NORTHERN LIGHTS

NORTH CENTRAL REGION OF THE ASTRONOMICAL LEAGUE

Summer 2024 - Volume 9, Number 1

INSIDE THIS ISSUE OF *Northern Lights*

NCRAL CHAIR'S MESSAGE

The NCRAL 2024 convention has come and gone, and it was a good one. Our hosts, the Neville Public Museum Astronomical Society, did an outstanding job and are to be congratulated. I especially want to thank Gerry Kocken and his team for hosting the convention. The program agenda and speakers were excellent, and St. Norbert College in De Pere, Wisconsin, was a lovely location for the conference. The conference was relaxed, enjoyable, and educational.

The tour of the Parmentier observatory was very interesting, with club members showing off the club's unique 30-inch telescope. There was plenty of time for networking between presentations on a range of interesting topics. Bob King's after-dinner talk highlighted a great lineup of speakers. The banquet meal was outstanding, too. Not only do amateur astronomers like to learn about science, but they also like good food and camaraderie. This is an excellent example of how a regional conference should be conducted.

This year's conference theme was *The Universe in Color*. This was very appropriate as we had numerous auroras this spring, some of which were of historic magnitude and visible even in the southern US. Bob King's after-dinner talk described the physical causes of the different colors visible in the auroras. The other speakers also had topics that aligned appropriately with the convention theme. Alison Klesman gave a talk on multi-wavelength astronomy. The rainbow colors of the visible spectrum are just one manifestation of the different wavelengths of electromagnetic radiation, and Alison's talk discussed wavelengths well above and below the visible spectrum.

Building on the theme of color, the astro-photo contest was extensive, with categories including deep space, solar system, and wide-field imaging. There were gorgeous images of recent comets, the Horsehead Nebula, sunspots, the solar eclipse, the moon, northern lights, and other examples of the beauty of astronomical objects and the creative artistry of astro-photography.

There was also a swap meet and display area with unique items brought in by attendees. Jerry Schaefer had examples of items, including a robot fabricated from 3-D printed componentry. There was also a nice meteorite display, a solar system scale model, award-winning sketches by Dick Francini, and many other items. AL vice-president Chuck Allen also brought an impressive display of chemical elements. He had samples of at least 100 chemical elements and even an example of anti-matter. Chuck also provided a talk Saturday morning on the perspectives on distance, during which he described the relative size of things from the subatomic to the gigaparsec extent of the visible universe and how we human beings fit into the scale of the universe.

During one of the other morning talks, Dick Jacobson described his specially designed 30" telescope, which he equipped with a custom-designed periscope allowing one to comfortably look through the massive telescope from the ground--no ladder required.

Holding to the conference's theme, Rodrigo Roesch discussed what he does for deep-sky imaging using a CMOS sensor. Rodrigo is a very accomplished astro-imager, and he has several examples of his work on display and submitted for the astro-photo contest.

There was also a display of astronomical sketches by Dick Francini. These sketches are impressive and fine examples of a keen eye and a steady hand.

During the awards portion of the meeting, the Northeast Wisconsin Stargazers were given the Membership Recruitment Mini-Grant, which they will use to promote their club and "sell "NEWSTAR to prospective "customers "like any small business would do to promote their product. The Newsletter Award was given to Greg Frohner and John Leeson for their work on *The Prime Focus*, Cedar Amateur Astronomer's newsletter. Matthew Ryno earned this year's NCRAL Region Award for his extensive work at the Milwaukee Astronomical Society.

This year's conference offered something for everyone: science, sketching, photography, telescope building, art, an observatory tour, door prizes, awards, good food, and camaraderie.

I enjoyed myself at this year's conference. Now I would like to hear from you. If you attended the conference, please let me know your thoughts. What did you like? What could be improved, and what would you suggest for next year's conference? If you didn't attend, why not? What would convince you to attend a future conference? Please send me a note with your feedback. My goal is to make conferences relevant and enjoyable. Your feedback will enable us to improve future conferences.

Regarding future conferences, we are still looking for a host(s) for 2025 and beyond. We have formed a committee to brainstorm what can be done for 2025. Please let me know your thoughts if you have suggestions for future conferences. These conferences are one of the many benefits of AL membership. Please let me know how we can make them more attractive to you.

Thanks, and keep looking up!

Alan Sheidler
NCRAL Chair

Vice Chair Report 2023-24 – Revising the NCRAL Bylaws

The NCRAL Bylaws were last revised in May 1974 in Burlington, Iowa. Years later, a few members noticed that the bylaws needed to be made easier to read and understand. Attempts to organize a bylaw committee were unsuccessful due to a lack of interest or time. I addressed this issue in August 2023 and initiated research to enhance the readability and comprehensibility of the bylaws document.

The objective was to simplify the critical elements of the bylaws and make them more accessible for a broader audience to comprehend. By improving the structure of the bylaws, NCRAL can enhance transparency, accountability, and well-informed decision-making. The analysis was vital to establishing a more streamlined and efficient legal framework, which can positively affect NCRAL's overall operations and results.

The latest version has been shared with the NCRAL affiliates, with the assistance of Chair Al Sheidler, Secretary-Treasurer Roy Gustafson, Regional Representative John Attewell, and former Chair Carl Wenning.

Awards Report: I received the following number of entries with the assistance of Chair Al Sheidler after reaching out to the NCRAL affiliates:

- Region Award Nominations: 2
- Newsletter Award Nominations: 2
- NCRAL Mini-Grant Membership Recruitment: 1
- NCRAL Mini-Grant for Affiliate Recruitment: 0

Yours respectfully,

Bill Davidson
NCRAL Vice Chair

Vote on Proposed NCRAL Bylaws Amendments

During the business meeting at the 2024 NCRAL convention in De Pere, Wisconsin, there was unanimous agreement to move ahead with voting on the amended Regional bylaws as proposed. These bylaws will be disseminated to each affiliate for their approval. The bylaws also may be downloaded here. Each affiliate will have one vote, and each affiliate's president should communicate their affiliate's decision about all amendments in an "up or down vote" (Yes, accept; No, reject) to Vice Chair Bill Davidson at rochesterskies@outlook.com. If rejected, please comment on any points of contention so they can be reconsidered. Approval will require a simple majority of votes cast. The voting deadline is September 15, 2024. Voting results will be announced in the Autumn 2024 issue of ***Northern Lights***."

MINUTES OF NCRAL COUNCIL & GENERAL MEMBERSHIP MEETINGS

Bemis Conference Center, De Pere, Wisconsin

May 18, 2024

COUNCIL MEETING: The NCRAL annual Council meeting was called to order at 3:30 p.m. by President Al Sheidler. Roy Gustafson, treasurer, conducted a roll call and reported that 17 out of 34 affiliates had members in attendance, so a quorum was present. Last year's minutes were published in the ***Northern Lights***, so they were not read aloud.

Al gave his Chair's report, noting that he had visited many clubs last year, including ZOOM meetings. He was impressed with the clubs' knowledge, enthusiasm, public outreach, and their observatories and planetariums.

Al reported that 20 members received Astronomical League outreach awards, and 57 completed their observing programs. Since the inception of this program, sixty-five members have been given the NCRAL Mini-Messier awards. Carl Wenning said two of his club's members recently qualified for the Messier Silver award for observing at least 103 Messier objects in one night.

Sixty-six libraries in NCRAL have now received library telescopes, and seventeen clubs publish newsletters. Carl publishes the NCRAL newsletter (***Northern Lights***) quarterly, and the NCRAL blotter is sent monthly to all the clubs.

Al reminded the members to use our website's Speakers' Bureau list when looking for speakers for club meetings. He also asked them to let him know if they had a recommendation to add to the list.

Al asked that you let him know of any changes to the website; Jeff Setzer is the webmaster. Al thanked his wife, Sara, for keeping up the NCRAL Facebook page, which has 435 followers.

Al reported that the Region grew from 1,900 to 2300 members, and we added one new club – The Planetary Studies Foundation. Al showed graphs of the number of affiliates per state in the Region and the number of members.

GENERAL MEMBERSHIP MEETING: Under new business, an election was held for the office of Secretary/Treasurer. Following a final call for nominations, Roy Gustafson was re-elected Secretary/Treasurer for two years (2024-2026).

Bill Davidson, Vice-Chair, reported on grants and awards. He said there were only five nominees. He reported that the NCRAL officers have been working on updating the NCRAL bylaws since they have not been revised since May 1974. The members can view these changes online. President Al Sheidler said the intent is not to change the bylaws drastically but to make them clearer and "clean up" the language. Al said he would reach out to clubs for a vote.

Roy Gustafson, treasurer, reported a balance of $8,877.48 at the end of the fiscal year (June 30, 2023).

A committee was formed to help find a location for next year's convention (2025) and to investigate finding a central location to host each convention. Carl said three clubs expressed interest in hosting the 2026 Convention.

John Attewell, Regional Representative to the National Council, reported that the Astronomical League recently approved updates to their bylaws and raised their annual membership dues after much discussion.

The meeting was adjourned at 4:30 p.m.

Roy Gustafson
NCRAL Secretary/Treasurer

TREAUERER'S REPORT – JULY 1, 2023, THROUGH MAY 18, 2024

Roy Gustafson NCRAL Secretary/Treasurer

Check #	Date	Description	Check Amount	Deposit	Daily Balance	Monthly Balance
	1-Jul-23					$8,877.48
1031	9-Sep-23	Al Sheidler (attend AL Convention)	$250.00		$8,627.48	$8,627.48
1032	7-May-24	Carl Wenning (2024 NCRAL Region Award Plaque)	$68.49		$8,558.99	$8,558.99
~~1033~~		VOID				
1034	7-May-24	Northeast Wisconsin Stargazers (Mini-Grant)	$250.00		$8,308.99	$8,308.99
1035	18-May-24	Jeff Setzer (Website)	$96.00			$8,212.99
1036	18-May-24	Cedar Amateur Astronomers (Newsletter Award)	$50.00		$8,162.99	$8,162.99
					Net Change	**-$714.49**

SPEAKERS BUREAU

The leadership of the North Central Region proudly announces the beginning of this new service. The brainchild of NCRAL Chair Alan Sheidler, the NCRAL Speakers Bureau will facilitate the acquisition of professional speakers for meetings and other events for our Region's affiliates. Many individuals have indicated a willingness to serve as speakers. Most speakers are available for presentations over Zoom, though some might also be willing to attend club meetings and other events. Please contact the speaker directly through our NCRAL Speakers Bureau listing to arrange a presentation. Speak with them frankly about arrangements, including accommodations, meals, travel expenses, and honorarium, if any.

NCRAL 2024 Convention Images

The massive 30" f/13.2 Cassegrain telescope at Parmentier Observatory with Andrew Salata (Naperville Astronomical Association) looking on.

