Snake River Skies

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

Membership Meeting
November 8th at the Herrett Center
CSI 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

Image Credit: Canon M6 MK2, APSc 32M sensor, Canon EF 85mm f/1.8 lens, set at f2.2 ISO 1600 Single 30sec exposure, processed in Photoshop. Sidereal tracking on SW AZGTi, no guiding being low in the NW, gradient is from Mountain Home light dome. Image by MVAS Secretary, Rick Hull.

Visit our Website
www.mvastro.org

Monthly Calendar - November 2025

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	Change your Clock on the 2nd at 2:00am Change your smoke alarm battery on 11/2					1 Dia de los Muertos Nov. 1st & 2nd 
2 Close approach of the Moon and Saturn Conjunction of the Moon and Saturn	3 The Moon at aphelion. Mercury at dichotomy	4	5 Full Frost Moon Beaver Moon The Moon at perigee	6 Close approach of the Moon and M45	7 Lunar occultation of Beta Tauri	8 MVAS General Mtg. 7:00p Herrett Cntr. Centennial Observatory Star Party
9	10 Conjunction of the Moon and Jupiter Close approach of the Moon and Jupiter	11 Veterans Day Moon at Last Quarter 	12 Northern Taurid meteor shower 2025 Conjunction of Mercury and Mars	13	14	15
16	17 Leonid meteor shower 2025 The Pleiades cluster is well placed	18	19 The Moon at apogee New Moon Lunation 1273	20 Mercury at inferior solar conjunction	21 Uranus at opposition Conjunction of the Moon and Mars	22 Comet 210P/ Christensen passes perihelion
23 Mercury at perihelion Lunar occultation of Sigma Sagittarii	24	25	26 The Hyades cluster is well placed Saturn ends retrograde motion	27 Thanksgiving 	28 November Orionid meteor shower 2025	29 Close approach of the Moon and Saturn Conjunction of the Moon and Saturn
30 Mars at apogee	11 Jupiter enters retrograde motion Asteroid 471 Papagena at opposition	12 Lunar occultation of Regulus	21 α-Monocerotid meteor shower 2025 The Moon at perihelion	27 The Hyades cluster is well placed Saturn ends retrograde motion Moon at First Quarter		

Links in this calendar are clickable. Dates at the bottom indicate more than one event is happening on that date.

The Beaver Moon is the name given to the full moon in November that signifies the preparation many animals take before the onset of winter. The Cree and Assiniboine peoples also marked this change in season with the name Frost Moon. This month's Full Moon is also called a supermoon. **Did you know**: The spin-time of the Moon on its axis is identical to the time it takes the Moon to revolve around Earth, which is why the Moon always keeps almost precisely the same face toward us. Learn more about the far side of the Moon.

