

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 |

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|-----|-------------|-----|-----|---------|---------|------|--------------|----------------------|
| 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