



Reflections

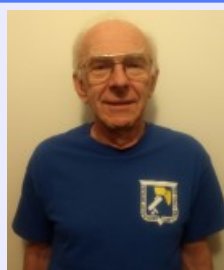
The Newsletter of the Popular Astronomy Club

ESTABLISHED 1936



June 2023

REFLECTIONS from the President



Dale Hachtel

There are now more reasons to keep looking up.

We had a good public observing session at Niabi Zoo in May, and I am writing this

just after return-

ing from an observing program at Giant Goose Conservation Area in Atkinson, where Tim, Alex, and Hugh Holt, Al Sheidler and I provided solar viewing for their Youth Day. The weather was clear, but very warm, and we looked at the projected image of the sun on the Sunspotter and saw sunspots through a club telescope with a solar filter.

We were also able to find and view Venus with the club scope. At least 50 visitors stopped by our astronomy area to observe and hear about the Popular Astronomy Club.

The long-range weather predictions seem to indicate we are in a period of improving weather for observing. This would be a good time to come to the Paul Castle Memorial Observatory, where you can bring your telescope or use the club scope in the observatory.

If you don't have a telescope, or want to try out a different scope, the club has some good scopes available

for members. Your fellow members are willing to help you learn the operation of any telescope you borrow.

Watch your email for notices of member observing sessions, which are usually announced a couple of days ahead of time when we see some good observing weather predicted.

Don't forget to make a donation to the Popular Astronomy Club through the John Deere Classic golf tournament's Birdies for Charity program. Use Bird Number 2046 at birdiesfor-charity.com/donate, to make a donation. More information is available in this issue of *Reflections*.

We have opportunities for public outreach coming up at our monthly meetings, at our Niabi Zoo public astronomy night, at the Eldridge Public Library, and at Illiniwek Campground. We have also invited members of the Black Hawk Hiking Club to participate with a sunset hike to the Illiniwek overlook, followed by an astronomy observing session in the campground.

We are also providing other astronomy education and observing sessions at Bishop Hill for their Native American Star Stories, the Silver Bell Alpaca Farm, and perhaps some astronomy programs for local Vacation Bible School programs.

Keep looking up – and keep looking for opportunities to support PAC!

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Editor receives NCRAL award

On May 6, at the annual convention of the North Central Region of the Astronomical League, I was the proud recipient of the 2023 NCRAL Newsletter Award. The award was given for the "production of the best NCRAL-affiliated newsletter," *Reflections*, a monthly publication of the Popular Astronomy Club.

While my name appears on the award certificate, I believe that this award belongs to all PAC members. *Reflections* relies on your submissions, your input, and your feedback – I can't do this alone and, thanks to the many club members who help keep this newsletter going, I don't have to.

So please keep sending the beautiful astronomical images you take through your telescopes. Send photos and information on any PAC-related events that you appear at or attend. Send articles on astronomy-related subjects, comments, information on upcoming events – anything you think might be of interest.

I'll add that this award is a tribute to our late friend, Terry Dufek, who served as *Reflections* editor before me. I am carrying on the work that he, and all past editors, began.

Remember, if you have something to share, email it to me at levesque5562@att.net. I can't wait to hear from you!

Paul Levesque

ANNOUNCEMENTS / INFO



NCRAL Seasonal Messier Marathon Program

NCRAL's Seasonal Messier Marathon observing program is NOT designed to qualify observers for the Astronomical League's Messier Observing program; the two programs are unrelated and observing requirements are quite different. In the NCRAL program, the main requirement is to quickly observe and essentially check off items from one of four seasonal lists of Messier objects as noted in the section to follow.

NCRAL recognition will consist a suitable printed certificate and a 3/4-inch enameled star pin (a different color for each season). There will be no direct cost to the membership for participating in the award program; the cost of the program (pins, certificates, mailers, postage) will be borne by the Region as a benefit of affiliation. Relevant program documents are linked below

[NCRAL Seasonal Messier Marathon Rules](#)

[NCRAL SPRING Seasonal Messier List](#)

[NCRAL SUMMER Seasonal Messier List](#)

[NCRAL AUTUMN Seasonal Messier List](#)

[NCRAL WINTER Seasonal Messier List](#)

HOW'S THE WEATHER?