At the Parmentier Observatory were Jim Dole (Planetary Studies Foundation), Sara Sheidler (Popular Astronomy Club), Andrew Salata (Naperville Astronomical Association), and from Neville Public Museum Astronomical Society: Dick Francini, Ted Kordes, and kneeling Mike Monfils.

A miscellany of convention images including shots of Gerry Kochen (Convention Chair) and Chuck Allen (AL Vice President)

Photos of Parmentier Observatory & St. Norbert College in De Pere, Wisconsin, location of NCRAL 2024. Photos courtesy of Matthew Ryno.

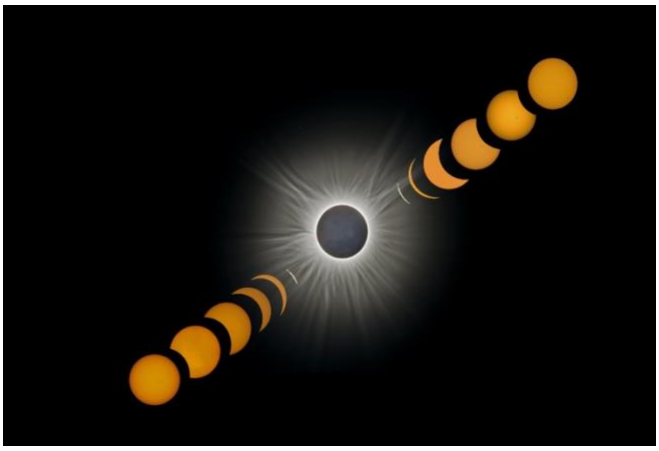
Dan Sheber accepted the Membership Recruitment Mini-Grant for Northeast Wisconsin Stargazers.

John Leeson received the Newsletter Editor Award for himself and co-editor Greg Frohner for their work on The Prime Focus, Cedar Amateur Astronomers newsletter.

NCRAL 2024 GROUP PHOTOGRAPHS DE PERE, WISCONSIN MAY 17-18

Gerry Kocken (NPMAS president and conference emcee) kicks things off.

Rodrigo Roesch (NPMAS) with his image of the Horsehead and Flame Nebula. Rodrigo's image won the deep sky category of the astro-photography contest.



Rodrigo also won the Solar System category with this composite of the April 8th solar eclipse.

Matthew Ryno (Milwaukee Astronomical Society) poses with various examples of space suits and Star Wars models Jerry Schaefer (NPMAS) made using 3D-printed components. Matt received this year's coveted NCRAL Region Award.

Wendy Dvorak (NPMAS) won the Wide Field nightscape astro-photo category with this gorgeous iPhone image of the recent northern lights display.

Attendees at the buffet. Banquet speaker Bob King is on the right.

Al Sheidler (Chair), Bill Davidson (vice-chair), Roy Gustafson (secretary-treasurer), and John Attewell (Regional Representative to the Astronomical League) make reports to the attendees of the NCRAL business meeting.

TOTAL SOLAR ECLIPSE SWEEPS REGION FOR SECOND TIME IN SEVEN YEARS

~ by Carl Wenning, TCAA; Robert Baer, AASI; & David Leake, CUAS ~

For the second time in less than seven years, the North Central Region – and Illinois in particular – was graced with a total solar eclipse. Following the August 21, 2017, eclipse, the April 8, 2024, event was just as spectacular. Some observers were fortunate to be located in southern Illinois, where they were able to experience two total solar eclipses from the same location, six years, seven months, and 18 days (2,422 days) apart.

While many individuals and small groups from across the Region tried to drive to observing sites within the eclipse path, most of those who did so held private observing sessions or small gatherings with family members or friends who lived in or near the path of totality. Three of our regional affiliates reported making it a big event.

The **Twin City Amateur Astronomers** of Bloomington-Normal in Central Illinois assembled a group of 26 observers to travel to the centerline adjacent to Shawnee National Forest near Ozark, Illinois, where they presented a three-day program for some 600 observers. They had done so similarly in 2017.

The TCAA presented an educational program at Camp Ondessonk, a renowned residential youth summer camp established in 1959 upon a bucolic 983-acre tract. The program ran April 6-8. Over the course of two days, TCAA members presented ten different talks a total of twelve times (*The April 8, 2024, Total Solar Eclipse* and *Safely Witnessing a Total Solar Eclipse* were repeated) as well as a panel discussion of experienced eclipse chasers. The TCAA also hosted two nighttime observing programs and a daytime solar eclipse viewing session. The schedule was frenetic, with special programs for premium and regular guests.

TCAAers began arriving on site as early as Friday, April 5. They encountered thunderstorms and continuous clouds until Sunday evening, when the sky opened. The first observing session was held on the front deck of the camp lodge while hemmed in by thunderstorms around the horizon. Observing continued until 10 p.m. Conversations continued into the night in anticipation of the coming event. By midnight, fog started to form.

An overcast sky and heavy fog greeted observers on the morning of the eclipse. Two passenger buses coming in from St. Louis reported clear blue skies, much to the delight of all. The sky began to clear as if on cue around 10:30 a.m. on Eclipse Day. By noon, the sky had almost entirely cleared, with only whisps of cirrus clouds remaining.

The TCAA hosted a three-day-long event with numerous talks and observing sessions at Camp Ondessonk near Ozark, Illinois.

The sky was sunshiny and warm for the main event that started at 12:43 p.m. and lasted for 2 hours and 35 minutes at that location. Viewers experienced 3 minutes and 49 seconds of slightly obstructed totality. Regardless, a small but intense corona was visible, along with two large prominences. Venus and Jupiter were plainly visible, but the sky was not dark and transparent enough to show stars. Post-totality eclipse viewing lasted until the moon slipped its surly bond with the sun at 3:19 p.m.

That evening, after most of the guests had left the site, TCAAers who chose to stay until the next day participated in a celebratory wiener roast around a campfire where family members from as far away as Oklahoma also made s'mores. With a beautifully clear sunset, campers took the opportunity of another observing session under the exceptionally dark skies. Then, by 10 p.m., stratus clouds formed in place, and the viewing concluded.

Members of the **Astronomical Association of Southern Illinois** (AASI) were also involved in eclipse festivities and observations in the Region. Bob Baer, AASI board member and a staff member in the School of Physics at Southern Illinois University (SIU) Carbondale, played a major role in several events and research activities around the eclipse. Southern Illinois included three NASA and NSF-funded Dynamic Eclipse Broadcast (DEB) Initiative observation sites led by AASI members at Giant City State Park, Unity Point Middle School, and SIU Carbondale.

The sites collected citizen science data on the solar corona as part of a North American network that included 82

observation teams in and out of the path of totality. Sites streamed public imagery and video back to events and broadcast from SIU Carbondale on April 8, including a large group observation and STEAM-themed educational show to a capacity crowd in Saluki Stadium. The broadcast, *Eclipse 2024 Live from Saluki Stadium,* and archived telescope feeds are available on YouTube @NASASolarSTEAM.

On Eclipse Day, the SIU campus hosted four days of events and had an estimated 30,000 visitors in partnership with NASA, the Adler Planetarium of Chicago, Johns Hopkins University, and others. Baer reported that weather reports a week out from the eclipse drove additional visitors and research teams to take advantage of the area's infrastructure and observation locations.

The second total solar eclipse over the Region allowed SIU Carbondale to host visitors worldwide, including the Illinois Governor and several science teams. According to Baer, the experience in 2024 was different, with the university being more prepared. “We took advantage of experience gained in 2017 to acquire several heliophysics engagement and research grants that will carry us forward through 2026. The grants allow us to carry on our solar science study and engage the world through additional hybrid astronomy events and broadcasts.

Eclipse volunteer and SIU Physics graduate student Aryan Iliat checks out the eclipse minutes before totality at Saluki Stadium, SIU Carbondale. Photo credit, Corey Tester.

In addition, we avoided much of the hype surrounding the Region for the 2017 eclipse and focused on providing enriching community events for visitors. Unlike in 2017, a large number of people stayed in the stadium and on campus to enjoy activities after the eclipse that included an eclipse art reveal and continued telescope feeds from H-alpha, Calcium-K, and white light telescopes on the video scoreboard inside the stadium.

We look forward to our next community event, the Southern Illinois Star Party, in October 2024.”

Members of the **Champaign-Urbana Astronomical Society** ventured toward multiple compass directions for the 2024 solar eclipse. We had a couple of members head to Texas, four to southern Illinois, and several to Indiana. The “official” club observing location was Olney, Illinois. After looking at maps for small towns in the totality zone with city parks, Olney jumped out.

Two club members visited a year before the eclipse and talked to Mayor Mark Lambird. Mayor Lambird had taken his kids to Carbondale in 2017, so he “got it.” He took the club members in his pick-up truck and provided a city tour. A white squirrel was even spotted! The Olney City Park had many trees and overhead wires, but Musgrove Park was perfect in the north-central part of town. Musgrove was a sports complex boasting a half-dozen ball diamonds, a soccer field, and a pool. We worked with Caiti Lambird, director of the Olney Chamber of Commerce, to get permission to use a soccer field.

The CUAS sported a tent and association sign during their solar eclipse event at Olney, Illinois.

Olney offered an “eclipse festival” on the Saturday before the event, complete with entertainment and food. They called it the “White Squirrel Blackout.” A few CUAS members took the two-hour trip down the night before and stayed at one of the two campgrounds just north of town. Most members made the trek the morning of the eclipse. We soon learned that a heavy rainstorm on Sunday turned the soccer field into a shallow lake. We ended up setting up just beyond the outfield fences on higher ground.

There were several tents, one displaying the club banner and many telescopes and projection devices. We were joined by a group from DePaul University and a bus of college students from the University of Illinois Department of Aerospace Engineering. The former group (about 30) launched a weather balloon just before totality. The engineering students provided activities for the kids. Two Parkland College buses brought roughly 25 students to join us. Though only a guess, there were approximately 300 people scattered throughout the park. Mayor Lambird came by and

thanked us for coming. The "locals" were amiable and welcoming.

The eclipse was spectacular. About 20-25 members and their families witnessed the event. Some high cirrus clouds made some hydrogen-alpha images dark, but the totality was terrific, with an obvious shadow approaching us from the southwest. Many used pinhole projectors, such as colanders, pegboards, and even a straw hat.

The traffic wasn't "great" on the way home, but it was better than in 2017. Some went the back roads but encountered four-way-stop signs with traffic coming from Indiana.

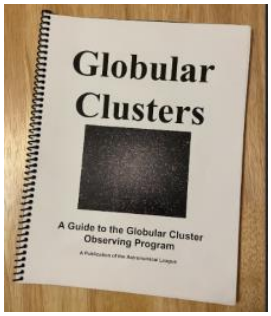
OKAY, THE SCOPE'S OUT. NOW WHAT?

