

# Take the Ghost Hunt challenge

by Stephen James O'Meara



Each spring, amateur astronomers around the world challenge themselves by competing in the Messier Marathon — a visual feat in which observers use their telescopes to view all 109 celestial objects catalogued by French comet-hunter Charles Messier in a single night. This dusk-to-dawn romp has been a popular annual event since the 1960s. The search is fun and gratifying, and it helps observers hone their hunting skills.

Why not double the fun by hosting a similar challenge in the autumn? I have created a list of 109 deep-sky objects that you can hunt down in a single night

on or around the New Moon closest to Halloween. In deference to the time of year, and considering that many deep-sky objects appear as pale specters of fuzzy light, I decided to call this October treat the Ghost Hunt.

Like the Messier Marathon, the Ghost Hunt is intended to be a fun and challenging activity that lasts from dusk to dawn. But there's one big difference: What you'll search for in the Ghost Hunt are not just Messier objects but 109 targets carefully selected from several deep-sky object lists.

	Designation	Type	Con.	R.A.	Dec.	Mag.	Size	Common name
1	NGC 40	PN	Cep	0h13m	72°31'	12.3	38" by 35"	Bow-Tie Nebula
2	NGC 147	Gal	Cas	0h33m	48°30'	9.5	18' by 11'	
3	NGC 185	Gal	Cas	0h39m	48°20'	9.2	17' by 14'	
4	NGC 205	Gal	And	0h40m	41°41'	8.0	22' by 11'	
5	M31	Gal	And	0h43m	41°16'	3.4	3° by 1°	Andromeda Galaxy
6	M32	Gal	And	0h43m	40°52'	8.2	9' by 7'	
7	NGC 246	PN	Cet	0h47m	-11°52'	10.9	5' by 4'	
8	NGC 188	OC	Cep	0h48m	85°15'	7.1	15'	
9	NGC 281	EN	Cas	0h53m	56°37'	7.8	35' by 30'	Pac-Man Nebula
10	NGC 404	Gal	And	1h09m	35°43'	9.8	7' by 7'	Mirach's Ghost
11	NGC 457	OC	Cas	1h20m	58°17'	6.4	20'	Owl Cluster
12	NGC 559	OC	Cas	1h30m	63°18'	9.5	7'	Ghost's Goblet
13	M33	Gal	Tri	1h34m	30°39'	5.7	71' by 42'	Pinwheel Galaxy
14	M74	Gal	Psc	1h37m	15°47'	8.5	10.5' by 9.5'	Phantom Galaxy
15	M76	PN	Per	1h42m	51°34'	10.1	67"	Little Dumbbell Nebula
16	NGC 663	OC	Cas	1h46m	61°13'	6.7	15'	Horseshoe Cluster
17	NGC 752	OC	And	1h58m	37°50'	5.7	75'	
18	NGC 869/84	OC	Per	2h21m	57°08'	5/6.0	18'/18'	Double Cluster
19	NGC 891	Gal	And	2h23m	42°21'	9.9	12' by 3'	Outer Limits
20	NGC 1023	Gal	Per	2h40m	39°04'	9.3	7.5' by 3'	Perseus Lenticular Galaxy
21	M34	OC	Per	2h42m	42°45'	5.2	25'	
22	NGC 1333	RN	Tau	3h29m	31°25'	5.7	6' by 3'	Embryo Nebula
23	NGC 1360	PN	For	3h33m	-25°52'	9.1	9' by 5'	Comet Planetary Nebula
24	IC 342	Gal	Cam	3h47m	68°06'	7.9	16'	
25	M45	OC	Tau	3h48m	24°06'	1.5	2°	Pleiades Cluster
26	NGC 1501	PN	Cam	4h07m	60°55'	10.6	56" by 48"	Oyster Nebula
27	NGC 1535	PN	Eri	4h14m	-12°44'	9.1	48" by 42"	Cleopatra's Eye
28	NGC 1528	OC	Per	4h15m	51°13'	6.2	18'	m & m Double
29	NGC 1545	OC	Per	4h21m	50°15'	6.2	12'	m & m Double
30	NGC 1647	OC	Tau	4h46m	19°07'	6.2	40'	Pirate Moon Cluster
31	IC 405	EN	Aur	5h16m	34°16'	6.0	30' by 20'	Flaming Star Nebula
32	M79	GC	Lep	5h24m	-24°32'	7.7	6'	
33	M1	SNR	Tau	5h35m	22°01'	8.0	6' by 4'	Crab Nebula
34	M42	EN	Ori	5h35m	-5°23'	3.7	1.5°x 1°	Orion Nebula
35	NGC 1973-5-7	EN	Ori	5h36m	-4°52'	6.3	20' by 10'	Running Man
36	M43	EN	Ori	5h36m	-5°16'	6.8	20' by 15'	DeMairan's Nebula
37	NGC 1999	EN	Ori	5h37m	-6°42'	9.5	2' by 2'	Rubber Stamp Nebula
38	NGC 2024	EN	Ori	5h42m	-1°51'	7.2	30' by 30'	The Lips
39	M78	RN	Ori	5h47m	0°03'	8.0	8' by 6'	
40	NGC 2163	EN	Ori	6h08m	18°39'	11.0	3' by 2'	
41	M35	OC	Gem	6h09m	24°21'	5.1	25'	
42	NGC 2175	EN	Ori	6h10m	20°30'	6.9	40' by 30'	
43	NGC 2237-9	EN	Mon	6h32m	5°03'	5	80' by 60'	Rosette Nebula
44	NGC 2261	RN	Mon	6h39m	8°44'	10.0	3.5' by 1.5'	Hubble's Variable Nebula
45	M41	OC	CMa	6h46m	-20°45'	4.5	40'	Little Beehive
46	NGC 2301	OC	Mon	6h52m	0°28'	6.0	15'	Hagrid's Dragon
47	NGC 2392	PN	Gem	7h29m	20°55'	9.2	47" by 43"	Eskimo Nebula
48	NGC 2419	GC	Lyn	7h38m	38°53'	10.4	5'	Intergalactic Wanderer

