The Messier Field Guide
All 110, by Season

Visual notes, imaging notes, sizes, and difficulty for every object — organized by when to look.

How to use this guide

Every object in Charles Messier's catalogue, organized by the season when it sits highest in the evening sky from mid-northern latitudes. Each entry includes what you'll actually see through small binoculars or a 4-inch scope, plus what's worth chasing if you image — focal length, exposure approach, framing tips. Featured targets (★) are season showpieces.

Difficulty scale

- ●○○○ **Easy** · naked eye / 7×50 binoculars
- ●●○○ **Moderate** · small scope (60–100mm) at moderate skies
- ●●●○ **Challenging** · 4–8" scope, dark skies recommended
- ●●●● **Difficult** · 8"+ scope, very dark skies, careful technique

Seasons at a glance

WINTER	Dec — Feb	**18** objects	**5** featured
SPRING	Mar — May	**41** objects	**11** featured
SUMMER	Jun — Aug	**38** objects	**13** featured
FALL	Sep — Nov	**13** objects	**3** featured

Charles Messier — the comet hunter who built the catalog

Charles Messier (1730–1817) was a French astronomer obsessed with one thing: finding comets. Working from a rooftop observatory in Paris with a small refracting telescope, he discovered thirteen of them — a respectable haul for the era — and earned the nickname "the comet ferret" from King Louis XV.

But comets were rare and easily confused with another kind of fuzzy patch in the sky: nebulae, star clusters, and galaxies that didn't move. Messier kept getting fooled. So he started writing down every fixed fuzzy thing he ran into, in the order he encountered it, with a single purpose — to remember what *not* to chase next time. The first entry, M1 (the Crab Nebula), made the list in 1758 because he'd briefly mistaken it for a returning Halley's Comet. By 1781 his list contained 103 objects. Later astronomers extended it to 110. In a delicious irony, Messier is now far better known for his "don't chase these" list than for any of his comets — the catalog became, by accident, one of the most beloved beginner observing lists in the hobby. It's a tour of the brightest, most rewarding deep-sky objects visible from northern temperate latitudes, all of them within reach of a small telescope or even good binoculars.

The catalog was originally compiled to help comet hunters avoid being fooled. Today, it's the gold-standard starter tour of the night sky.

Quick beginner glossary

Magnitude (mag)	How bright something looks. Lower number = brighter. Naked-eye limit is around mag 6 in dark skies. M31 at mag 3.4 is naked-eye easy; M97 at mag 9.9 needs a real telescope.
Arcminute (')	Angular size. The full Moon is about 30 arcminutes across. M42 at 65' is bigger than the Moon; M57 at 1.4' is tiny by comparison.
RA · Dec	Sky coordinates. Right Ascension (RA) and Declination (Dec) are the celestial equivalent of longitude and latitude — they tell a goto telescope exactly where to point.
Aperture	The diameter of your scope's main lens or mirror. A '4-inch scope' has a 4-inch aperture. More aperture = more light = fainter objects visible.
Focal length	How magnified the image is. Long focal length (1500mm+) zooms in on small targets like planetary nebulae; short focal length (50–200mm) frames big targets like the Andromeda Galaxy.
Narrowband / Hα / OIII	Filters that let only specific wavelengths of light through. Hα (red) and OIII (teal) cut light pollution and reveal nebula structure that's invisible in normal light.
Sub / Integration time	In astrophotography, a 'sub' is one short exposure (often 30 seconds to a few minutes); 'integration time' is the total time stacked. Faint targets need hours of integration.
Globular vs Open cluster	Globulars are tight, ancient balls of hundreds of thousands of stars. Open clusters are loose, young, scattered groupings of dozens to hundreds. Globulars look like fuzzy snowballs; open clusters look like jewelry.

Your first five Messiers

If you've never hunted a Messier object before, here are five to start with — each easy to find, each visibly impressive in binoculars or a small scope, each unmistakable. Together they cover all four seasons, so one of them is in the sky any clear night.

M42 — Orion Nebula WINTER

The easiest. Look at Orion's belt, then drop down to the three stars of the sword. The middle 'star' is M42 — a fuzzy patch even with the naked eye. Binoculars show the fan; a small scope reveals the Trapezium stars and complex nebulosity.

M44 — Beehive Cluster SPRING

In Cancer, between Gemini and Leo. A fuzzy naked-eye spot in dark skies. Binoculars resolve dozens of stars in a loose 'swarm of bees' pattern. Too big for most telescope eyepieces.

