# NORTHERN LIGHTS

NORTH CENTRAL REGION OF THE ASTRONOMICAL LEAGUE

Summer 2022 - Volume 7, Number 1


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## NCRAL CHAIR'S MESSAGE

I am happy and thankful to know that NCRAL *VISION* 2022 held May 13-14 came off without a hitch due to the expert planning and execution of **Jeffery Setzer** and his team of helpers at *Northern Cross Science Foundation*. Thanks go out, too, to Secretary-Treasurer **Roy Gustafson** who discharged the Chair's duties during both my absence and that of Vice Chair **Bill Davidson**. I extend my congratulations to Roy (*Popular Astronomy Club*) on re-election to another two-year term as Secretary-Treasurer and to **John Attewell** (*Rochester Astronomical Society*) on his election to a three-year term as Regional Representative to the Astronomical League. Read the minutes of the Regional Council and Business meetings later on in this issue of ***Northern Lights***, so you know about all the matters that came before the membership during NCRAL 2022.

I am happy to report that the *Northern Cross Science Foundation's* Board Of Directors met on June 16 and finalized the numbers from NCRAL *VISION* 2022. They confirmed that the convention was $941.01 in the black. As Jeff Setzer noted, "This means that the *NCSF* is pleased to write a check for $470.51 to the Region." We are most grateful!

I'm happy to announce that 2020 and 2021 NCRAL Region Award winners **Lee Green** and **Wayne Kuhn** have finally received their long-delayed award plaques that resulted from the postponement and cancelation of NCRAL 2020 and NCRAL 2021, respectively. Dual NCRAL Newsletter Editor Awards for 2022 were presented to **Eugene M. Brown** of the *Minnesota Astronomical Society* and **David Leake** of the *Champaign-Urbana Astronomical Society*. So close was the competition between these two that our Region's officers were unable to choose one editor over the other. Both were therefore chosen. Congratulations again to all of our award winners.

Thanks to **Sharon S. MacDonald** for talking up NCRAL 2023 that my club, the *Twin City Amateur Astronomers*, will host for the Region May 5-6, 2023, near North Utica, Illinois. We are working diligently on preparing a new variant of convention based on the working theme *Amateur Astronomy for Amateurs*. This gathering will have features that benefit from participant interactions that are not normally available during video-based conferencing. There will be many interesting activities that we hope will make this gathering particularly attractive to the Regional membership. The 2023 convention also will feature elections of two-year terms for the Regional Chair and Vice Chair. Recall that my third and final term as Regional Chair ends with NCRAL 2023. I am limited by the Region's Bylaws to three terms so we will need to elect someone else.

With regard to future conventions, note that we need future convention hosts. If your affiliate is willing to host NCRAL 2024 or beyond, please contact me. Without hosts, we run the risk not having future conventions.

I'm happy to report that **Jeff Setzer** has been working with me recently to update the NCRAL website where we've made many changes. Of particular note, we have been active on the awards page. We added interactive award nomination forms (required in all future nominations), newsletter production guidelines, and judging criteria for both the Region Award and the Newsletter Editor Award. We've also added vignettes about our 2022 Newsletter Editor Award winners. We have added the 2021-2022 NCRAL Region Report to the reports page. This report provides an extensive summary of the events from July 1, 2021, to June 30, 2022. There have been many minor changes to bring the website up to date.

I'm asking all club leaders to review their organization's contact information posted on the affiliates page, and let Jeff Setzer know if any changes are needed. River Bend Astronomy Club (IL) recently provided updates to their contact information for which I am grateful.

Looking to the remaining nine months of my final term in office, here are the things that I'm setting my sights on as Chair of the Region:

- Examining the Region's bylaws and recommending amendments in light of the significant pending changes in the Astronomical League's bylaws.
- Revising guidelines for hosting Regional conventions in light of the challenges of COVID and recent experiences with video conferencing.
- Producing a set of guidelines for a new NCRAL observing award based on a full-blown Messier Marathon.
- Finding nominees for the Region's new Chair and Vice Chair positions starting with NCRAL 2023.
- Finding affiliates to host future NCRAL conventions in the years 2024 and beyond.

If you would like to volunteer, provide input, or otherwise assist with any of these important efforts, please contact me directly at carlwenning@gmail.com.

Lastly, I'm delighted to announce that my club's newsletter editor **Sandullah Epsicokhan** (*The OBSERVER of the Twin City Amateur Astronomers*) will receive the AL's prestigious Mabel Sterns Newsletter Editor Award at ALCON 2022. This event will be held in Albuquerque, New Mexico, July 28-30. Register now if you'd like to attend.

In closing, I want to thank everyone who has contributed to make this issue of ***Northern Lights*** possible. Of special note are Ernie Mastroianni, Roy and Jan Gustafson, Jeff Setzer, and Jeffrey L. Hunt. Their efforts on behalf of the Regional membership are greatly appreciated.

Carl J. Wenning
NCRAL Chair (2017-2023)
carlwenning@gmail.com

## NCRAL Meeting Report: Informative, Well-Attended, Successful

by Ernie Mastroianni

After a two-year COVID delay, the NCRAL convention was finally held last month. Nearly 70 people, including speakers, registered to attend the **NCRAL 2022** conference at *Country Inn & Suites* in Port Washington May 13-14. The *Northern Cross Science Foundation* **(NCSF) served as hosts and** 18 **of their** club signed up for the event.

The presentation by keynote speaker Francis Halzen was the main event on Saturday night. Halzen, a University of Wisconsin theoretician, is the principal investigator of the Ice Cube Neutrino Observatory, a massive instrument based at the geographic South Pole. It uses 5,160 detectors frozen into a cubic kilometer of south pole ice to detect extra-galactic neutrinos. It's been online since 2010 and has been the topic of hundreds of scientific papers and publications since then.

NCSF Board member Kevin Bert was the lead-off speaker. He gave a presentation about the history of the Library Telescope Program. He also held a hands-on workshop on the assembly of the Orion Starblast 4.5-inch tabletop Dobsonian telescope.

Convention Chair Jeff Setzer gave a brief presentation on his design of a 3-D printed smart phone eyepiece adapter that allows viewers to make quick photos through a telescope without the lengthy task of locking into the adapter.

Lynda Schweikert, a self-proclaimed novice astronomer from the Iowa County (Wisconsin) Astronomers, gave an enthusiastic presentation about how her club welcomes members with all levels of astronomy skill, all with a very laid-back attitude about organization.

