



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

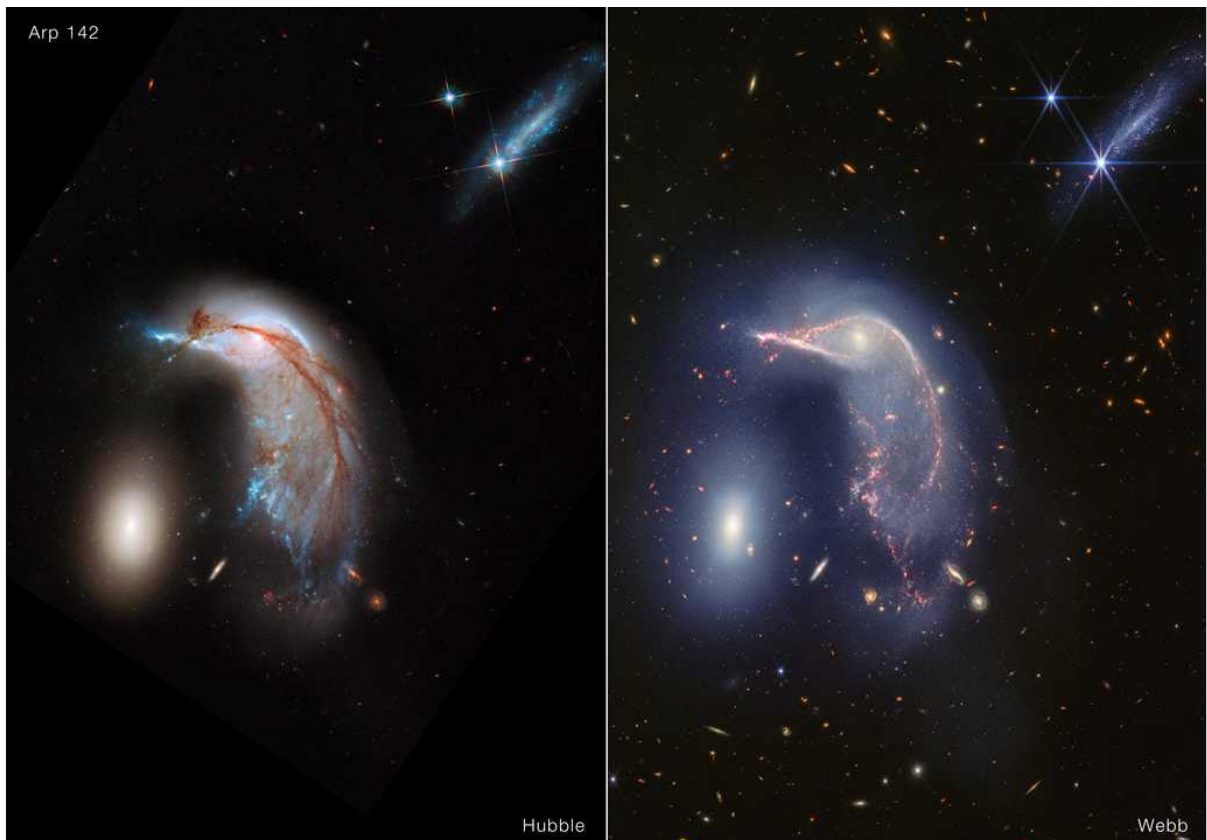
Fall, 2024

WHAT'S IN THIS ISSUE?

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25 years & 50 years ago
September Night Sky

Arp 142 Hubble versus Webb also known as the Egg and the Penguin



Officers:

President: Dan Son, sonshine1992@gmail.com
Vice-President: Jesse Hoover
Secretary: Linda Groezinger
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