M13 — Hercules Cluster SUMMER

The northern hemisphere's showpiece globular. Look between the two western stars of Hercules' Keystone. Binoculars show a fuzzy ball; a 6-inch scope resolves it into a glittering sphere of stars.

M27 — Dumbbell Nebula SUMMER

A bright planetary nebula in Vulpecula. The dumbbell shape is obvious in any 4-inch scope at modest magnification. Greenish in color due to oxygen emission.

M31 — Andromeda Galaxy FALL

Our nearest large neighbor — 2.5 million light-years away, naked-eye visible from any reasonably dark site. A wide-field 200mm camera lens captures the whole galaxy and its companions.

WINTER

Dec — Feb · 18 objects

The deep-sky winter sky is dominated by Orion, Taurus, Auriga, and Gemini. Cluster country, with the spectacular Orion Nebula complex as the centerpiece. Galaxies are rare in this section.

M1 · Crab Nebula ★ FEATURED

●●●○ CHALLENGING

Supernova Remnant · Taurus · 5h 35m +22° 01' · **mag 8.4** · size 6'×4'

Visual Faint oval gray smudge near zeta Tau; structure visible only in 8"+ scope at high power

Imaging 1500–2000mm shows expanding filaments; narrowband (Hα / OIII) reveals rich shock-front structure

M34

●○○○ EASY

Open Cluster · Perseus · 2h 42m +42° 47' · **mag 5.5** · size 35'

Visual Big naked-eye glow; lovely scattered stars in 7×50 binoculars

Imaging Wide field 200mm or shorter; minimal exposure needed

M35 ★ FEATURED

●○○○ EASY

Open Cluster · Gemini · 6h 09m +24° 21' · **mag 5.3** · size 28'

Visual Naked-eye smudge; binoculars show 50+ stars; small companion NGC 2158 visible nearby in 4"+

Imaging Standard cluster framing 300–500mm; capture NGC 2158 in same frame

M36

●○○○ EASY

Open Cluster · Auriga · 5h 36m +34° 08' · **mag 6.3** · size 12'

Visual Compact open cluster; binoculars show ~20 stars; lovely in any small scope

Imaging Tight grouping good for 800mm+; minimal integration needed

M37 ★ FEATURED

●○○○ EASY

Open Cluster · Auriga · 5h 52m +32° 33' · **mag 6.2** · size 24'

Visual Richest of the Auriga trio — hundreds of stars in a 4" scope; orange central star is striking

Imaging Beautiful in any focal length; short subs avoid star bloat

M38 · Starfish Cluster

●○○○ EASY

Open Cluster · Auriga · 5h 28m +35° 51' · **mag 7.4** · size 21'

Visual Cross-shaped pattern of stars; binoculars resolve outer members

Imaging Pair with NGC 1907 in same field

M41

●○○○ EASY

Open Cluster · Canis Major · 6h 47m -20° 44' · **mag 4.5** · size 38'

Visual Easy naked-eye target south of Sirius; binocular showcase

Imaging Wide field 100–200mm; capture with Sirius for context

M42 · Orion Nebula ★ FEATURED
EASY
Diffuse Nebula · Orion · 5h 35m -5° 23' · **mag 4.0** · size 65'×60'

Visual Naked-eye fuzzy 'star' in Orion's sword. Binoculars show fan; 4" reveals the four Trapezium stars and complex nebulosity

Imaging Iconic, beginner-friendly. 200–400mm frames it nicely with M43. HDR essential — bright core, faint outer wings

M43 · De Mairan's Nebula
MODERATE
Diffuse Nebula · Orion · 5h 35m -5° 16' · **mag 9.0** · size 20'×15'

Visual Northern lobe of M42; comma-shaped patch around mag-7 star

Imaging Always captured with M42; same processing approach

M45 · Pleiades ★ FEATURED
EASY
Open Cluster · Taurus · 3h 47m +24° 07' · **mag 1.6** · size 110'

Visual Naked-eye showpiece; binoculars reveal hundreds of stars and hint of nebulosity around brightest

Imaging Wide field 135–300mm; long exposures bring out the blue reflection nebulae around Merope and Maia

M46
MODERATE
Open Cluster · Puppis · 7h 42m -14° 49' · **mag 6.1** · size 27'

Visual Rich stellar field; small planetary NGC 2438 superimposed (visible in 6"+)

Imaging Pair with M47 in same wide field

M47
EASY
Open Cluster · Puppis · 7h 36m -14° 30' · **mag 4.4** · size 30'

Visual Bright scattered cluster; naked-eye glow next to M46

Imaging Pair with M46 at 200–400mm

M48
EASY
Open Cluster · Hydra · 8h 14m -5° 48' · **mag 5.8** · size 54'