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If you have questions or request,
or want more information on
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SUMMARY OF MAY PAC MEETING

The Popular Astronomy Club held a general membership meeting at the Butterworth Center in Moline on May 8 at 7 p.m.

Eleven PAC members and guests were present for the membership meeting, with another eight joining the meeting via Zoom, including guests and members of other astronomy clubs in the region. PAC Vice President Dino Milani led the meeting in the place of PAC President Dale Hachtel, who did join the meeting via Zoom.

The meeting began with a brief summation of the recent convention of the North Central Region of the Astronomical League. During the convention, Alan Sheidler was elected as NCRAL Regional Chair, while Paul Levesque received the NCRAL Newsletter Editor Award for his work on *Reflections*.

The meeting continued with member observations, as seen in the April issue of *Reflections*. Public outreach events conducted in the past month were also reviewed. Roy Gustafson reported that he and his wife, Jan, had presented a program on the StarLab Planetarium to a group of about 50 students at ROWVA Elementary School in Oneida, Illinois.

Dale Hachtel and Alan Sheidler reported that they had represented PAC at an event honoring the 40th anniversary of WQPT-TV at Old Oaks Winery in Milan. The local television station has offered PAC \$1,000 in underwriting for up to five spots a month, running from June to October, which could be brief video segments publicizing club activities. Some discussion was had on how the spots should be produced.

Dino told club members that one of the best ways to give to PAC was via donations to Birdies for Charity, the annual fund drive sponsored by the John Deere Classic golf tournament. Local charities such as PAC who receive donations through Birdies for Charity get an additional bonus of at least 5 percent.



Recent public outreach events were discussed at the meeting, including a May 1 presentation at Moline Public Library.

Telescopes are needed for a program titled “American Indian Star Stories” that will take place at Bishop Hill on July 7. Dino noted that this date conflicted with PAC’s outreach event at Silver Bell Alpaca Farm.

A schedule of upcoming events was then discussed, including a May 16 event at Moline Public Library and the May 20 observing session at Niabi Zoo. Requests have been received for a program at an upcoming Vacation Bible School at Loud Thunder Forest Preserve (note: that request has since been withdrawn) and for one at St. Mary Monastery in Rock Island on September 8.

Two visitors who attended the meeting and might be interested in club membership were introduced and welcomed.

Dino announced that the June meeting will feature a “smorgasbord” of presentations by club members. He encouraged members to create presentations for the meeting, and also said that submissions were needed for the monthly “Skywatch” column in the local newspaper.

The meeting adjourned at 7:45 p.m. The next membership meeting is scheduled for June 12 at the Butterworth Center and via Zoom.

Chip in to PAC through Birdies for Charity

If you're looking for a fair way to chip in some green to the Popular Astronomy Club, may we suggest that you give through Birdies for Charity.

Bad golf puns aside, Birdies for Charity makes your donated dollars go further. That's because local charities, like PAC, who receive donations through Birdies for Charity receive the full amount given, plus a bonus that ranges from 5 percent up to 10 percent.

Last year, PAC received \$187.25 in donations through Birdies for Charity. The overall fund drive raised a record-setting \$13.9 million in donations benefiting 481 charities.

Birdies for Charity is associated with the John Deere Classic Golf Tournament, which will be played this year July 5-9 at TPC Deere Run in Silvis.

Donations are accepted right up to the start of the tournament, but you must have your pledge in by June 16 to be entered into a drawing. The grand prize is a two-year lease on a 2023 Lexus NS, courtesy of Smart Lexus of the Quad Cities.

The winner will be whoever correctly guesses the total number of birdies that PGA

TOTAL BIRDIES BY YEAR	
2022: 2,041	2016: 1,982
2021: 1,905	2015: 1,990
2019: 2,091	2014: 2,040
2018: 2,355	2013: 2,142
2017: 1,918	2012: 2,113
No tournament in 2020 due to pandemic	

pro golfers will make during the tournament, including the pro-am on Wednesday and four rounds of medal play beginning on Thursday. In the case of ties, winners will be randomly selected.

