



Charlotte Amateur Astronomers Club  
[www.charlotteastronomers.org](http://www.charlotteastronomers.org)

### CAAC January 2023 Meeting

<p><b><u>Next Meeting:</u></b> Friday January 20th, 2023</p> <p><b><u>Time:</u></b> 7pm ET</p>	<p><b><u>Place:</u></b> <i>Myers Park Baptist Church Education Building – Shalom Hall (Basement)</i></p> <p><b><u>Address:</u></b> 1900 Queens Road Charlotte, NC 28207</p>
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### A View from Above – Using a Low Cost SDR to Down Link Weather Satellites

**Presentation:**

Learn the basics of the hardware and software to receive weather maps directly from satellites.

**Bio:**

We have such talented people in our club and this month is no exception as, one of our own will be speaking to us this month. This Friday we welcome Jim Craig.

Jim is a self-proclaimed skills acquirer. With a passion for learning how to do new things, he repaired his first television at the age of 10. Since then, he's learned a wide variety of skills including cooking, knitting, computer animation, drawing and welding. He's been interested in astronomy for over 50 years and spent more than 20 years teaching astronomy to thousands in planetariums.

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**From the President:**

Dear Friends,

Happy New Year!

As we get ready to kick off 2023 for the club, I want to thank you all for your support in making 2022 a resounding success.

We are growing. The club is nearing record levels of enrollment and we look forward to sharing our passion with our new club members. Please continue to subscribe to the Night Sky Network and come use your club facilities at the GHRO.

2023 will be very exciting as we return to Wild Acres for Southern Star, complete the current phase of the capital program, and seek-out new members to the Board of Directors. The club survives on its volunteers so please consider joining in on our several opportunities.

Welcome Back!

Joel Levy  
Club President

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## Secretary's Report:

1. Please see below for the 2023 CAAC annual membership options:
  - Annual individual/family membership, which includes access to the CAAC dark sky [observatory](#) (GHRO) - \$60.00
  - Dues are collected at the October meeting and are pro-rated for members joining in January or later.
  - Students up to 18 years old - \$15.00 per year.
  - Private Observing Pads - additional \$25.00 per year.  
Optional fee for members with private concrete observing pads at the club's dark sky location. Contact the Observatory Director for additional information.

Membership Applications are available through the CAAC Treasurer at monthly meetings.

Click <https://charlotte-amateur-astronomers-club-2.square.site/> to navigate to the CAAC online store. Then select "CAAC Membership" to add it to your cart

2. We are excited to announce the launch of the new CAAC website, <https://charlotteastronomers.org/>! The CAAC website has been updated to provide better service to our members with easier navigation, up to date announcements and postings, and accessible communication.  
Please explore and enjoy your new CAAC website.
3. If you are a former CAAC member and have not been keeping up with your membership dues, firstly please come back! We'd love to reconnect you with the love of astronomy through our club, use of GHRO observatory, and the camaraderie of our members.

Please also remember to return your badges on the table near the exit at the end of the meeting before you leave! Doing this will significantly reduce the chances of badges getting lost and reduce the amount of time (and cost) of having to re-create your name tag if it is lost. Thank you!

4. Register with the **Night Sky Network!** It is imperative that all members of the CAAC join the Night Sky Network (NSN). Many of the club's outreach activities are managed by the NSN, as well as club communications (newsletters, event notifications, general email). The NSN is a wonderful tool specifically designed for amateur astronomy clubs like ours. Membership allows you to contact other members via email, and receive last minute updates for outreach events via text message:  
[http://nightsky.jpl.nasa.gov/club-apply.cfm?Club\\_ID=1468&ApplicantType=Member-Pre-Monthly](http://nightsky.jpl.nasa.gov/club-apply.cfm?Club_ID=1468&ApplicantType=Member-Pre-Monthly)

My Do  
CAAC Secretary

## CAAC Treasurer's Report as of 12/31/2022

### Operating Fund

**Purpose: Enable the CAAC to pursue our non-profit goals, maintain our facilities, and run our programs.**

\*Funds are acquired through ongoing receipts of dues, fees, and annual Southern Star income (or expense).

\*Funds are expended to meet operating obligations of the club.