Visual Large scattered cluster; binocular target

Imaging Needs wide field — 100–200mm lens

M50
EASY
Open Cluster · Monoceros · 7h 03m -8° 20' · **mag 5.9** · size 16'

Visual Heart-shaped grouping; rewarding in 4" at low power

Imaging Modest target between Sirius and Procyon

M76 · Little Dumbbell
CHALLENGING
Planetary Nebula · Perseus · 1h 42m +51° 34' · **mag 10.1** · size 2.7'×1.8'

Visual Small bipolar planetary; needs 6"+ for the 'double-lobe' shape

Imaging Long focal length 1500mm+; narrowband shows beautiful structure

M78
CHALLENGING
Reflection Nebula · Orion · 5h 47m +0° 03' · **mag 8.3** · size 8'×6'

Visual Faint reflection nebula around two stars; needs dark skies and 6"+ scope

Imaging Notoriously tricky — wide dynamic range; reflection nebula plus dark dust lanes

M79

MODERATE

Globular Cluster · Lepus · 5h 24m -24° 31' · **mag 8.0** · size 9.6'

Visual Compact southern globular; granular in 4" scope

Imaging Long focal length; classic globular target

M93

EASY

Open Cluster · Puppis · 7h 44m -23° 52' · **mag 6.2** · size 22'

Visual Fan-shaped open cluster; pretty in any scope

Imaging Wide field 200–400mm

SPRING

Mar — May · 41 objects

Galaxy season. The Virgo Cluster and Coma Berenices contain dozens of bright galaxies in a small patch of sky. Long focal lengths reward patient observers and astrophotographers; dark skies essential for the fainter members.

M3 ★ FEATURED
EASY

Globular Cluster · Canes Ven. · 13h 42m +28° 23' · **mag 6.3** · size 18'

Visual Bright globular; resolved into pinpoints with 6"+ scope; one of the showpiece globulars

Imaging Standard globular at 1000mm+; stacks well with short subs

M40 · Winnecke 4
DIFFICULT

Double Star · Ursa Major · 12h 22m +58° 05' · **mag 8.4** · size 0.8'

Visual Just two faint stars (Messier's recording mistake); included for completeness

Imaging Not photographically interesting — historical curiosity

M44 · Beehive Cluster ★ FEATURED
EASY

Open Cluster · Cancer · 8h 40m +19° 59' · **mag 3.7** · size 95'

Visual Naked-eye fuzz; binoculars dazzling — dozens of stars; too big for most telescopes

Imaging Wide-field 85–135mm lens essential to fit the whole cluster

M49
MODERATE

Elliptical Galaxy · Virgo · 12h 30m +8° 00' · **mag 8.4** · size 9'×7.5'

Visual Bright elliptical galaxy; smooth oval glow in 4" scope

Imaging Anchors a small group; framing options at 800–1200mm

M51 · Whirlpool Galaxy ★ FEATURED
MODERATE

Spiral Galaxy · Canes Ven. · 13h 30m +47° 11' · **mag 8.4** · size 11'×7'

Visual Two bright cores visible in 4"; spiral arms detectable in 8"+ from dark sites

Imaging Stunning showcase — sharp spiral structure with companion NGC 5195. 1000–2000mm; tidal bridge needs long integration

M53
MODERATE

Globular Cluster · Coma Bere. · 13h 13m +18° 10' · **mag 7.6** · size 13'

Visual Compact globular near Arcturus; granular in 6"

Imaging Pairs with NGC 5053 in wider field

M58
CHALLENGING

Spiral Galaxy · Virgo · 12h 38m +11° 49' · **mag 9.7** · size 5.5'×4.5'

Visual Faint barred spiral; small oval glow in 6"+

Imaging Part of Virgo Cluster wide-field opportunity

M59
CHALLENGING
Elliptical Galaxy · Virgo · 12h 42m +11° 39' · **mag 9.6** · size 5'×3.5'

Visual Small elliptical; faint in 6"
Imaging Tight pair with M60

M60
MODERATE
Elliptical Galaxy · Virgo · 12h 44m +11° 33' · **mag 8.8** · size 7'×6'

Visual Bright elliptical with faint spiral NGC 4647 superimposed
Imaging Interesting interacting pair at 1500mm+

M61
CHALLENGING
Spiral Galaxy · Virgo · 12h 22m +4° 28' · **mag 9.7** · size 6'×5.5'

Visual Face-on barred spiral; faint round glow in 8"
Imaging Lovely structure at long focal lengths

