Peoria Astronomical Society, Inc.

P.O. Box 10111 Peoria, IL 61612-0111
Section of Peoria Academy of Science
Affiliate of the Astronomical League
www.astronomical.org

STARLITE

Winter, 2025

WHAT'S IN THIS ISSUE?

Crescent Nebula Linda Groezinger 08/06/2025

Officers:

President: Dan Son, sonshine1992@gmail.com
Vice-President: Jesse Hoover
Secretary: Carol Hootman
Treasurer: Dave Monroe, dave.monroe@comcast.net

Directors:

Parliamentarian: Dave Monroe, dave.monroe@comcast.net
Nominating Chairman: Open
Legal Agent: Chris Schmidt
Northmoor Chairman: Dan Son, sonshine1992@gmail.com
Jubilee Chairman: Jesse Hoover

PEORIA ASTRONOMICAL SOCIETY IS NOW ON FACEBOOK:

www.facebook.com/PeoriaAstronomicalSociety

Update your address, phone or email changes

Please notify Dan Son at sonshine1992@gmail.com if you will be getting a new mailing address, email address and/or phone number. It is important that he has your personal information correct so you will continue to receive the Starlite and the Reflector.

2025 -2026 Meteor Showers & other events:

Geminid Meteor Shower: peaks on the night of December 13-14. Moon phase will be 3rd quarter and rises after 1:30am on the 14th. The radiant rises after 9pm and is highest around 3am on the 14th. Should be a very good viewing with Jupiter in the Gemini constellation.

Quadrantids Meteor Shower: peaks on the night of January 3-4 with about 40 meteors per hour. The moon will be full and obscure all but the brightest. Meteors will radiate from the constellation Bootes.

Jupiter is at opposition on the night of January 10th.

Ramblings from the President

Our summer of fun at Northmoor is over. We had a great season and lots of members helping as keyholders or just helping run the program and for that I thank you. Without volunteers no program can succeed and we always need more. Same is true for those volunteers mowing at Jubilee or doing building maintenance to keep it running, Thank You!

Did you get to see the Auroras on November 12th. We have lots of pictures and I will admit, the visual was awesome. My wife and I went to Bowmen Lake outside of Washington and when I stepped outside of the car, the wall of red just hit me and made me feel like it was the 4th of July.

This year we had 23 new members join the PAS family. I hope we can keep all of them for years to come but I know we wont. I hope through the egroup members will ask questions and make suggestions that could improve your experience and improve our group. I always hope to call each new member but I do fall short so forgive me with this.   We do have some great events coming up soon. Dean Regas has been and will continue to give great zoom talks on topics of Astronomy. I can always make them the time they happen live but he records them and we can download them to view them at our leisure, so thanks Dean Regas! Also coming to a screen near you is the Kalamazoo Astronomical Society Introduction to Amateur Astronomy starting January 17th. If you cant make the online zoom time you can download the video at a later date. http://www.kasonline.org/amastro.html use this link to register. This is a 5 zoom lecture series and well worth the time.

We had a very nice Banquet at the Lariat Club with a quest speaker of Dr Carl Wenning on "Viewing with night vision technology". A large turnout of PAS members and quest's made a fun night of talking, eating and listening to the program. Thank you Sheldon Schafer for setting this up.

This time of year is membership renewal and I know the message's have already gone out. Any member who joined after ###### does not need to pay for 2026. Anyone who is not renewing and would like to tell me why (something we did or could improve on) let me know by email: sonshine1992@gmail.com .

From my family to yours, I wish you and yours a Merry Christmas, a joyous New Year and good health and happiness in 2026.

Facts..just the Facts..

Although the Moon has been a familiar sight to humans throughout our species' entire history, we didn't get to see the lunar farside — which always points away from Earth — until October 1959, when it was photographed by the Soviet Luna 3 probe.

Depending on the type of fuel, rocket flames can reach temperatures as high as 3,300 degrees Celsius (6,000 degrees Fahrenheit). This is almost three times the temperature of the hottest lava found on Earth.

The International Space Station is the second brightest space object in the night sky after the Moon, and can be seen with the naked eye from Earth.

Submission of photos / article content for the Starlite: *Dan Son*

If you have a photo that you would like to submit for the Starlite, please send these to Dan Son sonshine1992@gmail.com along with a little write-up about the photo. Photos can be from star parties, club events, personal view, etc. Astrophotography is encouraged. Also, if you have educational content, tips, techniques, lessons learned or how-to articles with photos, we encourage that material for the Starlite. We can also put these on out Facebook page if you so desire.
https://www.facebook.com/PeoriaAstronomicalSociety

The Caterpillar Matching Gifts Program IRA RMD: *Brian Hakes*

If you are a CAT Employee/Retiree you can gift the PAS through the CAT matching gift program. Employees/Retirees are asked to submit matching gift forms electronically via the Caterpillar Foundation website, www.caterpillar.com/foundation. The process is easy. Once you made your gift to the PAS you can go online to the Cat Foundation website and complete the electronic form, there is no paper involved. Once the form is registered with the foundation they will notify the PAS and the treasurer will then verify the gift has been received. Because there will be no mailings, the turnaround time for the whole process will be negligible.

