Snake River Skies

The Monthly Newsletter of the Magic Valley Astronomical Society. December 2025

Membership Meeting
December 13th at the Herrett Center, College of Southern Idaho main campus at 7:00pm

Centennial Observatory
See Inside for Details

Faulkner Planetarium
See Inside for Details

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Magic Valley Astronomical Society is a member of the Astronomical League

M-51 imaged by
Rick Widmer & Ken Thomason
Herrett Telescope - Shotwell Camera

September Vice - President's Message

To All My Astro Friends:

As December arrives, let me first thank all of you for your support the past year as your Vice President. I'm sure that as 2026 comes, I and the rest of the board will have some good monthly programs and events. Your continued support will be needed and greatly appreciated.

Our annual Christmas party will be held at the Herrett Center Dec. 13th at 7pm. And, as in past years, we're asking all who come to bring an exchange gift ($20-$30 max value) and a dessert, finger food, salad, or treats. We'll be able to enjoy Chris Anderson will present a Kahoot Program too.

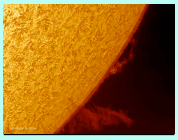
Our 2026 board will be:
Andy Newbry - President
Jay Hartwell - Vice President
Rick Hull - Secretary
Jim Tubbs - Treasurer.

And for our group, my hope is that we can stay together and do things together, i.e. star parties, regular monthly meetings, outreach to local school districts and to our community. Best to all of you for continued success. As we end 2025, my thoughts are with all of you for a safe and happy holiday season.

Jay Hartwell, MVAS Vice President

Visit our Website
www.mvastro.org

Monthly Event Calendar - December 2025

Sun	Mon	Tue	Wed	Thu	Fri	Sat
Note: All links are clickable for more information	1	2 Comet C/2025 T1 (ATLAS) passes perihelion	3 The Moon at aphelion Close approach of the Moon and M45	4 Mercury at dichotomy The Moon at perigee Full Cold Moon	5 Mercury at highest altitude in morning sky	6 December φ-Cassiopeid meteor shower 2025
7 Conjunction of the Moon and Jupiter Asteroid 16 Psyche at opposition	8 Mercury at greatest elongation west	9 Telescope Tuesday Monocerotid meteor shower 2025	10 Neptune ends retrograde motion	11 Moon at Last Quarter 	12 σ-Hydrid meteor shower 2025	13 MVAS General Mtg. 7:00p at the Herrett Center. Centennial Observatory Star Party
14 Geminid meteor shower 2025	15 The Running Man cluster is well placed The Orion Nebula is well placed	16 Coma Berenicid meteor shower 2025 The Moon at apogee	17	18 Conjunction of the Moon and Mercury	19 New Moon 	20 December Leonis Minorid meteor shower 2025 The Moon at perihelion
21 Winter solstice 	22 Ursid meteor shower 2025	23 Telescope Tuesday 	24 Christmas Eve 	25 Christmas Day Jul 	26 Conjunction of the Moon and Saturn	27 Moon at First Quarter 
28 The cluster NGC 2232 is well placed	29 The Rosette Nebula is well placed	30 Close approach of the Moon and M45 (on the 31st)	31 New Year's Eve 	1 Photo on the 31st. The Sugar Beet drops on New Year's Eve on the Square in Rupert, Idaho	2	3 Cabin Fever Day Solar Viewing 

December's full Moon is most commonly known as the **Cold Moon**—a Mohawk name that conveys the frigid conditions of this time of year when cold weather truly begins to grip us., and the nights become long and dark. Other names that allude to the cold and snow include **Moon of the Popping Trees** (Oglala), **Hoar Frost Moon** (Cree), **Snow Moon** (Haida, Cherokee), and **Winter Maker Moon** (Western Abenaki). In Europe, ancient pagans called the December full Moon the "**Moon Before Yule**" in honor of the Yuletide

festival celebrating the return of the sun heralded by the winter solstice.

Be Safe - Go Outside - Explore Your Universe

Night Sky This Month – December 2025

An early-morning auroral display as seen from Calgary, Canada on Nov. 4, 2021

As 2025 comes to an end, we see Jupiter and Saturn in prime viewing locations in the evening sky. While Venus is lost in the sun's glare, Mercury makes a good morning apparition for northern observers. The Geminid meteor shower arrives in at mid-month with the Moon out of the way this year. The Sun reaches the December solstice on the 21st marking the beginning of winter and summer in the northern and southern hemispheres, respectively. And a large sunspot group is turning into view; activity from this group may trigger strong auroral activity late in the first week and into the second week of December. Here's what to see in the night sky this month…

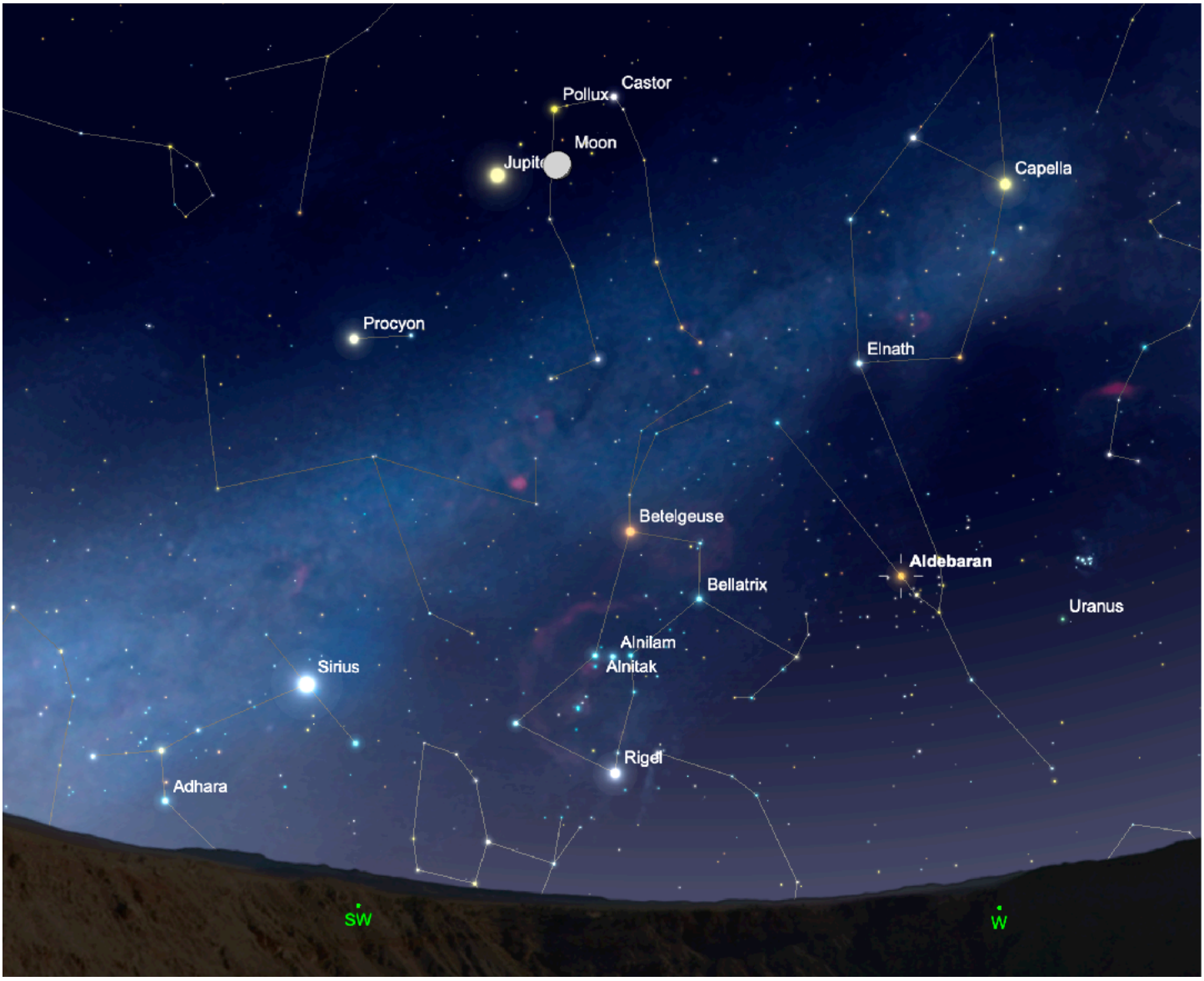
3 December. The nearly-full Moon passes through the Pleiades star cluster. This nominally interesting event makes for challenging viewing as the brilliance of the Moon obscures the blue-white stars of the cluster, even with binoculars. But give it a try!

4 Dec. Full Moon, 23:14 UT (the 'Cold Moon'). The Moon also lies near perigee today, so this will be a 'Super Moon' that appears about 7% larger than average.

7 Dec. Get out of bed early and wander out to see the waning crescent Moon and Jupiter together with the star Pollux forming a triangle high in the southwestern sky. Jupiter lies about 5^{o} southeast of the Moon and shines at magnitude -2.6, still slowly brightening on its way to opposition next month.

7 Dec. Also look for Mercury low over the southeastern horizon before sunrise. The planet reaches its greatest western elongation today about 21^{o} from the sun and shines at a respectable magnitude -0.4. This is the best morning apparition of the year for northern-hemisphere observers.

9 Dec. Look for the Moon rising around 10 p.m. local time very near the bright star Regulus in Leo. The pair make their



closest approach near midnight, and for many locations in Canada, Iceland, Greenland, and Europe, the Moon occults the star – an impressive event. Timing for various locations at this link.

