# The Messier Catalogue on Microsoft Access

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#### The Messier Catalogue on Microsoft Access

The Messier Catalogue is a list of 110 deep-sky objects initiated by Charles Messier. The first published edition in the journal of the French Academy of Science in 1774 contained 45 objects.

If you are au fait with MS Access you will be able to apply the search and query tools directly to the programme file to investigate aspects of the Messier Catalogue.

Some demonstrations on how the file can be used to study the Messier Catalogue have been given in this tutorial so that people who do not have the database can still benefit from its features.

#### Types of Information (Database Fields)

Messier Label: M 1 to M110

Messier Number: In numerical form to facilitate

listing in order.

NGC Number: The New General Catalogue Number

is given where appropriate.

Popular Name:

Alternative Name:

Constellation:

Constellation Rank: Numerical label

Object type

Main Database: This gives the main database of which the

object is a member.

Type Details:

SIMBAD details: Using the SIMBAD database

to check data.

Magnitude:

Type:

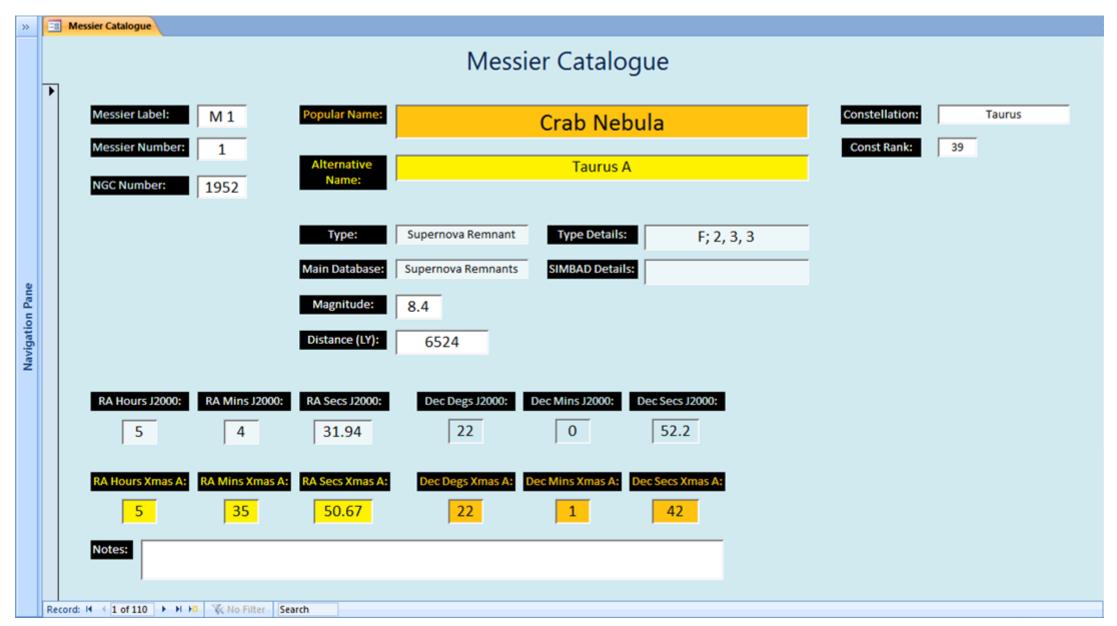
Distance: Using lightyears

Right ascension and declination for J2000 epoch.

Right ascension and declination for Christmas Australis (1 am BST 25<sup>th</sup> June 2021)

Notes: In particular this highlights cases where there are significant differences in information from different sources.

The form in the database called "Messier Catalogue" shows this information ...



Click on the arrow keys to show different Messier objects.

### 1. <u>Listing the Objects in Descending Order of Angle of Declination.</u>

Use the query "Coordinates J2000" which lists the Messier Objects in descending order of angle of declination.