If you are required to make an annual mandatory with drawl from an IRA you can also designate an amount to the Peoria Astronomical Society. Don't forget that the PAS is a 501C(3) organization.

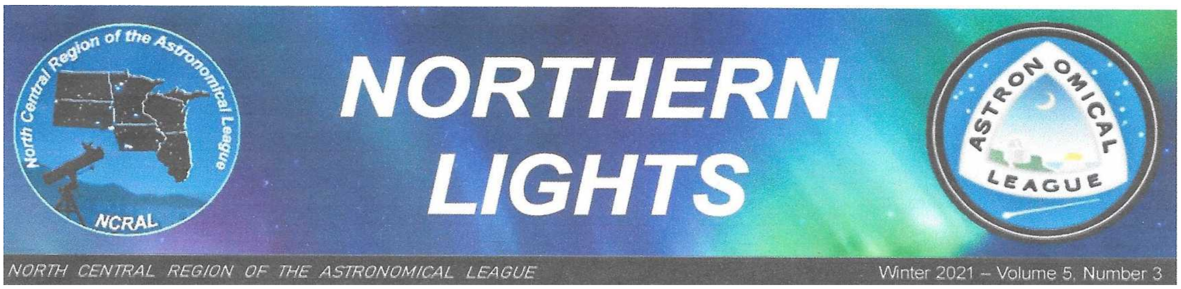
These are excellent ways to support the PAS and is a great way to help the society and the promotion of astronomy in the greater Peoria area.

Reflector:

Reflector Magazine digital edition is available for download. You may access an archive of digital issues from the AL website by visiting:
https://www.astroleague.org/reflector

NCRAL Newsletter:

The North-Central Region of the Astronomical League (NCRAL) is made up of member societies... the six states commonly thought of as the Upper Midwest of the USA, plus the Upper Peninsula of the state of Michigan. The PAS is a member of the NCRAL. Their Region Newsletter, also named "Northern Lights", has been resurrected and is better than ever! The latest issue's can be read on their website can be found here:
https://ncral.wordpress.com/newsletter-archive/
You can access the current issue and all other back issues through this link.



Program Schedule 2026

March 4 — Meet in the Dome at the Peoria Riverfront Museum. 7:00 p.m.
Program speaker, David Leake, retired director of Parkland College Planetarium, past-president CUAS. He will speak on the basics of light pollution and about the nuts and bolts of the process of working with the Champaign park district to get the Middle Fork River Forest Preserve designated as an International Dark Sky Park by the International Dark Sky Association Current Sky Summary

May 6 — Meet at Northmoor Observatory, Donovan Park, 7:00 p.m.
Get to know - all about Northmoor Observatory
Get ready for the start of our public observing season in May
Learn all there is to know about our historic public observatory, including the history, and the operation of the telescope. Social time bring cookies.