The Moon, Jupiter, and Pollux on the early morning of Dec. 7, 2025.

11 Dec. Last Quarter Moon, 20:52 UT

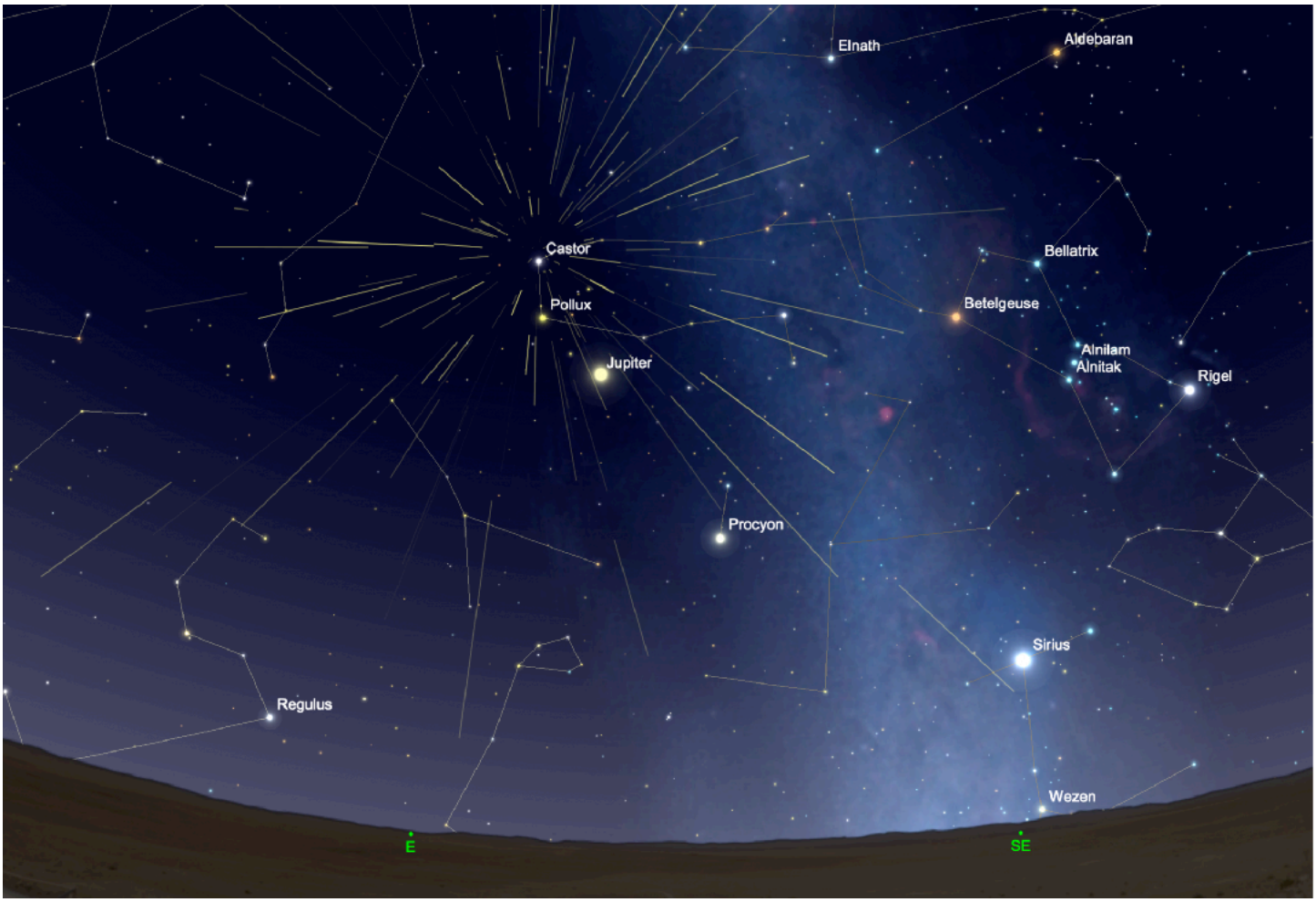
13-14 Dec. The usually reliable Geminid meteor shower peaks in the late hours of December 13 and into the early morning of the 14th. The stays out of the way this year allowing us to view even the faintest meteors, so it's worth the effort to see the Geminids this year. Look for them late in the evening and after midnight. Geminids can appear anywhere in the sky and trace their path back to a point near the star Castor in the constellation Gemini. Also, look especially just after dark on the 13th for a few brighter Geminids that may enter the atmosphere at a shallow angle and burn slowly across the sky. The meteor shower happens on this date each year as the Earth passes through a stream of debris from the asteroid 3200 Phaethon, an Apollo asteroid discovered in 1983.

14 Dec. If you're out looking for Geminids, pause to see the waning crescent Moon about 2° from the bright star Spica rising in the southeast a couple of hours before sunrise.

20 Dec. New Moon, 01:43 UT

21 Dec. The December solstice arrives at 15:03 UTC. This marks the longest night of the year in the northern hemisphere and the beginning of winter, and the longest day of the year in the southern hemisphere and the beginning of summer.

26 Dec. Saturn sits about 3° south of the waxing crescent Moon this evening high in the southwestern sky south of the Circlet of Pisces. The planet's rings continue to appear a little over a degree from edge-on which presents a striking view



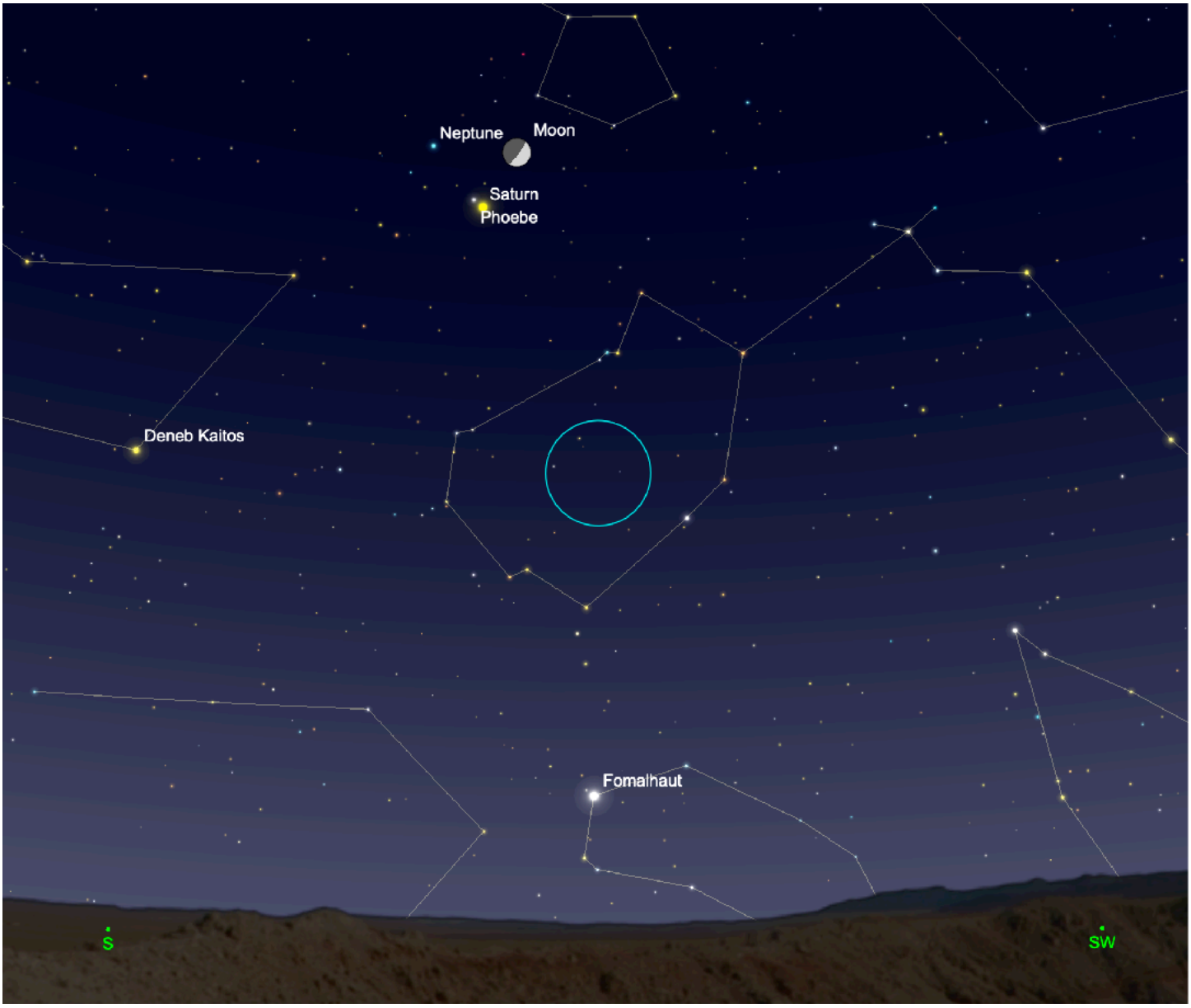
in a telescope. Also turn your scope 4° northeast of Saturn to spot the blue-green disk of 8th magnitude Neptune, the most distant major planet in the solar system.

A depiction of the radiant of the Geminid meteor shower.

27 Dec. First Quarter Moon, 19:10 UT

31 Dec. End the year by looking for a gibbous Moon near the Pleiades and Hyades star clusters rising in the eastern sky after sunset.