1	<b>Operating Fund Balance: 11/30/2022</b>	<b>\$7,271.17</b>
2	<b>Income:</b> Dues and Fees Auction Proceeds Donations	 \$675.00 \$2,612.00 \$100.00
3	<b>Expenses:</b> Christmas Party New GHRO building Speaker giftcards/supplies/zoom GHRO Utilities (alarm, elec, internet) Service fee to accept credit cards	 \$120.00 \$508.24 \$575.05 \$448.90 \$23.18
4	<b>Operating Fund Balance: 12/31/2022</b>	<b>\$8,982.80</b>

### Non-Operating Funds

**Purpose: Administer gifts and donations for designated use.**

1	<b>Non-Operating Fund Balance: 11/30/2022</b> Scholarship Fund CAAC Self Insurance Fund Contingency Fund	 \$6,706.87 \$20,000.00 \$7,368.89
2	<b>Income:</b> Interest	 \$4.35
3	<b>Expenses or Transfers:</b>	\$0.00
4	<b>Non-Operating Funds Balance: 12/31/2022</b> Scholarship Fund CAAC Self Insurance Fund Contingency Fund	 \$6,706.87 \$20,000.00 \$7,373.24

Scott Goforth  
CAAC Treasurer

# 34<sup>th</sup> Annual Astronomy Convention



REGISTRATION BEGINS IN FEBRUARY

Exceptional Key Speakers

Stay at WildAcres

3 Nights & 4 Days

Includes Meals & Reception



Star Parties & Solar Viewing

Social Events & Door Prizes

optional Nature Hike & Artisan Visit



FOR MORE INFO OR TO VOLUNTEER: [southernstar@charlotteastronomers.org](mailto:southernstar@charlotteastronomers.org)

Jodie Funderburk 410-303-2301

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## News from GHRO

1. The next star party is Saturday, January 21 beginning at dusk. We will be joined that evening by about 9 Boy Scouts and their leaders. They are working on Astronomy Merit Badge with Benton Kesler. They will be rotating among the observatories, so please share your viewing with them.
2. Telescope training for new members (and those wishing to get a review) will be held on Saturday, January 28 beginning at 4:30. This training is required for all new member that wish to use the facilities at GHRO. The training will take place even if it is cloudy, it will be cancelled only if it is actively raining or snowing. If it's clear, you can practice your newfound skills immediately after the training.
3. The complete GHRO calendar for 2023 is below.

2023 Star Party and Training Schedule					
			<b>GHRO</b>		
			<b>Moon</b>		
			<b>Illumination</b>		
		<b>Star Party</b>	<b>on Star</b>		<b>Training start</b>
		<b>Date</b>	<b>Party date</b>	<b>Training Date</b>	<b>time (PM)</b>
	<b>January</b>	21	1%	28	4:30
	<b>February</b>	18	5%	25	5:00
	<b>March</b>	18	15% waning	25	6:00
	<b>April</b>	22	7%	15	6:00
	<b>May</b>	20	1%	13	6:30
	<b>June</b>	17	1%	24	6:30
	<b>Junly</b>	15	5%	22	6:30
	<b>August</b>	19	9% waxing	26	6:30
	<b>September</b>	16	2%	23	5:30
	<b>October</b>	14	1%	21	5:00
	<b>November</b>	11	4%	18	4:30
	<b>December</b>	9	14% waning	No training in December	

4. Don't forget that the current sky conditions and weather and the Clear Sky Clock is found at the bottom of our home page...[www.charlotteastronomers.org](http://www.charlotteastronomers.org).
5. The new telescope storage building, near the all members pad is available for rent. The fee is \$10/month for a 3'x3' spot inside, with a 6 month minimum commitment; there are 9 spots available. Users are encouraged to have their contents insured, as CAAC will not be insuring the contents of the building. Please see Jim Gaiser or Rick Bassham if you have any questions.

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## **GHRO Information**

GHRO is located at [1427 Bloomwood Drive, Lancaster, SC](#). (some GPS show city as Pageland). Gravel road leading to the observatory is located 5.22 miles east of the "522 Grill" on Taxahaw, Rd.

### **Facebook FAQ**

<https://www.facebook.com/CharlotteAstronomers/> scroll down to NOTES, then Frequently Asked Questions page for more information about GHRO. Be sure to share your astronomy photos and observing tips.

### **Night Sky Network -- "Heading to GHRO"**

For updates on GHRO, be sure to join the <https://nightsky.jpl.nasa.gov/index.cfm> "Heading to GHRO" message group.

Jim Gaiser, Director GHRO.

As always, we care about the safety and security of all visitors to our observing facility, the GHRO. To keep us all mindful for the need to keep alert while visiting the observatory, we provide the following reminder. Please share this with your family and any visitors who may join you at the observatory. Thank you.

**\*\*\* WARNING \*\*\***

This facility (GHRO) and adjoining area may contain uneven terrain, dangerous wildlife, low light conditions, and dangerous man-made obstacles.

By using this facility, users assume the risk of personal injury, and loss or damage to personal property. All persons should use extreme caution at all times.