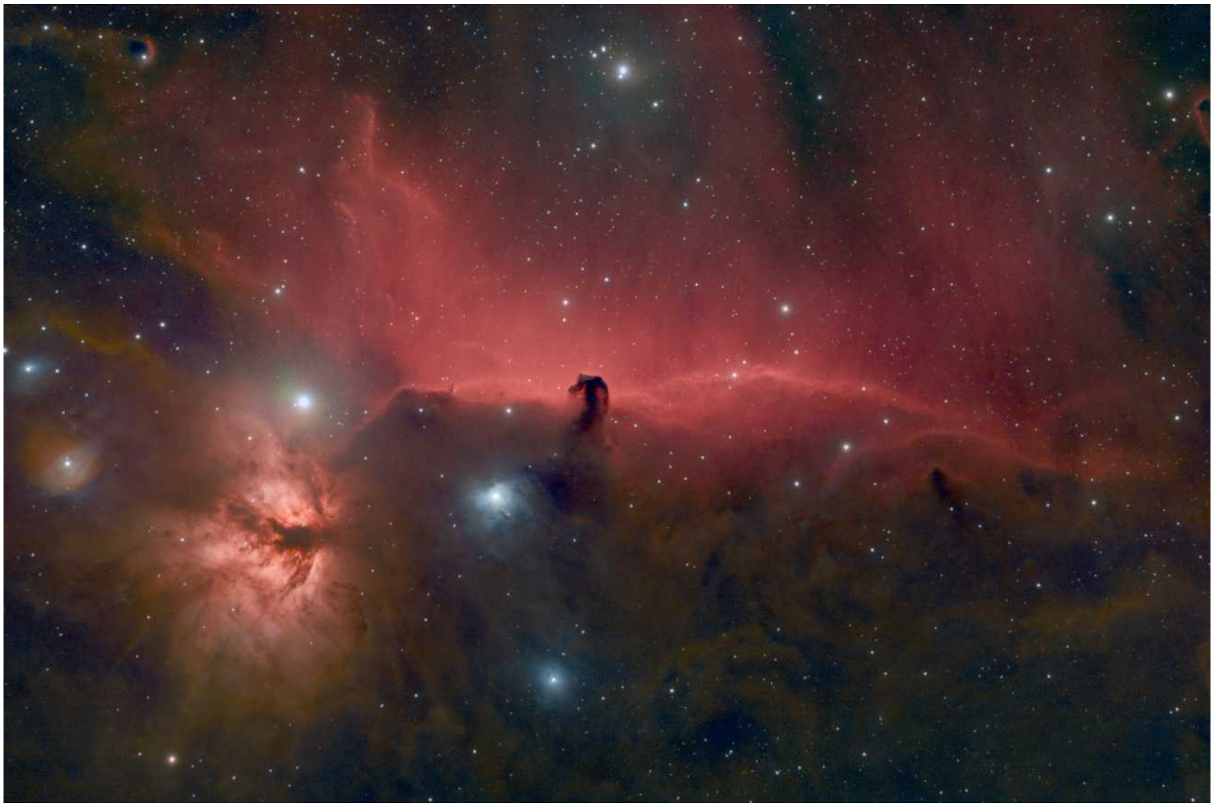
Inclement weather notice: Monitor email (e-group), local radio stations or PAS Facebook Page if a program, board meeting, viewing, or star party may be canceled due to weather. If we determine a risk in the weather, the Society will cancel the event.

Seestar Captures

IC 1396A M Frasca 91 minutes

M45 D Son 122 minutes

Photos from Members:

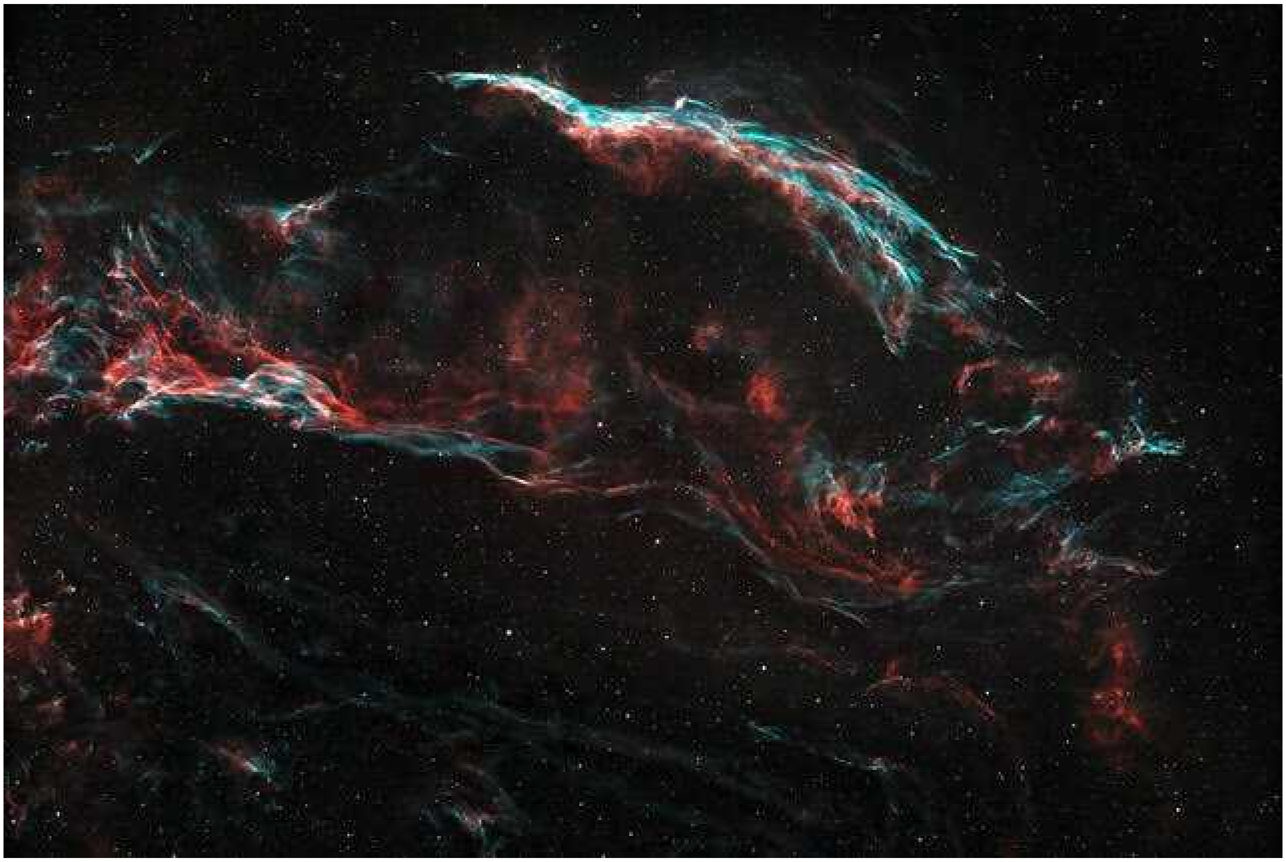


Horsehead Nebula & the Flame Nebula Tim McGrath 2025/10/19

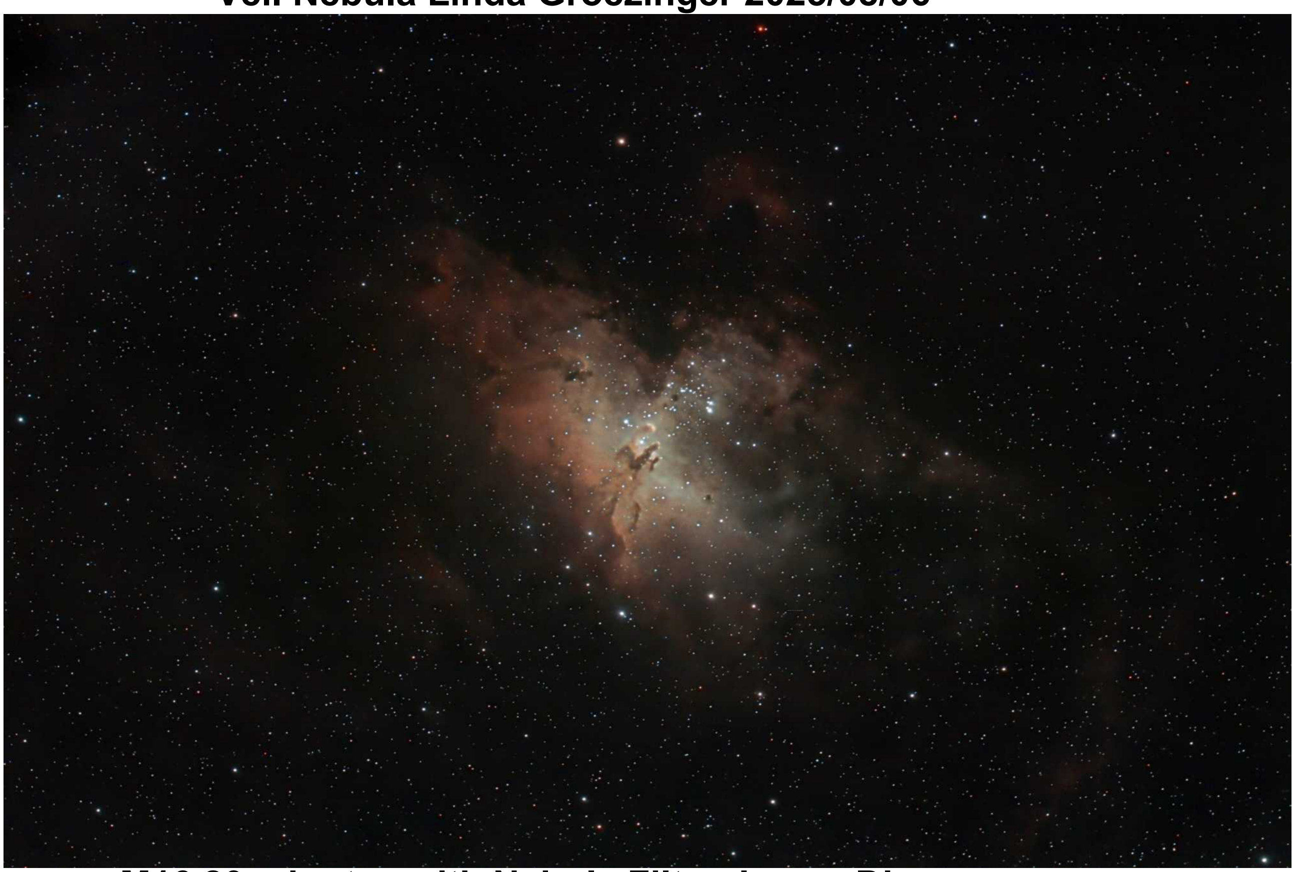
M8 20 minutes James Dire

M8 & M20 Tim McGrath Willim Optics GT71 on Sky Watcher HEQ5

NGC 281 Pacman Nebula by Jim Carroll



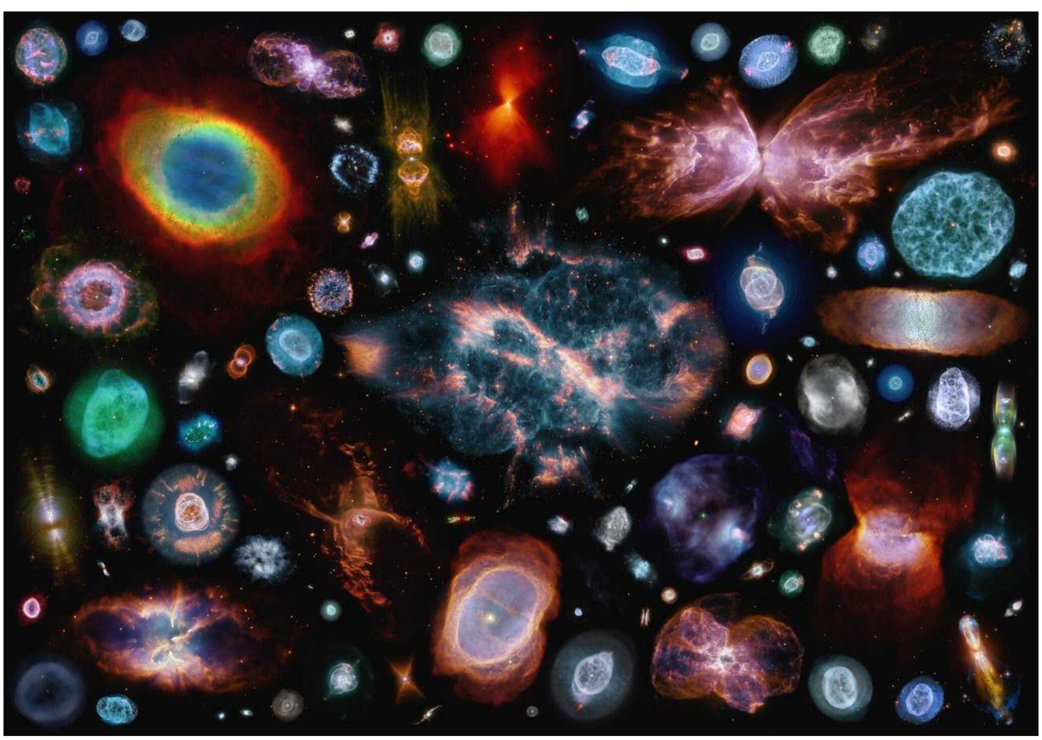
Veil Nebula Linda Groezinger 2025/08/06



M16 20 minutes with Nebula Filter James Dire

And from other Instruments:

Herbig-Haro 49/50 JWST shows what happens when an outflow of gas from a newborn star slams into other clouds around it: a billowing shape called a Herbig-Haro object. The newborn star is not shown; the bright shape to the upper left of the object is a background galaxy there by coincidence.



Planetary Nebula Collage from Hubble

Aurora from 11/12/2025

Gary Bussman

Mark Hootman

Dan Son from Bowman Lake Washington, IL

Shannon Wiltz

A Quasar Can Stretch Your Mind!   By John Manny

A few years ago, I learned that one of the quasars was visible with a small telescope. This quasar is called 3C 273. This magnitude 12.9 object is found in the constellation Virgo the Virgin.

Mysterious Objects

I remember news accounts of these objects during the 1960’s. Their extreme distance and extreme energy baffled astronomers. The name quasar means “quasi-stellar radio source”. Today, we know that they are galactic, rather than star-like. They have a new name: Active Galactic Nuclei, or AGN’s.

I Get to See a Quasar

I viewed 3C 273 with a 10” Dobsonian telescope at our Jubilee site. Since it looked like an ordinary star, I needed to use a chart to identify it.

The view of 3C 273 could be called underwhelming, but I was excited! I got to look at something which was a great mystery a few decades ago. Something else was amazing: the literature tells us that 3C 273 is two billion light-years from us.

How Far is Two Billion Light-Years?

Viewing something two billion light-years away triggered my curious mind. I have tried to express “two billion light-years” with terms from our everyday experience.