Messier 🔻	Popular Name 🔻	RA Hours J2( -	RA Mins J20 🕶	RA Secs J200 -	Dec Degs J2I →	Dec Mins J20 →	Dec Secs J2C →	Constellation
82	Cigar Galaxy	9	55	52.44	69	40	46.9	Ursa Major
81	Bode's Galaxy	9	55	33.17	69	3	55.1	Ursa Major
52	Cassiopeia Salt-and-Pepper Cluster	23	24	48.01	61	35	34.8	Cassiopeia
103		1	33	23.04	60	39	0	Cassiopeia
40	Winnecke 4	12	22	12.54	58	4	58.6	Ursa Major
102	Spindle Galaxy	15	6	29.56	55	45	47.9	Draco
108	Surfboard Galaxy	11	11	30.97	55	40	26.8	Ursa Major
97	Owl Nebula	11	14	47.71	55	1	8.7	Ursa Major
101	Pinwheel Galaxy	14	3	12.59	54	20	55.5	Ursa Major
109	Vacuum Cleaner Galaxy	11	57	35.99	53	22	28.3	Ursa Major
76	Little Dumbbell Nebula	1	42	19.95	51	34	31.1	Perseus
39		21	31	48.01	48	25	58.8	Cygnus
106		12	18	57.62	47	18	13.4	Canes Venatio
51	Whirlpool Galaxy	13	29	52.7	47	11	42.9	Canes Venatio
92		17	17	7.39	43	8	9.4	Hercules
34	Spiral Cluster	2	42	5.04	42	45	43.2	Perseus
63	Sunflower Galaxy	13	15	49.33	42	1	45.4	Canes Venatio
110		0	40	22.08	41	41	7.1	Andromeda
31	Andromeda Galaxy	0	42	44.33	41	15	7.5	Andromeda
94	Croc's Eye Galaxy	12	50	53.15	41	7	12.5	Canes Venatio
32		0	42	41.83	40	51	54.6	Andromeda
29	Cooling Tower	20	23	55.92	38	31	22.8	Cygnus
13	Great Star Cluster in Hercules	16	41	41.64	36	27	40.7	Hercules
38	Starfish Cluster	5	28	42.96	35	51	18	Auriga
36	Pinwheel Cluster	5	36	18	34	8	24	Auriga
57	Ring Nebula	18	53	35.08	33	1	45	Lyra
37	January Salt-and Pepper Cluster	5	52	18	32	33	10.8	Auriga
33	Triangulum Galaxy	1	33	50.91	30	39	3.8	Triangulum

Coordinates	; J2000							
Messier 🔻	Popular Name 🔻	RA Hours J2( +	RA Mins J20 🕶	RA Secs J200 →	Dec Degs J2( +	Dec Mins J2( →	Dec Secs J2C →	Constellation 🕶
56		19	16	35.58	30	11	0.5	Lyra
3		13	42	11.52	28	22	38.2	Canes Venatici
35	Shoe-Buckle Cluster	6	8	54	24	19	58.8	Gemini
45	Pleiades	3	47	0	24	7	1.2	Taurus
27	Dumbbell Nebula	19	59	36.39	22	43	15.8	Vulpecula
1	Crab Nebula	5	4	31.94	22	0	52.2	Taurus
64	Black Eye Galaxy	12	56	43.7	21	40	57.6	Coma Berenices
44	Beehive Cluster	8	40	24.01	19	40	1.2	Cancer
71	Angelfish Cluster	19	53	46.49	18	46	45.1	Sagitta
85		12	25	24.06	18	11	27.9	Coma Berenices
53		13	12	55.25	18	10	5.4	Coma Berenices
100	Blowdryer Galaxy	12	22	54.9	15	49	20.6	Coma Berenices
74	Phantom Galaxy	1	36	41.78	15	47	0.5	Pisces
98		12	13	48.3	14	54	1.7	Coma Berenices
91		12	35	26.44	14	29	46.7	Coma Berenices
88		12	31	59.22	14	25	13.5	Coma Berenices
99	Virgo Cluster Pinwheel	12	18	59.63	14	24	59.4	Coma Berenices
90		12	36	49.82	13	9	46.3	Virgo
65	Leo Triplet	11	18	55.96	13	5	32	Leo
66	Leo Triplet	11	20	15.03	12	59	28.6	Leo
86	Faust V051	12	26	11.82	12	56	45.5	Virgo
84	Markarian's Chain	12	25	3.75	12	42	13.1	Virgo
105		10	47	49.61	12	34	53.9	Leo
89		12	35	39.89	12	33	21.7	Virgo
87	Virgo Galaxy	12	30	49.43	12	23	28	Virgo
15	Pegasus Cluster	21	29	58.33	12	10	1.2	Pegasus
96		10	46	45.75	11	49	11.8	Leo
58		12	37	43.6	11	49	5.1	Virgo
67	Golden-Eye Cluster	8	51	18	11	48	0	Cancer