Dennis Roscoe, a neurophysiologist as well as an astronomy instructor at the University of Wisconsin-Waukesha campus, spoke primarily about the James Webb and the Vera Rubin telescopes. On the subject of the Webb, he said, "It's made it through the tough stuff and is nearing fully commissioned operation." He updated us on the ground-based Vera Rubin telescope, in north-central Chile and the Giant Magellan Telescope, a ground-based colossus that will have seven mirrors, each which will be nearly 8.4 meters across.

That evening, a many attendees drove north to Harrington Beach State Park to see the Plunkett Observatory and the Panarusky telescope. Although the sky was hazy with approaching storm clouds, the views of the nearly full moon were spectacular. A fly-over by the ISS and a distant lightning show made for a spectacular evening.

On Saturday, UW-Green Bay physicist William Dirienzo gave a thorough presentation about the nature of light waves and how the electromagnetic spectrum is observed with various kinds of instruments. He was followed by UWM professor emeritus John Friedman, who handed out special spectrum glasses that spread out light much like a prism. Friedman explained how the study of emission spectra helps us better understand the composition of stars.

Outreach experts Kate Meredith and Dave Prosper expounded on the myriad ways that astronomy outreach can connect with people and deliver astronomy education kits. Meredith is president of Geneva Lake Astrophysics and STEAM (GLAS).

Dave Prosper, of the Astronomical Society of the Pacific, told of the many presentations, science kits and online resources that are available to amateur astronomy groups through the Night Sky Network.

Alison Klesman, a senior editor at *Astronomy* magazine, explained to the conference how studying the same objects in different wavelengths of the electromagnetic spectrum can bring larger insights to the structure of the universe. She earned her Ph.D**.** from the University of Florida studying supermassive black holes in galaxy clusters.

**Convention Chair Jeff Setzer:** *"Our theme of VISION was weaved throughout the conference. I had a few people comment along the lines of the speakers building on* ***one*** *another and making Dr. Halzen's neutrino banquet presentation at the end more understandable. If you take a look at the session descriptions****,*** *you can see how they fit together. That was due to the fact that out of the different options each speaker presented to us in the planning stage, we chose topics and scheduled the presenter order to hopefully tell an overall story. Even so, I'm still amazed how fortunate we were in getting so many excellent speakers. It was just one hit after another."*

## MINUTES OF REGIONAL COUNCIL MEETING

Lakeview Conference Center, Port Washington, WI
May 6, 2022

The NCRAL Regional Council meeting was called to order at 4:00 PM by Secretary-Treasurer Roy Gustafson. There were 27 members present. Thirteen out of 37 clubs were represented, so a quorum was present.

Roy thanked the Northern Cross Science Foundation for hosting the conference. Roy read Chairman Carl Wenning's report on NCRAL activities since the last convention in 2019 (see below).

Jan Gustafson served as Secretary and read last year's minutes. The minutes were approved as read.

There being no old or new business to be brought before the Regional Council, the meeting was adjourned.

Roy Gustafson
Secretary-Treasurer

## CHAIR'S REPORT TO REGIONAL COUNCIL MEETING

Dear NCRAL Members,

I'm sorry that I can't be with you this weekend. I'm currently in Amsterdam, Holland. I made travel arrangements two years ago to be here in 2021. Unfortunately, the COVID pandemic delayed my original trip by a year. This produced an unintended schedule conflict this year. I thank NCRAL Secretary-Treasurer Roy Gustafson for filling in during my absence at this convention.

As you know, the COVID-19 pandemic has put a kibosh on Region activities during the past two years. Only in March of this year did the Astronomical League National Council again permit face-to-face A.L.-related events such as national and regional conventions. We missed NCRAL 2020, which was postponed to this year thanks to the kindness of our current host. NCRAL 2021 was canceled outright despite a substantial amount of planning. NCRAL 2022 is the first convention since NCRAL 2019 – a period of three years.

We have otherwise carried on during this time despite the limitations imposed by the pandemic. In a small sense, NCRAL has been lucky.

- Our NCRAL Region Awards have continued, with Lee Green of the Twin City Amateur Astronomers being the 2020 recipient and Wayne Kuhn of Neville Public Museum Astronomical Society being the 2021 recipient. Each will receive their plaque at the banquet if the 2020 and 2021 Region Award winners are present this evening.
- Our Newsletter Editor Awards have continued, with Edith Auchter of the Northwest Suburban Astronomers being our 2020 recipient. There were no nominations in 2021. The 2022 newsletter editor award recipients – yes, you heard it correctly – recipients (plural) – will be announced at this evening's banquet.
- Our *Northern Lights* newsletter has continued unabated. We now have six whole years archived on the NCRAL website which is maintained beautifully by Jeff Setzer. Thank you, Jeff!
- Our 2021 Membership Recruit Mini Grant in the amount of $250 was awarded to the Champaign-Urbana Astronomical Society, and they hoped to use the funds to grow their membership. We don't know the outcome yet and will be looking for a report shortly. There were no applications for the 2022 affiliate membership mini grant.
- Our 2020 Affiliate Recruitment Mini Grant in the amount of $250 was awarded to the Twin City Amateur Astronomers. The grant period was extended for a year due to the effects of the pandemic. The TCAA is happy to report that the Illinois State University Astronomy Club is well on its way to becoming one of the newest Astronomical League member organizations. There were no applications for the 2021 affiliate recruitment mini grant.
- Our Mini-Messier Marathon Observing Programs have been successful, with some 30 to 40 NCRAL members

having earned seasonal certificates and pins. Thanks to Secretary-Treasurer Roy Gustafson for taking over the management of this program.

- We have clarified our 501(c)(3) non-profit status with the Astronomical League thanks again to Secretary-Treasurer Roy Gustafson. The Region subsequently received its first tax-deductible donation of $250. I hope others will contribute to sustaining this worthwhile organization.
- I dropped the idea of developing a 5-year plan for the Region after receiving no statements of interest or suggestions for inclusion.
- The planned revision of the Region's bylaws has been put on hold due to pending revisions of the A.L. bylaws upon which our Region's bylaws are based.
- All these activities have been or will be documented in our newsletter, *Northern Lights*. If you are not subscribed to the Region's email database, do so soon to have future issues of our newsletter sent directly to you. Only about 480 of the Region's 1,900 members (about ¼) are registered to do so currently.