Birdies for Charity donations can be made by going to birdiesforcharity.com, then clicking on the green "DONATE" button. Note that the minimum online donation is \$20. All donations must be made in flat amounts; donations based on the number of birdies made (e.g. one cent per birdie) are no longer accepted.

PAC's "Bird" number, under "Your Charities," is 2046. A mail-in form is also available at birdiesforcharity.com/about/pledge-forms.

MEMBER DONATIONS BENEFIT CLUB



A big "Thank you!" goes out to two members of the Popular Astronomy Club for their donations benefiting the club.

PAC member Dan Cusack donated a flat-screen television that can be used at both public and private events. The club also received yellow table covers and a blue banner marked with the PAC logo, good for both inside and outside events, courtesy of Eva Davison.

Dan and Eva, *Reflections* joins the entire club in expressing our appreciation for your thoughtfulness and generosity!

PAC represented at NCRAL convention

The Popular Astronomy Club was well-represented at the annual convention of the North Central Region of the Astronomical League, held May 5-6 at Grand Bear Resort in North Utica, Illinois. Twin City Amateur Astronomers from Champaign-Urbana, Illinois, served as the sponsoring club for the 2023 convention.

The PAC group photo was taken at the banquet that closed the convention, which featured presentations and workshops on topics ranging from past and upcoming solar eclipses to small-telescope astronomy. During the banquet, outgoing NCRAL regional chair Carl Wenning presented Paul Levesque with the 2023 NCRAL Newsletter Editor Award. Al Sheidler earned an astrophotography award in the Solar System category, while Roy Gustafson and Bryan Raser were the lucky winners of door prizes. It was also announced that Al has been elected as NCRAL chair for a two-year term, succeeding Carl.

The keynote presentation at the banquet was given by Dr. John Martin of the University of Illinois-Springfield, on what he called the “Just Wonderful Space Telescope” (aka the James Webb Space Telescope). Dr. Martin discussed some of the discoveries already made by the JWST and how it is changing ideas about the origins and early life of the universe.

The 2024 NCRAL convention will be held May 17-18 in Green Bay, Wisconsin, and sponsored by the Neville Public Museum Astronomical Society.



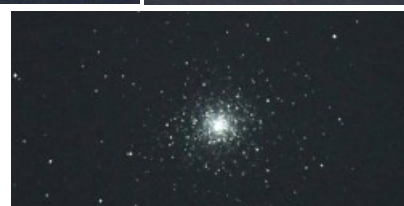
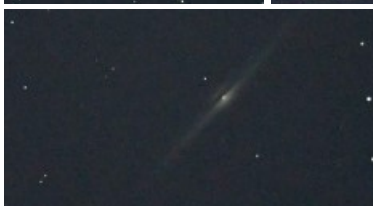
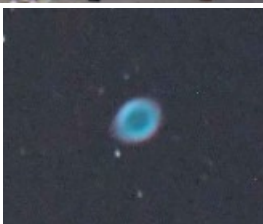
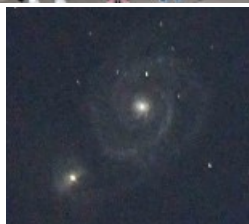
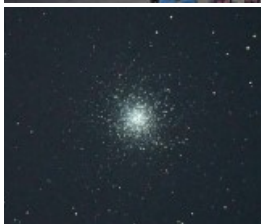
MEMBER OBSERVATIONS & CLUB ACTIVITIES



PAC performed public outreach at the Moline Public Library on May 16, under Project Next Generation. Al Sheidler demonstrated Stellarium and showed a student some of the features of a telescope available for checkout by library patrons. Dale Hachtel set up his telescope for observing; Rolando Gamino also had a scope ready for viewing.