"If everybody was an amateur astronomer and spent time looking at the sky, when would we have time to go to wars, people to fight on this beautiful planet? ... This is nuts not to be an amateur astronomer." - Al Nagler



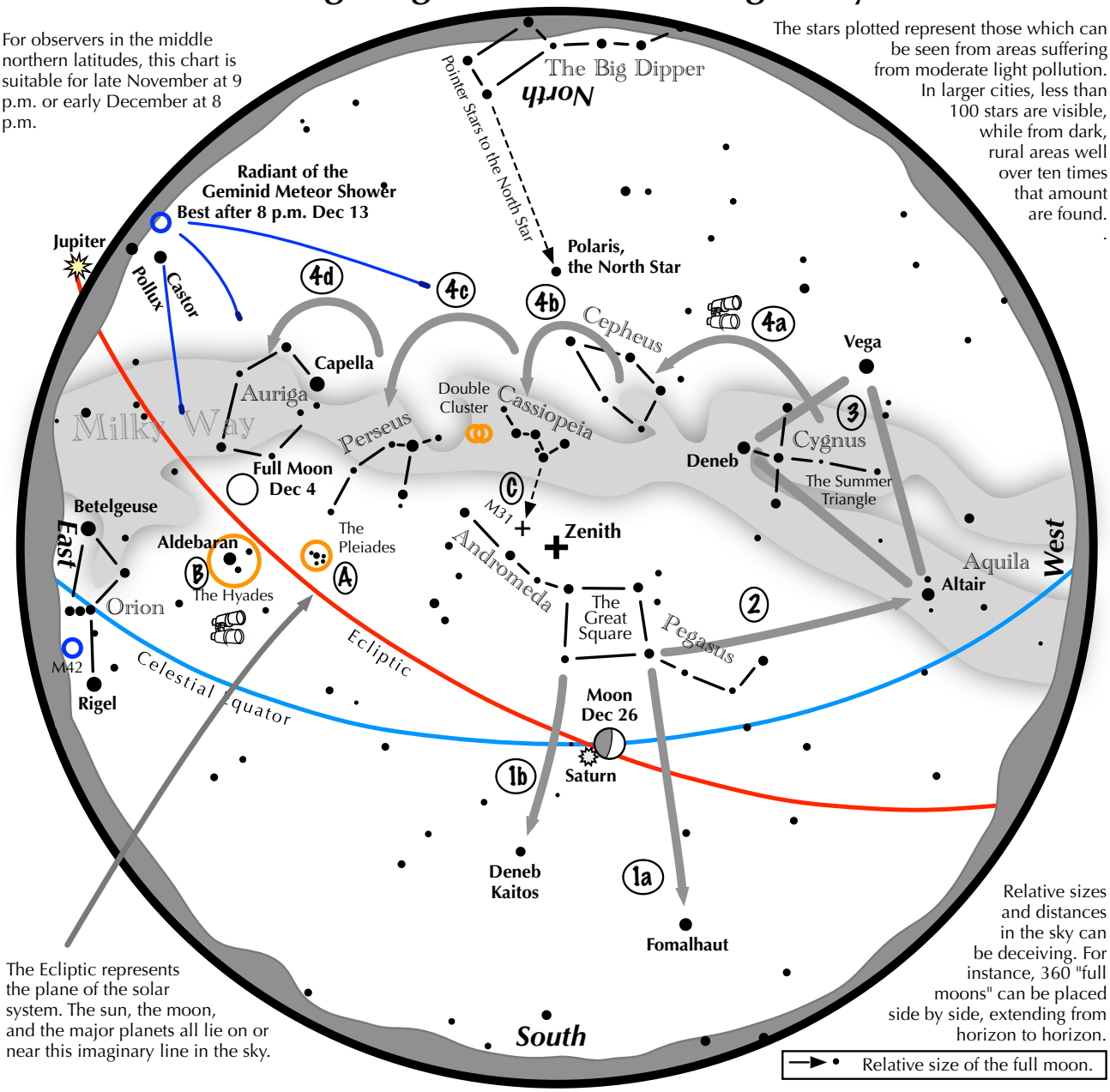
Saturn near the Moon and Neptune on Dec. 26, 2025.

Navigating the December Night Sky

2025

For observers in the middle northern latitudes, this chart is suitable for late November at 9 p.m. or early December at 8 p.m.

The stars plotted represent those which can be seen from areas suffering from moderate light pollution. In larger cities, less than 100 stars are visible, while from dark, rural areas well over ten times that amount are found.



The Ecliptic represents the plane of the solar system. The sun, the moon, and the major planets all lie on or near this imaginary line in the sky.

Relative sizes and distances in the sky can be deceiving. For instance, 360 "full moons" can be placed side by side, extending from horizon to horizon.

Relative size of the full moon.

Navigating the December night sky: Simply start with what you know or with what you can easily find.

1. Face south. Almost overhead is the "Great Square" with four stars about the same brightness as those of the Big Dipper. Extend an imaginary line southward following the Square's two westernmost stars. The line strikes Fomalhaut, the brightest star in the southwest. A line extending southward from the two easternmost stars, passes Deneb Kaitos, the second bright star in the south.
2. Draw another line, this time westward following the southern edge of the Square. It strikes Altair, part of the "Summer Triangle."
3. Locate Vega and Deneb, the other two stars of the "Summer Triangle. Vega is its brightest member while Deneb sits in the middle of the Milky Way.
4. Jump along the Milky Way from Deneb to Cepheus, which resembles the outline of a house. Continue jumping to the "W" of Cassiopeia, to Perseus, and finally to Auriga with its bright star Capella.

Binocular Highlights

A and B: Examine the stars of the Pleiades and Hyades, two naked eye star clusters.
C: The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.
D: Sweep along the Milky Way from Altair, past Deneb, through Cepheus, Cassiopeia and Perseus, then to Auriga for many intriguing star clusters and nebulous areas.

Astronomical League *www.astroleague.org/outreach; duplication is allowed and encouraged for all free distribution.*

How to find things by star-hopping (even if you don't have to)

Craig Lamison – Houston Astronomical Society

Well in the old days, you know the ones – when we used to walk to school both ways uphill in the snow, there were no go-to or push-to telescopes. What to do? There were two main approaches:

1. Use coordinates and setting circles
2. Use star-hopping

Someday I will figure out setting circles. If I get past the novice stage, and someone else hasn't already done so, I will fill you in but for now let's discuss star-hopping.

Before we get too far however what did I mean by "even if you don't have too". This is the 21st century but power failures do happen and batteries die. It is also a good way to learn the constellations and avoid further embarrassment when, no doubt thinking that you are into astrology :-|, someone asks, are those stars Aquarius? Recently I read that a study showed that using a map and memory to navigate to a destination improved mental development compared to using an app. It might even stave off mental decline if you are an old codger. Of course, there are no old codgers in HAS yet but it's good for us to be prepared and I would expect that star hopping may have similar benefits. I also find that the thrill of the hunt is part of the fun when you finally bag your quarry. Finally, you have commanded your go-to scope to go and it has gone. Now, which of those bright sparks is the aster-droid you were looking for. Star hopping techniques can help you avoid any Jedi-mount mind tricks.

I am going to take the liberty of addressing a number of techniques under the "star hopping" term. There may be purists out there who would prefer more finding method divisions but this unit assumes any approach, or combination of approaches, that uses only eyes, optics and "maps" as star hopping.

We don't have options as far as eyes are concerned but optics and maps come in many variations. I would recommend the following and will describe how to use them. Depending on your target, telescope and sky conditions not all may be required.

1. A planisphere and red flashlight, e.g., Rigel Starlite, as your starting point.
   Of the four planispheres I have tried, I like the Celestial Teapot one which you can get from Land, Sea and Sky. Other options such as books, maps, the central sky chart in your monthly Sky & Telescope or Astronomy magazine, or online charts for the month such as found at http://www.skymaps.com/downloads.html for example can also be used. These are to get you looking in the right direction.

2. A sky atlas such as the Pocket Sky Atlas (PSA) to identify "landmarks" in the vicinity of your objective. Another approach is a print-out from a program such as Sky Tools.
   The printout can provide a naked eye, finder, and telescope views for your sky and equipment. This can be very handy to zero in on your target. While an app or computer software program can also be used "live", without considerable red screening, these can adversely affect your night vision.

A circle drawing template can give you finder field of view (FOV) circles for use with maps.

Continued on the next page.