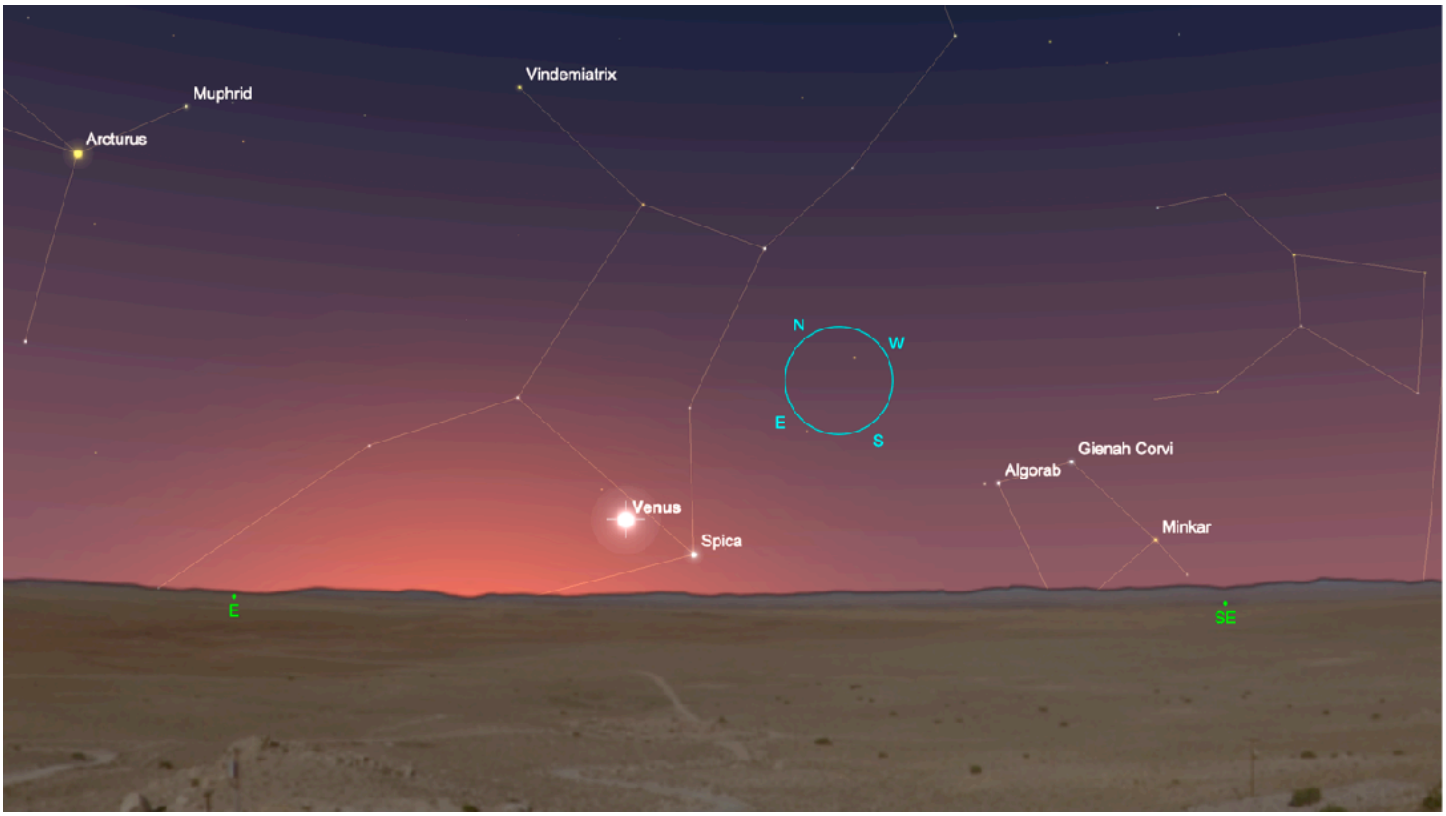
More Comet Lemmon from Rick Hull.

Top one is a stack of 16 x 20sec exposures. Second is a stack of 26 x 10sec exposures. Both sets at ISO 3200 Canon M6 MK2 and EF 85mm f/1.8 lens set at f/2.2 DSS stacking in Comet mode, aligned on center of coma. Then PS for Gradient XTerminator, color correction, stretching, etc, finishing with Topaz Denoise.

The Night Sky This Month – November 2025

Comet C/2025 A6 (Lemmon) continues to skirt the western horizon after sunset and challenge astrophotographers trying to tease out detail in its magnificent and complex tail. Visual stargazers can see the comet's head – barely – without optics in dark sky as November begins. Binoculars reveal a short, ethereal tail. November has lots more in store including a pair of meteor showers and planetary conjunctions along with the regular appearance of galaxy-rich constellations such as Pegasus, Andromeda, and Sculptor. Orion rises well into the evening and dominates the southern sky after midnight. Saturn remains in the sky, still in a good position for viewing, while the orbits of Mars and Venus direct them towards the Sun in the evening and morning sky, respectively. Here's what to see in the night sky this month.