Two

This is the easy part! When you see two apples, you know that two apples are there, not one or six.

Billion

One billion, or 1,000,000,000 is a precise number in mathematical terms. However, I found that the word “billion” in everyday speech simply means "a very large quantity." If you questioned a billionaire, you would probably find that the “billion” is based on estimated values of assets.

What if you walked a billion paces? That would take you around the world 39 times.

If someone showed me three piles of gravel, and asked me which one had a billion stones, I would have no way to make a good guess.

So, in practical terms, a billion is uncountable.

Light-years

Visualizing a light year is more challenging than visualizing the number one billion. A light-year is the distance traveled by electromagnetic radiation in one year.

I remember watching the Apollo 11 lunar mission. If Mission Control asked a question, it took 1.5 seconds for it to reach the Moon and another 1.5 seconds for the answer to return.

The distance to the Moon is about ten times the circumference of the earth. Many people have traveled this far.

Unfortunately, we are trying to visualize a light-year, not 1.5 light-seconds.

The Voyager 1 space probe is only 23 light-hours away, after a very speedy 47 years.

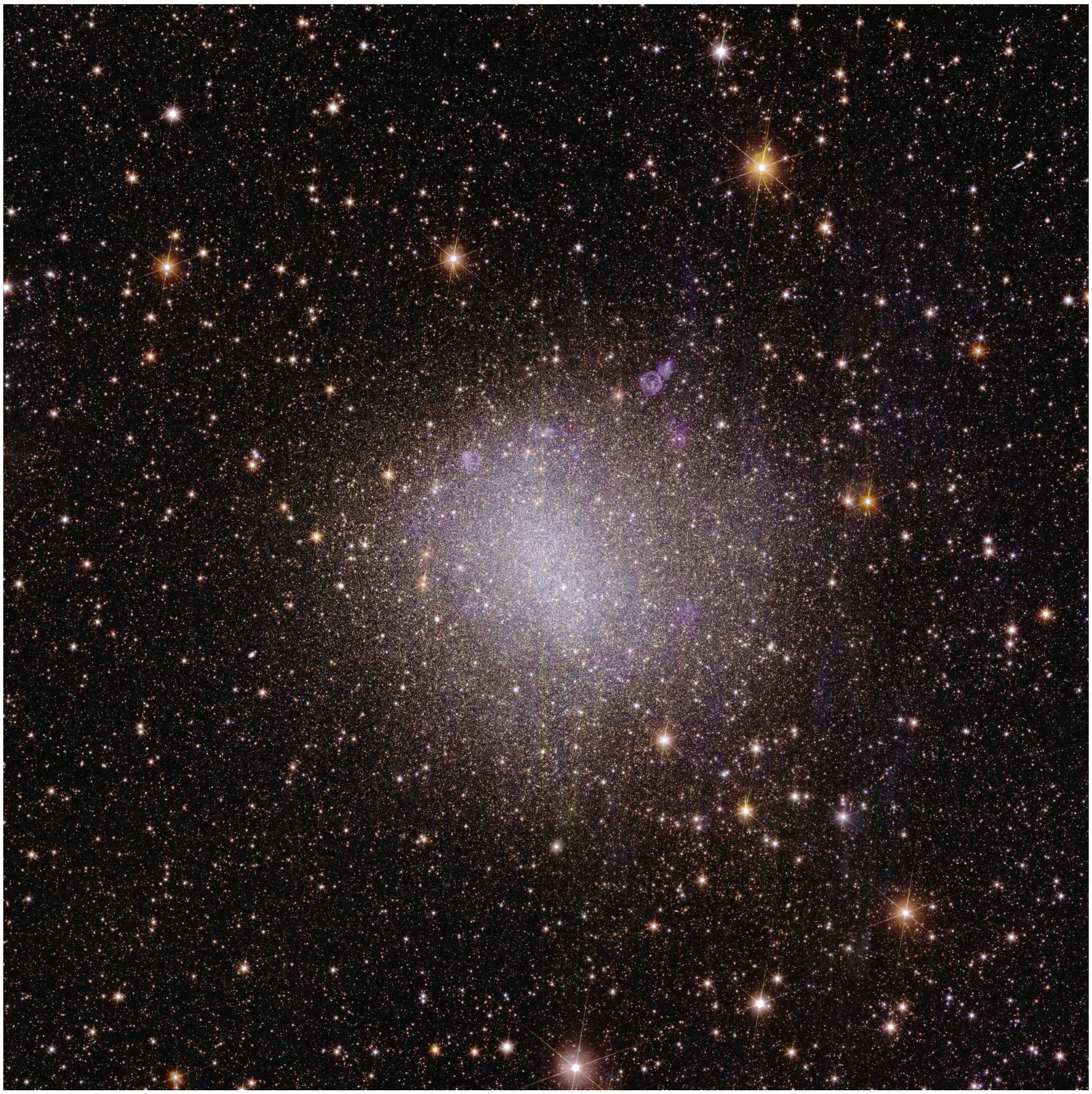
So, I call a light-year unimaginable.