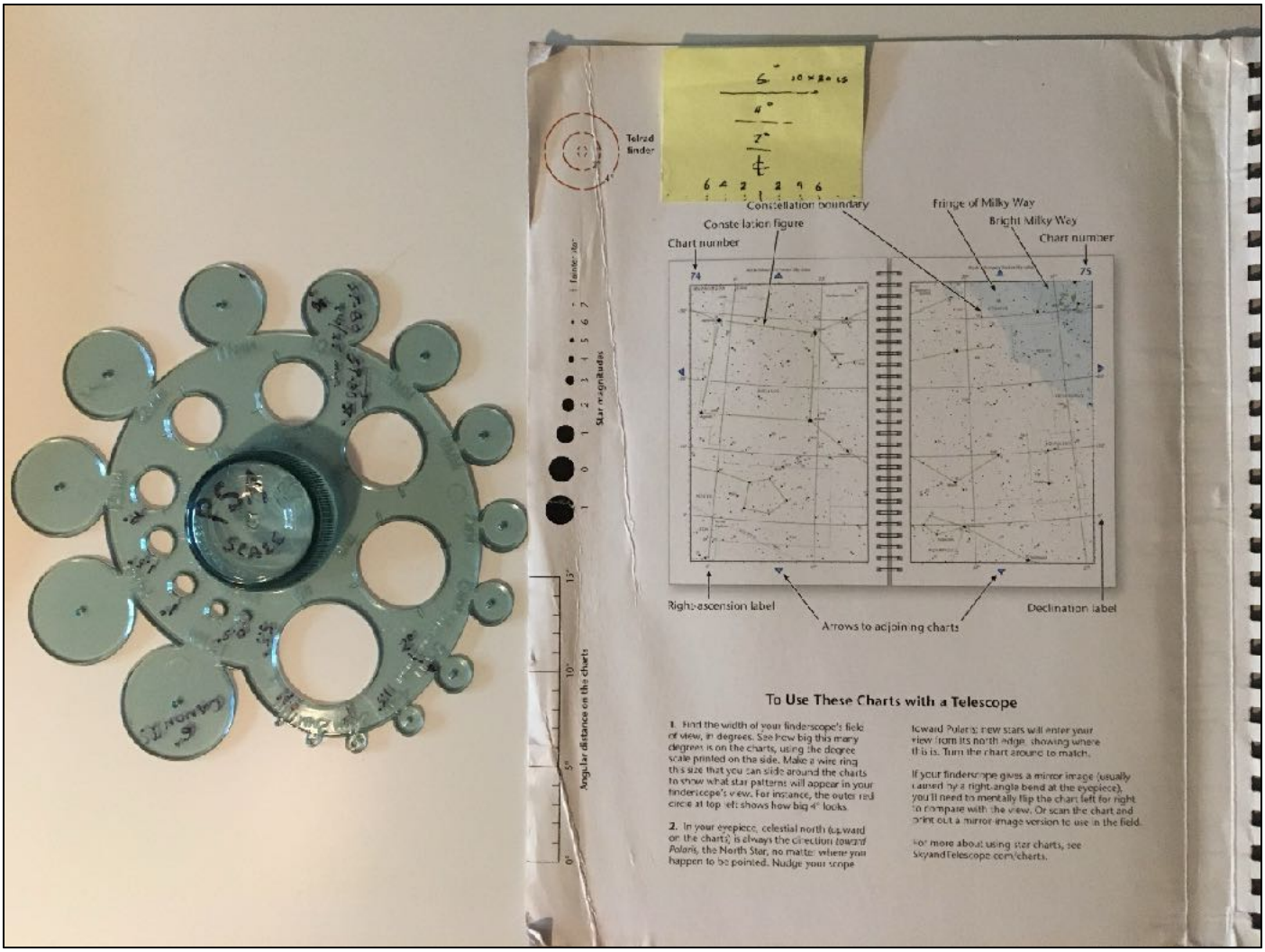


Figure 1 -- PSA Inside Front Cover: How to Use & FOV Template

3. Binoculars to perform a reconnaissance of the area of interest.
   Inexpensive ones with 50 mm objectives and with anywhere from 7 to 10x magnification work well although my smaller, but not inexpensive, 10 x 30 image stabilized Canons are as good or better than my 10 x 50 Bushnell's (~$40-$60).

4. A 1X (unit) finder which projects an illuminated pattern on the sky such as the Telrad or Rigel Quickfinder to refine the telescopes aim.

   I find the Telrad the best although it is too large for some of my telescopes. A large number of third-party charts and aids are available showing the Telrad circles which assist with navigation. The Rigel circles are smaller but so is the finder. A red dot finder can also be used but is more limited.
   A green laser pointer finder has the advantage of not requiring you to crane your neck to look along the barrel of the scope as you do with a unit finder. However, these pointers can constitute a hazard to aircraft pilots and I have had airplanes fly through my eyepiece field of view when observing so I don't use pointers. They are also a bane to astro-photography so don't use at the dark site without permission.

5. A 50 mm right angle correct image (RACI) optical finder to further match where the scope is pointing compared to your binocular and chart views.

   The reason for the RACI style is that it matches your binocular view with up being up and left and right also being in their proper places. Telescopes can do various image reverses depending on the type. Going from, say, your

naked eye/binocular orientation to that of your telescope can be confusing enough without a third orientation in between.

As an example of how to star hop with the above tools here is how to find Messier object M51, The Whirlpool Galaxy (at least one of them). Most references will tell you which constellation contains your target, in this case Canes Venatici (CVn), the Hunting Dogs. Not immediately familiar? As mentioned above star hopping does increase your knowledge of the constellations and once you find M51 you will have found Canes Venatici as well.

It's always good to plan your observing during the day and not waste the valuable hours of darkness. To start refer to PSA's Guide to Constellations (p. xii). This tells us CVn can be found on Charts 32 and 43. Look at either one and we find CVn right next to the Big Dipper, a much easier starting point. Next set your planisphere to your observing date and time by rotating the two parts to match the time to the date on the outer rim.

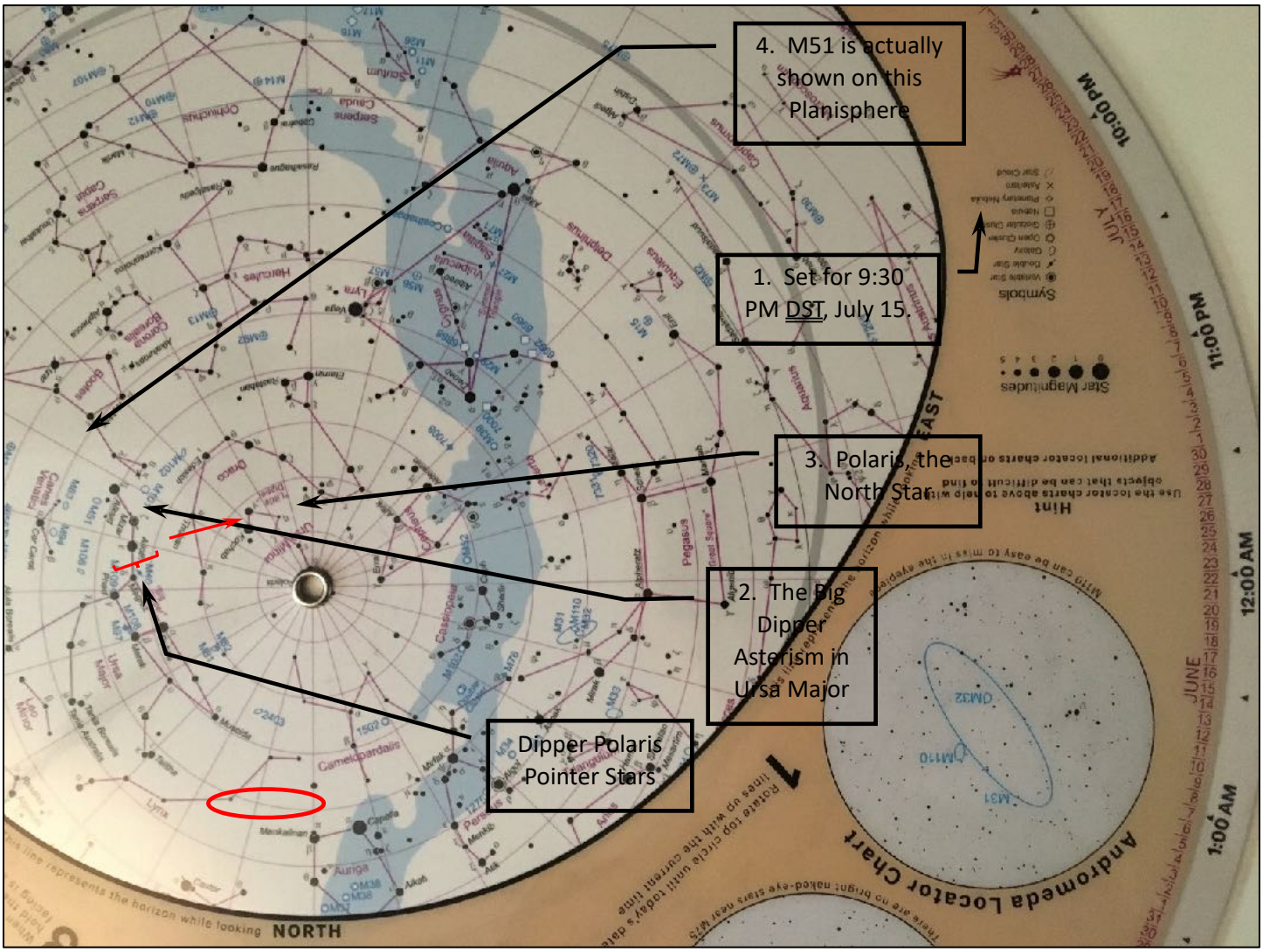


Figure 2 -- Planisphere Usage

Look inside the "sky" window which shows what is above the horizon at the date and time you set and find the Big Dipper in Ursa Major, the Great Bear constellation. You can see that it is in the northwestern part of the sky based on the cardinal directions shown on the horizon line.