1 November 2025. Look to the southeast to see Saturn trailing the waxing gibbous Moon by 5° south of the Circlet of Pisces. Saturn's rings are again tilted less than a degree to edge-on presenting a rare view in a telescope along with several of the planet's brightest moons. Our Saturn observing guide helps you get the best view of this unique and beautiful planet which remains in prime position for observing into 2026.



Venus and Spica in the eastern morning sky before sunrise on Nov. 2, 2025.

2 Nov. Look to the east-southeast before sunrise to see Venus about 3.5° north of 1st-magnitude Spica low over the horizon. While still bright at magnitude -3.9, Venus is nearly as faint as it ever gets and presents an almost fully-illuminated disk in a telescope as it moves towards conjunction.

5 Nov. Full Moon, 13:19 UT (the Full Hunter or Beaver Moon). This is also the largest full Moon of 2025.

6-12 Nov. The Taurid meteor showers peak this week with the Moon just past full. There are two Taurid showers, the Northern and Southern Taurids, and they both peak in late October through mid-November. They're sometimes called the Halloween Fireballs. You can see these bright, slow-moving meteors in the northern and southern hemispheres at essentially any time of night. This event usually shows 5-10 meteors an hour.

6 Nov. A fat gibbous Moon lies some 6° east of the Pleiades rising in the east a couple of hours after sunset.

11 Nov. A just-past-half lit Moon lies about 2° north of the Beehive star cluster (M44) in the eastern early-morning sky.

12 Nov. Last Quarter Moon, 05:28 UT.

Mercury and Mars in the evening sky on Nov. 12, 2025 as seen from 35 degrees south latitude.

12 Nov. Mercury sits just 1.3° south of Mars low in the west-southwestern sky after sunset among the stars of the 'claws' of Scorpius. This is a difficult observation for northern-hemisphere observers, but southern stargazers see the pair further above the horizon during this evening conjunction. Binoculars help extract the planets from the evening twilight. Mercury (mag. +1.1) shines slightly brighter than redder Mars (mag. +1.5). In a telescope, Mercury shows a crescent about 20% illuminated and 9" wide. Mars is less than half as wide and offers no detail at this distance. But it's worth seeing these two rocky but otherwise completely different worlds sinking together towards the horizon.

13 Nov. Regulus lies about a degree south of the waning crescent Moon in the northeastern sky before sunrise.

17 Nov. The thin crescent Moon sits just over a degree south of Spica in the southeastern sky before sunrise. Venus lies about 20° lower to the east, much closer to the horizon.

17-20 Nov. The Leonid meteor shower has been quiet these past many years and it remains a modest event despite some historical outbursts. The shower occurs as the Earth passes through the path of the periodic Comet 55/P Tempel-Tuttle. A peak of 15 meteors per hour is typical for the Leonids. But nothing's assured and a few extras may arrive, especially this year as the Earth passes through clumps in the comet's debris stream. Leonids can appear anywhere in the sky but appear to trace their paths back to a radiant in the 'Sickle' of Leo. This year, the moon is nearly new so we have a chance to see both bright and faint meteors in the sky, especially on the night of Nov. 17 (in Europe, Africa, and Australia and New Zealand) and the early morning of Nov. 17th in North America.

20 Nov. New Moon, 06:47 UT

Uranus lies 4 degrees south of the Pleiades at opposition on Nov. 21, 2025.

21 Nov. Uranus reaches opposition as it rises in the east as the Sun sets in the west. This distant ice giant lies just at the edge of naked-eye visibility at magnitude +5.7 with a disk that spans about 3.7″. You can see it with binoculars or telescope about 4° south of the Pleiades. Uranus remains visible through the end of 2025 and into the new year in this part of the sky. If you have dark sky, try to see the planet without optics. Although the planet was plainly, though not easily, visible to pre-telescopic stargazers, it wasn't 'discovered' until William Herschel found it with a 6" telescope on March 13, 1781. For an even bigger challenge – try to find some or all of the bright Moons of Uranus with the help of this handy-dandy moon finder at *Sky&Telescope*.