Two Billion Light-years

To sum it up, the distance to 3C 273 is an unimaginable distance, times an uncountable quantity, times two.

One More Thing...

Despite its distance, 3C 273 can be viewed with modest optical aid. What words can we use to describe its energy output?



Euclid’s view of irregular galaxy NGC 6822

25 Years ago

Can You Spot This?

Trumpler 1

by John Barra

The open cluster Trumpler 1 is featured in the inaugural column of this new *Starlite* series. In each column, I will present a different deep sky object and help you find it. These objects will not be in the Messier catalogue. They will not be found in common objects that are highlighted in most astronomical books. Rather, they will be unique objects that I have found in books or other sources. Each object will be observable with the aid of most backyard telescopes or with binoculars. A finder-chart and statistical information will be provided. Photographs or sketches will be provided when available.

I first learned of Trumpler 1 in an Alan MacRobert star-hopping article that I found while skimming back issues of *Sky & Telescope* magazines at the Peoria Public Library. I have since lost my Xerox copy of that article, but I was glad to learn that it was included in MacRobert's recent book, *Star-Hopping for Backyard Astronomers*. While I first observed this object several years before the crash of Comet Shoemaker-Levy on Jupiter, this small open cluster will forever be associated with that comet. I will explain this later.

You can find Trumpler 1 very near M103 in Cassiopeia (see star chart). Start by using a low-power eyepiece and aiming your Telrad or other finder at Delta Cassiopeiae. It is the left of the two stars that mark the bottom two points of the "W" that forms the constellation. Look in your eyepiece and move your scope approximately 1° toward Epsilon, the top left point of the "W." You should easily spot M103. Continue on this line another ⅓° and you will see a bright, compact, three-star asterism (marked with an arrow).

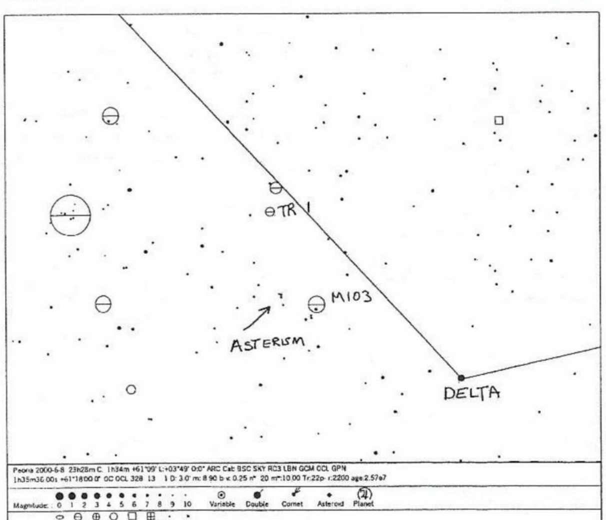
Move your scope another ½° almost due north of that asterism. You should now notice in the center or slightly east of center of your eyepiece what appears to be a small, out-of-focus dash. This is Trumpler 1. Put in a medium-power eyepiece. It looks like four or five stars packed together in a straight line. You may also see a fainter line of three stars below the first (see sketch). Keep increasing power as much as possible. At high power, the main line of this cluster definitely reminds me of the photographs of the chain of Comet Shoemaker-Levy pieces lined up in a row.

MacRobert describes Trumpler 1 as "an odd little clump — very small and dominated by a linear streak. In the 6-inch, the streak looks like nothing I've seen anywhere else in the sky, an anomaly begging for more aperture and resolution. Photographs or larger aperture show it to be a chain of stars lined up together."

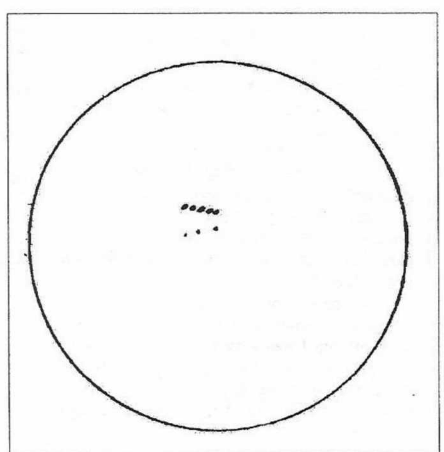
> ***...I will present a different deep sky object and help you find it....***

See if you can find Trumpler 1. Please send me comments of your observations for publication. What does it look like to you? I also welcome suggestions for future columns.