49	NGC 2440	PN	Pup	7h42m	-18°13'	9.1	74" by 42"	Albino Butterfly
50	NGC 2467	EN	Pup	7h53m	-26°24'	8.0	16' by 12'	
51	M44	OC	Can	8h40m	19°40'	3.1	1.2°	Beehive Cluster
52	NGC 2683	Gal	Lyn	8h53m	33°25'	9.8	9' by 3'	UFO Galaxy
53	NGC 2841	Gal	UMa	9h22m	50°59'	9.0	7' by 3'	Tiger's Eye Galaxy
54	NGC 2903	Gal	Leo	9h32m	21°30'	9.0	12' by 26'	
55	M81	Gal	UMa	9h56m	69°04'	6.9	27' by 14'	Bode's Galaxy
56	M82	Gal	UMa	9h56m	69°41'	8.4	11' by 4'	Cigar Galaxy
57	NGC 3242	PN	Hya	10h25m	-18°39'	7.8	45" by 36"	Ghost of Jupiter
58	M108	Gal	UMa	11h12m	55°40'	10.0	9' by 2'	
59	M97	PN	UMa	11h15m	55°01'	9.9	3'	Owl Nebula
60	NGC 3628	Gal	Leo	11h20m	13°35'	9.5	15' by 3'	King Hamlet's Ghost
61	NGC 4236	Gal	Dra	12h17m	69°28'	9.6	20' by 8'	
62	Melotte 111	OC	Com	12h25m	26°07'	1.6	300'	Flying Witch Cluster
63	NGC 4449	Gal	CVn	12h28m	44°06'	9.6	5' by 4'	Box Galaxy
64	NGC 4565	Gal	Com	12h36m	25°59'	9.6	16' by 2'	
65	NGC 4631	Gal	CVn	12h42m	32°32'	9.2	15' by 3.5'	Whale Galaxy
66	NGC 4699	Gal	Vir	12h49m	-8°40'	9.5	3' by 2.5'	The Vinyl LP
67	NGC 4725	Gal	Com	12h50m	25°30'	9.2	10.5' by 8'	
68	M53	GC	Com	13h13m	18°10'	7.7	13'	
69	M51	Gal	CVn	13h30m	47°12'	8.4	11' by 7'	Whirlpool Galaxy
70	M3	GC	CVn	13h42m	28°22'	5.9	19'	
71	M101	Gal	UMa	14h03m	54°21'	7.9	29' by 27'	
72	M13	GC	Her	16h42m	36°27'	5.3	21'	Hercules Cluster
73	M92	GC	Her	17h17m	43°08'	6.5	14'	
74	NGC 6543	PN	Dra	17h59m	66°38'	8.1	23" by 17"	Cat's Eye Nebula
75	NGC 6572	PN	Oph	18h12m	6°51'	7.3	16" x 13"	Emerald Eye
76	M16	EN	Ser	18h19m	-13°48'	—	120' by 25'	Ghost Puppet
77	M17	EN	Sgr	18h21m	-16°11'	6.0	40' by 30'	Omega Nebula
78	NGC 6633	OC	Oph	18h27m	6°30'	4.3	20'	Tweedledum
79	IC 4756	OC	Ser	18h39m	5°26'	4.3	40'	Tweedledee
80	M26	OC	Sct	18h45m	-9°23'	8.0	8'	
81	NGC 6709	OC	Aql	18h52m	10°20'	6.7	15'	Flying Unicorn