<b>Coordinate</b>	es J2000							
Messier -	Popular Name 🔻	RA Hours J2( +	RA Mins J20 🕶	RA Secs J200 +	Dec Degs J2( →	Dec Mins J2( →	Dec Secs J2C →	Constellation -
9	5	10	43	57.74	11	42	13	Leo
5	9	12	42	2.33	11	38	49	Virgo
6	D	12	43	40.01	11	33	9.4	Virgo
4	9	12	29	46.8	8	0	1.5	Virgo
6	1 Swelling Spiral Galaxy	12	21	54.95	4	28	24.9	Virgo
	5 Rose Cluster	15	18	33.23	2	4	51.7	Serpens Caput
7	7 Cetus A	2	42	40.78	0	0	-47.8	Cetus
7	Casper the Friendly Ghost Nebula	5	46	46.76	0	0	50.4	Orion
	2	21	33	27.02	0	-49	-23.7	Aquarius
1	2 Gumball Globular Cluster	16	47	14.18	-1	-56	-54.7	Ophiuchus
1	4	17	37	36.16	-3	-14	-45.3	Ophiuchus
1	D	16	57	9.05	-4	-6	-1.1	Ophiuchus
4	de Mairan's Nebula	5	35	30.96	-5	-16	-12	Orion
4	2 Great Orion Nebula	5	35	17.31	-5	-23	-28	Orion
4	Beehive Cluster	8	13	42.97	-5	-45	0	Hydra
1	1 Wild Duck Cluster	18	51	5.05	-6	-16	-12	Scutum
5	Heart-Shaped Cluster	7	2	47.5	-8	-20	-16.1	Monoceros
2	5	18	45	18.01	-9	-22	-58.8	Scutum
10	4 Sombrero Galaxy	12	39	59.44	-11	-37	-23	Virgo
7	2	20	53	27.71	-12	-32	-14.3	Aquarius
7	3	20	59	0.01	-12	-37	-48	Aquarius
10	7 The Crucifix Cluster	16	32	31.86	-13	-3	-13.6	Ophiuchus
1	Eagle Nebula	18	18	48.01	-13	-48	-25.2	Serpens Cauda
4	7	7	36	35.05	-14	-28	-58.8	Puppis Borealis
4	5	7	41	46.08	-14	-48	-36	Puppis Borealis
1	7 Omega Nebula	18	20	47.04	-16	-10	-19.2	Sagittarius
1	Black Swan Cluster	18	19	58.08	-17	-6	-7.2	Sagittarius
	9	17	19	11.78	-18	-30	-58.5	Ophiuchus
2	4 Small Sagittarius Star Cloud	18	16	48.01	-18	-33	0	Sagittarius

Coordinates	J2000							
Messier 🔻	Popular Name 🔻	RA Hours J2( +	RA Mins J20 →	RA Secs J200 -	Dec Degs J2( -	Dec Mins J2( →	Dec Secs J2C →	Constellation
23		17	57	4.08	-18	-59	-6	Sagittarius
25		18	31	47.05	-19	-7	-1.2	Sagittarius
41	Little Beehive Cluster	6	46	0.96	-20	-45	-25.2	Canis Major
75		20	6	4.85	-21	-55	-20.1	Sagittarius
21	Webb's Cross	18	4	12.96	-22	-29	-24	Sagittarius
20	Trifid Nebula	18	2	42	-22	-58	-19.2	Sagittarius
80		16	17	2.42	-22	-58	-33.9	Scorpius
30	Jellyfish Cluster	21	40	22.13	-23	-10	-47.5	Capricornus
93	Butterfly Cluster	7	44	30.01	-23	-51	-25.2	Puppis Borealis
22	Great Sagittarius Cluster	18	36	23.95	-23	-54	-17.1	Sagittarius
8	Lagoon Nebula	18	3	36.96	-24	-22	-40.8	Sagittarius
79		5	24	10.6	-24	-31	-27.3	Lepus
28		18	24	32.9	-24	-52	-11.4	Sagittarius
19		17	2	37.69	-26	-16	-4.6	Ophiuchus
4	Crab Globular Cluster	16	23	35.23	-26	-31	-32.7	Scorpius
68		12	39	27.98	-26	-44	-38.6	Hydra
83	Southern Pinwheel Galaxy	13	37	0.92	-29	-51	-56.7	Hydra
62	Flickering Globular Cluster	17	1	12.6	-30	-6	-44.5	Ophiuchus
54		18	55	3.33	-30	-28	-47.5	Sagittarius
55	Specter Cluster	19	39	59.71	-30	-57	-53.1	Sagittarius
6	Butterfly Cluster	17	40	19.93	-32	-15	-10.8	Scorpius
70		18	43	12.76	-32	-17	-31.6	Sagittarius
69		18	31	23.1	-32	-20	-53.1	Sagittarius
7	Ptolemy's Cluster	17	53	51.13	-34	-47	-34.8	Scorpius

## 2. <u>Constellations</u>

The following table shows how the 110 Messier objects are distributed across various constellations.

Constellation	Number of Messier Objects	Constellation	Number of Messier Objects
Draco	1	Virgo	11
Cassiopeia	2	Scorpius	4
Cygnus	2	Sagittarius	15
Lyra	2	Capricornus	1
Hercules	2	Aquarius	3
Canes Venatici	5	Pisces	1
Ursa Major	7	Taurus	2
Auriga	3	Gemini	1
Perseus	2	Cancer	2
Triangulum	1	Leo	5
Andromeda	3	Hydra	3
Pegasus	1	Monoceros	1
Vulpecula	1	Puppis Borealis	3
Sagitta	1	Canis Major	1
Scutum	2	Lepus	1
Serpens Cauda	1	Orion	3
Ophiuchus	7	Cetus	1
Serpens Caput	1		
Coma Berenices	8	TOTAL	110

#### 3. <u>Listing the Objects in Ascending Order of Magnitude Value</u>.

Use the query "Magnitude" which lists the Messier Objects in ascending order of magnitude value. (That is, the objects get dimmer as the list goes on.)