OBJECT STATISTICS:
Name: Trumpler 1
Type: Open cluster
Magnitude: 8.8
Size: 4.0
Coordinates: 1 hr. 35 min. 36 sec.; +61 deg. 18 min. 00 sec.



Star Chart: Trumpler 1 (TR 1) at center



Sketch of Trumpler 1 at 180x

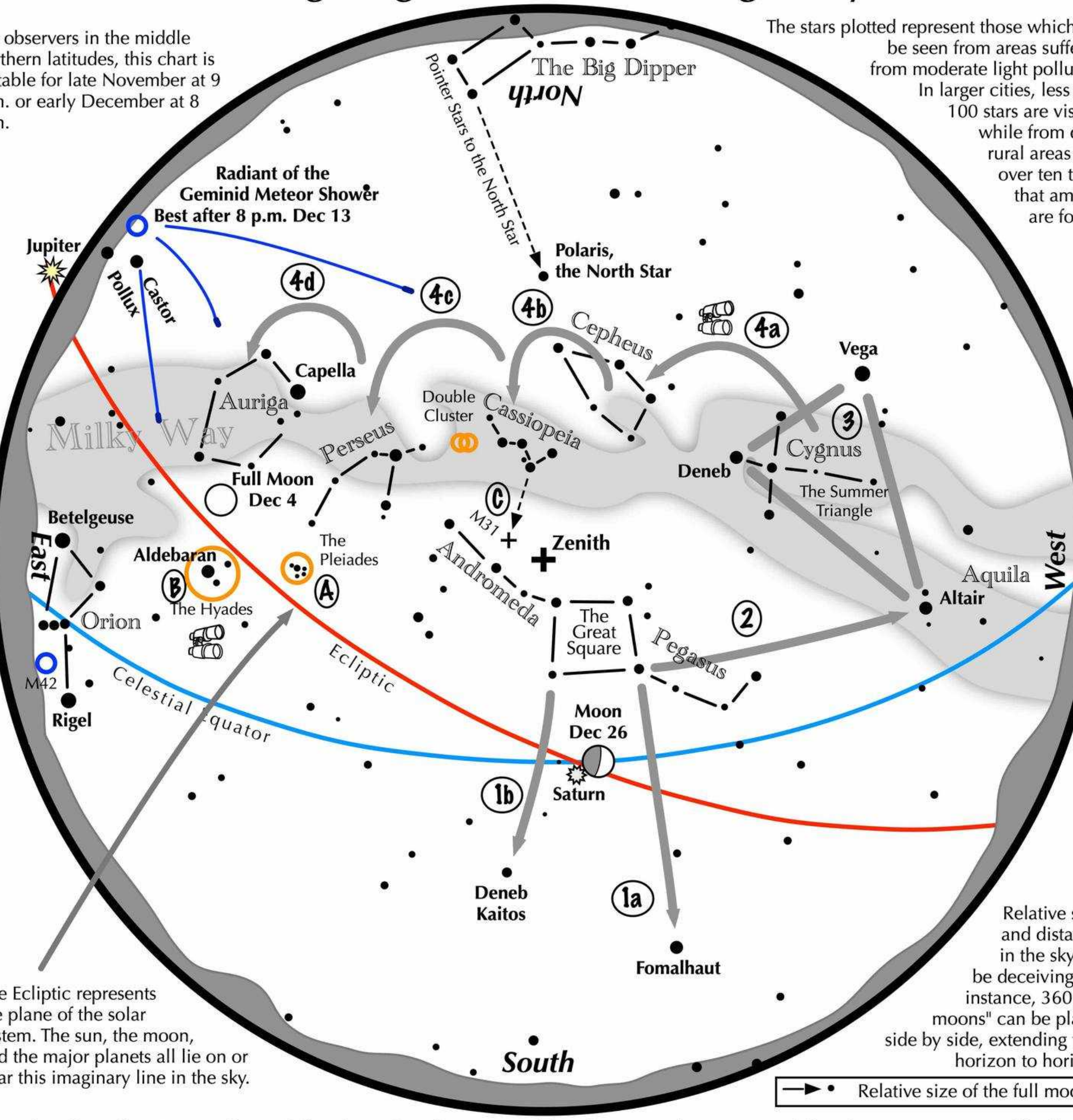
50 Years ago: *missing this issue...does anyone have a copy? Winter 1975*

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.

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IC 63 Ghost of Cassiopeia 190 hours of Seestar S30 & S50 collected from a Seestar group members and combined and edited. Permission was given to share.