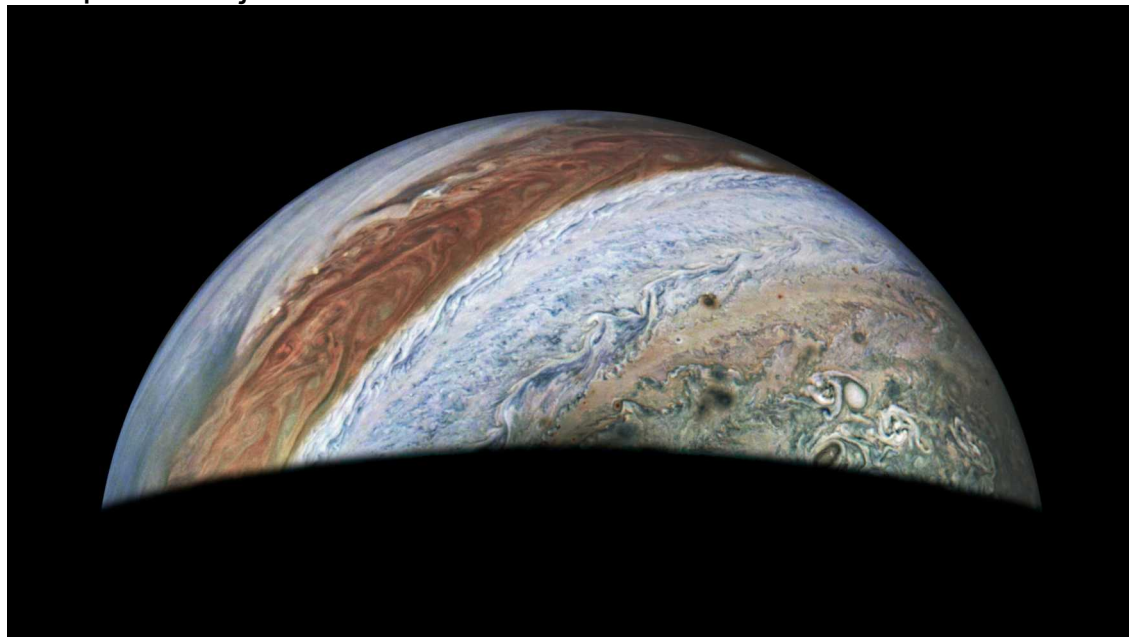
Update your address, phone or email changes

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.

2024 Meteor Shower Schedule:

The **Leonids** peak on Nov 17-18 and the moon will be 95% full. Comet Temple -Tuttle parent object.

Geminids meteor shower is Dec 13-14 and the moon will be 95% full. Asteroid 3200 is the parent object.



2024-06-13
Jupiter-Juno flyby

Presidents Ramblings:



Well fall is not officially here but it is nice to see cooler weather in the forecast. I want to thank all the members who have come out to help mowing at Jubilee and keyholders and helpers for all those Saturday nights at Northmoor. We just had the Banquet at Jubilee last night as I write this and it was a good time. It was great to see Bob Pauer at his old stomping grounds and I had fun cooking up on the grill and seeing everyone with smiles looking around and just talking. We opened up the 24 for a few to see during the daylight hours and we had lots of food to share and no one walked away hungry.

Sangamon Astronomical Society (SAS) is having their IL Dark Skies Star Party on October 3-5 of this year. <https://sas-sky.org/illinois-dark-skies-star-party-2024/> It is a wonderful time with good food and dark skies if the clouds stay away.

Northmoor is winding the year down but a lot of viewing is still left, We have the International Observe the Moon night (September 14th) coming up with the Peoria Public Library and I hope we will have a few members bring out their scope so the public can see thru them. I am also scheduling a couple of groups during the week and will be asking for help with groups of 20 to 30 coming out. Look for the emails. The planets are showing up so any member who wants to observe should call me if you don't have a key. Ask how to get a key!!

Look at the Program Schedule for September & November. September is our Potluck at Jubilee and November is a Banquet with a Great Speaker. Well time to wrap this up and I hope everyone makes it out to Jubilee Observing site and Northmoor on a dark sky night

Dan Son
President

Facts..just the Facts..

Perseverance has roved over 21 kilometers (13 miles) since it landed on Mars in 2021. But if there were a contest for long distance travel on another world, the champion would be Opportunity, which covered over 45 kilometers (28 miles) between 2004 and 2018.

Many planetary missions have given humanity much more than we asked for. NASA's Opportunity Mars rover, for example, was designed for a 90-day mission but operated for over 14 years before communication was lost in 2018.

Not all of the 43 tubes that Perseverance brought to Mars will collect rock samples. One was filled with a sample of Martian atmosphere, and five are "witness tubes" designed to document the cleanliness of the rover's sampling system throughout the mission.

"Comets are like cats: they have tails, and they do precisely what they want."
- David H. Levy

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 our Facebook page if you so desire.

<https://www.facebook.com/PeoriaAstronomicalSociety>

The Caterpillar Matching Gifts Program: Brian Hakes

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. This is especially advantageous at the end of the calendar (tax) year. This is an excellent way to support the PAS. If you can, please participate in this generous program. This 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:

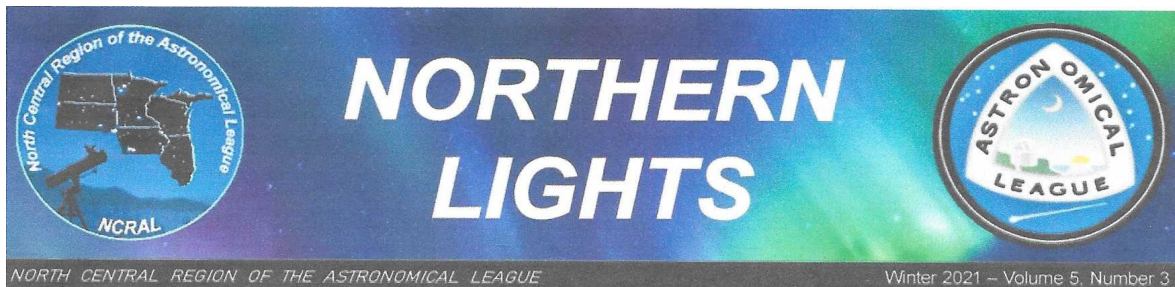
<https://www.astroleague.org/reflector>

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 2024 – 2025

October 2 Meet in the Dome at the Peoria Riverfront Museum. 7:00 p.m.

Members' Social and Sharing Session

Sharing of anything astronomical: astrophotography, new equipment, places visited or plans for visiting, internet sites found or videos viewed, books read, etc. Current Sky Summary and Planetarium show (if needed as time allows)

November 9. (Saturday evening) Meet at the Lariat Club

Fall Social and Banquet, must register in Advance, look for the emails

5:30 Social,

6:15 Dinner. (order individually (separate checks) from a limited menu, tbd)

7:30 Featured speaker: Dr. Carl Wenning

Talk Title: Fire and Ice: The Pending Collapse of Earth's Magnetic Field?

Talk Abstract: Earth's magnetic field last reversed itself 780,000 years ago, and the next reversal is long overdue. Earth's magnetic field is now both on the move and

rapidly weakening. The consequences could be profound if Earth's magnetic field entirely collapse during the next reversal. What might we expect in future years? To answer this question, the speaker will tie together such diverse topics as the auroras, plate tectonics, paleomagnetism, African tribal customs, and his recent visit to Iceland's Mid-Atlantic rift valley in Pingvellir National Park.

About our Speaker: Dr. Carl Wenning is a well-known Central Illinois astronomy educator hailing from Normal, Illinois. He holds a B.S. in Astronomy from The Ohio State University, an M.A.T. in Planetarium Education from Michigan State University, and an Ed.D. in Curriculum & Instruction with a specialization in physics teaching from Illinois State University. He was planetarium director at Illinois State University from 1978 to 2001. From 1994 through 2008, he directed the Physics Teacher Education Program at Illinois State University. After retiring in 2008, he continued to teach physics part-time for 14 years. He recently co-authored a three-volume work *Teaching High School Physics*. He serves as a physics teaching consultant worldwide, having spoken and taught in Chile, Indonesia, Mexico, and Brazil. Dr. Wenning is a 44-year member of the Twin City Amateur Astronomers. He is currently president of that group. He is also a member of its G. Weldon Schuette Society of Outstanding Amateur Astronomers. Carl was Chairman of the Astronomical League's North Central Region (NCRAL, 2017-2023). He is an Astronomical League (AL) Master Observer, received the 2007 NCRAL Region Award in 2007, and the AL's Mabel Stern's Newsletter Editor Award in 2017.

March 5 Meet in the Dome at the Peoria Riverfront Museum. 7:00 p.m.

Members' Social and Sharing Session

Sharing of anything astronomical: astrophotography, new equipment, places visited or plans for visiting, internet sites found or videos viewed, books read, etc. Current Sky Summary and Planetarium show (if needed as time allows)

May 7 Meet at Northmoor Observatory, Donovan Park, 7:00 p.m.