M63 · Sunflower Galaxy
MODERATE
Spiral Galaxy · Canes Ven. · 13h 16m +42° 02' · **mag 8.6** · size 12'×8'

Visual Bright oval in 6"; mottled appearance hints at spiral arms
Imaging Tight flocculent spiral structure shines at 1500–2500mm

M64 · Black Eye Galaxy ★ FEATURED
MODERATE
Spiral Galaxy · Coma Bere. · 12h 57m +21° 41' · **mag 8.5** · size 9.3'×5.4'

Visual Bright tilted spiral; the dark dust lane visible in 6"+ near nucleus
Imaging Striking dust lane reveal at 1500mm+ with good seeing

M65 ★ FEATURED
MODERATE
Spiral Galaxy · Leo · 11h 19m +13° 06' · **mag 9.3** · size 8'×2'

Visual One of the Leo Triplet — edge-on; visible with M66 in same eyepiece in 4"+
Imaging Iconic triplet with M66 + NGC 3628 at 800–1200mm — best galaxy field of spring

M66 ★ FEATURED
MODERATE
Spiral Galaxy · Leo · 11h 20m +12° 59' · **mag 8.9** · size 9'×4'

Visual One of the Leo Triplet — tilted spiral; brighter than M65
Imaging Frame with M65 and NGC 3628 for the full triplet

M67
EASY
Open Cluster · Cancer · 8h 51m +11° 49' · **mag 6.1** · size 30'

Visual Older open cluster; rich and even; pretty in binoculars
Imaging Standard cluster framing

M68
MODERATE
Globular Cluster · Hydra · 12h 39m -26° 45' · **mag 7.8** · size 12'

Visual Globular; partial resolution in 6"+ at southern latitudes
Imaging Standard globular if low altitude isn't an issue

M81 · Bode's Galaxy ★ FEATURED
EASY
Spiral Galaxy · Ursa Major · 9h 56m +69° 04' · **mag 6.9** · size 27'×14'

Visual Bright oval with stellar nucleus; visible in binoculars; spiral hints in 8"
Imaging Showcase pair with M82 at 400–800mm; integrated flux nebula appears at long exposures

M82 · Cigar Galaxy ★ FEATURED
EASY
Starburst Galaxy · Ursa Major · 9h 56m +69° 41' · **mag 8.4** · size 11'×4'

Visual Edge-on starburst galaxy; cigar shape obvious in any scope
Imaging Pairs with M81; Hα filter reveals dramatic central outflow plumes

M83 · Southern Pinwheel
MODERATE
Spiral Galaxy · Hydra · 13h 37m -29° 52' · **mag 7.5** · size 12'×11'

Visual Face-on barred spiral; bright nucleus, hints of arms in 6"+ from southern sites
Imaging Excellent target if you can get low altitude — beautiful spiral

M84
MODERATE
Elliptical Galaxy · Virgo · 12h 25m +12° 53' · **mag 9.1** · size 5'

Visual Bright elliptical; west end of Markarian's Chain
Imaging Anchor of Markarian's Chain — wide-field showcase at 600–900mm

M85
MODERATE
Lenticular Galaxy · Coma Bere. · 12h 25m +18° 11' · **mag 9.1** · size 7'×5'

Visual Bright lenticular; smooth oval
Imaging Coma Cluster outskirts

M86
MODERATE
Elliptical Galaxy · Virgo · 12h 26m +12° 57' · **mag 8.9** · size 9'×6'

Visual Bright elliptical paired with M84
Imaging With M84 anchors Markarian's Chain — many NGC galaxies in same frame

M87 · Virgo A ★ FEATURED
MODERATE
Elliptical Galaxy · Virgo · 12h 30m +12° 23' · **mag 8.6** · size 7'

Visual Round bright elliptical; the famous supermassive black hole host
Imaging Long exposures show the iconic relativistic jet emerging from the core

M88
CHALLENGING
Spiral Galaxy · Coma Bere. · 12h 32m +14° 25' · **mag 9.6** · size 7'×4'

Visual Tilted spiral; soft elongated glow in 6"
Imaging Beautiful at 1500mm+

M89
CHALLENGING
Elliptical Galaxy · Virgo · 12h 35m +12° 33' · **mag 9.8** · size 5'

Visual Round elliptical; faint
Imaging Part of Virgo Cluster mosaic

M90
CHALLENGING
Spiral Galaxy · Virgo · 12h 36m +13° 09' · **mag 9.5** · size 9'×4'

