects that he described in other publications but never listed in his catalogue. In the table below, the Double Cluster (in Perseus) has been added as objects 111 and 112 because these are Messier-type

objects that Messier knew existed but for some reason missed including them—his only glaring “error.”

Messier passed away in 1798 at his residence in the Cluny Hotel, (near the Sorbonne) now known as the National Museum of the Middle Ages. His observatory was atop the front tower but no trace remains.



Charles Messier was the leading observational astronomer in the 1700s and compiled the first catalogue of deep sky objects.

The Messier Catalogue

#	Cons.	NGC#	RA	Dec	Object	Mag.	Arc Size	Name
M1	Tau	1952	5h 35m	+22° 02'	Supernova Remnant	8	6x4'	Crab Nebula
M2	Aqr	7089	21h 34m	−0° 47'	Globular Cluster	6.5	13'	
M3	CVn	5272	13h 43m	+28° 19'	Globular Cluster	6.2	16'	
M4	Sco	6121	16h 25m	−26° 33'	Globular Cluster	5.9	26'	Cat’s Eye
M5	Ser	5904	15h 19m	+2° 03'	Globular Cluster	5.7	17'	
M6	Sco	6405	17h 41m	−32° 16'	Cluster	4.2	15'	Butterfly Cluster
M7	Sco	6475	17h 55m	−34° 47'	Cluster	3.3	80'	Ptolemy’s Cluster
M8	Sgr	6523	18h 05m	−24° 23'	Nebula	6	1.5x0.7°	Lagoon Nebula
M9	Oph	6333	17h 20m	−18° 32'	Globular Cluster	7.7	9'	
M10	Oph	6254	16h 58m	−4° 07'	Globular Cluster	6.6	15'	
M11	Sct	6705	18h 52m	−6° 15'	Cluster	5.8	14'	Wild Duck Cluster
M12	Oph	6218	16h 48m	−1° 58'	Globular Cluster	6.7	15'	
M13	Her	6205	16h 42m	+36° 26'	Globular Cluster	5.8	17'	Great Hercules Cluster
M14	Oph	6402	17h 38m	−3° 15'	Globular Cluster	7.6	12'	
M15	Peg	7078	21h 31m	+12° 13'	Globular Cluster	6.2	12'	Great Pegasus Cluster
M16	Ser	6611	18h 19m	−13° 47'	Nebula/Cluster	6	35x28'	Eagle Nebula
M17	Sgr	6618	18h 22m	−16° 11'	Nebula/Cluster	6.5	46x37'	Omega Nebula, Swan Nebula
M18	Sgr	6613	18h 21m	−17° 06'	Cluster	6.9	9'	Black Swan
M19	Oph	6273	17h 03m	−26° 17'	Globular Cluster	6.8	14'	
M20	Sgr	6514	18h 04m	−23° 02'	Nebula/Cluster	8	28x28'	Trifid Nebula