28 Nov. First Quarter Moon, 06:59 UT

29 Nov. Saturn reaches its second stationary point, ending its retrograde motion and initiating eastward motion against the background stars.

The intriguing comet 3I/ATLAS is swinging around the Sun and arrives back in our skies this month. This piece at *Cosmic Pursuits* shows you where to see the comet, along with an overview of what we know about this strange interstellar visitor to our solar system.

The founder of Tele Vue and crack optical designer Al Nagler had died. His telescopes and eyepieces helped revolutionize amateur astronomy over the past 40 years. An online note from his son David tells that Al passed away suddenly, at work, with a telescope in his hands. Al inspired me to take up astronomy again, after a long break, nearly 20 years ago. I was fortunate to speak with him many times, and I conducted a Q&A interview with him in 2017. You can read the whole piece here.

A great wave is passing through the Milky Way, perhaps from a long-ago collision with another galaxy.

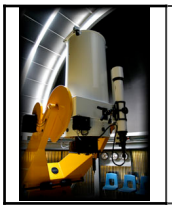
Enjoy this photo-essay of the Saskatchewan Summer Star Party (gift link from *The Globe and Mail*).

And the astronomy quote of the month - a little motivation for all of us to get out and see the night sky:

"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

Phil Harrington's Cosmic Challenge

Globular Cluster Palomar 1

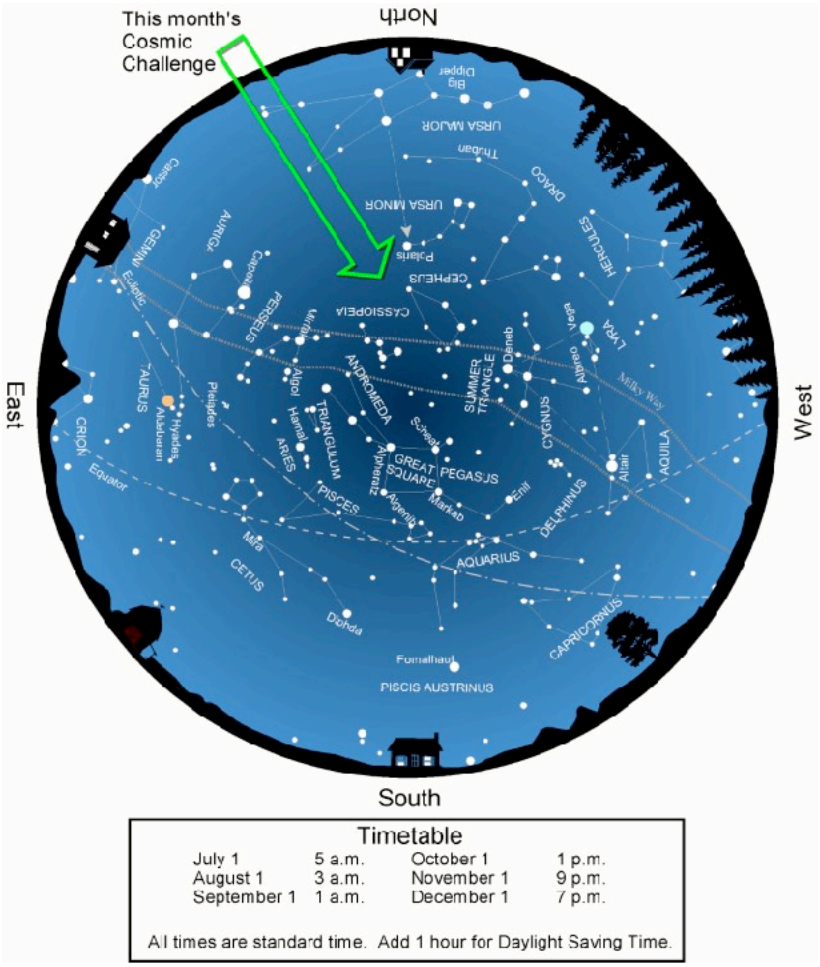


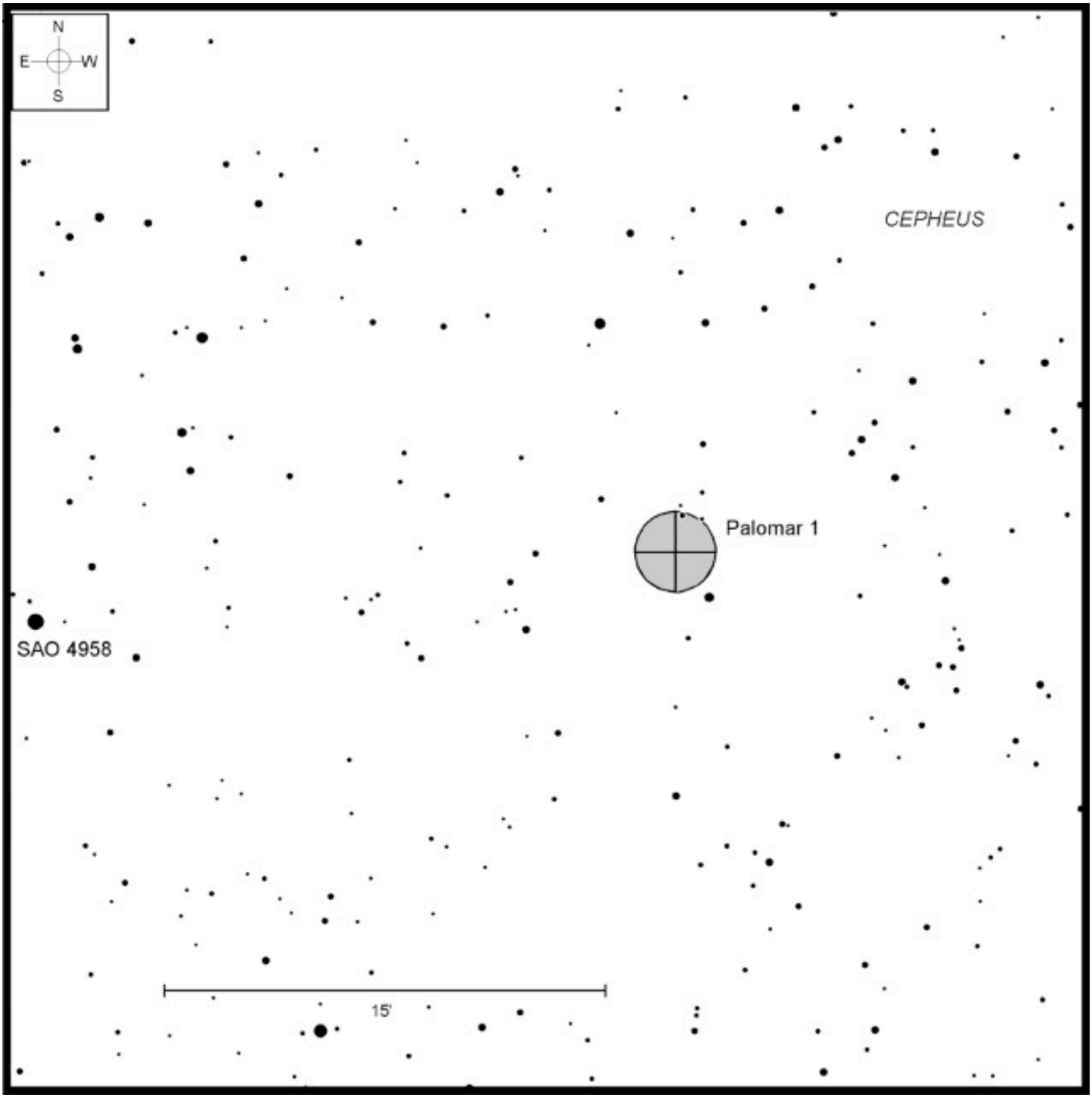
<u>This month's suggested aperture range</u>:
15-inch (38-cm) and larger telescopes
Featured Telescope: Centennial Observatory
Norman Herrett 24” Ritchey-Chrétien reflector telescope