Looking ahead…

- I hope to announce soon a Regional Messier Marathon certificate and pin for viewing all 110 Messier objects in a single dusk-to-dawn period (typically conducted in late March). To the best of my knowledge, no other group provides such recognition.
- I hope to update the NCRAL Convention Planning Guide to include what we have learned as a Region from our experiences with the pandemic and video-based conferencing.
- My affiliate, the Twin City Amateur Astronomers, will host NCRAL 2023 about 60 miles north of Bloomington-Normal, where they held NCRAL 2010 and NCRAL 2016. They have a fascinating approach to NCRAL 2023 that you will learn about during the business meeting later today. I hope you will attend both today's business meeting and NCRAL 2023.
- The Region is looking for more convention hosts. We need convention hosts for NCRAL 2024 and beyond. If your club is willing to host a future convention and has not yet mentioned it to the NCRAL leadership, consider tossing your hat into the ring at this afternoon's business meeting.

Finally, I'd like to thank all those who have helped me with my work as Regional Chair since 2017. I'd like to recognize especially the work of Vice Chair Bill Davidson, Secretary-Treasurer Roy Gustafson, and webmaster Jeff Setzer. I also wish to thank all those who have contributed magnificently to the *Northern Lights* newsletter – particularly Dr. Jeffrey L. Hunt, who has provided numerous articles about naked-eye astronomy. These Regional members – and many more – are bright stars in my universe. Thank you very much for contributing to the success of this organization.

Bidding you a fond farewell until I see you again at NCRAL 2023,

Carl J. Wenning
Regional Chair
(2017-2023)

## Minutes of Regional Business Meeting

Lakeview Conference Center, Port Washington, WI
May 6, 2022

The NCRAL Regional Business meeting was called to order at 4:15 PM by Secretary-Treasurer Roy Gustafson. Jan Gustafson served as Secretary and read last year's minutes. The minutes were approved as read. Roy Gustafson reported a balance of $8,211.15 in the treasury.

There was no Old Business.

Under New Business, Roy Gustafson was elected Secretary-Treasurer for the next two years, and John Attewell was elected NCRAL Regional Representative.

Sharon MacDonald from the Twin City Amateur Astronomers extended an invitation for everyone to attend the next NCRAL convention at Grand Bear Lodge near North Utica, Illinois, May 5-6, 2023. The theme of the convention will be "*Amateur Astronomy for Amateurs.*" Roy asked for volunteers to host upcoming conventions.

Roy reminded everyone about the Astronomical League Convention (ALCON 2022) being held in Albuquerque, NM, July 28-30, 2022.

It was moved and seconded to adjourn at 4:45.

Roy Gustafson
Secretary-Treasurer

## NORTH CENTRAL REGION OF THE ASTRONOMICAL LEAGUE FINANCIAL STATEMENT
## 01 July 2021 - 30 June 2022

| Check # | Date | Description | Check Amount | Deposit | Daily Balance |
|---|---|---|---|---|---|
| | 1-Jul-21 | | | | $8,332.70 |
| 1019 | 2-Jul-21 | Jeff Setzer (NCRAL Website Fee) | $96.00 | | $8,236.70 |
| DEB | 20-Jul-21 | Roy E. Gustafson (Checks for NCRAL) | $39.44 | | $8,197.26 |
| DEP | 9-Aug-21 | Anonymous Donor | | $250.00 | $8,447.26 |
| 1020 | 16-Dec-21 | U.S.P.S. (mail certificates and pins) | $10.59 | | $8,436.67 |
| 1021 | 19-Apr-22 | Carl Wenning (2 - NCRAL Award Plaques) | $125.52 | | $8,311.15 |
| 1022 | 6-May-22 | Minnesota Astronomical Society (Newsletter Editor Award) | $50.00 | | $8,261.15 |
| 1023 | 6-May-22 | Champaign-Urbana Astronomical Society (Newsletter Editor Award) | $50.00 | | $8,211.15 |
| 1024 | 13-May-22 | Jeff Setzer (NCRAL Website Fee) | $96.00 | | $8,115.15 |
| 1025 | 31-May-22 | Roy E. Gustafson (mail newsletter certificates and checks) | $2.32 | | $8,112.83 |
| | 30-Jun-22 | | | | $8,112.83 |
| | | | | Net Change | ($219.87) |

## NCRAL REGION AWARDS FOR 2020 AND 2021



The NCRAL Region Award plaques for 2020 and 2021 were finally presented during NCRAL 2022. Recipients were **Lee Green** of the Twin City Amateur Astronomers and **Wayne Kuhn** of the Neville Public Museum Astronomical Society.

Because the pandemic prevented the Region from holding its annual conventions for two years, these awards went unpresented. That "problem" has now been corrected and our most worthy recipients have now received their due.

See articles about Lee and Wayne in the Summer 2020 and Summer 2021 issues of ***Northern Lights*** respectively.

## Dual NCRAL 2022 Newsletter Editor Awards Presented

The Region's officers chose to recognize two newsletter editors with awards this year for excellence in newsletter writing, editing, and publishing. Two archetypal newsletters were present along with letters of nominated. The newsletters were nearly indistinguishable in terms of production quality that a single winner could not be identified.

Award recipients were **Fr. Eugene M. Brown**, editor of *Gemini* for the Minnesota Astronomical Society and **Mr. Dave Leake**, editor of *Clear Skies* for the Champaign-Urbana Astronomical Society of Illinois. Each affiliate has received a certificate of recognition and each editor's club a $50 honorarium. Congratulations to our winners and their clubs!

Rev. Eugene M. Brown
Minnesota Astronomical Society

Mr. David Leake
Champaign-Urbana Astronomical Society

## Guidelines for Newsletter Production & Newsletter Editor Award Established

In an effort to better distinguish between the competing newsletters among the nominations for the Region's Newsletter Editor Award (sometimes a very challenging task), NCRAL Chair Carl Wenning (the 2017 Mabel Sterns Newsletter Editor Award recipient and member of the national selection committee) has produced a set of guidelines for newsletter production that will also serve as a definitive set of judging criteria. The guidelines have published on the NCRAL website's awards page.

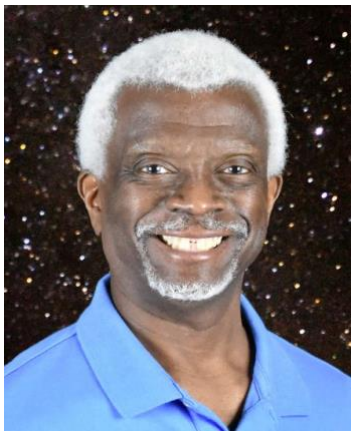
## Official Nomination Form Now Required for Region Award

In an effort to standardize nominations and ensure receipt of the correct types and amounts of information needed by the Region's officers to select the NCRAL's most prestigious award, the Region Award, the Region's Chair – working with our Vice

Chair and Secretary-Treasurer – has formulated a seven-point form that must be used to nominate candidates for this award. The form, an interactive PDF, will ensure that similar information is presented for consideration. The seven areas are as follows: member education, public service, outstanding accomplishments, observing ability, leadership through service, significant honors, and degree of participation in AL and NCRAL events. The new nomination form has been published on the NCRAL website's awards page.