Messier Objects

#	Cons.	NGC#	RA	Dec	Object	Mag.	Arc Size	Name
M21	Sgr	6531	18h 05m	-22° 29'	Cluster	5.9	13'	Great Sagittarius Cluster
M22	Sgr	6656	18h 37m	-23° 54'	Globular Cluster	5.1	24'	
M23	Sgr	6494	17h 58m	-18° 59'	Cluster	5.5	27'	
M24	Sgr	—	18h 15m	-18° 30'	Thick Milky Way Patch	4	1.5x1°	
M25	Sgr	4725	18h 33m	-19° 07'	Cluster	4.6	32'	Dumbbell Nebula
M26	Sct	6694	18h 46m	-9° 23'	Cluster	8	15'	
M27	Vul	6853	20h 00m	+22° 45'	Planetary Nebula	8	8x4'	
M28	Sgr	6626	18h 26m	-24° 52'	Globular Cluster	6.8	11'	
M29	Cyg	6913	20h 24m	+38° 32'	Cluster	6.6	7'	Andromeda Galaxy
M30	Cap	7099	21h 41m	-23° 08'	Globular Cluster	7.2	11'	
M31	And	224	0h 43m	+41° 20'	Spiral Galaxy	3.5	3x1°	
M32	And	221	0h 43m	+40° 55'	Elliptical Galaxy	8.2	8x6'	
M33	Tri	598	1h 34m	+30° 40'	Spiral Galaxy	5.7	62x39'	Pinwheel Galaxy
M34	Per	1039	2h 43m	+42° 48'	Cluster	5.2	35'	The Spectre
M35	Gem	2168	6h 10m	+24° 20'	Cluster	5.1	28'	
M36	Aur	1960	5h 37m	+34° 08'	Cluster	6.0	12'	
M37	Aur	2099	5h 53m	+32° 33'	Cluster	5.6	24'	
M38	Aur	1912	5h 29m	+35° 51'	Cluster	6.4	21'	The Scorpion
M39	Cyg	7092	21h 32m	+48° 29'	Cluster	4.6	32'	
M40	UMa	—	12h 23m	+58° 02'	Double Star	9.6/10.1	1'	
M41	CMa	2287	6h 47m	-20° 46'	Cluster	4.5	38'	
M42	Ori	1976	5h 36m	-5° 27'	Nebula	4.0	1.1x1°	The Great Orion Nebula
M43	Ori	1982	5h 36m	-5° 16'	Nebula	9	20x15'	Pleiades
M44	Cnc	2632	8h 41m	+19° 38'	Cluster	3.1	1.6°	
M45	Tau	—	3h 48m	+24° 09'	Cluster	1.2	1.8°	
M46	Pup	2437	7h 43m	-14° 50'	Cluster	6.1	27'	
M47	Pup	2422	7h 37m	-14° 31'	Cluster	4.4	30'	Whirlpool Galaxy
M48	Hya	2548	8h 15m	-5° 47'	Cluster	5.8	54'	
M49	Vir	4472	12h 30m	+7° 57'	Elliptical Galaxy	8.4	9x7'	
M50	Mon	2323	7h 03m	-8° 24'	Cluster	5.9	16'	
M51	CVn	5194	13h 30m	+47° 08'	Spiral Galaxy	8.1	11x8'	The Spectre
M52	Cas	7654	23h 25m	+61° 38'	Cluster	6.9	13'	
M53	Com	5024	13h 13m	+18° 07'	Globular Cluster	7.6	13'	
M54	Sgr	6715	18h 56m	-30° 28'	Globular Cluster	7.6	9'	
M55	Sgr	6809	19h 41m	-30° 56'	Globular Cluster	7.0	19'	Ring Nebula
M56	Lyr	6779	19h 17m	+30° 12'	Globular Cluster	8.3	7'	
M57	Lyr	6720	18h 54m	+33° 02'	Planetary Nebula	9	1.3'	
M58	Vir	4579	12h 38m	+11° 46'	Spiral Galaxy	9.8	5x4'	
M59	Vir	4621	12h 43m	+11° 35'	Elliptical Galaxy	9.8	5x3'	Flickering Globular
M60	Vir	4649	12h 44m	+11° 30'	Elliptical Galaxy	8.8	7x6'	
M61	Vir	4303	12h 22m	+4° 25'	Spiral Galaxy	9.7	6x5'	
M62	Oph	6266	17h 02m	-30° 08'	Globular Cluster	6.5	10'	
M63	CVn	5055	13h 16m	+41° 58'	Spiral Galaxy	8.6	12x8'	Sunflower Galaxy
M64	Com	4826	12h 57m	+21° 37'	Spiral Galaxy	8.5	9x5'	Black Eye Galaxy
M65	Leo	3623	11h 19m	+13° 02'	Spiral Galaxy	9.3	10x3'	King Cobra
M66	Leo	3627	11h 21m	+12° 56'	Spiral Galaxy	9.0	9x4'	
M67	Cnc	2682	8h 52m	+11° 46'	Cluster	6.9	30'	
M68	Hya	4590	12h 40m	-26° 48'	Globular Cluster	8.2	12'	