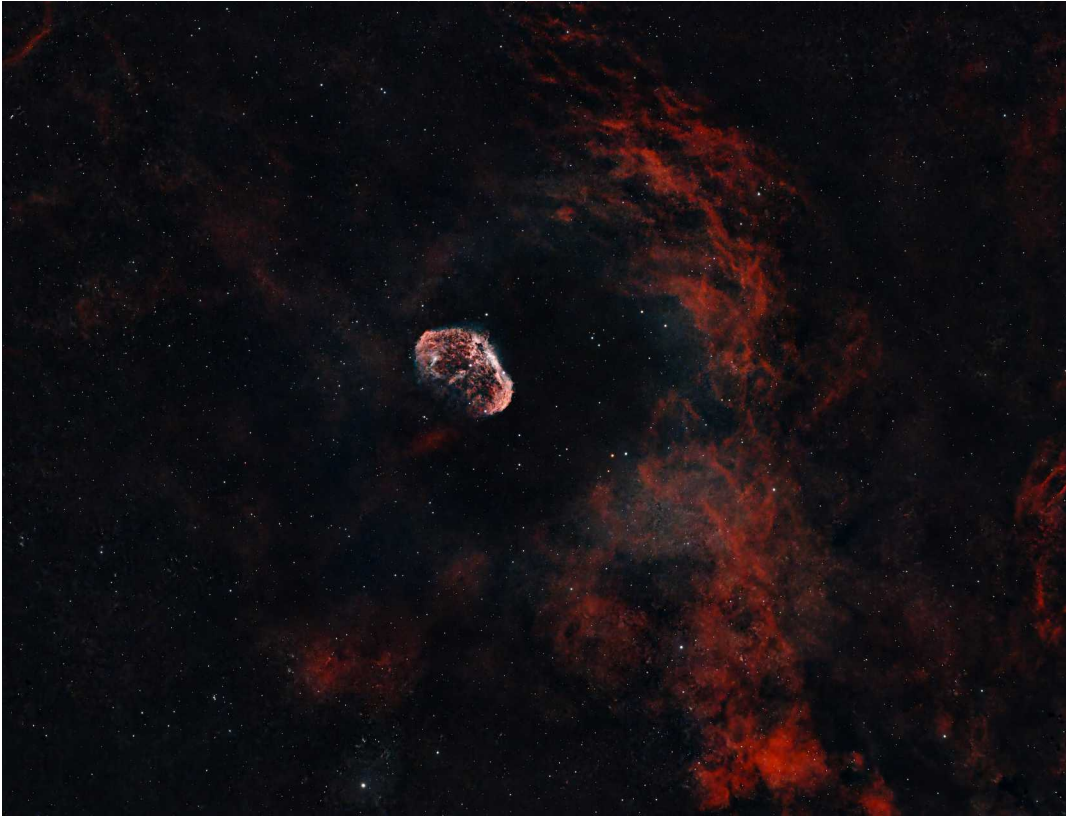
Get to know - all about Northmoor Observatory

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

Incident 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.

Photos from Members:



**NGC 6888 Crescent
Nebula by Linda
Groezinger**



NGC 6979 Pickering Triangle Linda Groezinger



When you only have a small opening in the forest..maximize the light gathering.