Visual Edge-on tilted spiral; elongated glow in 6"
Imaging Photogenic at 1500mm+

M91
CHALLENGING
Spiral Galaxy · Coma Bere. · 12h 35m +14° 30' · **mag 10.1** · size 5'×4'

Visual Faint barred spiral; challenging visually
Imaging Part of Virgo Cluster region

M94
EASY
Spiral Galaxy · Canes Ven. · 12h 50m +41° 07' · **mag 8.2** · size 11'×9'

Visual Bright compact spiral; almost stellar nucleus
Imaging Striking ring structure at long focal lengths

M95
CHALLENGING
Spiral Galaxy · Leo · 10h 43m +11° 42' · **mag 9.7** · size 4.4'×3.3'

Visual Faint barred spiral; round in 6"
Imaging Part of Leo I group with M96/M105

M96
MODERATE
Spiral Galaxy · Leo · 10h 46m +11° 49' · **mag 9.2** · size 7'×5'

Visual Slightly elongated spiral; brighter than M95
Imaging Group target with M95/M105

M97 · Owl Nebula
CHALLENGING
Planetary Nebula · Ursa Major · 11h 14m +55° 01' · **mag 9.9** · size 3.4'

Visual Round dim disk; the 'owl eyes' need 10"+ scope and dark skies
Imaging Narrowband (OIII) reveals the owl-eye structure beautifully

M98
CHALLENGING
Spiral Galaxy · Coma Bere. · 12h 13m +14° 54' · **mag 10.1** · size 9'×3'

Visual Edge-on spiral; faint elongated streak
Imaging Long focal length

M99
CHALLENGING
Spiral Galaxy · Coma Bere. · 12h 18m +14° 25' · **mag 9.9** · size 5'×4'

Visual Face-on spiral; round soft glow
Imaging Beautiful structure at long focal lengths

M100
MODERATE
Spiral Galaxy · Coma Bere. · 12h 22m +15° 49' · **mag 9.3** · size 7'×6'

Visual Brightest face-on spiral in Coma; small bright core in 6"
Imaging Showcase grand-design spiral

M101 · Pinwheel Galaxy ★ FEATURED

●●○○ MODERATE

Spiral Galaxy · Ursa Major · 14h 03m +54° 21' · **mag 7.9** · size 28'×27'

Visual Large face-on spiral; very low surface brightness — needs dark skies; arms in 8"+

Imaging Stunning at 600–1000mm; rewards long integration time; HII regions pop with Hα

M102 · Spindle Galaxy

●●●○ CHALLENGING

Lenticular Galaxy · Draco · 15h 06m +55° 46' · **mag 9.9** · size 5.2'×2.3'

Visual Edge-on lenticular; sliver shape in 8"+

Imaging Thin dust lane visible at long focal lengths

M104 · Sombrero Galaxy ★ FEATURED

●●○○ MODERATE

Spiral Galaxy · Virgo · 12h 40m -11° 37' · **mag 8.0** · size 9'×4'

Visual Bright edge-on spiral; the dark dust lane visible in 6" from dark sites

Imaging Iconic dust lane — high resolution rewarded; 1500mm+; one of the best edge-on spirals

M105

●●○○ MODERATE

Elliptical Galaxy · Leo · 10h 48m +12° 35' · **mag 9.3** · size 5'×4'

Visual Bright elliptical; trio with NGC 3384 and NGC 3389

Imaging Group target with M95/M96

M106

●●○○ MODERATE

Spiral Galaxy · Canes Ven. · 12h 19m +47° 18' · **mag 8.4** · size 19'×8'

Visual Tilted spiral; elongated bright nucleus; arms in 8"+

Imaging Underrated — beautiful long-exposure target with extended Hα jets

M108

●●●○ CHALLENGING

Spiral Galaxy · Ursa Major · 11h 11m +55° 40' · **mag 10.0** · size 9'×2'

Visual Edge-on spiral; mottled streak in 6"+

Imaging Pair with M97 in same field at 600–800mm

M109

●●●○ CHALLENGING

Spiral Galaxy · Ursa Major · 11h 57m +53° 22' · **mag 9.8** · size 7.6'×4.6'

Visual Faint barred spiral near Phecda; round soft glow

Imaging Long focal length

SUMMER

Jun — Aug · 38 objects

Milky Way core season. The richest stretch of sky north of the equator — Sagittarius and Scorpius blaze with nebulae and globular clusters. Hercules and Cygnus add northern showpieces. Most rewarding season for visual observers.