For once, conditions were just about perfect for PAC's observing session at Niabi Zoo on May 20, a night that featured clear skies, calm winds and mild temperatures. Nine telescopes were set up along with the PACMO. Many 'oohs' and 'ahs' were heard from visitors as Mars, Venus and star clusters, galaxies and nebulae were projected onto the PACMO's flat screen monitor. PAC members supporting the event included Alex Holt, Tim Holt, Hugh Holt, Rusty Case, Rolando Gamino, Eva Davison, Pam Kollar, Dan Cusack, Dale Hachtel, Dino Milani, Wayland Bauer, Sharon Kendall-Dunn, and Al Sheidler. Shown are some of the astrophotos taken that night of (top row, from left) M13 (Hercules Cluster); M57 (Whirlpool Galaxy); M57 (Ring Nebula); (bottom row, from left) NGC4595 (Needle Galaxy) and M92.

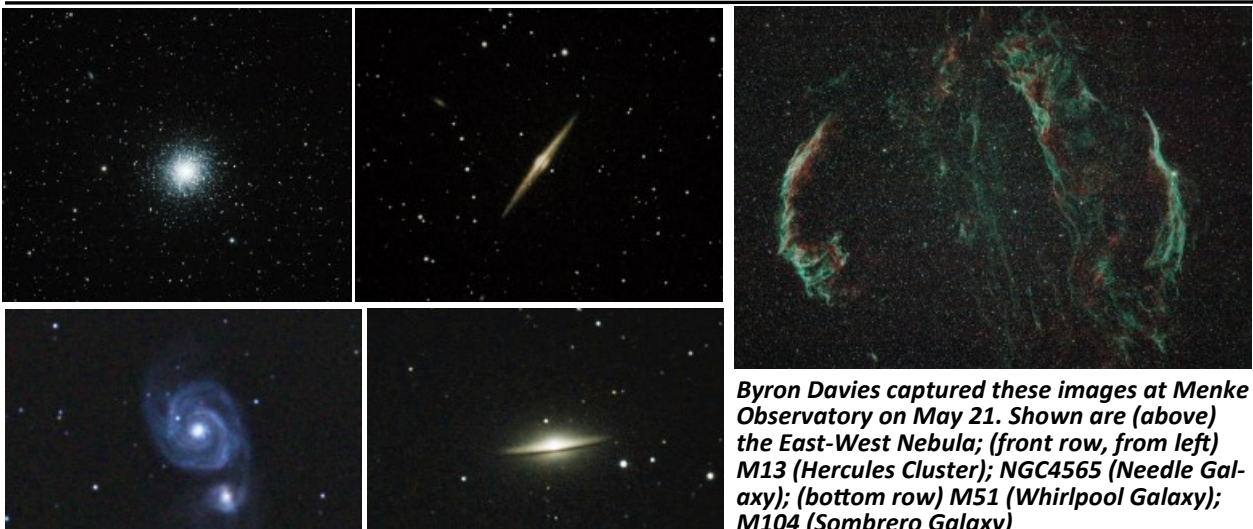


MEMBER OBSERVATIONS & CLUB ACTIVITIES



Al Sheidler and Rob McDonald met up at Paul Castle Observatory on April 26, a clear but chilly spring night. Al set up his 10-inch LX200 while Rob opened the dome and used the scope to bag some Messier objects and other targets. As of this session, Al had bagged 94 open clusters on the Astronomical League's list; his goal is to get 125 by year's end. Shown are some images captured that night, including (top row, from left) M36; NGC 1798; (bottom row) Polaris, showing it as a double star; Trumpler 14; and NGC1893.

Al Sheidler accepted an invitation from Rockford Amateur Astronomers and attended the group's May 17 meeting at Lockwood Park Observatory. Clouds and wildfire smoke made observing impossible, but Al did get a chance to check out the club's custom 10-inch Astro-Physics F13 refractor. Al is shown with (from left) Barry Beaman, Pete Minneci Jr. and club president Chuck Jansen.