Returning to your atlas find a good sky mark at which to start your route to the target. For M51 I like to start at the star Mizar in the Big Dipper. This is an easy binocular double (even possible with the naked eye) which allows you to confirm you are starting at the right place and not at an adjacent bright star. Hey, it happens :-(. Before it gets dark you might spend a bit more time looking at your atlas and finding some star patterns to help you navigate and some FOVs to determine how far to go. It's the astral equivalent of "proceed a block until you pass the supermarket, turn left at the Exxon station and your destination should be a short way ahead next to the Dairy Queen. In Astral terms this would be something like "when you pass Mizar go about one binocular or finder FOV toward the last star (Alkaid) in the handle of

the Big Dipper, turn left past the star 24 CVn and M51 should be ¾ of a finder FOV ahead next to a triangle of fainter stars".

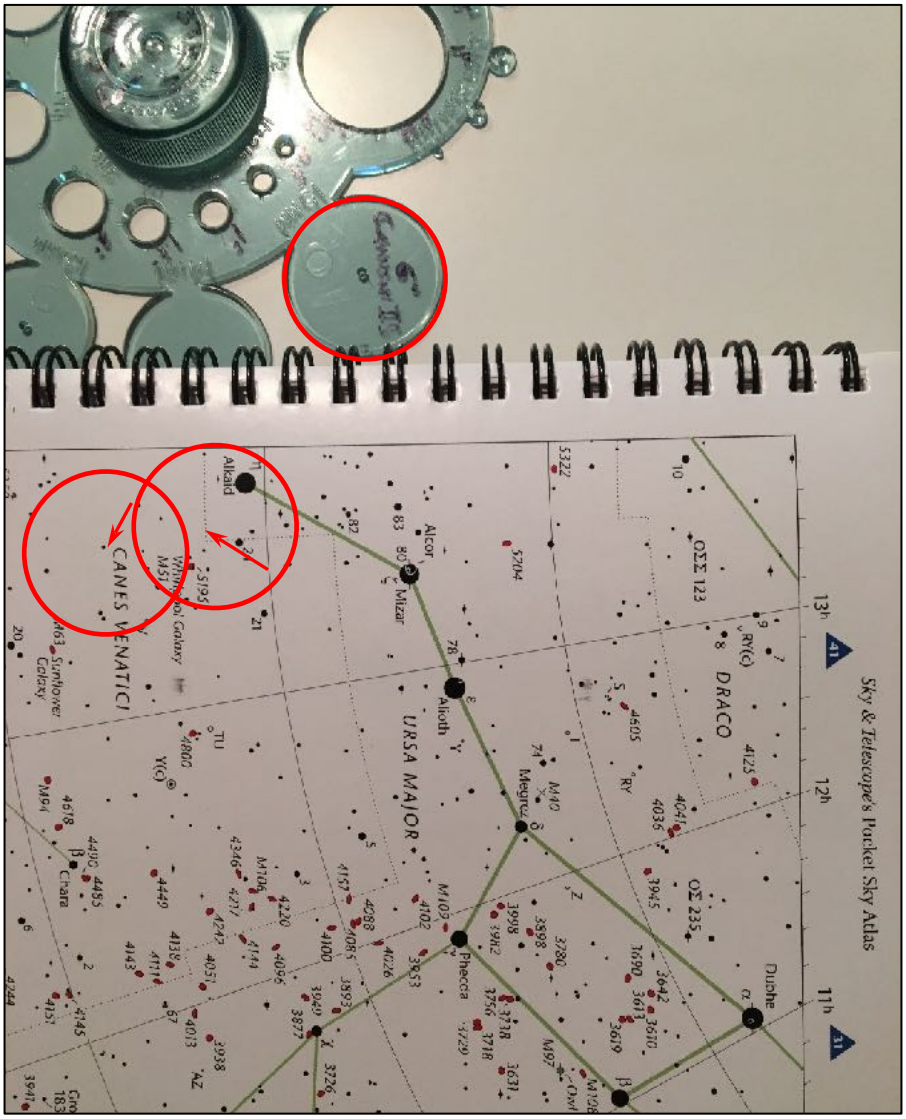
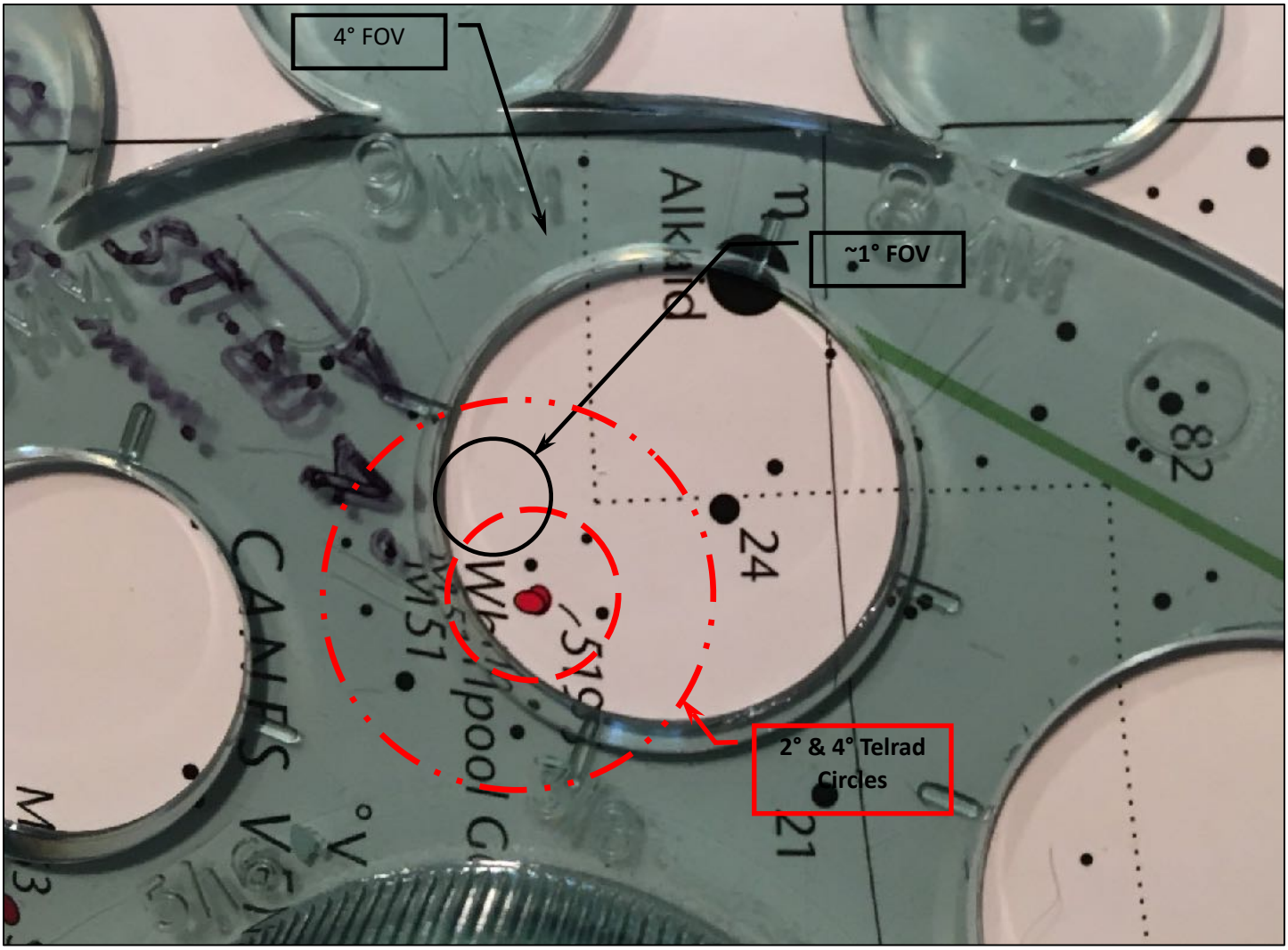


Figure 3 -- Astral Navigation

The final pre-planning step could be to superimpose an eyepiece (e.p.) FOV on your chart to get a better idea of what you should see in the local vicinity. The following illustration may not be the best as my template happened to be marked with the scope I had when I first started astronomizing, an 80 mm f5 refractor which gives a very wide FOV (4°, 16X, w/ 25 mm e.p.) compared to scopes with larger focal ratios. My next scope was a 102 mm f 12.7 for example where with the same e.p. the FOV is between a quarter and a third as much but the magnification at 52X is better for observing this target and still confirming location.

You are now ready for the sky. Hopefully it will be a clear night! Once it gets dark go out, face north and start studying the star patterns. Which way is north? Well if homing pigeon instinct, as my Dad used to call it, does not suffice a compass of the magnetic or phone app variety will work. Rest assured that in pretty short order, with a bit of star hopping practice, you will spot the Dipper and its pointer stars or other constellations and be able to dispense with the compass. I usually suss out my route with the binoculars, then follow with the finder on the scope and then confirm I am on target with the eyepiece view.