## NCRAL Member Wins *Astronomical League* Honor!



*Sandullah Epsicokhan (TCAA)*

*Twin City Amateur Astronomers* newsletter editor, **Sandullah Epsicokhan**, has been named 2022 winner of the Astronomical League's prestigious **Mabel Stern Newsletter Award**! In announcing the award to Sandullah, Chuck Allen, AL Vice President, noted, *"I am extremely happy to let you know that our panel of judges has awarded you the 2022 Mabel Sterns Newsletter Award, the League's highest honor for newsletter editing. All judges are current or past newsletter editors, and they had to sort through a record seven nominations this year, but The Observer stood out above the rest. You do incredibly impressive work. The Observer is one of the most attractive, current, and well-maintained newsletters that our judges have seen. My fullest congratulations to you."*


In winning this year, TCAA newsletter editors were recognized for the third time with the Mabel Sterns Newsletter Award. The inaugural award was conferred upon co-editors Michael Rogers & Jean Memken in 1998 and Carl Wenning received the award in 2017. Now, the TCAA has been recognized a third time for editorial work on ***The OBSERVER of the TCAA***. Only one other NCRAL affiliate has been honored with the Mabel Sterns Award in the past 25 years. Terry Dufek of *Popular Astronomy Club* was recognized for editing ***Reflections*** in 2018. Both the TCAA and Popular Astronomy Club members have been greatly blessed with excellent newsletter editors! **Congratulations, Sandullah!**

## Future NCRAL Conventions

During NCRAL's annual business meeting, the Region receives offers for hosting upcoming conventions. We are now looking for hosts for NCRAL 2024 beyond. It's never too early to start planning to host an NCRAL convention. The following affiliate has agreed to host the next convention; hosts are needed for 2024 and beyond.

- 2023, North Utica, Illinois, Grand Bear Resort: Twin City Amateur Astronomers (May 5-6)
- 2024, 2025, and beyond: **HOSTS NEEDED**

Whether or not your club has ever hosted an NCRAL Regional convention, please consider doing so in 2024 or later. While hosting a Regional convention is a considerable amount of work, it can be quite rewarding – even fun. It provides an opportunity to highlight your group's facilities and accomplishments, build club camaraderie, and to get to personally know interesting guest speakers. You can also use such an event to grow your club's membership.

Remember, NCRAL now has its own convention planning guide. To download the planning guide, visit the following URL: https://ncral.wordpress.com/conventions/. Look for the link at the bottom of the page.

Please contact NCRAL's Chair at carlwenning@gmail.com should you have any questions or wish to toss your affiliate's hat into the ring for hosting a future NCRAL convention.

## NCRAL Seasonal Messier Mini Marathon Awards – Autumn 2021

Sunil Chebolu, President of the Twin City Amateur Astronomers, completed the *Autumn Mini Messier Marathon*. It was assisted and the certificate number was #11.

## NOTEWORTHY!

The following NCRAL members were recognized for having completed Astronomical League observing programs in the March 2022 issue of *Reflector.* Congratulations to all for their many and varied successes!

**Galileo Observing Program:**
*Dave Tosteson,* Minnesota Astronomical Society

**Globular Cluster Observing Program:**
*Claire Weaverling,* Minnesota Astronomical Society

**Hydrogen Alpha Observing Program:**
*Dave Tosteson,* Minnesota Astronomical Society

**Lunar Observing Program:**
*Dave Tosteson,* Minnesota Astronomical Society

**Outreach Award:**
*Jeffrey S. Moorhouse,* La Cross Area Astronomical Society

**Advanced Observer Award:**
*Gerard Jones,* Minnesota Astronomical Society
*Dave Tosteson,* Minnesota Astronomical Society

**Solar System Observing Program:**
*Dave Tosteson,* Initial & B, Minnesota Astronomical Society
*John Zimitsch,* Minnesota Astronomical Society
*Stephen Pavela,* La Cross Area Astronomical Society

**Stellar Evolution Observing Program:**
*Dave Tosteson,* Minnesota Astronomical Society

**Sunspotter Observing Program:**
*Dave Tosteson,* Minnesota Astronomical Society

**Master Observer Progression**

**Observer Award:**
*Kevin Nasal,* Neville Public Museum Astronomical Society
*Dave Tosteson,* Minnesota Astronomical Society

**Master Observer – Silver Award:**
*Gerard Jones,* Minnesota Astronomical Society

## NCRAL SEASONAL MINI MESSIER MARATHON OBSERVING PROGRAM

The NCRAL Seasonal Mini Messier Marathon program is intended to serve as motivation to get NCRAL-affiliated members out under the stars to observe. The program permits the use of goto telescopes to find objects and, as such, the program must not be considered proof of observing prowess. The Astronomical League's Messier observing program serves that purpose. Still, NCRAL observing certificates include the words "assisted" or "unassisted." Certificates and pins are now being distributed on the equinoxes and solstices along with ***Northern Lights*** by the program administrator. NCRAL Secretary-Treasurer Roy Gustafson is program administrator. Please send observing records to Roy at astroroy46@gmail.com. Up-to-date details about the Region's four observing program and helpful observing record sheets can be found on the NCRAL website: https://ncral.wordpress.com/awards/.