Messier 🔻	Popular Name	→ Magnitude →	RA Hours J2( +	RA Mins J20 🕶	RA Secs J200 -	Dec Degs J2I →	Dec Mins J2ℓ →	Dec Secs J2C →	Constellation
45	Pleiades	1.2	3	47	0	24	7	1.2	Taurus
44	Beehive Cluster	3.1	8	40	24.01	19	40	1.2	Cancer
7	Ptolemy's Cluster	3.3	17	53	51.13	-34	-47	-34.8	Scorpius
31	Andromeda Galaxy	3.4	0	42	44.33	41	15	7.5	Andromeda
42	Great Orion Nebula	4	5	35	17.31	-5	-23	-28	Orion
6	Butterfly Cluster	4.2	17	40	19.93	-32	-15	-10.8	Scorpius
47		4.4	7	36	35.05	-14	-28	-58.8	Puppis Boreali
41	Little Beehive Cluster	4.5	6	46	0.96	-20	-45	-25.2	Canis Major
39		4.6	21	31	48.01	48	25	58.8	Cygnus
25		4.6	18	31	47.05	-19	-7	-1.2	Sagittarius
24	Small Sagittarius Star Cloud	4.6	18	16	48.01	-18	-33	0	Sagittarius
22	Great Sagittarius Cluster	5.1	18	36	23.95	-23	-54	-17.1	Sagittarius
35	Shoe-Buckle Cluster	5.1	6	8	54	24	19	58.8	Gemini
34	Spiral Cluster	5.2	2	42	5.04	42	45	43.2	Perseus
23		5.5	17	57	4.08	-18	-59	-6	Sagittarius
37	January Salt-and Pepper Cluster	5.6	5	52	18	32	33	10.8	Auriga
33	Triangulum Galaxy	5.7	1	33	50.91	30	39	3.8	Triangulum
13	Great Star Cluster in Hercules	5.8	16	41	41.64	36	27	40.7	Hercules
48	Beehive Cluster	5.8	8	13	42.97	-5	-45	0	Hydra
21	Webb's Cross	5.9	18	4	12.96	-22	-29	-24	Sagittarius
4	Crab Globular Cluster	5.9	16	23	35.23	-26	-31	-32.7	Scorpius
50	Heart-Shaped Cluster	5.9	7	2	47.5	-8	-20	-16.1	Monoceros
16	Eagle Nebula	6	18	18	48.01	-13	-48	-25.2	Serpens Cauda
8	Lagoon Nebula	6	18	3	36.96	-24	-22	-40.8	Sagittarius
17	Omega Nebula	6	18	20	47.04	-16	-10	-19.2	Sagittarius
36	Pinwheel Cluster	6	5	36	18	34	8	24	Auriga
46		6.1	7	41	46.08	-14	-48	-36	Puppis Boreali
71	Angelfish Cluster	6.1	19	53	46.49	18	46	45.1	Sagitta

•	Magnitude									
	Messier 🔻	Popular Name 🔻	Magnitude 🕶	RA Hours J21 +	RA Mins J20 →	RA Secs J200 -	Dec Degs J2( →	Dec Mins J2( →	Dec Secs J2C →	Constellation -
	3		6.2	13	42	11.52	28	22	38.2	Canes Venatici
	93	Butterfly Cluster	6.2	7	44	30.01	-23	-51	-25.2	Puppis Borealis
	15	Pegasus Cluster	6.3	21	29	58.33	12	10	1.2	Pegasus
	20	Trifid Nebula	6.3	18	2	42	-22	-58	-19.2	Sagittarius
	2		6.3	21	33	27.02	0	-49	-23.7	Aquarius
	11	Wild Duck Cluster	6.3	18	51	5.05	-6	-16	-12	Scutum
	38	Starfish Cluster	6.4	5	28	42.96	35	51	18	Auriga
	10		6.4	16	57	9.05	-4	-6	-1.1	Ophiuchus
	92		6.4	17	17	7.39	43	8	9.4	Hercules

The limiting magnitude for naked-eye vision is around 6.5 So the following Messier Objects would need to be viewed using telescopes or binoculars.