82	NGC 6712	GC	Sct	18h53m	-8°42'	8.1	9.8'	
83	M57	PN	Lyr	18h54m	33°02'	8.8	76"	Ring Nebula
84	NGC 6826	PN	Cyg	19h45m	50°32'	8.5	27" by 24"	Blinking Planetary
85	M71	GC	Sge	19h54m	18°47'	8.0	7'	
86	M56	GC	Lyr	19h17m	30°11'	8.4	7'	
87	NGC 6819	OC	Cyg	19h41m	40°11'	7.3	5'	Fox Head Cluster
88	M27	PN	Vul	20h00m	22°43'	7.3	8' by 6'	Dumbbell Nebula
89	NGC 6866	OC	Cyg	20h04m	44°10'	7.6	15'	Frigate Bird Cluster
90	NGC 6888	EN	Cyg	20h12m	38°21'	8.8	18' by 13'	Crescent Nebula
91	NGC 6934	GC	Del	20h34m	7°24'	8.8	7'	
92	NGC 6940	OC	Vul	20h35m	28°17'	6.3	31'	Mothra
93	—	DN	Cyg	~20h40m	41°00'	—	480' by 300'	Northern Coalsack
94	M72	GC	Aqr	20h54m	-12°32'	9.2	6'	
95	NGC 6992/5	SNR	Cyg	20h56m	31°43'	7.5	60' by 8'	Veil Nebula (East)
96	NGC 7000	EN	Cyg	20h59m	44°20'	3.8	100' by 60'	North America Nebula
97	NGC 6960	SNR	Cyg	20h46m	30°43'	7.9	70' by 6'	Veil Nebula (West)
98	NGC 7008	PN	Cyg	21h01m	54°33'	9.9	98" by 75"	Coat Button
99	NGC 7023	RN	Cep	21h02m	68°10'	7.7	10' by 8'	Iris Nebula
100	NGC 7006	GC	Del	21h02m	16°11'	10.6	3.6'	
101	NGC 7009	PN	Aqr	21h04m	-11°22'	8.0	44" by 23"	Ghost of Saturn
102	M15	GC	Peg	21h30m	12°10'	6.0	18'	
103	M2	GC	Aqr	21h34m	-0°49'	6.3	16'	
104	IC 5146	EN	Cyg	21h53m	47°16'	9.3	10' by 10'	Cocoon Nebula
105	NGC 7293	PN	Aqr	22h30m	-20°50'	6.0	12' by 10'	Helix Nebula
106	NGC 7331	Gal	Peg	22h37m	34°25'	9.5	10' by 4.5'	Deer Lick Group
107	NGC 7662	PN	And	23h26m	42°32'	8.3	32" by 28"	Blue Snowball
108	M52	OC	Cas	23h25m	61°36'	6.9	16'	Scorpion Cluster
109	NGC 7789	OC	Cas	23h58m	56°43'	6.6	25'	Screaming Skull

**Key:** Con. = Constellation; R.A. = Right ascension (2000.0; Dec. = Declination (2000.0; Mag. = Visual magnitude;  
 DN = Dark nebula; EN = Emission nebula; Gal = Galaxy; GC = Globular cluster; OC = Open cluster; PN = Planetary nebula;  
 SNR = Supernova remnant