It's a Great Time to Get Started on an Astronomical League Observing Program!

Bob Kerr, AL Observing Coordinator*

Bob has been an Astronomical League Observing Coordinator for 15 years, is the Globular Cluster Observing Program manager, and has authored and managed the Binocular and Advanced Binocular Observing Programs.

Astronomical League (AL) membership provides important benefits that add to our enjoyment of amateur astronomy. Undoubtedly, our opportunity to participate in its 123 observing and imaging programs is the most exciting. These varied programs are designed for every proficiency level, from beginner to advanced, and every observing interest from the solar system to the Milky Way - and beyond. Each thoughtfully structured program follows a theme, such as the Messier objects, lunar features, constellations, and carbon stars, and presents in-depth background information that often guides us through challenging observations to discoveries. Informational guidebooks covering many observing interests are available from the AL Store. We increase our knowledge as we observe.



Guidebook

Special Challenge Awards also recognize uncommon astronomical events, such as the 2012 transit of Venus and the recent 2024 total solar eclipse. A fascinating Challenge Award opportunity awaits in the anticipated eruption of the Nova T Coronae Borealis, which is expected to occur between now and September (if it hasn't already by the time you read this). Information about this, the AL programs and awards, and more may be found on the newly designed website, astroleague.org.

Additionally, and importantly, during an observation program, we will likely find new ways to maximize the performance of our binoculars and telescopes, whether visually or imaging, as well as our naked eyes. (Warning: now and then, members have even felt the need to add a new eyepiece or filter set to improve their observing experience!) Whether or not you choose to participate in an AL program now, you'll find their extensive observing lists are handy references to help you select interesting new targets. For example, we all have our favorite "showpiece" Messier globular clusters to routinely check out or highlight at public star parties. However, the comprehensive Globular Cluster Program Observing List and optional Guidebook include a broad range of 190 clusters that reveal how unique in structure this class of object truly is.

Our self-paced completion of a program is recognized with an award certificate suitable for display or framing and an attractive lapel-type pin. Awards are published in the AL's *Reflector* magazine and the searchable online database. Check out the mouth-watering menu of all the observing programs and their award pins on the AL website noted above.

Award Certificate

Within the last decade, amateur astronomy equipment, practices, and terminology have advanced far beyond those that existed when many observing programs were introduced. The following summary defines how the AL understands today's terminology in its programs. The accompanying pins represent those awarded with the completion of an observing program in this category.

* Bob Kerr is the Astronomical League Observing Coordinator and coordinates the Binocular Double Star, Advanced Binocular Double Star Program, and Globular Cluster Observing Programs. He is the author of recent articles for the Reflector and Gemini (the MAS newsletter), and of course, he is a member of the Minnesota Astronomical Society.

*Manual Observation** Some of our Observing Programs require the observer to do their observations manually. This means no "Go-To" or "Remote Telescopes" may be used. You are being encouraged to use star charts in paper or electronic form as sources of information to aid you in star-hopping or similar techniques. You may use powered mounts as long as you meet the other requirements.

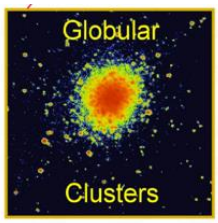
*Go-To Telescope** A telescope or device that assists the user in pointing the telescope to search for and locate an object. These include computer-controlled telescopes, telescopes with setting circles that either electronically or manually indicate the Right Ascension and Declination of where the telescope is pointing, as well as any other device (computer, tablet, or phone, etc.) that is used at the telescope to either point the telescope or indicate where the telescope is pointing.

Herschel Pin

*Remote Telescope** A telescope where the observer is not responsible for its maintenance and operation. Regardless of location, a telescope owned by the observer is not considered a Remote Telescope. Suppose an Astronomical League Observing Program allows the use of a Remote Telescope. In that case, it means the member must submit a request for an image, which must be done specifically for that member. The member must specify exposure times and request specific filters as needed. This includes telescopes where you "buy" time and control the telescope during that time slot and request a specific image be taken for you. Still, some telescope operators control the timing to optimize telescope use.

Local Galaxy Group & Neighborhood Pin

*Electro-Enhanced Telescope (ET)** This is electronically enhanced. These telescopes are designed to automate astronomy fully. They can usually be set up, turned on, and controlled from a phone/computer. They find objects, do plate solving to ensure they are in the right place, and then take images, stack them, and deliver them to your phone/computer. Even if the telescope has a feature resembling an eyepiece, it is usually a miniature screen. These telescopes are considered a form of imaging and are only acceptable for Observing Programs that allow imaging. They are not considered Remote Telescopes since the observer operates them directly.



Globular Cluster Pin

***Binoculars vs. Binocular Telescopes** Many AL Observing Programs are binocular programs. Others are telescope programs. How do Binocular Telescopes fit in? What about Bino-Viewers? A Binocular Telescope is an observing device with two optical tubes and two eyepieces, where the eyepieces are not fixed and can be replaced with eyepieces of different focal lengths (these are not "Giant Binoculars"). Bino-Viewers have a single optical tube and two eyepieces. Bino-Viewers and Binocular Telescopes may be used in any telescope-based observation programs. They may not be used in binocular programs. A binocular is a device with two optical tubes and two fixed eyepieces. (IS or image-stabilized binoculars are permitted and highly recommended.) Binoculars may be used in any Observing Programs requiring telescopes or binoculars, but most binoculars do not have sufficient magnification to replace telescopes.

Messier Pin

Binocular Double Star Pin

*Night-Vision (NV) Eyepieces and Devices** These use technology to enhance the view in real-time electronically. This is commonly done by "intensification," which especially enhances the reds and near-infrared parts of the spectrum. Many of the Observing Programs allow the use of these devices. If the device takes images or is used in the optical path for imaging, it is considered imaging and only acceptable when an Observing Program allows imaging.

Master Imager Pin

Instructions and requirements for Observing Programs on the AL website are intended to be complete. However, please check before beginning if you have questions about a program. Ask for clarification from your club ALCor (Astronomical League Correspondent), your club Observing Coordinator, or the Coordinator of the Observing Program itself, whose contact information accompanies the program's description on the AL website. They'll be glad to help.

I wish you an abundance of glorious photons under a clear, dark sky. Enjoy the universe. It's yours to explore.

CEDAR AMATEUR ASTRONOMERS

~ Alan Sheidler, Popular Astronomy Club ~

As Regional Chair, I was invited by Cedar Amateur Astronomers program coordinator Noha Reda to attend their Saturday evening public observing night on April 27. Here is my report on that event.

The CAA hosts Saturday Public Observing events featuring a guest speaker that is followed by observing through telescopes (weather permitting) at the Eastern Iowa Observatory and Learning Center located on the grounds of Palisades-Dows Preserve, near Cedar Rapids, Iowa. I attended CAA's Public Night on the evening of April 27, during which AL Vice-President Chuck Allen was the featured speaker. Chuck's *Perspectives on Distance* talk presented the relative and possible distances achievable by space flight and by telescopic observations by amateur and professional astronomers. The program examines the scale from the human altitude record to the four cosmological horizons and is supported by multiple props and models. The program answered the most significant questions about the universe: How far can we see, and how big might it be?

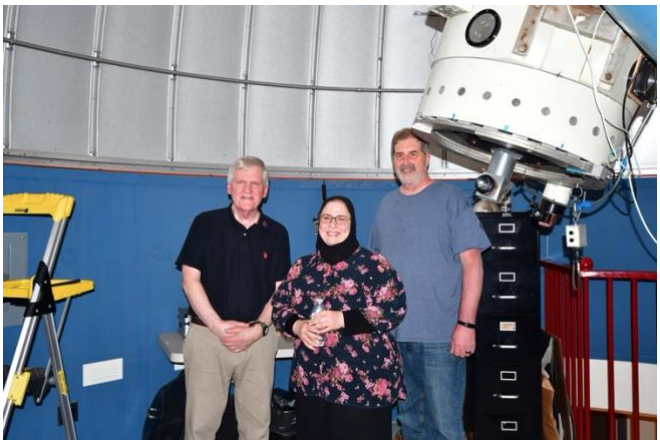
In addition to his talk on the scale of the universe, Chuck also brought an interesting display of a wonderful 9-case collection verifiably containing 100+ chemical elements.

Before the public portion of the CAA meeting, member Noha Reda prepared a wonderful meal of culinary wonders for CAA members to assist with the evening observing. For my part, I brought cookies from Hy-Vee for dessert. But Noha was the real "star" as she cooked a fine meal for the volunteers.

The evening's observing session was canceled due to rain, but we still participated in tours of the observatory, which is one of the best in the Region. I estimate that for Chuck's talk, approximately 40 club members and visitors attended (in person) and 20 remotely via Zoom. This was an excellent meeting.

CAA members in attendance before the arrival of the public

Noha Reda (Program Coordinator), Chris Kardos (VP), Tom Weber (President), Chuck Allen (AL-VP), Al Sheidler (NCRAL chair)



Chuck Allen, Noha Reda, and Tom Weber standing under the 24-inch Boller & Chivens telescope

Carl Bracken (Treasurer) and John Leeson (NL co-editor)

CHIPPEWA VALLEY ASTRONOMICAL SOCIETY

~ by Lauren Likkel, CVAS ~

Recreational astronomers near Eau Claire and Chippewa Falls in Wisconsin have found companions to share their enjoyment of the night sky in the Chippewa Valley Astronomical Society ("CVAS"). A partnership with the local Beaver Creek Reserve ("BCR") provides access to Hobbs Observatory across the road from BCR's Nature Center. This provides a dark field for observing, use of the telescopes, and opportunities to share astronomy with the public. CVAS members have a range of interests, from stargazing and backyard telescope use to image processing. The most active areas of the club are public outreach, astrophotography, and the radio astronomy group.

Astronomy Day 2024. (Lauren Likkel)

Hobbs Observatory at Beaver Creek Reserve. (Mike Brown)

Near the August new moon, about 75 astronomy enthusiasts gather for *Northwoods Starfest* to enjoy comradery, activities, and two nights of observing in the field at Hobbs Observatory. This regional star party is the only CVAS event that costs money to attend. The fee includes cabin/tent camping, access to the BCR Nature Center, a dinner, brunch, breakfast, and midnight snacks. Invited speakers give a presentation before observing begins, and on Saturday afternoon, attendees can make short presentations.