Magnitude	\								
Messier 🔻	Popular Name 🔻	Magnitude 🕶	RA Hours J2( +	RA Mins J20 🕶	RA Secs J200 -	Dec Degs J2( →	Dec Mins J2( →	Dec Secs J2C →	Constellation •
29	Cooling Tower	6.6	20	23	55.92	38	31	22.8	Cygnus
5	Rose Cluster	6.7	15	18	33.23	2	4	51.7	Serpens Caput
52	Cassiopeia Salt-and-Pepper Cluster	6.9	23	24	48.01	61	35	34.8	Cassiopeia
81	Bode's Galaxy	6.9	9	55	33.17	69	3	55.1	Ursa Major
18	Black Swan Cluster	6.9	18	19	58.08	-17	-6	-7.2	Sagittarius
67	Golden-Eye Cluster	6.9	8	51	18	11	48	0	Cancer
68		7.3	12	39	27.98	-26	-44	-38.6	Hydra
62	Flickering Globular Cluster	7.4	17	1	12.6	-30	-6	-44.5	Ophiuchus
27	Dumbbell Nebula	7.4	19	59	36.39	22	43	15.8	Vulpecula
55	Specter Cluster	7.4	19	39	59.71	-30	-57	-53.1	Sagittarius
103		7.4	1	33	23.04	60	39	0	Cassiopeia
19		7.5	17	2	37.69	-26	-16	-4.6	Ophiuchus
83	Southern Pinwheel Galaxy	7.5	13	37	0.92	-29	-51	-56.7	Hydra
30	Jellyfish Cluster	7.7	21	40	22.13	-23	-10	-47.5	Capricornus
28		7.7	18	24	32.9	-24	-52	-11.4	Sagittarius
54		7.7	18	55	3.33	-30	-28	-47.5	Sagittarius
12	Gumball Globular Cluster	7.7	16	47	14.18	-1	-56	-54.7	Ophiuchus
53		7.7	13	12	55.25	18	10	5.4	Coma Berenices
80		7.9	16	17	2.42	-22	-58	-33.9	Scorpius

Magnitude									
lessier 🔻	Popular Name 🔻	Magnitude 🕶	RA Hours J2( +	RA Mins J20 🕶	RA Secs J200 -	Dec Degs J2( →	Dec Mins J2( →	Dec Secs J2C →	Constellation
101	Pinwheel Galaxy	7.9	14	3	12.59	54	20	55.5	Ursa Major
104	Sombrero Galaxy	8	12	39	59.44	-11	-37	-23	Virgo
26		8	18	45	18.01	-9	-22	-58.8	Scutum
110		8.1	0	40	22.08	41	41	7.1	Andromeda
32		8.1	0	42	41.83	40	51	54.6	Andromeda
51	Whirlpool Galaxy	8.1	13	29	52.7	47	11	42.9	Canes Venatici
94	Croc's Eye Galaxy	8.2	12	50	53.15	41	7	12.5	Canes Venatici
49		8.3	12	29	46.8	8	0	1.5	Virgo
14		8.3	17	37	36.16	-3	-14	-45.3	Ophiuchus
69		8.3	18	31	23.1	-32	-20	-53.1	Sagittarius
78	Casper the Friendly Ghost Nebula	8.3	5	46	46.76	0	0	50.4	Orion
56		8.4	19	16	35.58	30	11	0.5	Lyra
106		8.4	12	18	57.62	47	18	13.4	Canes Venatici
82	Cigar Galaxy	8.4	9	55	52.44	69	40	46.9	Ursa Major
9		8.4	17	19	11.78	-18	-30	-58.5	Ophiuchus
1	Crab Nebula	8.4	5	4	31.94	22	0	52.2	Taurus
64	Black Eye Galaxy	8.5	12	56	43.7	21	40	57.6	Coma Berenice
79		8.6	5	24	10.6	-24	-31	-27.3	Lepus
87	Virgo Galaxy	8.6	12	30	49.43	12	23	28	Virgo
63	Sunflower Galaxy	8.6	13	15	49.33	42	1	45.4	Canes Venatici
57	Ring Nebula	8.8	18	53	35.08	33	1	45	Lyra
86	Faust V051	8.9	12	26	11.82	12	56	45.5	Virgo
77	Cetus A	8.9	2	42	40.78	0	0	-47.8	Cetus
107	The Crucifix Cluster	8.9	16	32	31.86	-13	-3	-13.6	Ophiuchus
66	Leo Triplet	8.9	11	20	15.03	12	59	28.6	Leo
73		8.9	20	59	0.01	-12	-37	-48	Aquarius
43	de Mairan's Nebula	9	5	35	30.96	-5	-16	-12	Orion
70		9.1	18	43	12.76	-32	-17	-31.6	Sagittarius
75		9.2	20	6	4.85	-21	-55	-20.1	Sagittarius