**Autumn:** M55, M69, M70, M75, M11, M26, M56, M57, M71, M27, M29, M39, M2, M72, M73, M15, M30, M52, M103, M31, M32, M110, M33, M74, M77, M34, and M76. (27 objects)

**Winter:** M1, M45, M36, M37, M38, M42, M43, M78, M79, M35, M41, M50, M46, M47, M93, M48, M44, M67, M40, M81, M82, M97, M101, M108, M109, M65, M66. (27 objects)

**Spring:** M95, M96, M105, M53, M64, M85, M88, M91, M98, M99, M100, M49, M58, M59, M60, M61, M84, M86, M87, M89, M90, M104, M3, M51, M63, M94, M106, and M68 (28 objects)

**Summer:** M83, M102, M5, M13, M92, M9, M10, M12, M14, M19, M62, M107, M4, M6, M7, M80, M16, M8, M17, M18, M20, M21, M22, M23, M24, M25, M28, and M54. (28 objects)

**OBSERVING NOTES:**

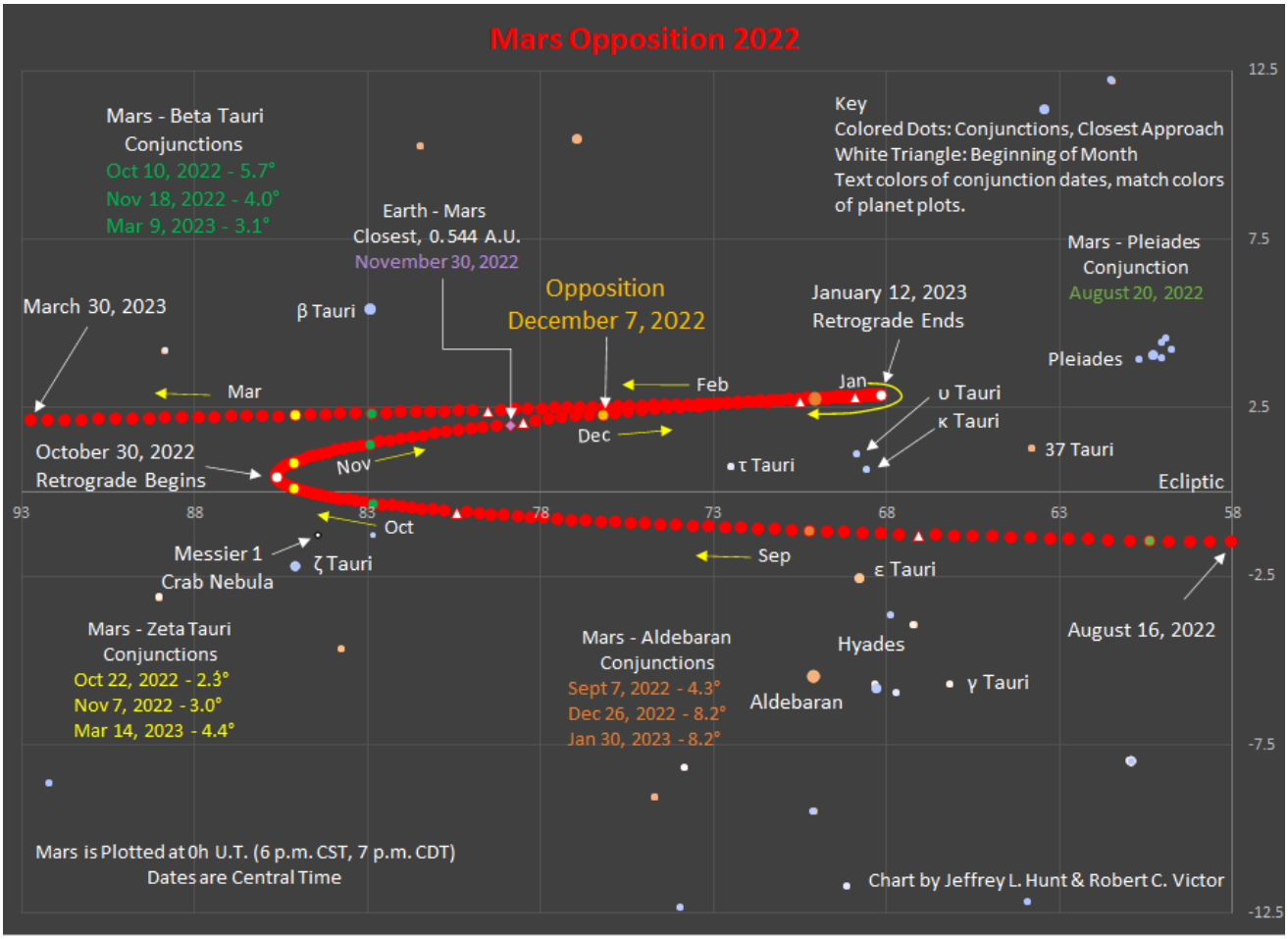
- ***Autumn:*** This season's objects span a wide range of right ascension and declination. With several objects located in Sagittarius and disappearing into the glare of the sun by mid-autumn (M55, M69, and M70), it is best to complete the autumn observing program before the end of October. After that they will be too near the sun to observe during late autumn evenings.

- ***Winter:*** It probably would be best to begin the winter Marathon around mid-February or later. Any earlier in the year, observers will have to wait until late into the night for all winter objects to have risen high enough in the sky to observe. With winter weather moderating in March, it wouldn't be too late to start then so long as observations are completed by the March equinox.
- ***Spring:*** This season's objects span a rather narrow region of right ascension, with most of the objects being associated with or in proximity to the Virgo-Coma cluster of galaxies. At the start of spring, an observing run beginning near the end of astronomical twilight should allow observers to view all objects by around 10:30 PM. By mid-April, all objects should be well enough placed at the end of astronomical twilight allowing for their fastest possible observation.
- ***Summer:*** All summer Marathon objects are above the horizon at the end of astronomical twilight on the first day of summer through the last day of summer. They are nearly all tightly clustered around the galactic center, and most are globular clusters with a few notable exceptions.
- UPDATE (June 4, 2021): *By fiat of the Regional Chair, it is permissible for a group of two or more individuals to work together using a single telescope on the same night to earn a seasonal Mini-Messier Marathon certificate and pin, so long as the group shares a single certificate and pin. All members of a group must observe each Messier object.*

## PLANET OUTLOOK, SUMMER 2022

### By Jeffrey L. Hunt




*This chart shows the motion of Mars from August 16, 2022, through March 30, 2023. It has triple conjunctions with several stars in the constellations. Of special notice are the triples with Aldebaran, Beta Tauri, and Zeta Tauri. See* https://bit.ly/mars_opposition_2022

The season begins with a rare display of the five bright planets in their solar system order before daybreak from the east-northeast to the south-southeast. The best mornings, when Mercury rises at least 110 minutes before sunrise, are June 20-29. Long twilight makes this a somewhat challenging observation. The moon is near Jupiter (21st), Mars (22nd/23rd), Venus (26th), and Mercury (27th). Mercury and the moon fit into the same binocular field on that morning.

The grouping of five planets in their order from the sun is a rare occurrence, last occurring in 2004. Some press sources report that the next grouping occurs in 2040, but Mercury is only 7° from the sun and sets about 20 minutes after sunset, hardly an easy observation.