There are variations. For example, note that the Telrad outer circle in the illustration has a 4° diameter, the inner 2° (the smallest 1/2° circle is not shown for clarity). It is not too hard in a case like this to point your scope so the Telrad is about 2° off from Alkaid in the right direction to put the target in the FOV of your widest field e.p. straight away. What if the stars in the area are too dim (Virgo galaxies anyone?) or you are in downtown Houston and visible stars are few and far between? The same approach can be used, just with a more detailed star chart such as Interstellarum, your widest field e.p. and many more “hops”. (Don’t tell anyone but I have been known to resort to my go-to scope in such cases ;-)

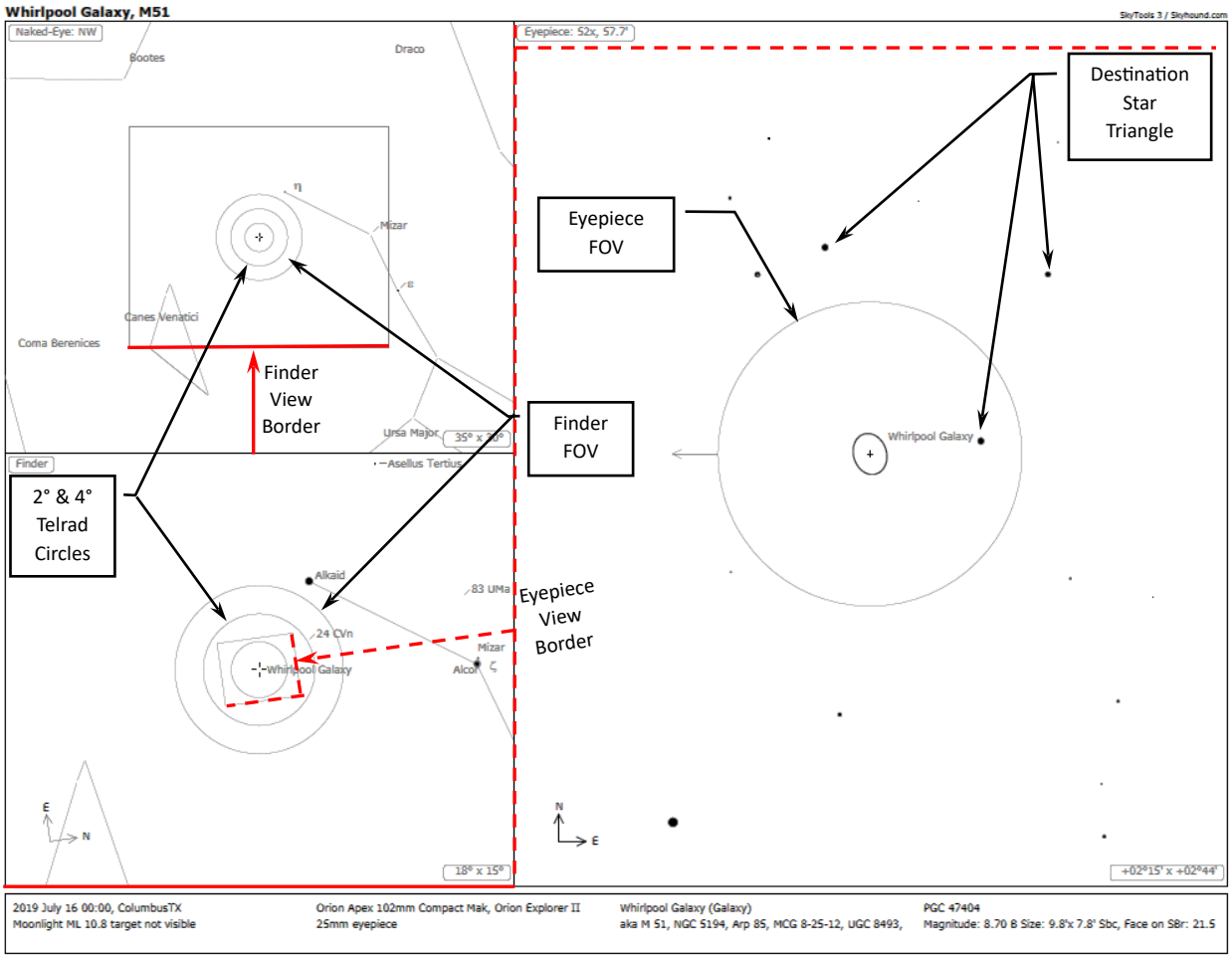
Software can do much the same thing as the manual approach outlined above. I use SkyTools on my Windows computer. This software allows me to input optical data on all my telescopes, assign a stable of eyepieces to each telescope, define unit and optical finders for the scope and then prepare a finder chart for the target, date and time of my choosing. Note the software also can provide lists of objects to view, along with best times, magnitudes, surface brightness’s and other data, and can be used to log your observations.

Sky Tools shows your view orientations for the time, date and equipment you entered. The naked eye and Telrad/finder views align because we chose a RACI finder. In this case the eyepiece view is mirror reversed. (Odd number of mirrors = mirror reversed per Uncle Rod Mollise’s rule of thumb just like if you look in a mirror and wave your right hand, the left waves back.) Second because the scope is on an equatorial mount it is rotated by the amount the target is rotated from the meridian.

For target lists and further guidance there are many books on the topic. Three I’ve used are Mollise’s Urban Astronomer’s Guide, Pennington’s Messier Marathon Field Guide, and Garfinkle’s Star Hopping.

Want hands on help? Attend the next meeting of your astronomical society or a star party. You are very likely to find someone glad to assist. Happy hunting!

The following figure shows information on a typical finder chart. The scope is made up so the chart corresponds to the above discussion. Sky Tools predicts visibility but this is subject to many variables and so I take it with the proverbial grain of salt.


Whirlpool Galaxy, M51
SkyTools 3 / Skyhound.com
Naked-Eye: NW
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Moonlight ML 10.8 target not visible
Orion Apex 102mm Compact Mak, Orion Explorer II
25mm eyepiece
Whirlpool Galaxy (Galaxy)
aka M 51, NGC 5194, Arp 85, MCG 8-25-12, UGC 8493,
PGC 47404
Magnitude: 8.70 B Size: 9.8'x 7.8' Sbc, Face on SBr: 21.5

Phil Harrington's Cosmic Challenge

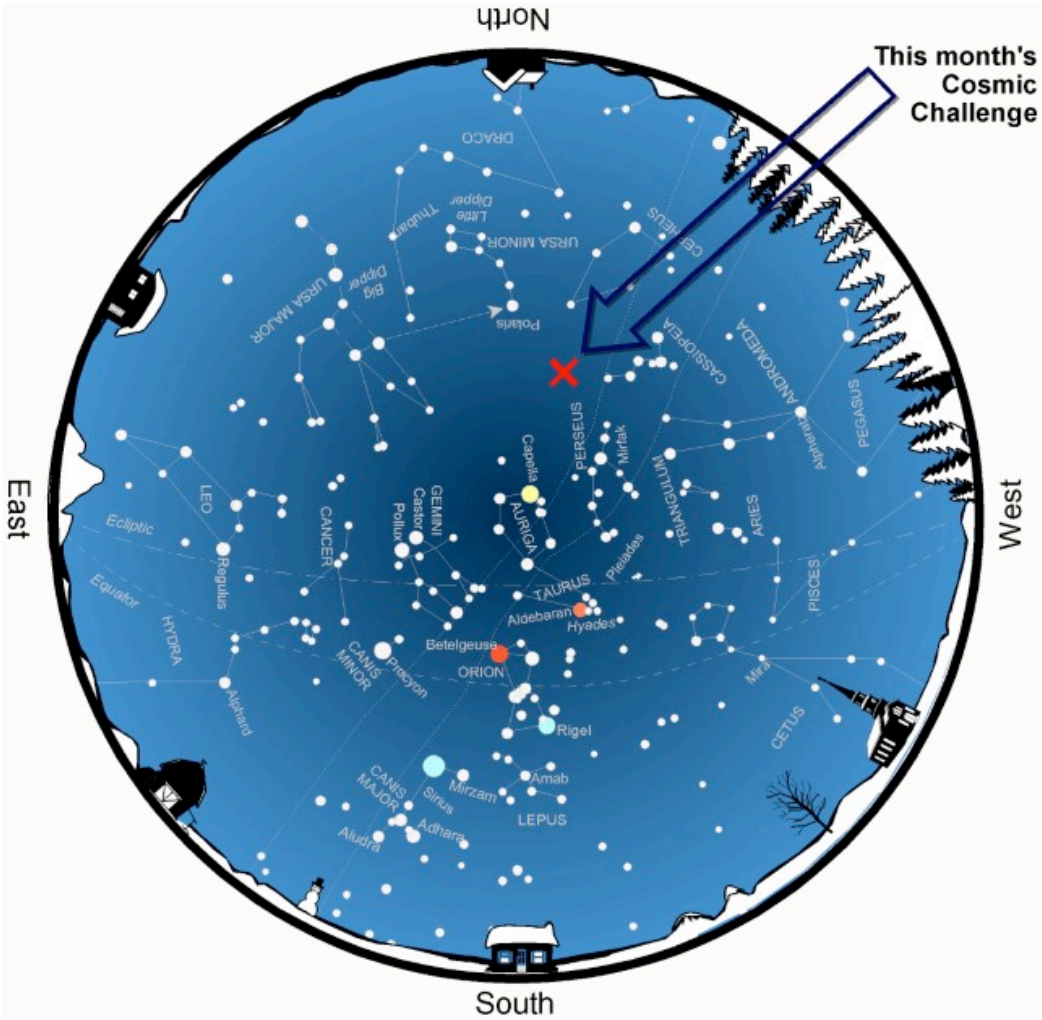
IC 342

This month's suggested aperture range:
6” to 9.25” (15-24cm) telescopes
Featured Telescope: Meade LS6