	Magnitude									
4	Messier +	Popular Name 🔻	Magnitude -	RA Hours J2( -	RA Mins J20 -	RA Secs J200 -	Dec Degs J2I -	Dec Mins J21 -	Dec Secs J2C -	Constellation →
	72		9.2	20	53	27.71	-12	-32	-14.3	Aquarius
	96		9.3	10	46	45.75	11	49	11.8	Leo
	74	Phantom Galaxy	9.4	1	36	41.78	15	47	0.5	Pisces
	100	Blowdryer Galaxy	9.4	12	22	54.9	15	49	20.6	Coma Berenices
	90		9.5	12	36	49.82	13	9	46.3	Virgo
	40	Winnecke 4	9.7	12	22	12.54	58	4	58.6	Ursa Major
	95		9.7	10	43	57.74	11	42	13	Leo
	58		9.7	12	37	43.6	11	49	5.1	Virgo
	61	Swelling Spiral Galaxy	9.7	12	21	54.95	4	28	24.9	Virgo
	105		9.8	10	47	49.61	12	34	53.9	Leo
	60		9.8	12	43	40.01	11	33	9.4	Virgo
	89		9.8	12	35	39.89	12	33	21.7	Virgo
	102	Spindle Galaxy	9.9	15	6	29.56	55	45	47.9	Draco
	97	Owl Nebula	9.9	11	14	47.71	55	1	8.7	Ursa Major
	99	Virgo Cluster Pinwheel	9.9	12	18	59.63	14	24	59.4	Coma Berenices
	85		10	12	25	24.06	18	11	27.9	Coma Berenices
	98		10.1	12	13	48.3	14	54	1.7	Coma Berenices
	76	Little Dumbbell Nebula	10.1	1	42	19.95	51	34	31.1	Perseus
	65	Leo Triplet	10.3	11	18	55.96	13	5	32	Leo
	84	Markarian's Chain	10.5	12	25	3.75	12	42	13.1	Virgo
	109	Vacuum Cleaner Galaxy	10.6	11	57	35.99	53	22	28.3	Ursa Major
	59		10.6	12	42	2.33	11	38	49	Virgo
	108	Surfboard Galaxy	10.7	11	11	30.97	55	40	26.8	Ursa Major
	88		13.2	12	31	59.22	14	25	13.5	Coma Berenices
	91		13.6	12	35	26.44	14	29	46.7	Coma Berenices

### 4. Messier Objects in the New General Catalogue (NGC Catalogue)

All but the following five Messier Objects are listed in the NGC Catalogue.

Messier 🔻	Popular Name 🔻	Type -	RA Hours J2( +	RA Mins J20 🕶	RA Secs J200 🕶	Dec Degs J2I 🕶	Dec Mins J2( →	Dec Secs J2C →	Constellation -
8	Lagoon Nebula	H II Region	18	3	36.96	-24	-22	-40.8	Sagittarius
24	Small Sagittarius Star Cloud	Star Cluster	18	16	48.01	-18	-33	0	Sagittarius
25		Open Star Cluster	18	31	47.05	-19	-7	-1.2	Sagittarius
40	Winnecke 4	Star	12	22	12.54	58	4	58.6	Ursa Major
45	Pleiades	Cluster / Nebulosity	3	47	0	24	7	1.2	Taurus

### 5. Types of Messier Objects

The following tables show the types of Messier Objects described on Stellarium.

STELLARIUM	
Astronomical Object	Total
Galaxies	40
Cluster-Nebulosity	4
Star Cloud	1
Star	1
Globular Star Clusters	31
Open Star Clusters	24
Planetary Nebulae	4
Supernova Remnant	1
H II Regions	3
Reflection Nebula	1

Grand Total	110
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	MESSIER OBJECTS ON STELLARIUM											
Gala	axies	Cluster -	Star	Star		lar Star		n Star	Planetary	Supernova	нп	Reflection
		Nebulosity	Cloud	o.c.	l	ters		ters	Nebulae		Regions	
M 31	M 86	M 16	M 24	M 40	M 2	M 68	M 6	M 50	M 27	M 1	M 8	M 78
M 32	M 87	M 17			M 3	M 69	M 7	M 52	M 57		M 42	
M 33	M 88	M 20			M 4	M 70	M 11	M 93	M 76		M 43	1
M 49	M 89	M 45			M 5	M 71	M 18	M 103	M 97			J
M 51	M 90		•		M 9	M 72	M 21		•			
M 58	M 91				M 10	M 73	M 23					
M 59	M 94	]			M 12	M 75	M 25					
M 60	M 95				M 13	M 79	M 26					
M 61	M 96				M 14	M 80	M 29					
M 63	M 98				M 15	M 92	M 34					
M 64	M 99				M 19	M 107	M 35					
M 65	M 100				M 22		M 36					
M 66	M 101				M 28		M 37					
M 74	M 102				M 30		M 38					
M 77	M 104				M 53		M 39					
M 81	M 105				M 54		M 41					
M 82	M 106				M 55		M 44					
M 83	M 108				M 56		M 46					
M 84	M 109				M 62		M 47					
M 85	M 110				M 67		M 48					
4	10	4	1	1	3	1	2	4	4	1	3	1

Total 110

# 6. <u>Listing the Distance of Messier Objects from Earth</u>

Use the query "Distances" which lists the Messier Objects in ascending order of distance (in lightyears) from Earth.