The appearance of five planets simultaneously can occur during a decade-long window near the Jupiter-Saturn great conjunctions, occurring about every 20 years. Displays of the planets in their solar system order can occur during the five years before the conjunction while morning displays can occur in the five years following the meetings.

For any bunching of the five bright planets to occur, they must be within 180° of ecliptic longitude. In the evening sky, the eastern planet – Mars, Jupiter, or Saturn – must rise before Mercury sets. For morning sightings, the western outer planet cannot set before Mercury appears. Jean Meeus suggests that the sun must be at least 5° below the horizon and Mercury should be at least 5° up in the sky for these simultaneous observations to be visible.

The challenge for all of this is Mercury, with its rapid revolution around the sun, the length of twilight, the angle of the ecliptic with the horizon, and Mercury's celestial latitude. All can contribute to a poor apparition for the speedy planet.

The last visible grouping of five planets simultaneously occurred in July 2020 (Mercury, Venus, Mars, Saturn, Jupiter). Just last year, five planets were in the sky after sunset during August, although Mercury and Mars were only 2° above the horizon at 30 minutes after sunset, hardly visible without exceptional sky conditions and an optical assist. During the spring of 2036, the planets span nearly 90°. The order is: Mercury, Jupiter, Venus, Mars, and Saturn. The next time the five planets are in order and easily visible is and evening event during early May 2100. The five span 145°, from Mercury to Saturn. The Jupiter – Saturn gap is 6.6° and Venus is near the Pleiades. The great conjunction occurs September 24.

Back to present, the five planets are joined by Uranus, Neptune and the classic ninth Pluto. Uranus is moving eastward in Aries, over 2° to the lower left of Pi Arietis and 1.5° to the lower right of Rho Arietis. The aquamarine planet is a binocular object.

Neptune is in Pisces, over 1° from 20 Piscium. It begins to retrograde on June 28.

For those with enough telescopic aperture and appropriately dark skies, look for Pluto across several nights. At the beginning of morning twilight, this classic ninth planet is nearly 25° up in the southern sky in eastern Sagittarius, 0.2° to the upper left of a star cataloged as HIP 98575. Use the finder chart in the *Observer's Handbook, 2022* (p. 239) or the July 2022 issue of *Sky & Telescope* magazine (pp. 48-49).

**June**

The sun reaches its solstice coordinates at 4:14 a.m. CDT on the 21st.

Mercury, at its greatest elongation before summer begins, is part of the morning planet extravaganza. For observers with an unobstructed east-northeast horizon, the planet is bright enough to follow into growing morning twilight during early July. Use a binocular to track it. As highlighted above, maybe the best morning to see the planet parade is the 27th when the crescent moon is in the same binocular field as Mercury.

Venus continues to step eastward quickly during the last weeks of the month meeting the stars of Taurus as they make their first morning appearances. It passes the Pleiades on the 23rd. With good luck, an optical assist from a binocular, and exceptional viewing toward the east-northeast, it might be visible between the Pleiades and the Hyades on the 27th and 28th. The crescent moon is 2.6° from Venus on the 27th.

Mars marches eastward in Pisces near the stars Mu Piscium, Nu Piscium, and Omicron Piscium, where it appeared at opposition in 2020. It ends the month nearly 20° to the lower left of Jupiter.

Jupiter is slowly moving eastward from Pisces to Cetus on the 26th. By month's end it rises nearly five hours before the sun, appearing nearly 40° up in the southeast before daybreak. As it rises higher in the sky, the Great Red Spot becomes easier to see during its central passages on the planet's disk. If you use a computer program to predict the times to see the spot, be sure the program has been updated to account for its changing longitude. Through a telescope, look for Ganymede at its maximum elongation east of the planet on the 25th and Callisto during the next morning.

During mid-twilight, Saturn is over 30° up in the south near Delta Capricorni, as the summer season opens. The Ringed Wonder is slowly retrograding. As it picks up apparent westward speed, watch it approach Delta. By month's end it rises over 90 minutes before Jupiter. Their gap is over 40°.

Through a telescope, Saturn's rings are inclined over 12°. Titan is near maximum eastern elongation of nearly 3 arcminutes on the 23rd. On the 29th, Iapetus is near the eastern maximum elongation (9 arcminutes). On this morning, Tethys is south of the planet's disk.

**July**

Moon phases: FQ, 6th; Full (Buck), 13th; LQ, 20th; New, 28th. On the 9th the gibbous moon seems to be caught in the Scorpion's pincers. The moon is in the same binocular field with 4Vesta on the 16th, Neptune on the 18th, and Uranus on the 22nd. On the 23rd look for the moon 4.3° below the Pleiades. This will be a nice photo – a crescent moon with earthshine with the star cluster.

Mercury reaches its superior conjunction on the 16th and struggles to appear in the evening sky after sunset next month, setting before Nautical Twilight.

The gap between the four bright morning planets explodes during the month. At the beginning of July, the Venus – Saturn gap is over 105°, expanding nearly 40° by month's end.

Venus, low in the east-northeast, steps eastward in Taurus, passing Aldebaran on the 1st; Beta Tauri (12th); between the Bull's horns (13th); and Zeta Tauri (14th). Venus passes within 0.5° of the Crab Nebula on the 13th, but the nebula is low in the sky during bright twilight. The sun is slowly roping Venus toward it. The planet's elongation decreases 7° during the month. At mid-month, the planet's disk is 11 arcseconds across and nearly 90% illuminated. The planet passes through the northern edge of Orion's club (July 16-18) and into Gemini, ending the month about 10° to the upper right of Pollux. It is near Messier 35 on the mornings of the 19th and 20th, although it is low in the sky during morning twilight. The crescent moon is 3.9° away from the planet on the 26th.

Mars widens the gap to Jupiter by over 20° during the month, moving from Pisces into Aries on the 9th. It passes 11.6° to the lower right of Hamal on the 16th. The moon is nearby on the morning of the 21st, with an occultation occurring later in the day in eastern Asia. Watch Mars begin to close a wide gap to the Pleiades before their conjunction next month. Through a telescope the planet is only 7 arcseconds across and grows only 1 arcminute during the month. Brighter than Saturn, its brightness increases from 0.5 to 0.2. Through a telescope, winter begins in the northern hemisphere on July 21st. Can you see the polar cap grow or will clouds obscure the view?