CVAS hosts public access to Hobbs Observatory at BCR on almost every clear Saturday from May through October for stargazing and telescope viewing. The CVAS volunteers love sharing the excitement of the night sky. Besides the 24" and 14" telescopes at Hobbs Observatory, CVAS members offer viewing with their own telescopes. CVAS has astronomy presentations at Hobbs Observatory in most months. This usually draws 25-40 people from CVAS, BCR, and the public. Stargazing and telescope viewing are offered after the presentations, even in the cold months of November and January – March.

Astronomy Day for the Chippewa Valley is held on the first Saturday of May. Displays highlight the electromagnetic spectrum via spectroscopes, IR imaging, UV fluorescence, and a working radio telescope detecting radio emission from the sun. Other popular features are radioactivity demonstrations, meteorites, and short planetarium shows. About 200 people drop by the 5-hour event. CVAS usually has 12 enthusiastic members running Astronomy Day. The UWEC Physics and Astronomy department supports the event, which is held on the University of Wisconsin-Eau Claire campus.

Astronomy Day 2024. (Lauren Likkel)

CVAS invites you to *Northwoods Starfest*, August 2-4, 2024. Details on this and other CVAS events are on the calendar at cvastro.org.

AstroBits

Here are some news notes that readers might find interesting or helpful. Items appear here as bullet points because they are too short to merit separate articles. If readers have something to share and want it to appear here, email this newsletter's editor at carlwenning@gmail.com.

- The Twin City Amateur Astronomers have just issued ***TCAA Guide #11: Recruiting and Retaining Astronomy Club Members***. This publication, edited by Carl Wenning, is a compendium of 12 articles by Wenning, Alan Sheidler, and Devanand Chatrathi that appeared in earlier issues of ***Northern Lights.*** The articles have been assembled in one place to serve as a reference work. TCAA Guide #11 may be viewed and downloaded through the TCAA website at https://www.tcaa.club/guides
- The Region has added a new *NCRAL 103 Messier Marathon record sheet* for member use. It is available for download and use through the following link: https://ncral.wordpress.com/observing/
- Newsletters from both NCRAL and the Astronomical League are available online. They may be accessed at the following URLs. In addition, this monthly update is likewise archived.
    - *Reflector:* https://www.astroleague.org/reflector/
    - *Northern Lights:* https://ncral.wordpress.com/newsletter-archive/
    - *NCRAL blotter:* https://ncral.wordpress.com/monthly-blotter/
- The ad hoc NCRAL 2025 convention committee consisting of Al Sheidler, John Attewell, Lynda Schweikert, Andrew Salata, Carl Wenning, and Bill Davidson (Bill could not attend) met on June 2 to begin work. The basic conclusion is that the committee will likely be largely responsible for planning the conference. This means that the Region (NCRAL) will be the "host" for next year's conference. Several of us have had experience hosting conventions in the past. We feel a collaborative effort, perhaps with the help of a few others in the Region, should result in a successful conference. Until the next Zoom meeting, committee members will contact individuals they know in Milwaukee, Minneapolis, Madison, Rockford, and Yerkes Observatory to find a suitable venue. We need local involvement wherever we have the conference ("boots on the ground") to ensure things move smoothly. Once the committee gets a couple of potential locations and commitment from individuals, we will develop a theme, contact speakers, and solidify plans. Rochester Astronomy Club's Randy Hemann and Milwaukee Astronomical Society's Matt Ryno also joined the working group subsequently. Carl stepped down due to having too many other obligations. A follow-up meeting of the group was held on June 23rd. Details to follow.
- **NEWS FLASH: We have a volunteer convention host for NCRAL 2026! Cedar Amateur Astronomers has most graciously offered to host following this year's convention.**
- Keep an eye on the NCRAL website for the latest updates regarding the recent Region and Newsletter Editor Awards, the Region Report to the AL, updates to the 103 Messier observing program, and other Events in 2024.

NCRAL Seeking Future Convention Hosts

During NCRAL's annual business meeting, the Region receives offers to host future conventions. We are now looking for hosts for NCRAL 2025, 2027, and beyond. It's never too early to plan to host an NCRAL Regional convention.

Whether or not your club has ever hosted an NCRAL Regional convention, please consider doing so. While hosting a regional convention is a lot of work, it can be rewarding – even fun. It allows you to highlight your group's facilities and accomplishments, build club camaraderie, and personally get to know interesting guest speakers. You can also use such an event to grow your club's membership.

Remember, NCRAL has its own ***Convention Planning Guide***. To download the most recent version of the *Guide* (last updated November 30, 2023), visit the following URL: https://ncral.wordpress.com/conventions/. Look for the link at the bottom of the page. Please contact the NCRAL Chair, Alan Sheidler, at adsheidler@gmail.com should you have any questions or wish to toss your affiliate's hat into the ring for hosting a future NCRAL convention.

AMATEUR ASTRONOMER WANNABE CHECKLIST

~ by Carl J. Wenning, Twin City Amateur Astronomers ~

In the last issue of this newsletter, I mentioned the need for wannabe amateur astronomers to take charge of their formation as such.[2] I suggested in that article that it would be helpful if wannabes were provided with a checklist for doing so. This guidance is essential to helping newbies fledge, for without it, they will probably drop out of amateur astronomy.

At that time, I was mindful of the fact (to the best of my knowledge) that no club or individual had ever produced such a list. With this article, I'm making an initial effort to create a rough draft of such a checklist in the hope that, over the years, others with new and more effective ideas can improve upon it.

I've long believed in the French proverb, "Never let the perfect be the enemy of the good." This proverb means that we should never get caught up in the impossible task of making things perfect and — as a result — never get anything done. It is better to try and fail than never try at all. So it is with the present situation. While the following list might be faulty or incomplete, it's a start.

Here is my checklist of suggestions that tyros should follow so that they might fledge as fully capable amateur astronomers:

- ✓ First, realize that you – dear wannabe – must take charge of your education. Plot your course with this advice and follow it. Be mindful that a ship without a rudder will rarely arrive at the intended port.
- ✓ Read far and wide. There is no substitute for learning from the experiences of others who have already dedicated part of their lives to helping you achieve the goals you are pursuing. Read the many TCAA Guides[3] developed by the Twin City Amateur Astronomers. Then, read yourself a free introductory college-level astronomy textbook, such as *Astronomy 2e*, available on Open**Stax**.[4]
- ✓ Network, network, network! Go to astronomy club meetings and observing sessions. Join in on pizza parties and other special events. Actively circulate and introduce yourself, sharing one thing in particular about yourself that will make others remember you.
- ✓ Reach out and be the first to make an acquaintance. Know that camaraderie is based on familiarity with others. Please get to know others and call them by name. Don't forget to ask others about themselves, as for some, it is their favorite topic.
- ✓ Believe it or not, make a business card that you can use to familiarize others with yourself. Keep the card simple with your name and contact information and perhaps an astronomical symbol to key the reader into the fact that you are involved in the community of amateur astronomers.
- ✓ Make your interests and desires known. If something interests you, ask question after question until you are satisfied. People tend to like enthusiastic newbies.
- ✓ Actively seek assistance from experienced amateur astronomers when observing and purchasing a telescope. Engage in a conversation with someone you feel has the knowledge and experience, someone willing to teach, and someone from whom you would like to learn.
- ✓ Don't purchase binoculars or telescopes until you have seen what's available and how the options work. Carefully choose your observing instruments based on your needs.
- ✓ Don't waste too much money purchasing expensive equipment you might not need. This way, you can avoid buyer's remorse that often ends many a hobbyist's career.
- ✓ Ask to be trained on club telescopes and observatories. Don't expect experienced amateur astronomers to help you learn the art of amateur astronomy by having them teach you how to use an inferior-quality toy telescope.
- ✓ Get out there and observe with others. Ask them to look through their telescopes. Have them tell you about their telescopes. Have them show you one or two things in the telescope and comment on what they are showing.
- ✓ Ask lots of questions and listen more than you speak. This will show others you are interested and willing to engage instead of showing how unknowledgeable you might be.
- ✓ Avoid being a know-it-all. Nothing is worse than a new member who thinks they know everything. Be humble. Your knowledge will eventually shine forth if you are really that qualified.

So, there are just a few points to remember as you start your journey as a newbie…

[2] Wenning, C. J., ***Northern Lights,*** Why Novice Amateur Astronomers Fail to Fledge, Vol. 8, No. 4, pp. 9-10, Spring 2024.

[3] The TCAA Guides, ten in number, can be found at the following URL: https://www.tcaa.club/guides

[4] *Astronomy 2e* by Fraknoi, Morrison, & Wolff, 2022. The first four chapters are somewhat "incomplete" but serviceable.

A Journey Through the Messier Marathon

~ by Sunil Chebolu, Twin City Amateur Astronomers ~

Editor's Note: Members of the Twin City Amateur Astronomers have been enthusiastic participants in NCRAL's Mini Messier Marathon. Recently, TCAA's ***Keith Hanson*** *completed what might have been the first NCRAL 103 Messier Marathon on the night of March 10/11.* ***Sunil Chebolu*** *performed the same amazing feat a day later using the same telescope. Congratulations to these two for earning what might be the first and second Silver Star awards in this challenging observing program.*

For a while now, I've been intrigued by the unique opportunity March presents to observe nearly all Messier objects within a single night, especially at mid-northern latitudes. This idea fascinated me, prompting me to add it to my bucket list to achieve this remarkable feat one day. That dream materialized on Monday, March 11, 2024, thanks to the support and guidance of Carl Wenning, President of TCAA. Here is a detailed report of my experience doing the Messier Marathon.

The viewing conditions at Sugar Grove were almost ideal for stargazing on March 11. Good to excellent seeing and transparency provided an optimal environment for observing celestial objects. Additionally, the moon was in its waxing crescent phase, just 1.16 days old, minimizing its interference with the night sky. The temperature hovered in the low 40s, accompanied by a gentle breeze, ensuring comfort during the extended observation session. The sky remained predominantly clear throughout the night, with only a few passing clouds on the horizon. At Funks Grove Nature Spaces, I used our club's Celestron CPC 11-inch telescope, equipped with a 40 mm eyepiece. Because this telescope is identical to the one I own, I was already familiar with its navigation system. Moreover, the timing was ideal since I was on Spring break, affording me the luxury of dedicating the entire night to the exhilarating Messier Marathon.

I arrived promptly at 8:00 p.m. to find Carl Wenning at Funks Grove Nature Spaces. Having assisted with a Messier Marathon himself the night before, Carl served as an invaluable mentor. Following his advice, I came well-prepared with ample supplies of water, food, warm clothing, and an observation checklist. I even brought along a blanket in case a nap was needed during the night.