Distances			
Messier Number 🔻	Popular Name 🔻	Distance (LY →	Constellation -
45	Pleiades	444.3	Taurus
52	Cassiopeia Salt-and-Pepper Cluster	499.1	Cassiopeia
40	Winnecke 4	508.9	Ursa Major
44	Beehive Cluster	577.4	Cancer
39		825.3	Cygnus
27	Dumbbell Nebula	861.2	Vulpecula
7	Ptolemy's Cluster	978.6	Scorpius
42	Great Orion Nebula	1343.9	Orion
48	Beehive Cluster	1500.5	Hydra
34	Spiral Cluster	1533.1	Perseus
47		1598.4	Puppis Borealis
43	de Mairan's Nebula	1598.4	Orion
78	Casper the Friendly Ghost Nebula	1598.4	Orion
6	Butterfly Cluster	1601.6	Scorpius
25		1999.6	Sagittarius
97	Owl Nebula	2025.7	Ursa Major
23		2149.7	Sagittarius
41	Little Beehive Cluster	2316	Canis Major
76	Little Dumbbell Nebula	2433.5	Perseus
73		2511.7	Aquarius
35	Shoe-Buckle Cluster	2772.7	Gemini
67	Golden-Eye Cluster	2772.7	Cancer
57	Ring Nebula	2870.6	Lyra
50	Heart-Shaped Cluster	3262	Monoceros
93	Butterfly Cluster	3588.2	Puppis Borealis
8	Lagoon Nebula	4077.5	Sagittarius
21	Webb's Cross	4240.6	Sagittarius
36	Pinwheel Cluster	4240.6	Auriga
38	Starfish Cluster	4249.6	Auriga

Distances			
Messier Number 🔻	Popular Name 🔻	Distance (LY →	Constellation -
37	January Salt-and Pepper Cluster	4511.3	Auriga
18	Black Swan Cluster	4893	Sagittarius
26		5003.9	Scutum
20	Trifid Nebula	5219.2	Sagittarius
17	Omega Nebula	5499.7	Sagittarius
46		5545.4	Puppis Borealis
11	Wild Duck Cluster	6197.8	Scutum
1	Crab Nebula	6524	Taurus
16	Eagle Nebula	7000.3	Serpens Cauda
4	Crab Globular Cluster	7176.4	Scorpius
103		9786	Cassiopeia
22	Great Sagittarius Cluster	9786	Sagittarius
24	Small Sagittarius Star Cloud	10014.3	Sagittarius
29	Cooling Tower	13048	Cygnus
71	Angelfish Cluster	13048	Sagitta
10		14352.8	Ophiuchus
12	Gumball Globular Cluster	15657.6	Ophiuchus
55	Specter Cluster	17614.8	Sagittarius
28		17941	Sagittarius
107	The Crucifix Cluster	20876.8	Ophiuchus
62	Flickering Globular Cluster	22181.6	Ophiuchus
5	Rose Cluster	24465	Serpens Caput
13	Great Star Cluster in Hercules	25117.4	Hercules
9		25769.8	Ophiuchus
92		26748.4	Hercules
30	Jellyfish Cluster	27074.6	Capricornus
19		28705.6	Ophiuchus
70		29358	Sagittarius
69		29684.2	Sagittarius

<b>Distances</b>			
Messier Number 🔻	Popular Name	→ Distance (LY →	Constellation -
14		30336.6	Ophiuchus
15	Pegasus Cluster	32620	Pegasus
80		32620	Scorpius
3		32620	Canes Venatici
56		32620	Lyra
68		33598.6	Hydra
2		39144	Aquarius
79		42406	Lepus
72		54573.3	Aquarius
53		58716	Coma Berenices
75		67523.4	Sagittarius
54		87421.6	Sagittarius
32		2489000	Andromeda
31	Andromeda Galaxy	2538000	Andromeda
110		2688000	Andromeda
33	Triangulum Galaxy	2724000	Triangulum
81	Bode's Galaxy	11808000	Ursa Major
82	Cigar Galaxy	12069000	Ursa Major
83	Southern Pinwheel Galaxy	15038000	Hydra
94	Croc's Eye Galaxy	16016000	Canes Venatici
101	Pinwheel Galaxy	20877000	Ursa Major
106		22834000	Canes Venatici
51	Whirlpool Galaxy	23160000	Canes Venatici
64	Black Eye Galaxy	24008000	Coma Berenices
104	Sombrero Galaxy	29293000	Virgo
74	Phantom Galaxy	30010000	Pisces
96		31315000	Leo
105		31968000	Leo
95		32620000	Leo