Target	Type	RA	DEC	Constellation	Magnitude	Size
Palomar 1	Globular cluster	03h 33.3m	+79° 34.9'	Cepheus	13.8	2.8'

If you're a regular reader of this column, you may recall that we've explored a few of the Palomar globular clusters in past installments. Last November, we visited Palomar 13, while Palomar 4 was the subject of my May 2024 challenge. Palomar 2 was also spotlighted here in February 2023. This month, we're turning our attention to the leader of the pack. It is also one of the toughest to see.

Palomar 1 was discovered in 1954 on photographic plates from the original Palomar Observatory Sky Survey (POSS), conducted with the 48-inch Schmidt telescope at Palomar Mountain in California. The POSS was one of the most ambitious astronomical mapping projects of the 20th century, imaging the entire northern sky in fine detail on glass plates. While its main goal was to catalog galaxies, nebulae, and variable stars, the survey also revealed a dozen previously unknown globular clusters—many of them extremely faint and remote. These became known collectively as the Palomar clusters, numbered 1 through 15. Below: Evening star map. Credit: Map adapted from Star Watch by Phil Harrington





Above: Finder chart for this month's Cosmic Challenge.

Palomar 1 lies in northern Cepheus, a constellation rich with star fields and obscuring dust, and it never sets for most Northern Hemisphere observers. Given how difficult it is, however, it's best to wait for it to reach culmination—its highest point in the sky—before attempting to observe it. Even then, it will take a night of excellent transparency, steady seeing, and a large-aperture telescope to glimpse this faint, distant swarm of ancient suns.