As Carl and I rolled back the roof of our observatory, we were greeted by a Starlink satellite train passing overhead. Carl provided invaluable advice that greatly facilitated my observations. One such tip was regarding the shortcut button on the handheld controller for accessing Messier objects directly. Previously, I had been navigating through deep-sky objects, resulting in unnecessary clicks. With the shortcut, locating Messier objects became more efficient, particularly when dealing with a list as extensive as 100 objects. Furthermore, Carl shared a clever alignment technique: starting with the star in question positioned at the bottom left corner of the field of view and gradually centering it without overshooting – thus removing gear backlash in the system. While my initial auto two-star alignment was satisfactory, Carl's realignment ensured optimal accuracy, allowing me to proceed with greater precision and efficiency in my observations for the rest of the night.

My journey began in the northwest sky at 8:33 p.m. with my first observation of M77, followed by M74, M33, and M31. It was crucial to capture these objects while they were still low on the western horizon before they set for the night. From there, I systematically traversed the night sky, steadily progressing upwards, checking off items on my list. I completed the first 20 objects in 30 minutes, indicating a promising start. Seeing that I was rolling on track, Carl wished me good luck and headed home. From there, I was on my own for the rest of the night, embracing the visual delights that unfolded before me: globular clusters, open clusters, galaxies of diverse shapes, diffuse nebulae, the majestic Jupiter, and brilliant stars.

Around 11:24 p.m., after observing approximately 70 objects, I took my first extended break, as the remaining objects had yet to rise or were too low on the horizon. Seizing the opportunity, I set a 1:30 a.m. alarm on my phone and rested, although sleep proved elusive. Nevertheless, I took some rest, refreshed myself with food, and prepared for the second half of my marathon.

The subsequent hours were dedicated to patiently awaiting the rise of objects while revisiting previously observed ones now positioned closer to the zenith, offering enhanced views. This phase demanded persistence as I alternated between observing rising objects and revisiting those now higher in the sky. Despite the challenges, each moment brought new wonders, fueling my determination to complete the marathon.

From 8:30 p.m. to 6:30 a.m., I diligently observed 108 Messier objects. This extended session marked the longest time I spent stargazing. Despite my efforts, two globular clusters, M55 and M30, eluded my observation. M55 remained low on the horizon, obstructed by trees, while M30 only rose after 6:30 a.m. I attempted to improve my vantage point by using my Canon 12x36 binoculars and a step stool, but unfortunately, these objects remained out of reach.

I utilized *SkySafari* to gather information about the Messier objects I observed and to double-check that the telescope was accurately slewing to the intended targets. During this process, I stumbled upon a fascinating fact: M58, the most distant Messier object, is a staggering 68 million light-years away. To put this into perspective, consider the extinction of the dinosaurs that occurred approximately 65 million years ago. This means that the light from M58, which entered my eyepiece and retina, embarked on its journey when dinosaurs likely roamed the Earth. Reflecting on this cosmic connection, I couldn't help but feel a sense of awe.

If you're experiencing similar goosebumps or have yet to embark on a Messier Marathon, I highly recommend the experience. It's a journey that offers a profound connection to the universe and one that you'll undoubtedly cherish for years to come.

WHY DO SO MANY AMATEUR ASTRONOMERS NOT OBSERVE WITH THE GROUP?

~ by Carl J. Wenning, Twin City Amateur Astronomers ~

I have been an avid amateur astronomer for over 60 years and a member of my home club for nearly 45 years. I've noticed over the years that many astronomy club members never seem to get out to observe the heavens with the group. In my club, we've held several observing sessions most recently, and more than 25% of the membership rarely shows up. Even with the TCAA's 20" telescope, outfitted with an amazing, military-grade image intensifier that makes it the equivalent of a 60", I suspect that 75% of the club membership or more has never taken the opportunity to peer through this fantastic instrument! The images viewed, like the M51 shown here, are visually stunning! Why might that be? What can be done to reconcile the situation?

Direct view of M51 using image intensifier on 20" PlaneWave. (Image by Meredith Barkhurst)

As I began this article, I had yet to learn the correct answer or answers to that question. As a passionate writer, I often start writing, hoping to discover answers as I consider this or that possibility. So is my hope with the current article.

To determine the answer to the question in the title, let's start by brainstorming some possibilities. These will be analyzed one after another to find which ones appear to be answers to this question. What are some possible reasons? Consider the following:

- **The observing site needs to be more distant.** Not everyone will drive 30 or 50 miles to visit a dark-sky observing site. It can be a matter of economy, environmentalism, or vehicular reliability.
- **The observing site is too remote.** Perhaps they perceive a danger element. Who knows who or what might be lurking in the dark? Personal safety can be a problem near and far, depending on the nature of the observing site.
- **Evening Twilight Interferes.** Astronomical twilight doesn't end until quite late during late spring and summer. When observing can't start until 10 p.m., and people have to depart for work around 7 a.m., evening viewing on weeknights is not feasible.
- **Schedule Conflicts.** Schedule conflicts due to family and social obligations can be a real problem. Families with kids are often tied up with school, church, or sports activities on weekday nights.
- **Some feel uncomfortable in the dark.** Some people just don't like the dark. Some people feel threatened when they can't see what's coming at them from every direction, so setting up near a grove of trees might be a problem.
- **Some people have night vision problems.** Some have cataracts and don't like to drive at night due to the glare caused by oncoming vehicle lights. Others have night blindness due to vitamin A deficiency or other medical reasons.
- **Insufficient notification.** Some people have busy social schedules, and sometimes, conflicts prevent their attendance. Unfortunately, with the vagaries of the

weather, it's just impossible to plan long-range observation sessions.

- **Lack of sufficient information:** Sometimes, we must provide detailed information when we notify our membership of an observing opportunity. Always include answers to the following questions when making announcements: Who? What? When? Where? Why? and How?
- **Too hot, too cold, too humid, or too many bugs.** Some people are agitated by the conditions of the environment. I, for instance, prefer to avoid observing under any of these conditions. As a result, I do most of my observing during the late spring and early autumn.
- **Aging Members.** As members age, many feel increasing pain and weakness. With amateur astronomy's graying, it's not surprising to see older amateur astronomers become armchair amateur astronomers.
- **Logistics of Observing.** Sometimes, it's too late in the evening (e.g., long summer twilights) when people are often tired, and there's much preplanning for setting up equipment.
- **A sense of inadequacy.** Some members don't feel like they are part of the group because they think their knowledge and expertise are inadequate. Efforts should be made to note that no experience is necessary to participate.
- **Some are astrophotographers.** Astrophotographers, in particular, have reason to view this approach to photography alone, as it can often be a solitary endeavor. Astrophotography cannot always be a group activity, such as is possible with visual observation.
- **Some people are just loners.** Not everyone wants to view things in a group. They enjoy the serenity that being out under the stars alone brings.
- **Lack of sufficient interest.** We must realize that sometimes people join an astronomy club for camaraderie, to receive the newsletter, or to support a good cause – despite the visual wonders that await. Their interest is in contributing dues payments; they have no deep, abiding interest in taking advantage of club offerings – and that's okay. Not everyone is cut out to do astronomy.

So, as we can all see, there are plenty of good reasons people don't show up for group observing sessions – especially on school nights. Failure to do so does not mean that they are not observing, and it certainly doesn't mean they are not interested. While these realizations do not solve the problem, they can help planners understand and feel better when few club members show up for viewing.

ASTRONOMICAL LEAGUE OBSERVING PROJECT – FLAT GALAXIES

A learning project in several ways.

~ by Jim Dole, Planetary Studies Foundation ~

When the Planetary Studies Foundation (PSF) joined the Astronomical League (AL) in 2023, the observatory staff reviewed the benefits of being part of the AL and the potential opportunities it could bring to our facility. The list of observing programs and what we could do with them to enhance our learning and share with the public during our observing nights was of interest to several of us. The *AL Astro Note C4 – Observing Programs* states, "No matter what the members' experience, equipment, capabilities, and preferences, there is an Observing Program to meet that need."

The PSF's Firebaugh Observatory has three main telescopes, two for optical viewing and one dedicated to (Electronically Assisted Astronomy) EAA. The 14-inch SCT and imaging camera in the observatory dome is well suited to image galaxies. Learning to run the telescope, with software to control the pointing and tracking of the mount, planetarium software used to choose the object of observation, and camera imaging software to collect and live stack the images, has many steps.

The Flat Galaxy Observing Program caught the attention of staff member Bill Boike, who wants to learn more about imaging and computer control of the telescope, and myself. The equipment in the observatory dome is a good match for such a project, and we saw it as a great opportunity to get Bill fully trained on using the equipment, imaging technology and learning about these specific galaxy types.

What are Flat galaxies?

Flat galaxies are edge-on galaxies with a diameter larger than four arc seconds and a major-to-minor axis ratio of ≥ 7[1]. Many of these galaxies have little or no apparent central bulge, many have visible dust lanes, and by their nature, appear somewhat needle-like. The Needle Galaxy (NGC4565) is on the list. The galaxies listed for this program range from visual magnitude 10 to 15, which is not a problem for digital imaging and our equipment.

I had not heard of flat galaxies before this, so I thought I'd do some research to get more information. I feel that understanding a little more about the objects you're

observing (and sharing with the public) makes it more interesting and fun. Flat galaxies are a subset of spiral galaxies (being flat is a matter of the orientation of these objects from our perspective on Earth) and have little central bulge. The morphology of these objects is poorly understood and is a topic of active research. The Revised Flat Galaxy Catalogue

Flat Galaxy NGC 973

(RFGC) paper, referenced in the AL program, states that studying these objects is meant to understand better how mass flows in "large-scale cosmic streaming." [1]

A study from 2021 suggests that the formation and existence of flat galaxies may be related to the environment in which they are located.[2] In this study, the authors argue that these galaxies seem to be located in lower galaxy density regions (sheets) of the large-scale cosmic web rather than the higher density (nodes and filaments). Being in less dense regions, these galaxies interact less with other galaxies. They may "grow in isolation and rarely experience major mergers in their lifetime." [2] Models show that gravitational interaction with other galaxies can lead to perturbations and dispersion of stars and matter that may lead to more prominent galactic bulges.

Observing Flat Galaxies

Requirements for the program include information on the seeing, equipment, observing details, and estimating each galaxy's position angle. To measure each galaxy position angle, we have the camera set so the top of the display is zero degrees, and Bill built a protractor-type device that we can hold up to the screen to measure the angle. We've spent many hours over several nights on this project and, so far, have captured 41 of the 100 galaxies that we want to image to complete this program.

We estimate the seeing and sky conditions a few times per night since they can change quickly. Little time is spent with any post-processing (just a bit of histogram adjustment) of the images since we wanted to get through the list and illustrate what it will look like during normal public viewing nights when visitors are coming and going. We want to show a few examples.