Distances			
Messier Number 🔻	Popular Name 🔻	Distance (LY →	Constellation →
66	Leo Triplet	35882000	Leo
63	Sunflower Galaxy	36991000	Canes Venatici
108	Surfboard Galaxy	45994000	Ursa Major
77	Cetus A	46973000	Cetus
88		47005000	Coma Berenices
89		50006000	_
99	Virgo Cluster Pinwheel	50235000	Coma Berenices
86	Faust V051	51866000	Virgo
61	Swelling Spiral Galaxy	52518000	Virgo
60		54802000	
100	Blowdryer Galaxy	54997000	Coma Berenices
49		57737000	Virgo
102	Spindle Galaxy	57737000	Draco
90		58716000	Virgo
59		59695000	Virgo
	Virgo Galaxy	60021000	Virgo
84	Markarian's Chain	60021000	_
85		60347000	Coma Berenices
91		61978000	Coma Berenices
58		62304000	
109	Vacuum Cleaner Galaxy	83507000	Ursa Major
98		113518000	Coma Berenices

<sup>\*</sup> The distance of the Messier Object M 65 (Leo Triplet) is quoted as 41-42 million lightyears by Wikipedia.

#### 7. <u>Details of Galaxy Types</u>

Use the query "Type Details" to compare the descriptions of the 40 Messier galaxies by Stellarium and by the SIMDAD database. This gives a glimpse of the level of understanding required to study the evolution of galaxies!

Type Details				
Messier Number 🔻	Type <b>→</b>	NGC Numb∈ +	Type Details 🔻	SIMBAD Details 🕶
31	Galaxy	224	SA(s)b	SA(s)b D
32	Galaxy	221	cE2	cE2 D
33	Galaxy	598	SA(s)cd	SA(s)cd D
49	Galaxy	4472	E2	E-E/S0 C
51	Galaxy	5194	SA(s)bc pec	SABbc C
58	Galaxy	4579	SAB(rs)b, LINER Sy1.9	Sab C
59	Galaxy	4621	E5	E-E/S0 C
60	Galaxy	4649	E2	S0 C
61	Galaxy	4303	SAB(rs)bc, HII Sy2	Sc(dSc) C
63	Galaxy	5055	SA(rs)bc	SAbc C
64	Galaxy	4826	(R)SA(rs)ab, HII Sy2	SABa C
65	Galaxy	3623	SAB(rs)a, LINER	SABa C
66	Galaxy	3627	SAB(s)b	SABb C
74	Galaxy	628	SA(s)c	SA(s)c D
77	Galaxy	1068	(R)SA(rs)b	SAb C
81	Galaxy	3031	SA(s)ab, LINER	SAab C
82	Galaxy	3034	10	I0 Edge D
83	Galaxy	5236	SAB(s)c	SAB(s)c D
84	Galaxy	4374	E1	E-E/S0 C
85	Galaxy	4382	SA(s)0+ pec/E2	S0 C
86	Galaxy	4406	S0(3)/E3	E-E/S0 C
87	Galaxy	4486	E+0-1 pec, NLRG Sy	E-E/S0 C
88	Galaxy	4501	SA(rs)b, HII Sy2	Sbc C
89	Galaxy	4552	E, LINER, HII Sy2	S0 C
90	Galaxy	4569	SAB(rs)ab, LINER, Sy	Sab C
91	Galaxy	4548	SBb(rs)	Sb C
94	Galaxy	4736	(R)SA(r)ab, LINER	SAB0/a C
95	Galaxy	3351	SB(r)b	SBb C
96	Galaxy	3368	SAB(rs)ab	SBa C

Here are the descriptions of the remaining 11 galaxies listed as Messier objects.

15	Type Details							
	Messier Number 🔻	Type 🕶	NGC Numb∈ ▼	Type Details 🕝	SIMBAD Details 🔻			
	98	Galaxy	4192	SAB(s)ab	Sb C			
	99	Galaxy	4254	SA(s)c	Sc(dSc) C			
	100	Galaxy	4321	SAB(s)bc	Sc(dSc) C			
	101	Galaxy	5457	SAB(rs)cd	SABc C			
	102	Galaxy	5866	S0-a	SAB0 C			
	104	Galaxy	4594	SA(s)a	Sa D			
	105	Galaxy	3379	E1	E1 D			
	106	Galaxy	4258	SAB(s)bc	SAB(s)bc D			
	108	Galaxy	3556	SB(s)cd	Scd C			
	109	Galaxy	3992	SB(rs)bc, LINER/HII	SBbc C			
	110	Galaxy	205	E5 pec	E5pec D			