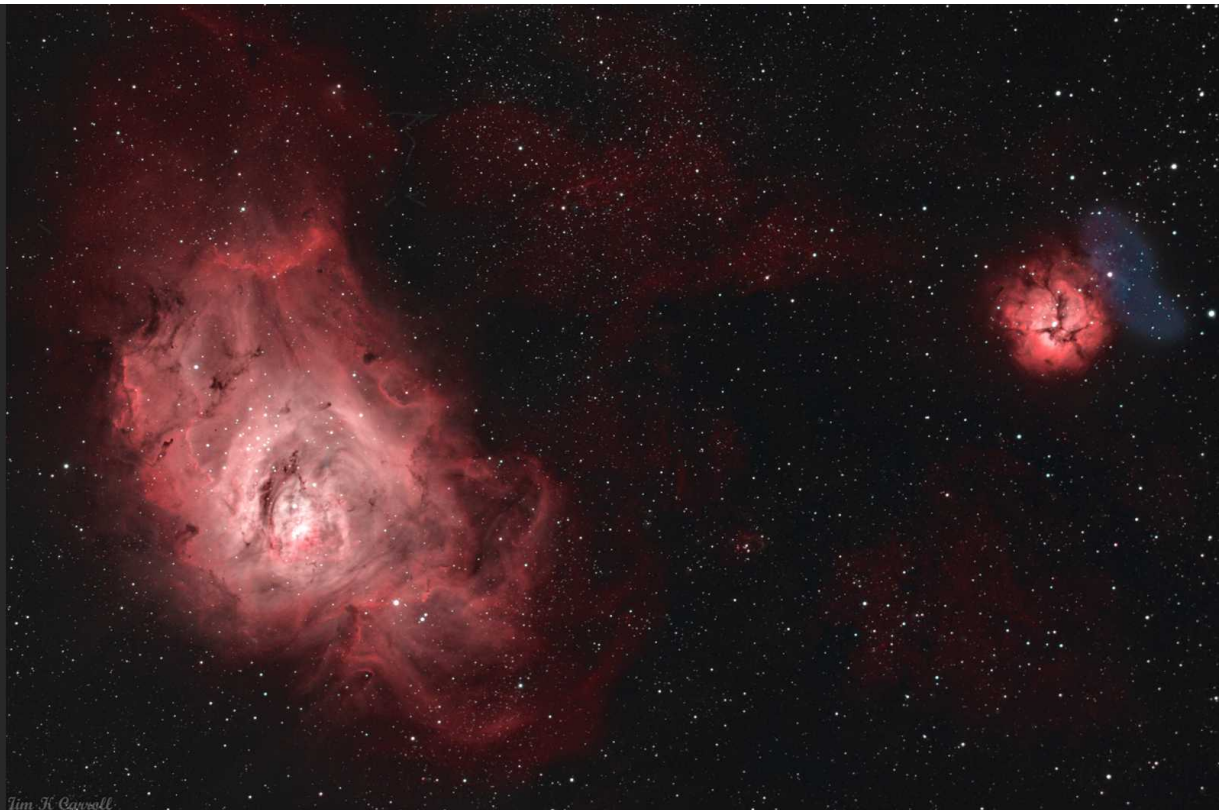
M8 Lagoon Nebula

Constellation Sagittarius
 5000 light-years from Earth
 ~50x110 light years across
 Magnitude 4.6
 90'x40' Across

M20 Trifid Nebula

Constellation Sagittarius
 4100 light-years from Earth
 ~40 light years across
 Magnitude 6.3
 28'x28' Across

- PAS Jubilee Site, No Moon
- Williams Optics 120mm Triplet
- Skywatcher EQ6 Mount, Auto-guided
- D8 Flattener/ Reducer
- 624mm Focal Length (w/reducer)
- f/5.2 (w/reducer)
- Optolong L-Ultimate 3nm H α & OIII
- ZWO ASI2600MC Duo
- 2 hr 40 minutes total exposure
- 32x5 minute subs
- Deep Sky Stacker
- Lightroom (Adjust exposure, black level, red color texture and clarity)
- Output to High Fidelity JPG Files
- Final Adjustments for On-Screen



Jim H. Carroll

Jim Carroll

Hercules Globular Cluster (M13)

Constellation Hercules
22,200 light-years to Earth
145 light years diameter
~400,000 stars
Magnitude 5.8
20 arc minutes across

Stacked Photo
All Photos (Nautical &
Astronomical Twilight)

- Peoria, Home w/Light Pollution
- Williams Optics 120mm Triplet
- Skywatcher EQ6 Mount, Auto-guided
- 0.8 Flattener/ Reducer
- 624mm Focal Length (w/reducer)
- f/5.2 (w/reducer)
- NO Filter
- ZWO ASI2600MC Duo
- 21 minutes total exposure time
- 21 x 0.5-minute sub exposures
- Deep Sky Stacker
- Lightroom TIF File
- Lightroom background color corrections, exposure, black, highlight, clarity, texture, noise reduction adjustments
- Output to High Quality JPG Files

Nautical Twilight 9:50 PM
Astronomical Twilight 10:40PM



Jim Carroll

If you look closely lower right you can spot 2 spiral galaxies.



2024-08-12

Perseids & Aurora

Nick Rae



Schickard Crater 2024-08-16 James Dire 10-inch f/12 classical Cassegrain, ZWO ASI715MC camera The images were made from stacking the best 33-50% of 500-600 video frames.

And from other Instruments:



Top of the Horsehead
Nebula by Webb
NIRCam



Uranus
close up
from
JWST

My Best Astro-Blunders by John Manny

Intrusive Lights

For many years, I lived in a rural setting in Southern Michigan. It was a pleasure to have a dark sky and freedom from nearby lights. At the telescope one night, I was bothered by a light from the cornfield behind me. I ignored it for quite a while, but it persisted. At last, I turned around and found that my annoyance was caused by the Northern Lights. A few seconds later, the aurora ended and did not return.

Don't forget...

When I was a brand-new observer, I heard many stories of people traveling to a dark-sky site, only to find that they had forgotten to pack their eyepieces. I resolved not to make this mistake, so I always triple-checked this item when I packed the car. One night, I arrived at a club event and found that I hadn't brought the telescope.

Manney's Comet?

While I was searching for an object with my telescope, I was startled to find a bright, fuzzy ball. I hadn't heard any reports of a new comet. My breath slowed and my pulse picked up as I wondered how such a bold object could have been missed by so many experts. I checked my planetarium app and found that I was looking at a globular cluster. Over 200 years ago, Charles Messier had included it in his list of comet look-alikes. After a laugh, I realized that he had compiled this list to help people like me to be a little more humble.

The Mystery of the Great Square

Some blunders are obvious, but this one was hard to solve. I was performing a "Two Star Alignment" which requires careful aim of the telescope at two known stars. This enables a digital system to locate numerous objects easily.

The Great Square of Pegasus was well placed, so I aimed at the brightest of the four stars. The system asked me the name of the star. Since it was the brightest of the four stars, I entered "Alpha Pegasi."

I was quite baffled when the system couldn't complete the alignment.