We're both learning to find details in the galaxies themselves and finding other galaxies and celestial objects in the images. This is a different kind of observing skill, similar in many ways to looking through the eyepiece, but in this case, studying the objects and details available in the 'near live' image on a large screen TV. Those skills are helpful during our public observing nights as we explain and point out objects and features that the novice and casual observer may not see. This leads to a better observing program and more information for our visitors.

Our first try at an AL observing program has been a great learning experience for Bill and me. Bill is now routinely running the computerized equipment and sharing his knowledge and experience with the public.

We're both learning about Flat Galaxies!

Jim

ADD YOUR EMAIL ADDRESS TO THE NCRAL MEMBER DATABASE

Did you know that only about 525 of our Region's 1,900 members receive this newsletter? That's less than one-quarter of the membership! Please help NCRAL get its newsletter out to the membership by encouraging fellow club members to add their email addresses to the NCRAL member database. Editors, please include this information in your affiliate's newsletter. It's one of the many benefits of belonging to the Astronomical League.

When one adds their email address to the NCRAL member database, they will receive direct notifications about the availability of ***Northern Lights***. In addition, subscribers receive important and timely announcements about Regional conventions, elections, star parties, etc. Only blind addressing (Bcc:) will be used with this email list, so others will not see subscribers' email addresses. Email addresses will never be shared with or sold to outside entities.

No one will add your email address to this list, so you must do it yourself. Sign-up takes only about a minute. Resubscribe if you recently changed your email address and are not receiving our notifications. You must provide your name, email address, and astronomy club affiliation (or indicate A.L. membership-at-large) and let us know if you hold specific positions within your club. Go to the following case-sensitive URL to add your information to our database at https://tinyurl.com/NCRAL today so you won't miss critical future communications.

REGIONAL CLUB PRESENTS TELESCOPE TO LOCAL LIBRARY

~ by Author, Popular Astronomy Club ~

PAC members and library board members pose with the telescope. Seated: Kathi Parrish (left), Sue Routt; Standing (left to right): Jan Gustafson, Dale Hachtel, Rod Ward, Georgia Veyette, Beth Hoffman, Roy Gustafson, Jeanine McGaughy, & Alan Sheidler.

The Popular Astronomy Club, based in the Quad Cities area of western Illinois and eastern Iowa, has donated a telescope to the Western District Library in Orion, Illinois.

PAC President Dale Hachtel formally presented the telescope during a library board meeting on April 22. Also attending the presentation were PAC members Al Sheidler and Roy and Jan Gustafson, who reside in Orion.

Coincidentally made by Orion Telescopes and Binoculars, the telescope is a 4.5-inch "StarBlast" reflector. Its compact "grab and go" design makes it portable and easy to use for novice and intermediate-level amateur astronomers. However, it is still powerful and versatile enough to observe a full range of celestial objects.

Library patrons can now borrow the donated telescope, expanding the range of services offered by the Western District Library.

"Library telescopes are an excellent way to make astronomy more accessible," PAC President Dale Hachtel said, "and to reach more individuals who may be interested in amateur astronomy." He added that PAC may expand its library telescope program in the future.

PAC was awarded the telescope last year during the Astronomical League's annual convention. This is the second library telescope the Astronomical League has awarded to PAC; the other was given to the Eldridge Branch of the Scott County Library, which has proven popular among patrons.

Before donating these telescopes, PAC inspected them and made minor modifications to make them easier to use. User manuals in plain language accompany the telescopes. PAC maintains and repairs the telescopes as needed and provides other support when requested.

The Popular Astronomy Club meets the second Monday of every month (except for August and October) at 7 p.m. at the Butterworth Center in Moline. Visitors are welcome.

PAC also has public observing sessions in the parking lot of Niabi Zoo on the third Saturday of every month through November, with the next scheduled for May 18 at sunset. You can learn more by finding PAC on Facebook or visiting its website at popularastronomyclub.org.

NOTEWORTHY!

The following NCRAL members have completed the following Astronomical League observing and award programs in recent months and have been recognized in the most recent issue of ***Reflector.*** Congratulations to all!

Astronomy Before the Telescope Observing Certificate:
Brian Chopp, Neville Public Museum Astronomical Society
Madeline Chopp, Neville Public Museum Astronomical Society

Galileo Observing Program:
Jean Napp, Iowa County Astronomers

Solar System Observing Program:
Jean Napp, Iowa County Astronomers

Congratulations to *Bob Kerr* for having his article, *The Little Observatory that Could,* published in the Spring 2024 issue of ***Reflector,*** pages 16-18.

Note: Details about all these observing programs and awards can be found on the Astronomical League's website at https://www.astroleague.org/observing.html

NCRAL 103 AND SEASONAL MESSIER MARATHON AWARDS

- *Keith Hanson,* Twin City Amateur Astronomers, **Silver & Bronze**, March 10/11, 2024
- *Meredith Barkhurst,* Twin City Amateur Astronomers, **Bronze**, March 10/11, 2024
- *Sunil Chebolu,* Twin City Amateur Astronomers, **Silver & Bronze**, March 11/12, 2024
- *Meredith Barkhurst,* Twin City Amateur Astronomers, **Spring**, assisted, May 1, 2024

SUMMER SKIES, 2024

~ by Jeffrey L. Hunt ~

Sun

Summer begins at 3:51 p.m. Central Time on the 20th. The season lasts 93 days, 15 hours, and 53 minutes. The midpoint occurs on August 6th at 10:48 a.m. On the Celtic calendar, February 2 (Candlemas), May 1 (May Day), August 1 (Lammas), and November 1 (All Hallows) approximately mark the mid-season points. In today's culture, Ground Hog's Day and Halloween are more noteworthy than the traditional Celtic holidays. Cinco de Mayo, a celebration that continues to grow each year, is closer to spring's midpoint than May Day.

Earth

Earth passes aphelion (1.0167 AU) a few minutes after midnight on July 5th.

Moon Phases

	New	First Quarter	Full	Last Quarter
June	6	14	21	28
July	5	13	21	27
August	4	12	19	26
Sept	2	11	17	24

Bright Planets

June 2024

Morning

As the new season opens, the three bright outer planets – Jupiter, Mars, and Saturn – two faint ones – Uranus and Neptune – and three dwarf planets – 134340 Pluto, 1 Ceres, and 136199 Eres – are west of the sun and lie between the sunrise point and the southwest horizon during morning's mid-twilight.

On solstice morning at an hour before sunrise, Jupiter (m = −2.0), ambling eastward in Taurus, is nearly 5° above the east-northeast horizon and 7.3° to the lower left of Eta Tauri (η Tau, m = 2.8), the brightest Pleiad. The planet and the Pleiades fit tightly into the same binocular field. This week, the planet is higher in the sky. Watch its altitude increase each morning, becoming easier to see by month's end. Mars (m = 1.0), marching eastward in Aries, is 20° up in the east. The planet is only 5.2 arcseconds across through a telescope, disappointing at a distance of 1.8 astronomical units (AU). The distance and its low altitude result in a disappointing view.

Mars steps eastward in Aries at approximately 0.7° from night to night. This morning, the Jupiter-Mars gap is nearly

28°. Mars passes 11.0° to the lower right of Hamal (α Ari, m = 2.0).

Saturn (m = 1.1) is the farthest west of the bright planets, standing over 35° above the southeast horizon against Aquarius' dim starfield. Since the April 10th Mars-Saturn conjunction, Mars has widened the gap to the Ringed Wonder to 49°. Through an eyepiece, Saturn's ring inclination is less than 2°. This morning, Titan is about 2 arcminutes west of the planet. With this inclination, the rings seem to form an arrow that points toward the satellite. Saturn begins to retrograde on June 30th. Its westward track can be followed in a single binocular field in front of dim Aquarius' starfield. Beginning on the 28th, Saturn rises before local midnight.

The dimmer bodies are affected by mid-twilight's brightness, although they add to the interesting massing of solar system bodies west of the sun. Uranus (m = 5.8) is only 11° up in the east-northeast, 10.6° to Jupiter's upper right, and 5.6° to the right of η Tau. Interestingly, Uranus is in the same binocular field as the Pleiades until the cluster and the planet disappear into evening twilight in 2027.

Neptune (m = 7.9) is nearly 40° up in the southeast and 1.7° to the upper left of 29 Piscium (29 Psc, m = 5.1).

Three of the more famous dwarf planets are here as well. Certainly, morning twilight is not the time to look for them. The most famous, 134340 Pluto (m = 14.4), is over 25° above the south-southeast horizon, near 4 Capricorni (4 Cap, m = 5.8), while 136199 Eris (m = 18.7) is in Cetus over 16° below Mars. 1 Ceres (m = 7.5) is about 16° up in the southwest, 2.0° to the east of Tau Sagittarii (Tau Sgr, m = 3.3) in the Teapot's handle. This is worth a look during dark hours when Sagittarius is near the meridian.

Evening

Venus passed superior conjunction on June 4th and slowly moved into the evening sky. Mercury passed the same solar configuration ten days later. Venus slowly emerges from bright twilight at the end of next month.

By month's end at 30 minutes after sundown, Mercury (m = −0.6) is only 5° above the west-northwest horizon.

At this season, after sunset, the ecliptic makes a shallow angle with both horizons, and the visibility of the planets is affected by this geometric impediment until early fall. For Mercury aficionados, this apparition is a challenge when the planet sets near mid-twilight, even on the best nights.

July 2024

Morning Sky

The three bright outer planets – Jupiter, Mars, and Saturn – span nearly 80° in the eastern sky during morning twilight. As the month opens, the moon is hopping eastward each morning from planet to planet. On the 1st, it is with Mars. The next morning, look for a pretty crescent moon (14% illuminated) appearance with the Pleiades. On the 3rd, Jupiter, Moon, and Aldebaran make a rare grouping. They fit into a circle 9.4° across. During this apparition of Jupiter, the moon does not pass this closely for observers across the Americas. They are not bunched together this closely again on the celestial sphere until June 22, 2036, when they fit into a circle 5.5° in diameter.

Jupiter ambles eastward in front of Taurus, near Aldebaran (m = 0.8) and the Hyades star cluster, passing 4.8° to the upper left of Taurus' brightest star on the 10th.

Mars marches eastward in front of Aries, crossing into Taurus on the 12th. With the star-rich region, choose your favorite stars and watch the Red Planet pass. On the 21st, Mars (m = 0.9) passes 4.8° to the lower right of η Tau. The planet and the Hyades "V" fit into the same binocular field from the 28th through August 5th. It passes Gamma Tauri (γ Tau, m = 3.6) on the 29th and Delta 1 and Delta 2 Tauri (δ1 Tau, m = 3.8; δ2 Tau, m = 4.8), 30th. On the 30th, the crescent moon (25%) is 4.9° to Mars' upper left and 8.1° above Jupiter. They fit into a circle 8.4° across. This is their closest grouping until November 30, 2026, when they fit into a circle 6.0° in diameter and easily into a binocular field. Next month, they fit into a circle 14.0° across. Look for the moon near Saturn on the 24th and 26th.