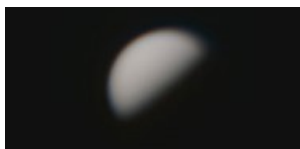


Byron Davies captured these images at Menke Observatory on May 21. Shown are (above) the East-West Nebula; (front row, from left) M13 (Hercules Cluster); NGC4565 (Needle Galaxy); (bottom row) M51 (Whirlpool Galaxy); M104 (Sombrero Galaxy)

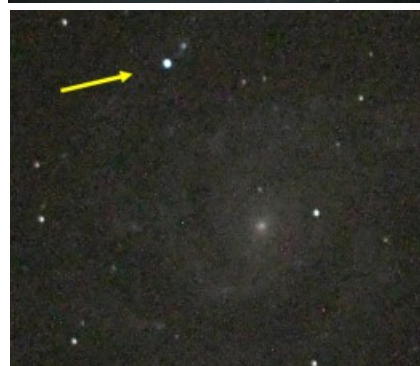
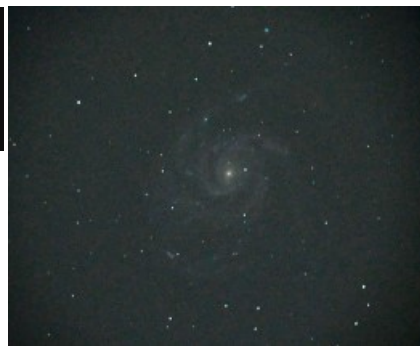
MEMBER OBSERVATIONS & CLUB ACTIVITIES



These photos of the Sun were both taken on May 23; the photo at left was taken by Roy Gustafson in the late morning, while the other photo was taken by Al Sheidler in the early afternoon. Al confirmed that the large sunspot could be seen by the naked eye when he peeked at it through a certified solar filter. Of course you should never look at the sun, with your eye or through a telescope, without using a proper filter.



Steve Sinksen, Al Sheidler and Dan Cusack met up at Paul Castle Observatory on May 22. During the observing session, Al imaged more open star clusters and captured this image of Venus in its half phase. Telescopes were turned to the Pinwheel Galaxy to observe the supernova recently spotted in the galaxy. The top image shows the Pinwheel Galaxy as it appeared in June 2022, while the image at bottom points out the supernova as it appeared on May 22.



A supernova has appeared in M101 (the Pinwheel Galaxy), and Roy Gustafson snapped a photo of it on May 21 by using Stellina and stacking 230 images. The object is designated as SN 2023ixf and categorized as a Type II supernova. It was first spotted on May 19 and has been closely observed by professional and amateur astronomer since.

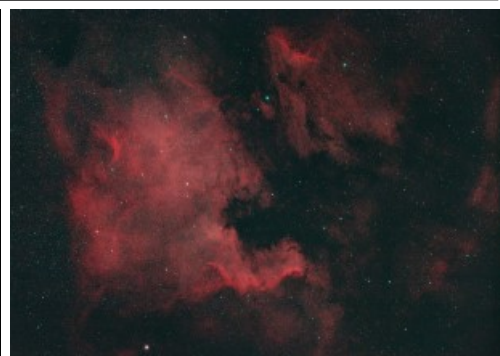
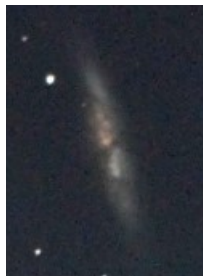
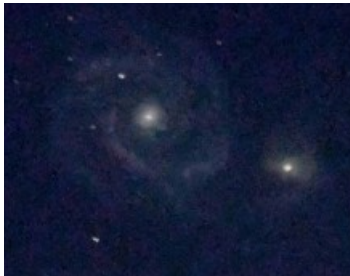


Former PAC member Mike Mack, now with the Madison (WI) Astronomical Society, sent this nice image showing the center of the M3 globular cluster taken on May 10.

MEMBER OBSERVATIONS & CLUB ACTIVITIES



Rolando Gamino, Al Sheidler and Rusty Case got together at Paul Castle Observatory on May 26 with the goal of testing a Celestron 8SE telescope recently donated to PAC. Al attached his D7500 DSLR to the scope and captured these photos of (middle row, left to right) the Crab Globular Cluster (M4); the Hercules Cluster (M13); (bottom row, from left) the Whirlpool Galaxy (M51); the Ring Nebula (M57); the Cigar Galaxy (M57); and the Pinwheel Galaxy (M101), showing the supernova at the top of the image. The proof is in the pictures; the new telescope performed well.