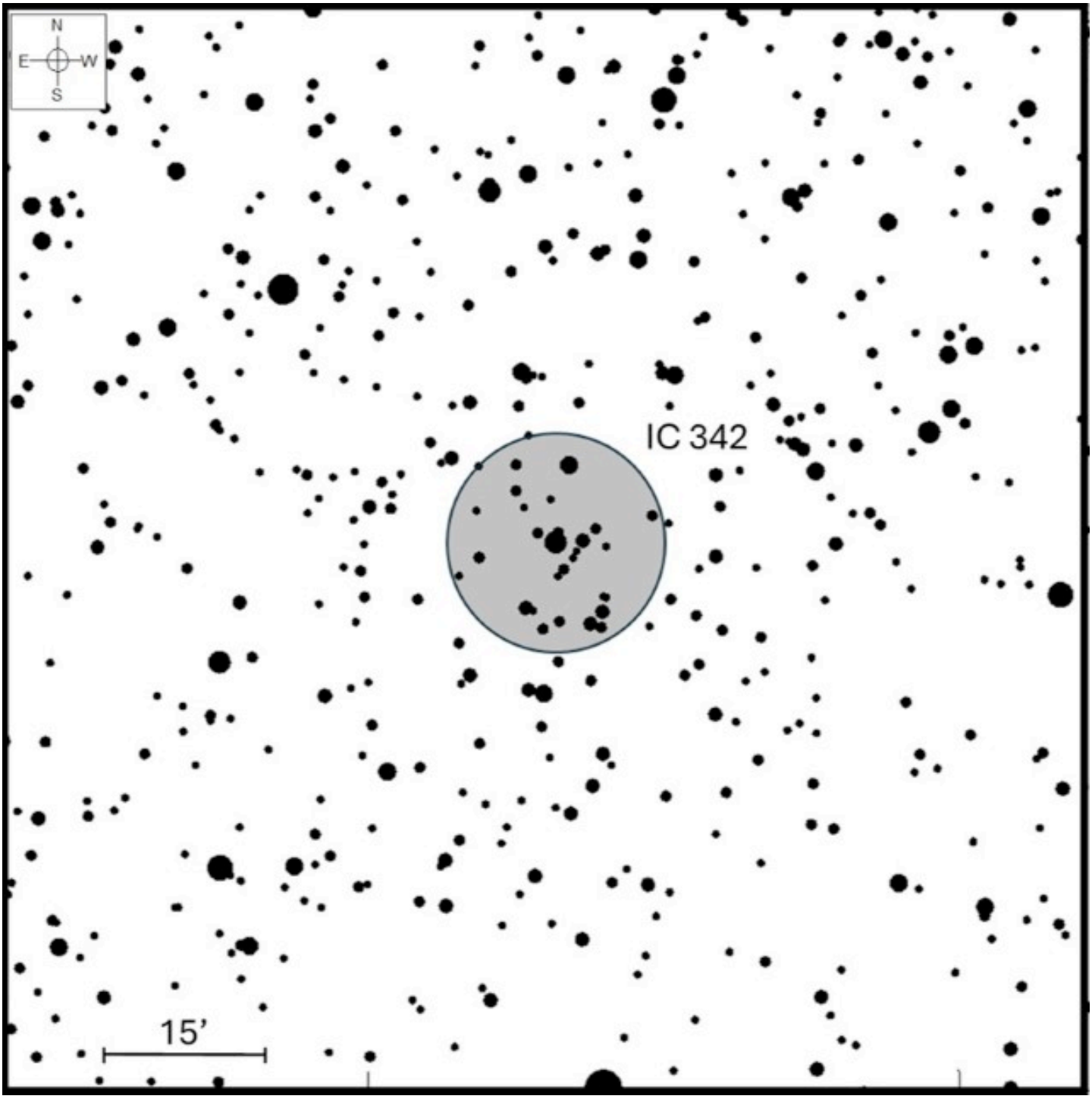
Target	Type	RA	DEC	Constellation	Magnitude	Size
IC 342	Galaxy	00h 20.3m	+59° 18.1'	Camelopardalis	8.4	22' x 21'

Hidden behind the dusty clouds of the Milky Way, IC 342 is a deep-sky prize that rewards patience, dark skies, and persistence. This sprawling spiral galaxy in Camelopardalis, the Giraffe, is easy to overlook, buried near the galactic plane where foreground stars and interstellar haze dull its glow. But for those willing to search, it's a beauty worth the effort.

IC 342 was discovered in 1892 by English amateur William Frederick Denning, better known for his comet work. It later picked up the nickname "The Hidden Galaxy," an apt description for something so large yet so elusive. If not for the Milky Way's veil of dust, IC 342 might rank among the showpiece galaxies of the northern sky, right up there with M33 and M81.



Above: Winter star map showing the location of this month's Cosmic Challenge.
Credit: *Map adapted from* ***Star Watch*** *by Phil Harrington.*



Above: Finder chart for this month's Cosmic Challenge.
Chart adapted from Cosmic Challenge by Phil Harrington.

Astrophysically, IC 342 is a barred spiral about 75,000 light-years wide and some 10 million light-years away. Its arms are laced with glowing hydrogen clouds and newborn blue stars, telltale signs of active star formation. A paper published in Astronomy & Astrophysics in 2023 revealed an unusually rich supply of molecular gas in its central region. The study, entitled A Sensitive, High-Resolution, Wide-Field IRAM NOEMA CO(1-0) Study of IC 342, is freely available at aanda.org.

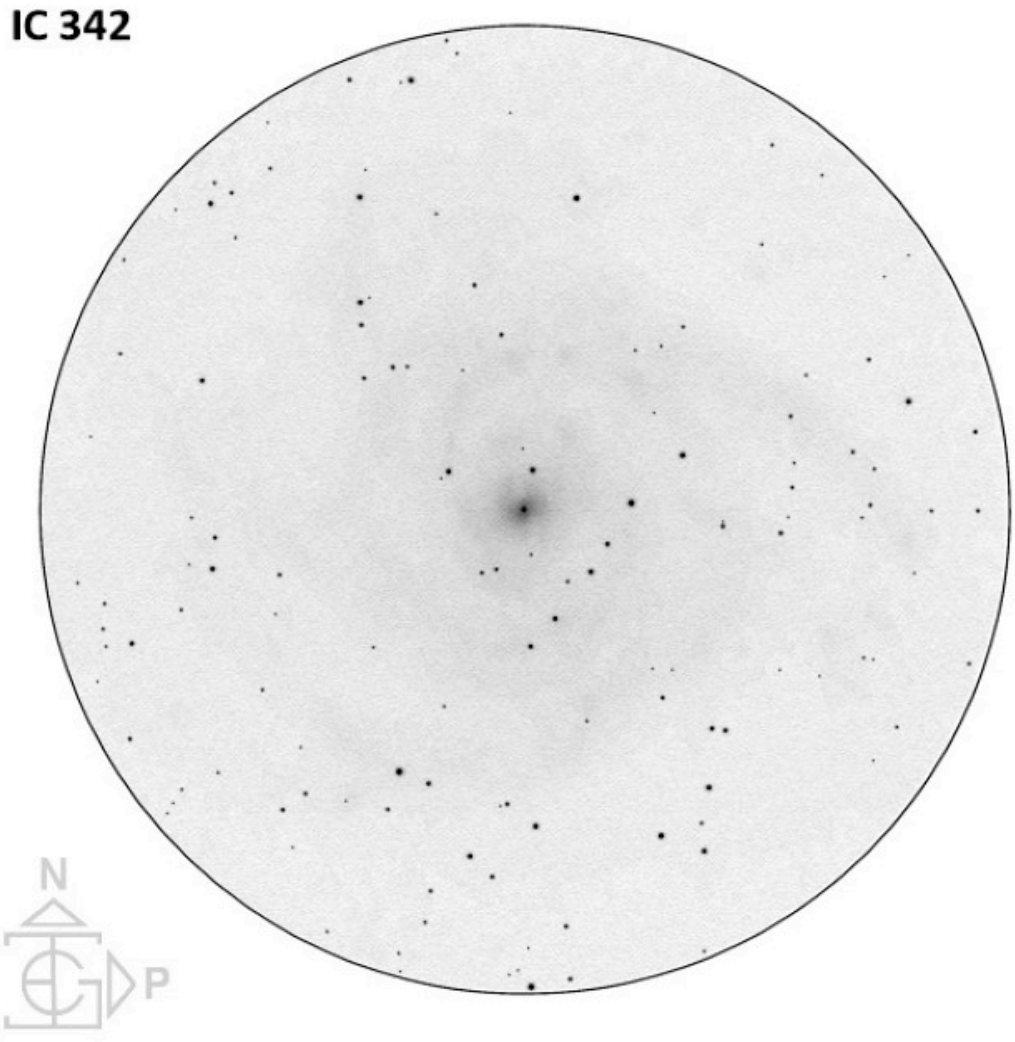
IC 342 lies just over 3° south of Gamma (g) Camelopardalis. So, to find our target, you first have to find its faint constellation! The easiest way to do that is to springboard off of Cassiopeia. Draw an imaginary line between Ruchbah (Delta [d] Cassiopeiae) and Epsilon (e) Cassiopeiae, and extend it toward the northeast for 13°, passing Iota (i) Cas along the way, to 5th-magnitude Gamma Cam. As a clue to show you're in the right place, Gamma joins with 5th-magnitude 54 Cam to form an easy optical double star. From Gamma, scan 3° southward using a low-power, wide-field eyepiece. Continue past 69 and 79 Cam (11' apart) to wider 62 and 80 Cam (43' apart).

The galaxy is about half a degree to their south. Look for a broad, dim patch that brightens slightly toward the middle. Use averted vision and slow sweeps to separate it from the crowded Milky Way background. You may also notice a line of 6 stars shining between magnitudes 11 and 12 stretching for 5' across the southwestern portion of the galaxy's spiral disk.