M4 ★ FEATURED

●○○○ EASY

Globular Cluster · Scorpius · 16h 23m -26° 31' · **mag 5.9** · size 26'

Visual Loose globular near Antares; bar of stars across center; resolved in 4" scope

Imaging Pair with Antares region for one of the richest wide-field nebula+globular composites in the sky

M5 ★ FEATURED

●○○○ EASY

Globular Cluster · Serpens · 15h 18m +2° 05' · **mag 5.6** · size 23'

Visual Magnificent globular; resolves to the core in 6"+

Imaging Showcase globular at 1000mm+

M6 · Butterfly Cluster

●○○○ EASY

Open Cluster · Scorpius · 17h 40m -32° 13' · **mag 4.2** · size 25'

Visual Naked-eye glow; binoculars show the butterfly pattern

Imaging Pair with M7 at 200–400mm

M7 · Ptolemy Cluster ★ FEATURED

●○○○ EASY

Open Cluster · Scorpius · 17h 53m -34° 49' · **mag 3.3** · size 80'

Visual Bright naked-eye cluster (recorded by Ptolemy ~AD 130); huge binocular target

Imaging Wide-field 50–100mm lens; rich Milky Way background

M8 · Lagoon Nebula ★ FEATURED

●○○○ EASY

Diffuse Nebula · Sagittarius · 18h 03m -24° 23' · **mag 6.0** · size 90'×40'

Visual Naked-eye fuzz; binocular showcase; 4" reveals dark Lagoon lane and embedded cluster

Imaging Iconic Hα target; 300–600mm; pairs with M20 nearby for famous combined frame

M9

●●○○ MODERATE

Globular Cluster · Ophiuchus · 17h 19m -18° 31' · **mag 7.7** · size 9.3'

Visual Compact globular; partial resolution in 6"

Imaging Standard globular

M10

●○○○ EASY

Globular Cluster · Ophiuchus · 16h 57m -4° 06' · **mag 6.6** · size 15'

Visual Bright globular; resolves outer members in 6"

Imaging Lovely 1000mm target; pairs nicely with M12

M11 · Wild Duck Cluster ★ FEATURED
EASY
Open Cluster · Scutum · 18h 51m -6° 16' · **mag 6.3** · size 13'

Visual Dense fan-shaped open cluster; one of the richest; 'flying ducks' V pattern in 6"+
Imaging Compact target — long focal length OK; rich Milky Way background

M12
EASY
Globular Cluster · Ophiuchus · 16h 47m -1° 57' · **mag 6.7** · size 14.5'

Visual Loose globular; pair with M10 in low power
Imaging Pairs with M10 at 600mm

M13 · Hercules Cluster ★ FEATURED
EASY
Globular Cluster · Hercules · 16h 42m +36° 28' · **mag 5.8** · size 20'

Visual Northern showpiece globular; fully resolves in 6"+; the 'propeller' dark lanes pop in 10"+
Imaging Easy resolved globular at 1000–1500mm; classic beginner astrophotography target

M14
MODERATE
Globular Cluster · Ophiuchus · 17h 38m -3° 15' · **mag 7.6** · size 11'

Visual Compact globular; barely resolves in 6"
Imaging Standard globular

M16 · Eagle Nebula ★ FEATURED
MODERATE
Open Cluster + Nebula · Serpens · 18h 19m -13° 47' · **mag 6.0** · size 35'×28'

Visual Bright open cluster with surrounding nebulosity (Pillars of Creation region) — needs dark skies for nebula
Imaging Pillars of Creation is the famous heart; narrowband Hα/SII/OIII for SHO 'Hubble palette'

M17 · Omega / Swan Nebula ★ FEATURED
EASY
Diffuse Nebula · Sagittarius · 18h 21m -16° 11' · **mag 7.0** · size 11'

Visual Bright swan/checkmark shape; one of the brightest visual nebulae
Imaging Hα-rich; 600–1000mm; high contrast and easy to process

M18
MODERATE
Open Cluster · Sagittarius · 18h 20m -17° 08' · **mag 7.5** · size 9'

Visual Sparse cluster between M17 and M24; modest
Imaging Wide-field with M17/M24

M19
MODERATE
Globular Cluster · Ophiuchus · 17h 03m -26° 16' · **mag 7.5** · size 13.5'

Visual Elongated globular; faint at northern latitudes
Imaging Standard globular

M20 · Trifid Nebula ★ FEATURED
MODERATE
Diffuse Nebula · Sagittarius · 18h 03m -23° 02' · **mag 6.3** · size 28'

Visual Bright emission/reflection nebula; the trifurcating dark lanes need 6"+
Imaging Stunning multi-color target (red emission + blue reflection); 600–1000mm; pair with M8 in same frame