Byron Davies was out at Menke Observatory on May 26 and sent these photos taken during that observing session of (from left) the Pinwheel Galaxy (M101); a half-moon, showing great detail; and the North America Nebula (NGC7000).

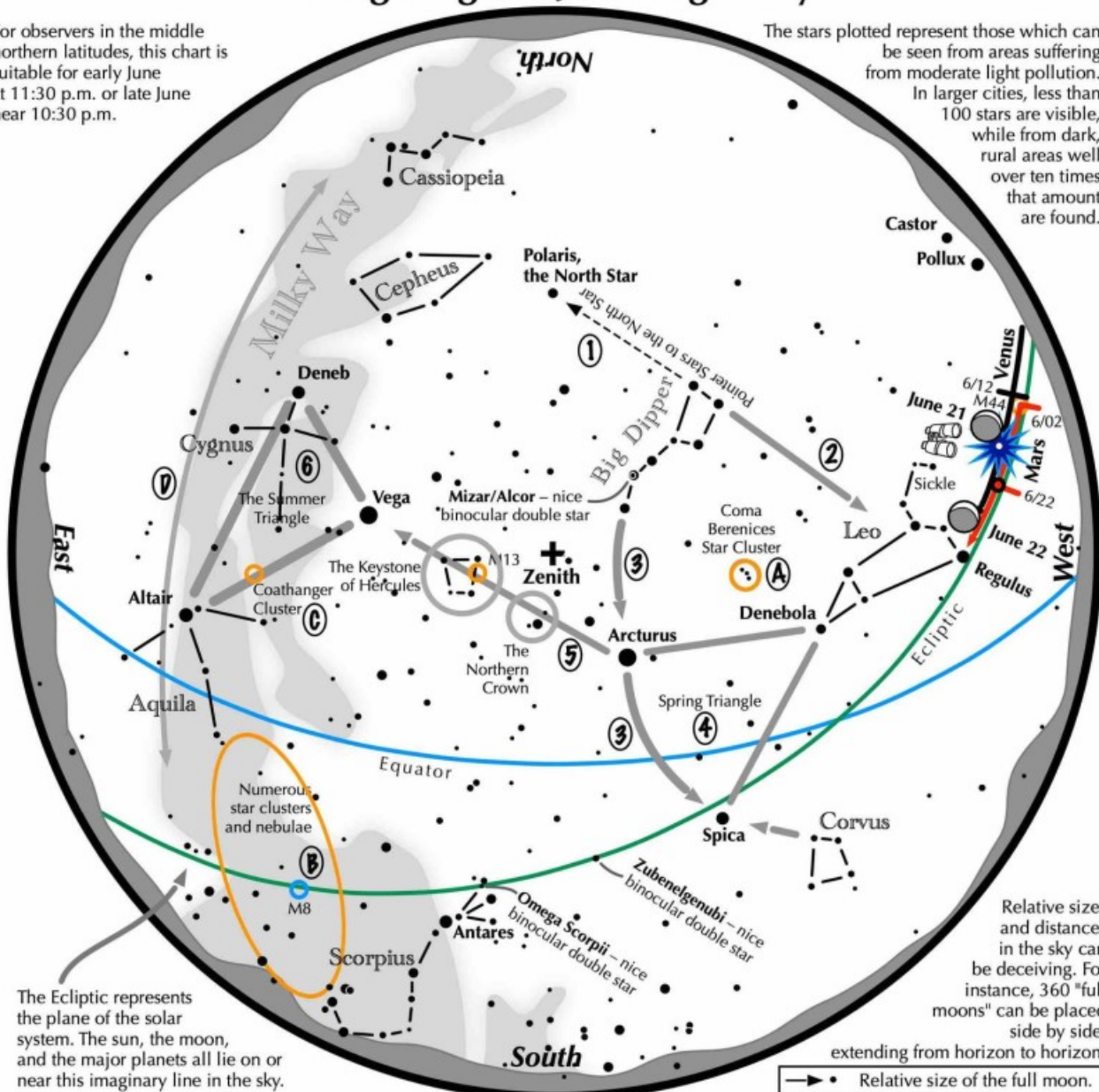
ALCON 2023 ★ JULY 26-29 ★ BATON ROUGE, LOUISIANA
Click here for more information: alcon2023.org



Navigating the June Night Sky

For observers in the middle northern latitudes, this chart is suitable for early June at 11:30 p.m. or late June near 10:30 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.