Jupiter slows its eastward motion in Cetus, beginning to retrograde at month's end. The Jovian Giant only moves 1.2° eastward before it reverses direction. At mid-month, the planet rises around 11:30 p.m. CDT (in Chicago). The moon is 4.5° away on the 19th. Have you seen the Great Red Spot? Look for Callisto wide on the east side of the planet on the 12th through the 14th. The moon is west of Jupiter on the 20th through the 22nd. This is a time to test the quality of your binocular. Can you hold it steady enough and is your binocular of high enough quality to see the moon about 9 arcminutes from the planet?

Saturn continues to retrograde in western Capricornus near Delta, passing the star on the 18th. Watch it form a nice isosceles triangle with Delta and Gamma on the 30th. Early during the month, not much change is noticed, but Saturn picks up western speed during the month. At midmonth, it rises about 90 minutes after sunset, approaching its opposition next month. Through a telescope the equatorial diameter is over 18 arcseconds. The rings are inclined nearly 13°. On the 18th, Iapetus is at inferior conjunction. Depending on the time, the moon is either in front of the disk or as morning twilight grows, between the disk and the rings.

For those with sufficient aperture, the classic ninth planet Pluto is at opposition on the 19th.

**August**

Moon phases: FQ, 5t ; Full (Sturgeon), 11th; LQ, 18th; New, 26th. The bright moon, during the annual Perseid meteor shower, washes out all but the brightest meteors.

The moon passes Saturn on the 11th. It is in the same binocular field as Neptune on the 14th. The waning gibbous phase is near Jupiter on the 15th. Use a binocular to see Uranus with the moon on the 18th. On the 19th the moon is between Mars and the Pleiades. The trio nicely fits into a binocular field of view. The lunar crescent catches Venus on the 25th, a nice binocular view. On its return to the evening sky, the moon is with Spica on the 30th.

Mercury emerges from the sun's glare to reach its evening greatest elongation (27.3°) on the 27th. While the elongation is large, the planet struggles to make it into the sky. Only at magnitude 0.2, the speedy planet sets 50 minutes after sunset, before Nautical Twilight. This is the poorest evening apparition of the year. Mercury is below the ecliptic and at less than 9° altitude at sunset. Even at midmonth when its setting time interval is nearly an hour, Mercury's altitude is less than 10° at sunset. Even with the poor observing opportunity try to see Mercury and the crescent moon on the 29th with a binocular. The moon is 6.2° above the planet at about 20 minutes after sunset. The planet is about 5° up in the west, but it is not very bright (m = 0.3), a challenge during brighter twilight.

During the month, Venus is noticeably reeled in by the sun. The brilliant planet loses over 35 minutes of rising time, appearing above the horizon just before morning's Nautical Twilight. The consistent loss of one to two minutes each morning continues through the superior conjunction during late October. The planet is stepping through Gemini, passing Pollux on the 6th. At mid-month, Venus has the same altitude as Procyon during morning twilight and the first morning appearance of Sirius. On the 17th it passes the Beehive cluster,

a challenging observation during twilight. Around the 20th, note that the brightest planet and the brightest star are at about the same altitude.

Mars passes 1.3° to the lower right of Uranus on the 2nd. It moves into Taurus on the 9th, heading toward its opposition on December 7. As noted above, Mars and the moon appear in the same binocular field with the Pleiades on the 19th. On the 20th the planet passes Eta Tauri, the brightest star in the cluster. Beginning about the 28th, Mars and the Hyades fit into the same binocular field of view until after the first week of September. On the 30th, Mars passes between the Pleiades and Aldebaran. The next morning, Mars passes Gamma Tauri, the star at the point of the "V" of Taurus. The planet's brightness increases nearly a full magnitude and the angular size grows 1.5 arcseconds.

Jupiter retrogrades 1.7° in Cetus, near the Pisces border. Shining at magnitude −2.8, the Jovian Giant rises over 140 minutes after sunset on the 1st. This is before midnight for all locations in a time zone. It is approaching its opposition near the end of next month. The moon is in the same binocular field on the 15th. Callisto is near its maximum elongation on the 7th (W), 15th (E), and 24th (W). Ganymede revolves faster and its maximum elongations occur on the 4th (W), 7th (E), 11th (W), 14th (E), 18th (W), 21st (E), 25th (W), and 28th (E).

At magnitude 0.3, Saturn's retrograde continues, passing opposition on the 14th. The planet is 8.8 Astronomical Units away. With a binocular track the planet's progress compared to Gamma Capricorni and Delta Capricorni. Through a telescope the rings are tilted about 13° and span nearly 44 arcseconds. In the eyepiece notice the oblateness of the Ringed Wonder. Titan reaches its maximum elongation on the 9th (E), 17th (W), and 24th (E). Can you find Iapetus near its maximum western elongation (10 arcminutes) on the night of the 6th/7th. Try to locate it above the rings on the planet's west side during the early evening of the 26th before its superior conjunction with the planet later that night. On the evening of the 27th, find it east of Saturn and north of Tethys.

The August 2022 issue of *Sky & Telescope* magazine recounts the history of observations of the spokes in Saturn's B ring structure. Before they were sighted by Voyager 1 in 1980, they were spotted in a nine-inch refractor. The rings have been missing and it is suggested in the article that the spokes become visible when the inclination of rings is less than 15°. So, you sharp-eyed observers, take a look on the eastern part of the rings.

As the month progresses, the Venus – Saturn gap widens. By mid-month, the two planets are becoming a challenge to see simultaneously. Once Saturn is below about 5° altitude, atmospheric extinction hampers the view without a binocular, while brilliant Venus is seen easily within a few degrees of the horizon. What is the last date you see Venus and Saturn simultaneously? The two planets are at opposition, 180° apart in the sky on the 28th. After this date only three bright planets are in the morning sky simultaneously, either Venus or Saturn is with Mars and Jupiter.

Uranus begins to retrograde on the 24th.

**September**

The sun reaches the coordinates of the Autumnal Equinox on the 22nd at 8:04 p.m. CDT.

Moon phases: FQ, 3rd; Full (Harvest), 10th; LQ, 17th; New, 25th.

The moon is in the same binocular field with Antares on the 3rd. Look for it in the handle of the teapot on the 5th. Notice the Harvest Moon effect as the Full phase approaches. The moon moves the typical 13° eastward compared to the stars each evening, but its altitude does not change much at the same time each evening. It is to the lower right of Saturn on the 7th and the lower left on the 8th. The lunar orb is in the same binocular field with Neptune on the 10th, and to the right of Jupiter on that evening. The moon and Jovian Giant fit into a binocular on the next evening. The moon is between the Pleiades and Mars on the 16th. The gap is too wide (14.8°) for a binocular view of them, but Mars and the moon fit in the field the next morning. Catch the moon with star cluster M35 on the 18th. On the 24th, try to observe a razor-thin moon (2% illuminated), about 9° above Venus that is immediately above the horizon.