When I dug deeper into the problem, I had a surprise: Only three of the stars of the Great Square belong to Pegasus. I had picked the one which belongs to Andromeda!

Pickering Triangle NGC 6979 by Dan Son

Linda Groezinger above photo inspired me to discover more about this name of an object I love to observe..The Veil Nebula. Here is what I discovers:

The chaotic filamentary structure of the Cygnus Loop or Veil Nebula, a supernova remnant in the constellation Cygnus (SH2-103, SNR G074.0-08.6), is in full display in Pickering's Triangle (NGC 6979). The bubble of expanding glowing gas is what is left of a powerful explosion of a progenitor star estimated to be 12-15 times as massive as our Sun. Distance from Earth and the age of this supernova remnant has gone through several refinements over the years and the most recent estimate ([Fesen et al. 2018](#)) puts the Cygnus Loop at roughly 2,400 light years from Earth, with a diameter of 130 light years, and an age of roughly 21,000 years.

Pickering's Triangle was discovered in 1904 by Williamina Fleming, one of the founding members of the Harvard Computers, an all female team hired by the Harvard College Observatory director Edward Charles Pickering. The discovery was made through analysis of photographic plates. While Pickering's Triangle is the most common name for this deep sky object, following the custom at the time to name the object after the senior member of the discovery team, it is also referred to as Fleming's Triangular Wisp.

Williamina Wisp is also credited with having discovered the Horsehead Nebula in 1888 from a photographic plate made by astronomer W.H. Pickering, brother of E.C. Pickering.

25 Years ago:

Kelly Goes "Down Under" by Mike Frasca

Peoria Astronomical Society member Jim Kelly recently made "the astronomical trip of a lifetime" as he and his father spent two weeks in Australia and New Zealand. Kelly shared his adventures with other PAS members and the general public at the August 4th monthly meeting held at Lakeview Museum Planetarium.

"I have always wanted to see the southern sky," Kelly said, after reading a Sky & Telescope article about an observatory/vacation resort located "down under," he looked into booking a stay with them.

Grove Creek Observatory (<www.gco.org.au>) is located at an altitude of 3000 feet on a sheep farm in the western part of New South Wales, Australia, and is a four hour drive from Sydney. Since it is a very popular spot, especially during the dry fall season, Kelly started making arrangements in February of 1998 for an April 1999 visit during new Moon. The Observatory has several telescopes: a Celestron C-14; a 10-inch Meade LX200; and three Newtonian's (a 12.5-inch f/4, a 12 inch F/5, and an 8-inch F/7).

Kelly spent three nights at the observatory. The first night was used to become familiar with the Southern sky. "At first, I thought there were clouds in the sky, but it turned out to be the Magellanic Clouds!" The owners of a telescope and binocular shop which Jim visited while in Sydney said, "The only good thing about Northern skies is Polaris." Kelly commented, "And after seeing their skies, I would agree."

Astrophotography took up the last two nights. While he did try some prime-focus photography, the results were mixed due to the lack of a good guide scope. Kelly did his most productive work with either a 4-inch Pentax astrograph or a 90 mm Vivitar macro lens piggybacked onto one of the larger telescopes, which served as a guide scopes, with the help of an ST-4 CCD Autoguider.

His three most spectacular photos were of the Eta Carina Nebula, the Southern Cross, and the Southern Milky Way. World renowned astrophotographer Tony Hallas

processed Kelly's images. Hallas later said that Kelly's image of Eta Carina was "one of the best" he's ever seen.

Kelly and his father also spent time touring Sydney and New Zealand before returning to the States.