Navigating the June 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 Draw another line in the opposite direction. It strikes the constellation Leo high in the west.
- 3 Follow the arc of the Dipper's handle. It first intersects Arcturus, the brightest star in the June evening sky, then Spica.
- 4 Arcturus, Spica, and Denebola form the Spring Triangle, a large equilateral triangle.
- 5 To the northeast of Arcturus shines another star of the same brightness, 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.
- 6 High in the east are the three bright stars of the Summer Triangle: Vega, Altair, and Deneb.

Binocular Highlights

- A: Between Denebola and the tip of the Big Dipper's handle, lie the stars of the Coma Berenices Star Cluster.
- B: Between the bright stars of 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.

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





**June
2023**

Wendee Levy among the stars

Never in my life did I appreciate the peace and beauty of the night sky as I do now. It offers solace; it brings peace. And now, more than eight months since my wife Wendee's death, it is an easy reminder of why I love the sky.

Over many years, I have been reading brief poems for multiple online and personal sessions. One of my favorites is the Denver Astronomical Society, which I first joined in May of 1963 while I was a patient at the Jewish National Home for Asthmatic Children in Denver. Recently, they even elected me as their poet laureate. Like the night sky, poetry brings peace.

The days go on; I watch the news, the details of war, of debt, of artificial intelligence well beyond my own, of murder, theft, and lies. But as the Sun sinks in the west, the shadow of our planet rises in the east, and with the daily darkening of the sky comes a bigger picture.

The Universe does not care about the details; our days and years are nanoseconds in the cosmic timescale. But when we look toward the sky, with our eyes in the hope of catching a shooting star, through binoculars to make out a new pattern of stars, or with a telescope to celebrate a planet's rings or a far-off galaxy, we can enter that cosmic picture and be part of it for a brief time.

In my professional life, I have tried to connect the night sky to poetry, but those rhymes are rarely my own. I make an exception this month. Besides raising my insight and bringing me peace, I find nothing that so

stirs my heart as the joy of the night sky.

*Each day I awake; today is the day!
I look toward her, she is not there.
My heart goes on, but do I care?
Will anything – anything – let in some ray.*

*The night is dark, as dark as coal.
The sky is stars from west to east
From south to north, just like a feast
A pill, heav'n sent to calm my soul.*

*A telescope stands, it stands and waits
For my eye, it asks, "Just one brief look."
Forward through space, like an open book;
And back through time, open wide the gates.*

*I see a star; why is it there?
Lapis philosophorum, philosopher's stone
That strikes the night, it ushers me home
As part of a pattern to learn, I dare.*

*But reason not. General relativity;
Gravity's geometry, no speck of thought;
No idea works, no system bought,
A spacetime crash, to save its dignity.*

*She's part of me, a beam of light
Among the stars, in the sky a plant
Not there, but there, my soul enchant.
From grief to joy, all through the night.*



Wendee Levy, in silhouette, looking at a conjunction of Venus and Jupiter.

Look up in the sky – it's a bird!

Cygnus is easy to find and full of treasures

Bird constellations abound in the night sky, including Cygnus, the majestic swan. Easy to find with its dazzling stars, it is one of the few constellations that look like its namesake – and it is full of treasures.

Visible in the Northern Hemisphere all summer long, there's so much to see in Cygnus, and even some things that can't be seen. To locate Cygnus, start with the brightest star, Deneb, also the northeastern most and dimmest star of the Summer Triangle.

The Summer Triangle is made up of three bright stars from three different constellations. The other Summer Triangle stars are Altair in Aquila and Vega in Lyra.