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M69	Sgr	6637	18h 32m	-32° 21'	Globular Cluster	7.6	7'	
M70	Sgr	6681	18h 44m	-32° 17'	Globular Cluster	8.1	8'	
M71	Sge	6838	19h 54m	+18° 48'	Globular Cluster	8.2	7'	
M72	Aqr	6981	20h 54m	-12° 30'	Globular Cluster	9.3	6'	
M73	Aqr	6994	21h 00m	-12° 36'	4-Star Asterism	10.5 (Brightest)	1'	
M74	Psc	628	1h 36m	+15° 47'	Spiral Galaxy	9.2	10x9'	The Phantom
M75	Sgr	6864	20h 07m	-21° 54'	Globular Cluster	8.5	6'	
M76	Per	650/651	1h 43m	+51° 38'	Planetary Nebula	11	2x1'	Little Dumbbell
M77	Cet	1068	2h 44m	+0° 02'	Spiral Galaxy	8.8	7x6'	
M78	Ori	2068	5h 48m	+0° 03'	Nebula	8	8x6'	
M79	Lep	1904	5h 25m	-24° 31'	Globular Cluster	7.7	9'	
M80	Sco	6093	16h 18m	-23° 00'	Globular Cluster	7.3	9'	
M81	UMa	3031	9h 56m	+69° 01'	Spiral Galaxy	6.8	26x14'	Cigar Galaxy > Bode's Nebulae
M82	UMa	3034	9h 57m	+69° 38'	Irregular Galaxy	8.4	11x5'	
M83	Hya	5236	13h 38m	-29° 56'	Spiral Galaxy	8	11x10'	
M84	Vir	4374	12h 26m	+12° 50'	Elliptical Galaxy	9.3	5x4'	
M85	Com	4382	12h 26m	+18° 08'	Elliptical Galaxy	9.2	7x5'	Virgo A
M86	Vir	4406	12h 27m	+12° 53'	Elliptical Galaxy	9.2	7x5'	
M87	Vir	4486	12h 31m	+12° 20'	Elliptical Galaxy	8.6	7x7'	
M88	Com	4501	12h 33m	+14° 22'	Spiral Galaxy	9.5	7x4'	
M89	Vir	4552	12h 36m	+12° 30'	Elliptical Galaxy	9.8	4x4'	Croc's Eye
M90	Vir	4569	12h 37m	+13° 06'	Spiral Galaxy	9.5	10x5'	
M91	Com	4548	12h 36m	+14° 26'	Spiral Galaxy	10.2	5x4'	
M92	Her	6341	17h 17m	+43° 08'	Globular Cluster	6.4	11'	
M93	Pup	2447	7h 45m	-23° 53'	Cluster	6	22'	Croc's Eye
M94	CVn	4736	12h 51m	+41° 04'	Spiral Galaxy	8.1	11x9'	
M95	Leo	3351	10h 45m	+11° 39'	Spiral Galaxy	9.7	7x5'	
M96	Leo	3368	10h 47m	+11° 46'	Spiral Galaxy	9.2	7x5'	
M97	UMa	3587	11h 15m	+54° 58'	Planetary Nebula	11	3'	Owl Nebula
M98	Com	4192	12h 14m	+14° 51'	Spiral Galaxy	10.1	10x3'	Pinwheel Galaxy
M99	Com	4254	12h 19m	+14° 21'	Spiral Galaxy	9.8	5x5'	
M100	Com	4321	12h 23m	+15° 46'	Spiral Galaxy	9.4	7x6'	
M101	UMa	5457	14h 04m	+54° 18'	Spiral Galaxy	7.7	27x26'	
M102	Dra	5866	15h 07m	+55° 46'	Elliptical Galaxy	9.9	6x3'	Méchain's Lost Galaxy
M103	Cas	581	1h 34m	+60° 42'	Cluster	7	6'	Sombbrero Galaxy
M104	Vir	4594	12h 41m	-11° 41'	Spiral Galaxy	8.3	9x4'	
M105	Leo	3379	10h 48m	+12° 32'	Elliptical Galaxy	9.3	5x4'	
M106	CVn	4258	12h 19m	+47° 15'	Spiral Galaxy	8.3	18x8'	
M107	Oph	6171	16h 33m	-13° 05'	Globular Cluster	8.1	10'	West Part of Double Cluster
M108	UMa	3556	11h 12m	+55° 37'	Spiral Galaxy	10.0	8x2'	
M109	UMa	3992	11h 58m	+53° 19'	Spiral Galaxy	9.8	8x5'	
M110	And	205	0h 41m	+41° 45'	Elliptical Galaxy	9.0	17x10'	
M111	Per	869	2h 20m	+57° 10'	Cluster	4	30'	East Part of Double Cluster
M112	Per	884	2h 23m	+57° 10'	Cluster	4	30'	East Part of Double Cluster

Notes

It is often believed erroneously that Messier made a mistake by cataloguing the two stars that comprise M40, however, M40 was included in his catalogue because he was reporting a "negative find" from a short list of deep sky objects observed by another astronomer. M73 was the only mistake made by Messier because he attributed nebulosity to a little triangular asterism of four stars when there was none. It is a mystery as to why Messier did not include the Double Cluster in his catalogue because it was on a list from another astronomer that he had in his possession. Messier was very busy as Astronomer of the Navy, so it is very conceivable that he never got around to including the Double Cluster and stopped adding entries to his catalogue when Herschel published his first catalogue listing over 1000 objects.