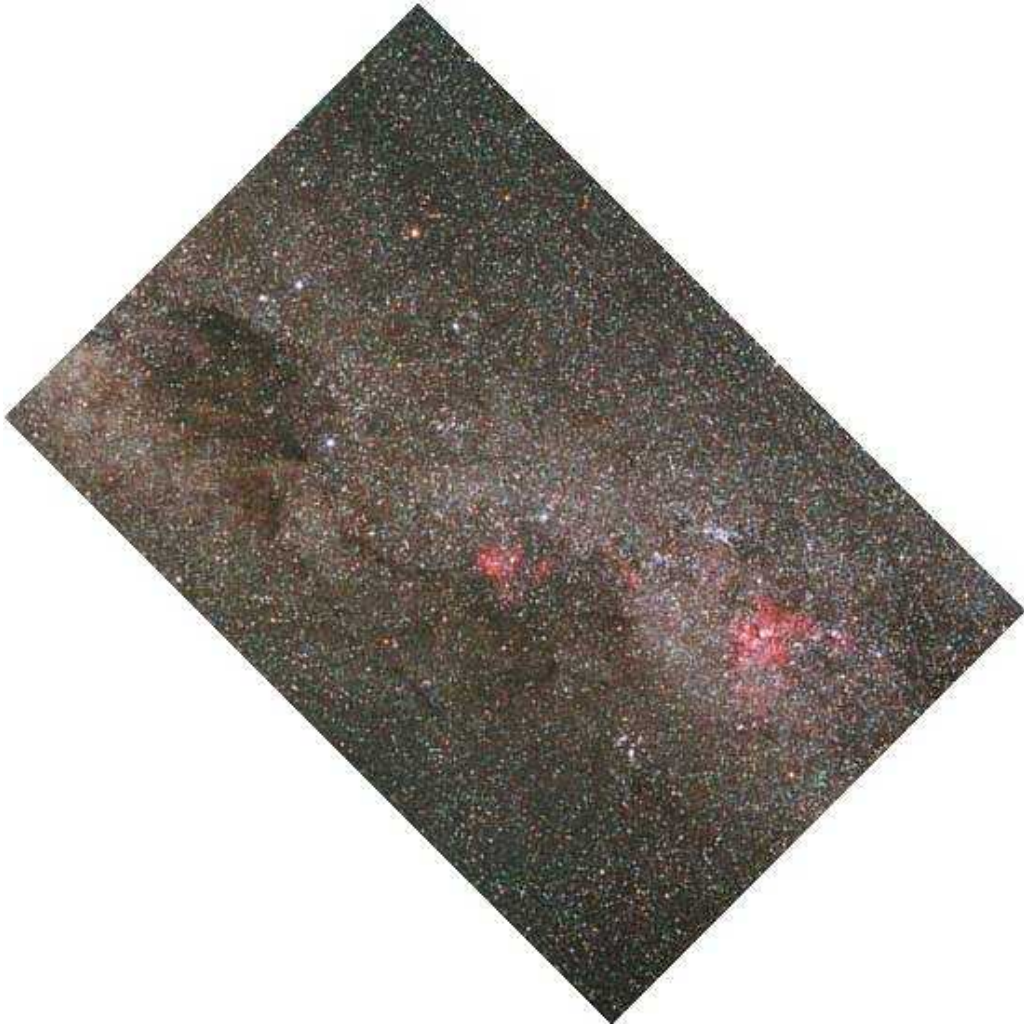


Eta Carina Nebula
f/4 Pentax 4 inch Astrograph

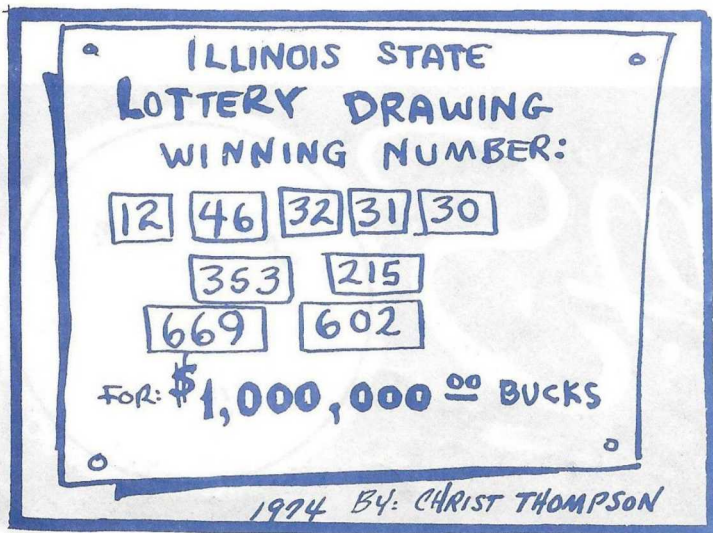


Milky Way
Vivitar 90 mm
macro lens at f/4

Southern
Cross
Vivitar 90 mm
macro lens at
f/4



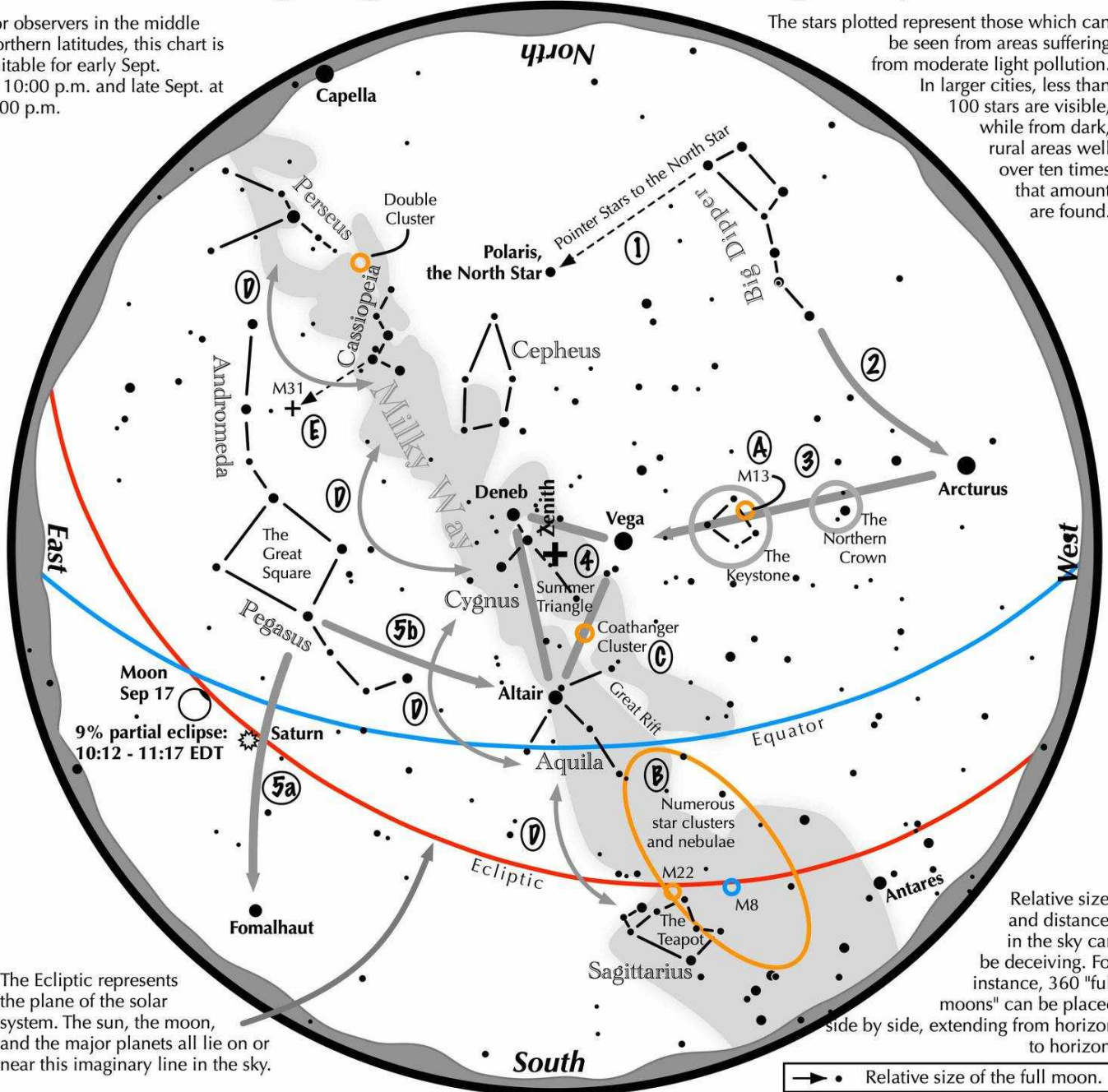
50 Years ago:



Navigating the mid September Night Sky

For observers in the middle northern latitudes, this chart is suitable for early Sept. at 10:00 p.m. and late Sept. at 9:00 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 mid September night sky: Simply start with what you know or with what you can easily find.

- 1 Extend a line north from the two stars at the tip of the Big Dipper's bowl. It passes by Polaris, the North Star.
- 2 Follow the arc of the Dipper's handle. It intersects Arcturus, the brightest star in the September evening sky.
- 3 Nearly overhead shines a star of similar brightness as Arcturus, Vega. Draw a line from Arcturus to Vega. It first meets "The Northern Crown," then the "Keystone of Hercules." A dark sky is needed to see these two dim stellar configurations.
- 4 The stars of the summer triangle, Vega, Altair, and Deneb, shine overhead.
- 5 The westernmost two stars of the Great Square, which lies high in the east, point south to Fomalhaut. The southernmost two stars point west to Altair.

Binocular Highlights

- A: On the western side of the Keystone glows the Great Hercules Cluster.
- B: Between the bright stars Antares and Altair, hides an area containing many star clusters and nebulae.
- C: 40% of the way between Altair and Vega, twinkles the "Coathanger," a group of stars outlining a coathanger.
- D: Sweep along the Milky Way for an astounding number of faint glows and dark bays, including the Great Rift.
- E: The three westernmost stars of Cassiopeia's "W" point south to M31, the Andromeda Galaxy, a "fuzzy" oval.