Above: IC 342, as imaged through the author's Celestron Origin 6-inch (15 cm) f/2.2 astrograph.
For full tech specs, visit the author's Astrobin page.

Although its integrated magnitude is around 8.4, IC 342's light is spread across a broad disk, giving it low surface brightness. From suburban skies, it's nearly invisible, its delicate glow washed away by skyglow and haze. Under a dark, transparent sky, a 6-inch (15-cm) telescope shows a large, diffuse oval glow that brightens gently toward the center. The core appears slightly concentrated, surrounded by a soft, hazy halo that fades unevenly into the background. Through an 8- to 10-inch (20-25 cm) telescope, the galaxy gains texture. Careful averted vision reveals a mottled, uneven surface and the first hints of a grainy spiral pattern, like faint brushstrokes circling the nucleus. The core becomes more distinct, and with patience, a subtle asymmetry appears across the disk.

A 12- to 14-inch (30-35 cm) instrument under very dark skies begins to tease out a faint arm extending to the north, while the opposite side of the galaxy seems slightly truncated by dust lanes. In a 16-inch (41-cm) or larger telescope, IC 342 truly comes to life. Its low-contrast spiral arms emerge as broad, patchy arcs of nebulosity curling away from a luminous central hub. On the best nights, experienced observers may detect a few embedded knots along the arms. These are likely star-forming regions shining through the Milky Way's obscuring dust.

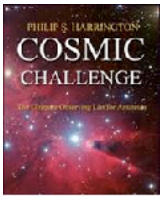


Above: Sketch of IC 342 by CN'er Eric Graff (cildarith) through his Sky-Watcher 10-inch (25 cm) f/4.7 Newtonian and Parks 12mm Kellner eyepiece (100x, 24' FoV). Visit Eric's CN gallery for more of his great sketches.

Challenge yourself this month to track down IC 342 and share your observations in this article's discussion forum.

Have a favorite challenge object of your own? I'd love to hear about it, as well as how you did with this month's test. Contact me through my website or post to this month's discussion forum. Until next month, remember that half of the fun is the thrill of the chase. Game on!

About the Author:



Phil Harrington is a contributing editor to Astronomy magazine and is the author of 9 books on astronomy. Visit www.philharrington.net to learn more.

Herrett Center for Arts and Science

Centennial Observatory

Upcoming Events
All events are weather permitting.

Event	Place	Date	Time	Admission(s)
Telescope Tuesday	Centennial Observatory	Tuesday, December 9, 2025	6:00-9:00 p.m.	$1.50, ages 6 & under free, or free with planetarium admission
Monthly Free Star Party	Centennial Observatory	Saturday, December 13, 2025	6:00-9:00 p.m.	Free
Telescope Tuesday	Centennial Observatory	Tuesday, December 23, 2025	6:00-9:00 p.m.	$1.50, ages 6 & under free, or free with planetarium admission

Faulkner Planetarium

Now Showing

Find Current Shows following the link above. Admission: Adults (ages 18-59): $7.50 Seniors (ages 60+): $6.50 Children (ages 2-17): $5.50 CSI students (w/ activity card): $5.50 Children under age 2: FREE. Buy your tickets online.

*50% discount for Planetary Society members and families.

- Assistive listening devices available upon request.
- Open captioning available upon request for some shows.
- No food, drink, or late entry.
- Dark conditions and audio/visual effects may be too intense for younger children.

Websites and Other Helpful Astronomy Links.

Information on passes of the ISS, the USAF's X-37B, the HST, the BlueWalker 3, and other satellites can be found at http://www.heavens-above.com/

Visit https://saberdoesthe...does-the-stars/ for tips on spotting extreme crescent Moons and https://curtrenz.com/moon.html for Full Moon and other lunar data.

Go to https://skyandtelesc...ads/MoonMap.pdf and https://celestron-si...RReeves-web.pdf and https://nightsky.jpl...ObserveMoon.pdf for simple lunar maps. Click on https://astrostrona.pl/moon-map/ for an excellent online lunar map. Visit http://www.ap-i.net/avl/en/start to download the free Virtual Moon Atlas. Consult http://time.unitariu...moon/where.html for current information on the Moon and https://www.fourmila.../lunarform.html for information on various lunar features. See https://svs.gsfc.nasa.gov/4955 a lunar phase and libration calculator and https://svs.gsfc.nasa.gov/5187/

The Lunar Reconnaissance Orbiter Camera (LROC) quick map. https://www.universa...ise-and-sunset/

For more on the planets and how to locate them, browse http://www.nakedeyeplanets.com/

Summaries on the planets for each month can be found at https://earthsky.org/astronomy-essentials/

The graphic at https://www.timeandd...lanets/distance displays the apparent and comparative sizes of the planets, along with their magnitudes and distances, for a given date and time.

The rise and set times and locations of the planets can be determined by clicking on https://www.timeandd...stronomy/night/

Click on https://www.curtrenz.../asteroids.html for information on asteroid occultations taking place this month.

Visit http://cometchasing.skyhound.com/ and http://www.aerith.ne...t/future-n.html and https://cobs.si/ for additional information on comets visible this month.

A list of the closest approaches of comets to the Earth is posted at http://www.cometogra.../nearcomet.html

A wealth of current information on solar system celestial bodies is posted at http://www.curtrenz.com/astronomy.html and http://nineplanets.org/

Information on the celestial events transpiring each week can be found at https://stardate.org/nightsky and http://astronomy.com/skythisweek and http://www.skyandtel...ky-at-a-glance/

Free star maps for any month may be downloaded at http://www.skymaps.com/downloads.html and https://www.telescop...thly-Star-Chart and http://www.kenpress.com/index.html

Data on current supernovae can be found at http://www.rochester...y.org/snimages/

Finder charts for the Messier objects and other deep-sky objects are posted at https://freestarcharts.com/messier and https://freestarcharts.com/ngc-ic and http://www.cambridge..._april-june.htm

Telrad finder charts for the Messier Catalog are posted at http://www.custerobs...cs/messier2.pdf and http://www.star-shin...ssierTelrad.htm

Telrad finder charts for the SAC's 110 Best of the NGC are available at https://www.saguaroa...k110BestNGC.pdf

Information pertaining to observing some of the more prominent Messier galaxies can be found at http://www.cloudynig...ur-astronomers/

Author Phil Harrington offers an excellent freeware planetarium program for binocular observers known as TUBA (Touring the Universe through Binoculars Atlas), which also includes information on purchasing binoculars, at http://www.philharrington.net/tuba.htm

Stellarium and Cartes du Ciel are two excellent freeware planetarium programs that are available at http://stellarium.org/ and https://www.ap-i.net/skychart/en/start

Deep-sky object list generators can be found at http://www.virtualcolony.com/sac/ and https://telescopius.com/ and http://tonightssky.com/MainPage.php

Freeware sky atlases can be downloaded at http://www.deepskywa...-atlas-full.pdf and https://www.cloudyni...ar-charts-r1021 and https://allans-stuff.com/triatlas/

For current sky charts visit the NASA Night Sky Network https://nightsky.jpl.nasa.gov/news/212/

McDonald Observatory famous radio program stardate is now a podcast https://stardate.org/podcast

Magic Valley Astronomical Society

550 Sparks St.
Twin Falls, ID

The Magic Valley Astronomical Society (MVAS) was founded in 1976. The Society is a non-profit [501(c) 3] educational and scientific organization dedicated to bringing together people with an interest in astronomy.

In partnership with the Centennial Observatory, Herrett Center, College of Southern Idaho - Twin Falls; we hold regularly scheduled monthly meetings and observation sessions, at which we share information on current astronomical events, tools and techniques for observation, astrophotography, astronomical computer software, and other topics concerning general astronomy. Members enthusiastically share their telescopes and knowledge of the night sky with all who are interested. In addition to our monthly public star parties we hold members only star parties at various locations throughout the Magic Valley.

MVAS promotes the education of astronomy and the exploration of the night sky along with safe solar observing through our public outreach programs. We provide two types of outreach; public star parties and events open to anyone interested in astronomy, and outreach programs for individual groups and organizations (e.g. schools, churches, scout troops, company events, etc.), setting up at your location. All of our outreach programs are provided by MVAS volunteers at no cost. However, MVAS will gladly accept donations. Donations enable us to continue and improve our public outreach programs.

Membership is not just about personal benefits. Your membership dues support the work that the Magic Valley Astronomical Society does in the community to promote the enjoyment and science of astronomy. Speakers, public star parties, classes and support for astronomy in schoolrooms, and outreach programs just to name a few of the programs that your membership dues support.

Annual Membership dues will be:
$20.00 for individuals, families, and $10.00 for students.
Contact Treasurer Jim Tubbs for dues information via e-mail: jtubbs015@msn.com

Donations to our club are always welcome and are even tax deductible. Please contact a board member for details.
Lending Telescopes: The society currently has three telescopes for loan and would gladly accept others please contact President Robert Mayer, for more information on these and other benefits.

Telescopes are an individual thing and not practical for public use. However, everyone should have the experience of a good look at the Moon for at least 5 minutes in their life time. It is a dimension and feeling that is unexplainable. Pictures or TV can't give this feeling, awareness, or experience of true dimension. A person will not forget seeing our closest neighbor, the Moon.

Norman Herrett in a letter to Dr. J. L. Taylor, president of the College of Southern Idaho