M21 · Webb's Cross

EASY

Open Cluster · Sagittarius · 18h 04m -22° 30' · **mag 6.5** · size 13'

Visual Tight open cluster next to M20; binocular target
Imaging In M8/M20 wide field

M22 · Sagittarius Cluster ★ FEATURED

EASY

Globular Cluster · Sagittarius · 18h 36m -23° 54' · **mag 5.1** · size 32'

Visual Brightest globular for northern observers; rivals M13; resolves in 4"
Imaging Showcase globular if you can get reasonable altitude

M23

EASY

Open Cluster · Sagittarius · 17h 56m -19° 01' · **mag 6.9** · size 27'

Visual Rich open cluster; binocular target
Imaging Wide field

M24 · Sagittarius Star Cloud ★ FEATURED

EASY

Star Cloud · Sagittarius · 18h 16m -18° 50' · **mag 4.6** · size 90'

Visual Naked-eye Milky Way star cloud; binocular extravaganza — hundreds of stars
Imaging Wide field 50–100mm; rich star fields with embedded dark nebulae

M25

EASY

Open Cluster · Sagittarius · 18h 31m -19° 15' · **mag 4.6** · size 32'

Visual Bright scattered cluster; binoculars show many stars
Imaging Wide field

M26

MODERATE

Open Cluster · Scutum · 18h 45m -9° 23' · **mag 8.0** · size 15'

Visual Compact cluster near M11; modest
Imaging Wide field with M11

M27 · Dumbbell Nebula ★ FEATURED

EASY

Planetary Nebula · Vulpecula · 19h 59m +22° 43' · **mag 7.4** · size 8'

Visual Bright dumbbell shape obvious in 4"; one of the easiest planetaries
Imaging Showpiece planetary; OIII bright; 800–1500mm; rewards long integration in OIII for outer halo

M28

MODERATE

Globular Cluster · Sagittarius · 18h 24m -24° 52' · **mag 6.8** · size 11.2'

Visual Compact globular near M22; small soft ball
Imaging Pair with M22

M29

MODERATE

Open Cluster · Cygnus · 20h 23m +38° 30' · **mag 6.6** · size 7'

Visual Small open cluster; binocular target embedded in Milky Way
Imaging Rich background; modest at long focal lengths

M39
EASY
Open Cluster · Cygnus · 21h 31m +48° 26' · **mag 4.6** · size 32'

Visual Bright loose open cluster; binocular target
Imaging Wide field

M54
MODERATE
Globular Cluster · Sagittarius · 18h 55m -30° 28' · **mag 7.6** · size 9.1'

Visual Compact globular (extragalactic — in the Sgr dwarf galaxy); not resolved easily
Imaging Distant globular — historical curiosity

M55
MODERATE
Globular Cluster · Sagittarius · 19h 40m -30° 57' · **mag 6.3** · size 19'

Visual Loose globular at low altitude; large and resolved in 6"
Imaging Standard globular if low altitude isn't an issue

M56
MODERATE
Globular Cluster · Lyra · 19h 17m +30° 11' · **mag 8.3** · size 7.1'

Visual Compact globular between Albireo and the Ring; partial resolution in 8"
Imaging Standard globular

M57 · Ring Nebula ★ FEATURED
EASY
Planetary Nebula · Lyra · 18h 54m +33° 02' · **mag 8.8** · size 1.4'

Visual Tiny smoke ring obvious in 4"+; one of the most rewarding planetaries
Imaging Small target — long focal length 2000mm+; central star visible in long exposures with H-alpha

M62
EASY
Globular Cluster · Ophiuchus · 17h 01m -30° 07' · **mag 6.4** · size 15'

Visual Bright globular; one of the brightest in Ophiuchus
Imaging Standard globular

M69
MODERATE
Globular Cluster · Sagittarius · 18h 31m -32° 21' · **mag 7.6** · size 7.1'

Visual Small dense globular; faint at northern latitudes
Imaging Standard globular at low altitude

M70
MODERATE
Globular Cluster · Sagittarius · 18h 43m -32° 18' · **mag 7.9** · size 8'

Visual Compact globular near M69; faint in the south
Imaging Pair with M69

M71
EASY
Globular Cluster · Sagitta · 19h 53m +18° 47' · **mag 8.0** · size 7.2'

Visual Loose globular (long debated as open); unusual character; binocular target
Imaging Pretty target in rich Milky Way background

M75

MODERATE

Globular Cluster · Sagittarius · 20h 06m -21° 55' · **mag 8.5** · size 6.8'