Mercury retreats back into evening twilight during the month. It passes inferior conjunction, between Earth and the sun, on the 23rd, moving into the morning sky for its best morning apparition of the year. By month's end it rises over an hour before sunrise. At 30 minutes before daybreak, it is only 5° up in the east, but it has a dismal magnitude (1.6). It brightens dramatically during October and rises as early as 95 minutes before the sun.

Venus is finishing its morning apparition, heading for its solar conjunction near the end of October. At the beginning of September, it rises just 72 minutes before daybreak. The rising time gap before sunup slips 41 minutes during the month. The Morning Star passes Regulus on the 9th, in a narrow gap (0.7°). During the month, the Venus – Jupiter gap widens toward 180°. Their opposition occurs October 1. Unlike Saturn's opposition with Venus last month, brilliant Venus and bright Jupiter are visible near the horizon. What is the last date you can see them, simultaneously?

Mars is moving eastward in Taurus, heading toward opposition in December. As the month opens, Mars is nearly two-thirds of the way up in the southeast as morning twilight begins. It is near the Hyades. The Red Planet is in the same binocular field as the star cluster until at least the 8th. Mars

has its first conjunction of three during this apparition with Aldebaran on the 7th. It passes Tau Tauri on the 12th and Iota Tauri on the 23rd. The planet's brightness grows 0.5 magnitude during the month and its apparent size grows over 2.2 arcseconds to 12.0 arcseconds. At month's end, the planet is 70° up in the south-southeast, approaching the Bull's horns.

Bright Jupiter (m = −2.9) rises about an hour after sunset as the month opens. It retrogrades into Pisces on the 1st and moves over 3.5° westward during the month. It is at opposition on the 26th, with an angular size of nearly 50 arcseconds. Have you seen the Great Red Spot? Through the eyepiece, Callisto reaches its maximum elongation on these evenings: 8th (W), 17th (E), and 25th (W). Ganymede appears farthest from the planet on the 4th (E), 8th (W), 11th (E), 15th (W), 19th (E), 22nd (W), 26th (E), and 29th (W).

Saturn is about 20° up in the southeast at an hour after sunset on the 1st. It is west of Delta Capricorni and Gamma Capricorni. With a binocular watch it approach Iota Capricorni, 2.6° to the west on the 1st. The Ringed Wonder retrogrades only 1.6° during September. It passes through opposition on the 14th. Through a telescope, the rings are inclined over 13°. In the eyepiece, look for Titan at east maximum elongation on these evenings: 2nd (W), 10th (E), 18th (W), and 25th (E). Iapetus reaches eastern maximum elongation on the 15th, nearly 9 arcminutes away from Saturn's disk.

Neptune is at opposition on the 16th.

Summer has many opportunities to make naked-eye observations of the bunching and dispersing of the five bright planets or to watch their moving moons. Autumn provides a Mars opposition and planets moving toward the evening sky. Have a great observing season!

## Add Your Email Address to the NCRAL Member Database

Did you know that only about 475 of our Region's 1,900 members are receiving this newsletter via email? That's less than one-fourth 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.

When one adds his or her email address to the NCRAL member database, he or she will receive direct notifications about the availability of ***Northern Lights***. In addition, subscribers will receive important and timely announcements about Regional conventions, elections, star parties, and so forth. Only blind addressing (Bcc:) will be used with this email list so that 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 for you, so you'll need to do it yourself. Sign-up takes only about a minute. You'll need to provide your name, email address, 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://goo.gl/gsS8SF today, so you won't miss important future communications.

## Regional Officer & Leader Contact Information

**Chair** and **Newsletter Editor:** **Carl Wenning**

**Bio:** Carl has been an avid amateur astronomer since being introduced to the sky by his grandfather during July 1957. Today he is an ***A.L. Master Observer*** spending most of his time introducing nascent amateur astronomers to observing. He has been involved with the *Twin City Amateur Astronomers* (Illinois) since September 1978. Carl served as editor of his club's newsletter, ***The OBSERVER,*** from 2014-2021, during which time he received the Astronomical League's *Mabel Sterns Newsletter Editor Award* in 2017. He has served as the Region's newsletter editor from 2016 to present. He was recognized for his Regional education and outreach efforts in 2007 when he received the ***NCRAL Region Award***. Carl served as planetarium director and physics teacher educator at Illinois State University (1978-2008). (Two-year term as Regional Chair, currently in third and final term, 2017-2023; ***Northern Lights*** Newsletter Editor, 2016-present.)

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**Vice Chair:** **Bill Davidson**

**Bio:** In the days of the Apollo missions, Bill first observed the moon (and sunspots!) with a 50x, 60mm JC Penny's refractor telescope. Not discouraged, 40 years later, he built and observes with a 6.25-inch achromatic doublet objective, f/10, 1600 mm focal length refracting telescope. He recently retired as a college mathematics instructor, has been a member of the *Rochester Astronomy Club* (Minnesota) 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 second term, 2021-2023.)

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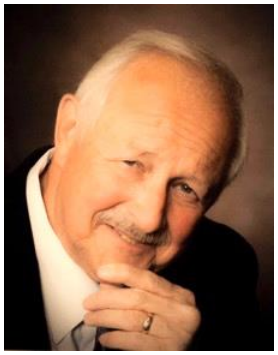
**Secretary-Treasurer:** **Roy Gustafson**



**Bio:** Roy, a member of *Popular Astronomy Club* (Quad Cities), got interested in astronomy when visiting the Adler Planetarium in Chicago when he was in 2nd Grade. The stars 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. (Two-year term as Secretary-Treasurer; currently in third term, 2018-2024.)

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**Regional Representative:** **John Attewell**

**Bio:** John's interest in astronomy was kindled during two great comet events – comets Hyakutake (1996) and Hale–Bopp (1997). For the next ten years he used a 2½-inch refractor borrowed from his brother 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 meetings of the Rochester Astronomy Club 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 first term, 2022-2025)

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**Webmaster:** Jeff Setzer (appointed)

**Bio:** Jeff has been an amateur astronomer since 1984 and has been part of the *Northern Cross Science Foundation* (Wisconsin) since that time. He is a longtime member of their Board of Directors, has held several office positions, and is currently their President. He has completed several Astronomical League observing programs, made his own telescopes and optics, and is a self-described telescope nut. You will often find him at star parties with his 22" Starmaster and TeleVue 85 telescopes.

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