"Deneb" is an Arabic word meaning "Tail." Then travel into the triangle until you see the star Albireo, sometimes called the "beak star," in the center of the Summer Triangle. Stretching out perpendicular from this line

are two stars that mark the crossbar, or the wings, and there are also faint stars that extend the swan's wings.

From light-polluted skies, you may only see the brightest stars, sometimes called the Northern Cross. In a darker sky, the line of stars marking the neck of the swan travels along the band of the Milky Way. A pair of binoculars will resolve many stars along that path, including a sparkling open cluster of stars designated Messier 29, found just south of the swan's torso star. This grouping of young stars may appear to have a reddish hue due to nearby excited gas.

Let's go deeper. While the bright beak star Albireo is easy to pick out, a telescope will let its true beauty shine!

Like a jewel box in the sky, magnification shows a beautiful visual double star, with a vivid gold star and a brilliant blue star in the same field of view. There's another marvel to be seen with a telescope or strong binoculars – the Cygnus Loop. Sometimes known as the Veil Nebula, you can find this supernova remnant (the gassy leftovers blown off of a large dying star) directly above the final two stars of the swan's eastern wing. It will look like a faint ring of illuminated gas about three degrees across (six times the diameter of the Moon).

Speaking of long-dead stars, astronomers have detected a high-energy X-ray source in

Continued on Page 13



Cygnus is high in the sky throughout the summer months and its brightest star, Deneb, is part of the familiar asterism the Summer Triangle. Among the treasures found in Cygnus is X-1, the first x-ray source to be widely accepted as a black hole; shown are an optical view of X-1, at left, and an artist's conception showing the black hole pulling material from its companion star.

UPCOMING EVENTS



Date: June 12, 2023

Event: Membership meeting @ 7 p.m.
Location: Butterworth Center / Zoom
Program: Smorgasbord of member presentations

All these events, dates and times are tentative and subject to change! Please check your emails for any

UPCOMING EVENTS

- **June 17:** Public observing at Niabi Zoo (*June 24 rain date*)
- **June 26:** Eldridge Public Library astronomy night (*June 27 rain date*)
- **July 1:** Illiniwek Campground public observing session (*July 8 rain date*)
- **July 7:** Silver Bell Alpaca Farm public observing session
- **July 7:** Native American Star Stories, Twinflower Inn, Bishop Hill
- **July 10:** Membership meeting, Butterworth Center. Subject: Extreme Astronomy
- **July 15:** Public observing at Niabi Zoo
- **July 25:** DeWitt Public Library, Westbrook Park
- **August 19:** Public observing at Niabi Zoo

Need a new t-shirt? PAC has you covered

You can't have too many t-shirts, so you'll be glad to hear that all new and current members of the Popular Astronomy Club are eligible to receive a new PAC t-shirt.

The t-shirts come in blue and yellow, are marked with the club logo on the front left side, and come in sizes medium through 4X. A free t-shirt is provided to new members of PAC; in addition, you can get a new t-shirt if you are a club member in good standing, i.e. you are current on your dues.

T-shirts were distributed at the Niabi Zoo public observing event on May 20. A box of t-shirts in various sizes and both colors will be available for club members at upcoming events.

If you're not sure if you are up to date on club dues, or want to pay your dues, contact PAC Treasurer Michael Haney at mhaney32@yahoo.com.



**Byron Davies
rocks his PAC
t-shirt at the
2021 club
picnic.**

Cygnus

Continued from Page 12

Cygnus that we can't see with our eyes or backyard telescopes, but that is detectable by NASA's Chandra X-ray Observatory. Discovered in 1971 during a rocket flight, Cygnus X-1 is the first X-ray source to be widely accepted as a black hole.

This black hole is the final stage of a giant star's life, with a mass of about 20 Suns. Cygnus X-1 is spinning at a phenomenal rate – more than 800 times a second – while devouring a nearby star. Astronomically speaking, this black hole is in our neighborhood, 6,070 light years away. But it poses no threat to us, and in fact benefits us by offering a new way to study the universe.

Check out the beautiful bird in your sky this evening, and you will be delighted to add Cygnus to your go-to summer viewing list. Find out NASA's latest methods for studying black holes at www.nasa.gov/black-holes.

Theresa Summer