Evening Sky

With a poorly-inclined ecliptic with the western horizon and a long summer evening twilight, Mercury reaches greatest elongation (26.9°, m = 0.3) on the 22nd. Catch it early in the month, during early twilight when it is bright. Perhaps the best evening is on the 7th when the moon is nearby. At 30 minutes after nightfall, use a binocular to see the crescent moon (5%) over 10° above the west-northwest horizon. Mercury (m = −0.1) is 3.0° below the crescent.

Venus is still in bright evening twilight. Its elongation increases from 8° to 16°. The planet's diameter reaches 10 arcseconds on the 22nd, while the phase is 97% illuminated. Early birds can begin looking for it at month's end when it is less than 5° above the horizon 30 minutes after sundown.

The moon occults Spica (m = 1.0) on the 14th. It is with Zubenelgenubi (β Lib, m = 2.8) on the 15th; Antares (m = 1.0), 17th; Nunki (σ Sgr, m = 2.0), 19th; and Saturn, 24th and 25th.

August 2024

The annual Perseid meteor shower peaks after sunrise on the morning of the 12th. Moonset occurs 3.5 hours after sundown and around midnight.

Morning

With Orion above the eastern horizon at mid-twilight, Mars approaches Jupiter in the eastern sky. Sirius' reappearance from bright morning twilight occurs on about the 12th.

Mars marches eastward through the Hyades' outliers to the upper left of the "V." This is a pretty view through a binocular. Compare the color of Mars to Aldebaran. Which one is redder? On the 2nd, it passes Epsilon Tauri (ε Tau, m = 3.5). The Mars-Aldebaran conjunction, 4.9°, occurs on the 4th. This morning, the Red Planet was 5.1° from Jupiter. Mars (m = 0.8) overtakes the Jovian Giant (m = −2.2) on the 14th when the gap is only 0.3°. Jupiter and Mars fit into the same eyepiece with the Galilean satellites, yielding a 0.5° field. That's approximately 80x. The Red Planet passes between Taurus horns on the 26th and 27th.

During the month, Jupiter moves eastward nearly 6° between Taurus' horns. It has enough altitude for telescopic observation. On the 11th, the planet rises before midnight. Look for the Great Red Spot on August 1st, 6th, 8th, 11th, 13th, 16th, 18th, 23rd, 25th, and 30th. Find Jupiter's satellites crossing the face of the planet: Io, Europa, and their shadows, 7th; Io, 14th; Io, 23rd, and Io and shadow, 30th.

Mercury passes between Earth and the Sun (inferior conjunction) on the 19th, heading for its best morning appearance of the year. On the 31st at 45 minutes before sunrise, the speedy planet is over 6° above the east-northeast horizon. The thin lunar crescent is over 13° above it.

The moon is with the Pleiades on the 26th, Jupiter, 27th; Mars, 28th; and Pollux (β Gem, m = 1.2), 30th. While Cancer's Beehive star cluster is low in the sky at mid-twilight, the moon (6%) is in the same binocular field on the 31st, the same morning it is above Mercury during brighter twilight.

Evening

Venus slowly makes its way into the evening sky. On the 1st 30 minutes after sundown, it is over 3° above the horizon, setting 20 minutes before Nautical Twilight. Venus does not set at this twilight phase until next month. It passes Regulus (α Leo, m = 1.3) during bright twilight on the 4th. Look for a thin waxing moon (2%), 0.8° above Venus on the 5th. The ecliptic's low inclination to the western horizon continues to delay the planet's appearance in a darker sky, even while the elongation widens from 16° to 24°.

Saturn, making a wonderful telescopic view, retrogrades in front of a faint Aquarius' starfield. On the 18th, it passes between Phi Aquarii (ϕ Aqr, m = 4.2) and Chi Aquarii (χ Aqr, m = 4.9). The ring plane opens about 1° through a telescope during the month. With opposition approaching, capture the best views for this apparition. At mid-month, the Ringed Wonder rises an hour after sundown.

The moon is near Spica on the 9th and 10th; Zubenelgenubi, 11th; Antares, 13th; and Saturn, 20th.

September 2024

Morning

On the 1st, Jupiter rises over 4 hours before sunrise, appearing high in the southeast during morning twilight. It moves eastward between Taurus' horns. It slows as retrograde begins next month. The Jovian Giant moves eastward 4.5° during September, ending the month 6.3° to the lower right of Elnath (β Tau, m = 1.6).

Rising five hours before sunup at the beginning of the month, Mars (m = 0.5) moves into Gemini on the 6th. It passes about 1° south of Messier 35 on the 8th, a pretty binocular view. Farther eastward, it passes Castor's heel (μ Gem, m = 2.8) on the 14th. The moon passes the planet on the 28th. At month's end, Mars is over 10° from Pollux and nearly 25° east of Jupiter. The three bright outer planets span 120°.

Mercury (m = −0.1) reaches its morning greatest elongation (18.0°) on the 4th. At 45 minutes before sunrise, find it nearly 8° above the east-northeast horizon. On the 1st, find the crescent moon (2%), 4.4° to Mercury's upper left. As the planet recedes toward superior conjunction, it brightens, passing Regulus (0.5°) on the 9th. Track it until about mid-month. Mercury reaches superior conjunction on the 30th.

The moon is near the Pleiades on the 22nd; Jupiter, 24th; Mars, 25th; and Pollux, 26th. Use a binocular to spot the lunar orb (24%) with the Beehive on the 27th. It is with Regulus on the 29th.

Evening

Venus widens its angular solar distance during the month, from 24° to 31°. The planet continues to suffer from a poorly inclined ecliptic with the western horizon after sundown. On the 1st, the planet is about 5° above the western horizon. On the 5th, the crescent moon (8%) is 8.5° to the left of the Evening Star. Three months after its solar conjunction, it sets an hour before sunrise on the 9th – the time of Nautical Twilight. By month's end, it only gains another 13 minutes of setting time compared to sunset while the planet's setting point advances southward.

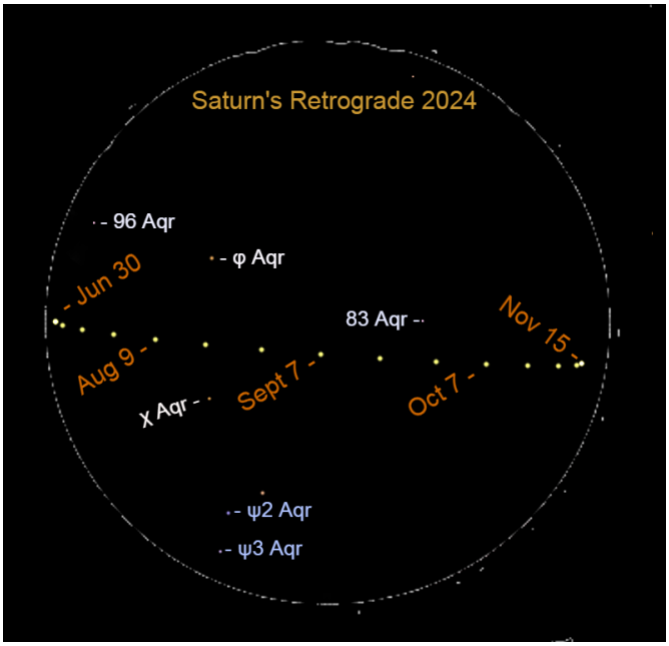
Saturn (m = 0.6) reaches opposition on the 7th at a distance of 8.6 AU from Earth. The rings are tilted about 3.5°. Through a telescope, look for the satellite Iapetus, which is 1 arc minute north of the planet. At 160x, five other satellites are easily visible, lined up with the ring plane. As Saturn retrogrades, it passes 0.5° south of 83 Aquarii (83 Aqr, m = 5.4) on the 24th.

Look for the moon near Spica on the 6th; Pi Scorpii (π Sco, m = 2.9), 9th; Antares, 10th; and Nunki, 12th. For several

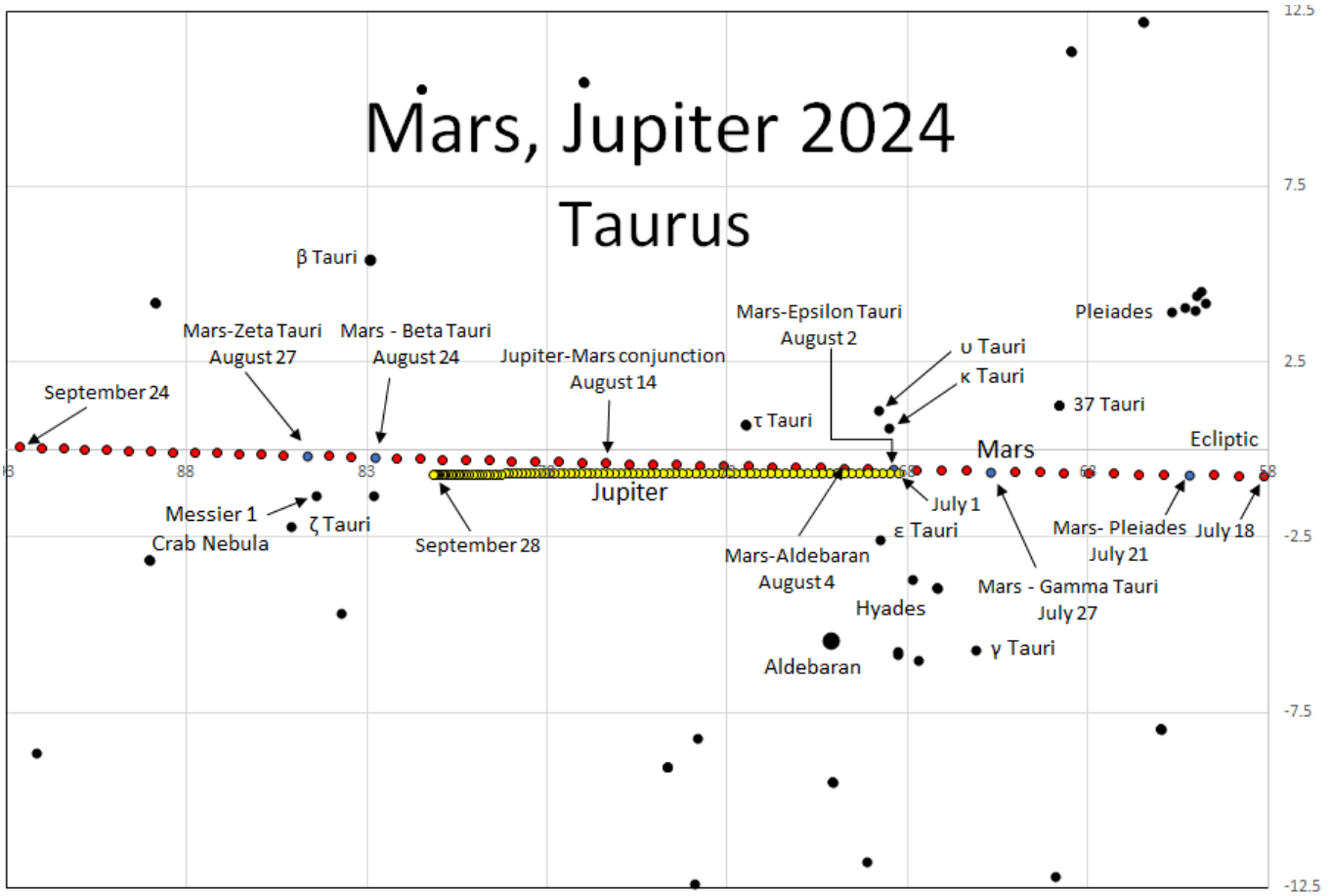
evenings, notice the Harvest Moon effect as the moon phase approaches the Full phase on the 17th. While the moon moves eastward about 13° nightly, its altitude decreases less than 5°. After the Harvest Moon, the lunar orb rises about 20 minutes later each evening, providing a night light for the traditional harvest. It rises at the end of evening twilight on the 20th. This effect is from the ecliptic's low inclination with the eastern horizon. The Harvest Moon occurs near the point of the Vernal Equinox, the origin of the two celestial coordinate systems.