Visual Distant compact globular; soft round glow

Imaging Standard globular

M80

MODERATE

Globular Cluster · Scorpius · 16h 17m -22° 58' · **mag 7.3** · size 8.9'

Visual Compact globular near Antares; soft ball

Imaging In rich Antares region wide field

M92

EASY

Globular Cluster · Hercules · 17h 17m +43° 08' · **mag 6.4** · size 14'

Visual Bright globular often overshadowed by M13; resolves well in 6"

Imaging Often paired with M13 photographically

M107

MODERATE

Globular Cluster · Ophiuchus · 16h 32m -13° 03' · **mag 7.9** · size 10'

Visual Faint globular; modest in 4"

Imaging Standard globular

FALL

Sep — Nov · 13 objects

Andromeda season. The naked-eye Andromeda Galaxy and its companions dominate the sky, joined by the magnificent globular M15 and the elusive Triangulum Galaxy. A quieter section but with the most spectacular galaxy in the catalog.

M2
●○○○ EASY

Globular Cluster · Aquarius · 21h 33m -0° 49' · **mag 6.5** · size 13'

Visual Bright globular near celestial equator; resolved in 6"

Imaging Standard globular

M15 · Pegasus Cluster ★ FEATURED
●○○○ EASY

Globular Cluster · Pegasus · 21h 30m +12° 10' · **mag 6.2** · size 18'

Visual Compact bright globular near Enif; very dense core; partial resolution in 6"+

Imaging Showpiece globular; planetary nebula Pease 1 hides inside (long focal length, careful exposure)

M30
●○○○ EASY

Globular Cluster · Capricornus · 21h 40m -23° 10' · **mag 7.2** · size 11'

Visual Compact globular; soft ball in 4"

Imaging Standard globular at low altitude

M31 · Andromeda Galaxy ★ FEATURED
●○○○ EASY

Spiral Galaxy · Andromeda · 0h 43m +41° 16' · **mag 3.4** · size 178'×63'

Visual Naked-eye smudge from any dark site; binoculars show oval core; companions M32 and M110 visible

Imaging Massive target — needs 50–135mm focal length; long integration shows full halo and dust lanes; mosaic for full resolution

M32
●○○○ EASY

Elliptical Galaxy · Andromeda · 0h 43m +40° 52' · **mag 8.1** · size 8'×6'

Visual Compact elliptical companion to M31; round bright glow

Imaging Always in M31 frame

M33 · Triangulum Galaxy ★ FEATURED
●●○○ MODERATE

Spiral Galaxy · Triangulum · 1h 34m +30° 39' · **mag 5.7** · size 71'×42'

Visual Large face-on spiral; deceptively faint due to low surface brightness; binocular target from dark sites

Imaging Stunning at 300–500mm; arms full of HII regions visible with Hα filter

M52
●○○○ EASY

Open Cluster · Cassiopeia · 23h 24m +61° 35' · **mag 7.3** · size 13'

Visual Rich open cluster; pair with the Bubble Nebula (NGC 7635) photographically

Imaging Pair with Bubble Nebula at 800mm+ for stunning composition

M72
CHALLENGING
Globular Cluster · Aquarius · 20h 53m -12° 32' · **mag 9.4** · size 6.6'

Visual Faint distant globular; small disk in 6"+
Imaging Standard globular

M73
DIFFICULT
Asterism · Aquarius · 20h 59m -12° 38' · **mag 9.0** · size 1.4'

Visual Just an asterism of 4 stars (Messier's mistake); easy in any scope
Imaging Not photographically interesting

M74 · Phantom Galaxy
CHALLENGING
Spiral Galaxy · Pisces · 1h 36m +15° 47' · **mag 9.4** · size 10'×9'

Visual Notoriously low surface brightness face-on spiral; needs dark skies and 8"+
Imaging Beautiful flocculent spiral at long focal lengths; rewards integration time

M77 · Cetus A
MODERATE
Spiral Galaxy · Cetus · 2h 43m 0° 01' · **mag 8.9** · size 7'×6'

Visual Bright Seyfert galaxy; small bright nucleus easily seen
Imaging Active core; long focal length

M103
EASY
Open Cluster · Cassiopeia · 1h 33m +60° 39' · **mag 7.4** · size 6'

Visual Compact triangular open cluster; rewarding in small scopes
Imaging Tight target

M110
MODERATE
Elliptical Galaxy · Andromeda · 0h 40m +41° 41' · **mag 8.5** · size 17'×10'

Visual Elongated elliptical companion to M31; subtle glow visible in 4"+
Imaging Always in M31 frame; the 'other' companion