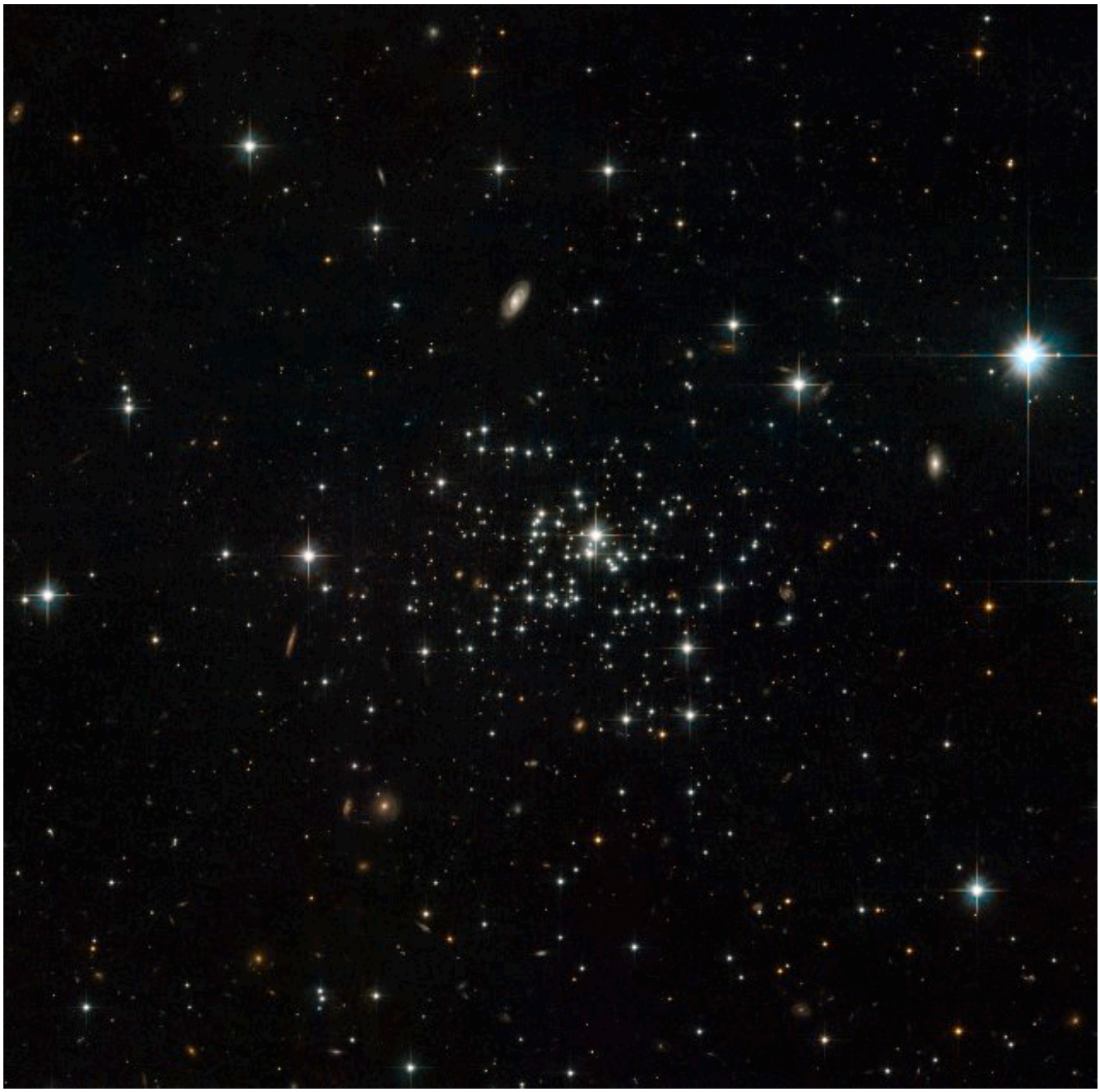
Palomar 1 holds the distinction of being not only the most northerly globular cluster visible in amateur telescopes, but also one of the youngest known. A 1998 study titled Palomar 1 – Another Young Galactic Halo Globular Cluster, led by Alfred Rosenberg of the Telescopio Nazionale Galileo in Padova, Italy, estimated its age at between 6.3 and 8 billion years. That makes Palomar 1 roughly half as old as most Milky Way globular clusters, which are thought to be as many as 13 billion years old—nearly as old as the galaxy itself.

The same study found that Palomar 1's mass and metallicity differ significantly from typical globulars. Most halo globulars

are ancient, metal-poor systems formed in the galaxy's earliest epochs, but Palomar 1 contains stars with noticeably higher metal content, suggesting that it formed in a more chemically enriched environment. "This fact, coupled with its young age," the authors wrote, "might be further evidence that Palomar 1 should be considered a member of a different globular cluster population, with a different formation process and time."

Some astronomers have gone further, proposing that Palomar 1 may not be a native Milky Way object at all. Its orbital path and chemical composition hint that it could have originated in a dwarf galaxy long ago cannibalized by the Milky Way. In that scenario, Palomar 1 would be a stripped nuclear remnant, left behind when its parent galaxy was torn apart by tidal forces. This possibility is supported by the discovery of faint tidal tails extending outward from the cluster—stellar streamers that trace its gradual disintegration under the galaxy's gravitational pull.

The exact number of stars in Palomar 1 is not well documented, but all evidence points to a sparse and low-mass cluster. It carries a Shapley–Sawyer concentration class of XII, the lowest possible rating, indicating an extremely loose structure with little central condensation. In appearance, it resembles a faint, diffuse smudge rather than the compact, bright balls we associate with showpiece globulars like M13 or M3.



Above: Palomar 1, captured by the Hubble Space Telescope. Credit: ESA/Hubble & NASA.

Observational studies suggest that Palomar 1's tidal tails may contain roughly as many stars as the cluster's core itself—meaning that the system is literally being pulled apart by the Milky Way's tidal field. Astronomers estimate its total luminosity at only about 10,000 times that of the Sun, an order of magnitude lower than typical globulars. At a distance of approximately 36,000 light-years, it lies on the outskirts of the Galactic halo, well above the plane of the Milky Way.