A partial lunar eclipse occurs on the evening of the 17th. The moon enters the penumbra at 7:39 p.m. Central Time before moonrise at Chicago's longitude. The moon enters the umbra for 65 minutes beginning at 9:12 p.m. Greatest eclipse (8%) occurs at 9:44 p.m. The moon leaves the penumbra at 11:49 p.m.

In addition to the wonders of the summer Milky Way, watch the planets dance among the stars, especially Mars and Jupiter with Taurus.



Saturn retrogrades through a single binocular field of view in front of Aquarius during 2024.



Jupiter and Mars move eastward in front of Taurus' distant stars during the summer of 2024.

CONTRIBUTIONS TO NORTHERN LIGHTS ARE INVITED AND WELCOME!

Have you ever considered writing an article for this newsletter? The Region is vibrant, and many things are happening locally that are worthy of note. Authors are encouraged to submit stories for inclusion in ***Northern Lights*** and news items in the NCRAL blotter. We are now looking for items to be included in the coming editions. Contact the editor, Carl Wenning, at carlwenning@gmail.com, with your inquiries and submissions.

NORTHERN LIGHTS INDEX OF FEATURE ARTICLES (2016-2024)

The editor of ***Northern Lights*** has created a listing of articles he considers of considerable interest and lasting value. This listing will increase the ease of finding and the likelihood that these articles will be read and re-read. Please review these article titles and see what you have missed since the current series of newsletters was established in 2016. This information (recently revised and updated to include articles through Summer 2024) can now be found on the NCRAL website's newsletter archive page: https://ncral.wordpress.com/newsletter-archive/

EXHIBITION: M78 AND NGC 3190

Jim Dole is the ALCor for the Planetary Studies Foundation's Firebaugh Observatory. He has a personal observatory in his backyard in Freeport, Illinois, where he acquired the following images. Jim writes, "We had a few clear nights last week, and I was able to spend a little time imaging. I've attached images along with a little description."

Here is a rundown on the equipment Jim used to acquire images of M78 and NCG 3190: telescope: AG Optical FA10 10-inch f/5; imaging camera: ZWO ASI294MM Pro w/filter wheel; mount: Software Bisque Paramount MX+; imaging equipment controlled with Starkeeper Voyager.

M78: Messier 78 is a reflection nebula in the northern constellation Orion, the Hunter. M78 is the brightest diffuse reflection nebula in the sky. Integration:3h 20m; L=40x120s (80min); R=20x120s (40min); G=20x120s (40min); B=20x120s (40min).

NGC3190 Galaxy Group: I was looking for a photogenic region of galaxies and found the Region around NGC3190 (Hickson 44), a group of galaxies in the constellation Leo. The four prominent galaxies in this image show a very nice variety of galaxy types. At about 100 million light-years away, the galaxies in the NGC 3190 group display great diversity in form. Spiral NGC 3190, the largest galaxy in the group, has a diameter of 75,000 light-years, slightly smaller than our Milky Way. The brightest galaxy is the elliptical NGC 3193 at magnitude 10.8. Barred spiral galaxy NGC 3187, with its wacky arms, appears at lower left of NGC 3190. At the top is the final object of this quartet, barred spiral NGC 3185. Integration: 7h 4m; L=92x120s (184min); R=40x120s (80min); G=40x120s (80min); B=40x120s (80min).

TCAA Guides Available for Regional Use

The Twin City Amateur Astronomers hereby remind the Regional membership that eleven TCAA Guides are now available for affiliate use. These guides address a wide variety of topics and can be used to educate members, teach public courses, recruit and retain memberships, and even perform celestial navigation!

The eleven guides have been used, revised, and updated following years of service, so they are items of high quality with proven benefits. You may visit the TCAA website to download electronic copies of the Guides by going to https://tcaa.club/guides. The listing of Guides currently available is as follows:

1. *Introduction to Amateur Astronomy*
2. *Membership and Benefits*
3. *Astronomy as a Hobby*
4. *The Art of Sky Interpretation*
5. *Coordinating Observing Sessions*
6. *Having a Successful Observing Session*
7. *Buying Binoculars & Telescopes*
8. *Optimizing Deep Sky Observations*
9. *Introduction to DSLR-based Astrophotography*
10. *Introduction to Spherical Astronomy*
11. *Recruiting and Retaining Astronomy Club Members*

REGIONAL OFFICER & LEADER CONTACT INFORMATION

Chair: Alan Sheidler

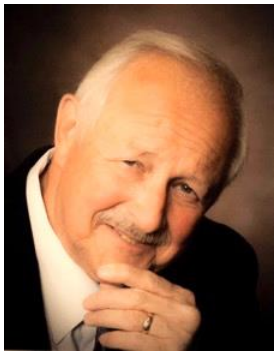
Bio: Alan has been an active member of the Popular Astronomy Club in the Quad Cities for 30 years and has held the offices of vice president and president. He is currently serving as the director of observing. Alan has been very involved in public outreach activities and, in 2022, received the Master Level Astronomical League Outreach Award. He has also completed several AL observing programs for Double Stars, Globular Clusters, Planetary Nebulae, Venus & Mercury transits, and all four NCRAL Seasonal Messier Observing Awards.

Contact: Adsheidler@gmail.com

Vice Chair: Bill Davidson

Bio: In the days of the Apollo missions, Bill first observed the moon (and sunspots!) with a 50x, 60mm JCPenney's refractor telescope. Not discouraged, 40 years later, he built and observed with a 6.25-inch achromatic doublet objective, f/10, 1600mm focal length refracting telescope. He recently retired as a college mathematics instructor, has been a *Rochester Astronomy Club* (Minnesota) member for more than 20 years, and serves as editor of the club's award-winning newsletter, ***Rochester Skies***. (Two-year term as Vice Chair; currently in his third term, 2023-2025.) Bill manages the Region's membership awards and grants program as Vice Chair.

Contact: rochesterskies@outlook.com



Secretary-Treasurer: Roy Gustafson

Bio: Roy, a member of the *Popular Astronomy Club* (Quad Cities), got interested in astronomy when visiting the Adler Planetarium in Chicago in 2nd Grade. The star projected by the Zeiss Projector hooked him and started him on the path of astronomy. He has been active in outreach and has presented astronomy programs to over 20,000 people. He was awarded the ***Master Outreach Award*** from the Astronomical League. Roy travels with his telescopes and has observed both Transits of Venus and total solar eclipses in 2017 and 2019. Roy also taught astronomy at Black Hawk Junior College in Moline, IL. Roy retired from John Deere & Company after 32 years of service. As Secretary-Treasurer, Roy manages the Region's observing awards program. (Two-year term as Secretary-Treasurer; currently in his fourth term, 2018-2026.)

Contact: astroroy46@gmail.com

Regional Representative: John Attewell

Bio: John's interest in astronomy was kindled during two great comet events – comets Hyakutake (1996) and Hale–Bopp (1997). He used a 2½-inch refractor borrowed from his brother for the next ten years, which he mounted on a rickety camera tripod. It wasn't until 2009 that he acquired a serious telescope as a gift from his family. He started attending the Rochester Astronomy Club meetings in 2002, becoming a member in 2006 and Vice President in 2019. In 2017, he chaired the NCRAL annual conference held at Eagle Bluff Environmental Center in Lanesboro, Minnesota, and served as NCRAL Vice Chair from 2017-2019. John's particular interest is the history of astronomy. (Three-year term as Regional Representative; currently in the first term, 2022-2025)

Contact: john_attewell@hotmail.com

Webmaster: Jeff Setzer (appointed)

Bio: Jeff has been an amateur astronomer since 1984 and has been part of the *Northern Cross Science Foundation* (Wisconsin). He is a longtime member of their Board of Directors, has held several office positions, and is their President. He has completed several Astronomical League observing programs, made his telescopes and optics, and is a self-described telescope nut. You often find him at star parties with his 22" Starmaster and TeleVue 85 telescopes. Jeff is the webmaster of the NCRAL website, which can be found at https://ncral.wordpress.com/.

Contact: astrosetz@hotmail.com

Newsletter Editor: Carl J. Wenning (appointed)

Bio: Carl has been an avid amateur astronomer since being introduced to the sky by his grandfather in July 1957. He has been involved with the *Twin City Amateur Astronomers* (Illinois) since September 1978. Today, he is president of that organization. He is also an ***Astronomical League Master Observer*** and spends most of his free time introducing nascent amateur astronomers to observing using his club's Celestron 11" and PlaneWave 20" telescopes. Carl served three consecutive two-year terms as NCRAL Regional Chair from 2017 to 2023. He also has served as the Region's ***Northern Lights*** newsletter editor from 2016 to the present. He originated the ***NCRAL blotter***, a monthly newsletter for affiliate leadership. He was recognized for his Regional education and outreach efforts in 2007 when he received the ***NCRAL Region Award***. Carl served as planetarium director (1978-2001) and physics teacher educator (1994-2008) at Illinois State University in Normal, where he resides. After retirement, he continued teaching part-time at ISU and Heartland Community College through spring 2022. He spends much of his time nowadays writing about astronomical topics and political issues.

Contact: carlwenning@gmail.com