Even though it's technically a globular cluster, Palomar 1 shows some properties more typical of open clusters—its youth, its small mass, and its low stellar density. This hybrid character makes it an intriguing "bridge object" for researchers studying how different cluster populations form and evolve.

Finding Palomar 1 is a challenge even for seasoned observers. As a general guide, it lies on the opposite side of the Celestial Pole from the Little Dipper asterism. Draw a line from Delta (δ) Ursae Minoris through Polaris [Alpha (α) Ursae Minoris] and extend it about 9° to an obtuse triangle of 5th- and 6th-magnitude stars—SAO 650, 670, and 691. Follow the triangle's wide base roughly 2° west, passing the very red variable star SS Cephei, to the orangish 8th-magnitude SAO 4958. Palomar 1 lies 22 arcminutes further west, just 2 arcminutes northeast of an 11th-magnitude field star.

Above: Palomar 1 taken through the author's Celestron Origin Home Observatory astrograph.
Click here for a full size image and exposure details on the author's Astrobin page.

Even veteran observers using large telescopes under pristine skies have trouble capturing Palomar 1. Renowned deep-sky observer Barbara Wilson of Houston, Texas, once described her experiences:

"I have suspected its very faint glow on three separate occasions, and have positively seen it once after seeing had settled down. On each of those four occasions, I could see or suspect something in exactly the same position. There were two stars to the south, and two fainter stars at the very edge to the north."

Her account underscores just how demanding this target is. Part of the difficulty arises from its proximity to those foreground stars, which easily draw the eye away from the cluster's dim glow. Compounding the problem, Palomar 1 appears a magnitude or more fainter than its published integrated magnitude of about 13.8. Its loose structure reduces the cluster's surface brightness, spreading the light over a wider area and making it seem even dimmer.

To have any chance of seeing Palomar 1 visually, you'll need dark, transparent skies and a telescope of at least 16 inches (40 cm) aperture—though some observers have reported marginal detection with 12-inch (30.5 cm) instruments. Use moderate to high magnifications (200× to 300×) and averted vision to tease out its faint, roundish glow. If you're imaging, long exposures of 30 minutes or more will reveal it as a pale, granular patch peppered with a few cluster stars behind closer members of the Milky Way.

Even if you manage to glimpse it, don't expect to resolve individual stars. The brightest member of the cluster glimmers at around magnitude 16.5, well below the reach of most amateur telescopes. Still, successfully detecting Palomar 1 is a rewarding achievement — a testament to patience, skill, and favorable sky conditions.

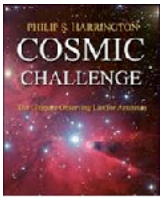
So, if you're up for a deep-sky challenge, aim your telescope toward northern Cepheus and hunt for this dim ghost of a cluster. Seeing even a hint of Palomar 1's elusive glow connects you directly with one of the most enigmatic and intriguing members of the Milky Way's ancient family.

I'd enjoy reading of your successes and attempts. Be sure to post your experiences in this month's discussion forum.

And do you have a favorite challenge object that you'd like to share with the rest of us? Post your suggestions in this month's discussion forum as well, and I'll try to feature them in future installments.

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. Phil Harrington's Cosmic Challenge is copyright 2025 by Philip S. Harrington. All rights reserved. No reproduction, in whole or in part, beyond single copies for use by an individual, is permitted without written permission of the copyright holder. This newsletter editor has received the authors permission to use this article.

Herrett Center for Arts and Science

Upcoming Events
All events are weather permitting.

Event	Place	Date	Time	Admission(s)
Monthly Free Star Party	Centennial Observatory	Saturday, November 8, 2025	6:15-9:00 p.m.	Free
Telescope Tuesday	Centennial Observatory	Tuesday, November 25, 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