Users of this facility agree to hold harmless the Charlotte Amateur Astronomers Club, its Directors, and its members for any and all injuries sustained while participating in club activities or using this facility.

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## **CAAC Outreach Opportunities**

Last month we had an outreach event for the Park Road Montessori School involving approximately 25 students and their parents. They enjoyed views of Jupiter and Saturn. Thanks to Jim Craig and Tom Blevins for their assistance on this event.

### **Upcoming Event:**

Christmas Telescope event. From Benton Kesler:

After several years delay because of covid, we are again offering to the community help in setting up and using their new telescopes that either they received for Christmas or had collecting dust in their closets. Previous years we have helped nearly 20 new users to enjoy the wonders of the night sky and this year we hope to do the same. We can show them how to set up their equipment and some tips on how to use successfully.

We are looking for 5 club members for up to 3 hours on Sunday afternoon Feb 5.

Location - St Francis United Methodist Church, 4700 McKee Rd, Charlotte  
in the pavilion (brick building behind the church)

Time - Between 2 and 5 PM

Please let me know if you could assist.

Benton Kesler

Charlotte Amateur Astronomers Club

### **On Deck:**

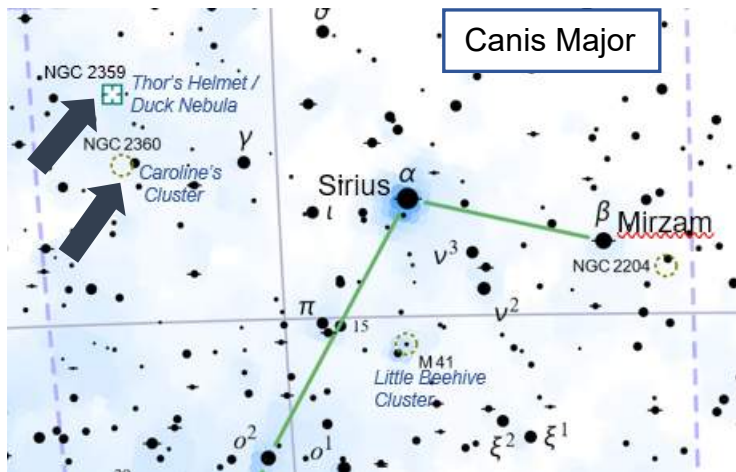
Catawba Land Conservancy March, exact date to be determined.

Cornelius Park and Recreation: April 15, location and details TBD.



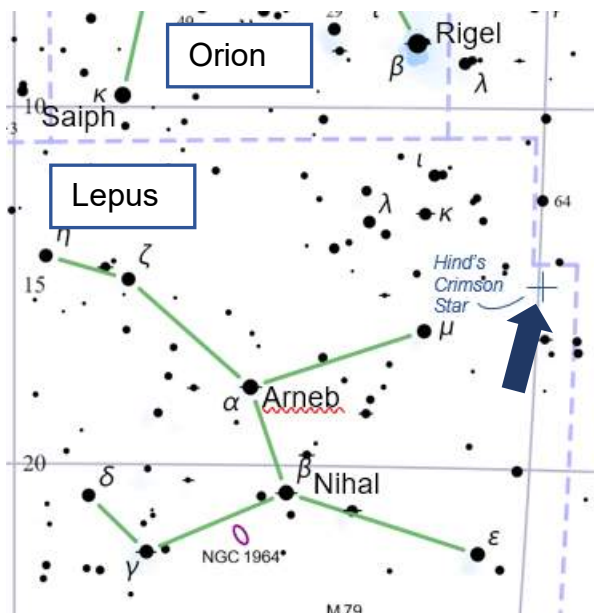
# January Sky Challenge

Are you looking for something to discover in the night sky? Try these with a modest size telescope, with some patience and persistence! Or come down to the GHRO and get a really fine look! This month, a nebula, a cluster, and a truly red star!



**NGC 2359**, (a.k.a. **Thor's Helmet** or **Duck Nebula**) is an emission nebula in the constellation Canis Major. The nebula is approximately 11.96 thousand light years away and 30 light-years in size. It is similar in nature to the Bubble Nebula, but interactions with a nearby large molecular cloud are thought to have contributed to the more complex shape and curved bow-shock structure of Thor's Helmet.

**NGC 2360**, also known as **Caroline's Cluster**, is an open cluster in the constellation Canis Major. It was discovered on 26 February 1783, by Caroline Herschel who wrote, "A beautiful cluster of pretty compressed stars near  $\frac{1}{2}$  degree in diameter." Her notes were overlooked until her brother William included the cluster in his 1786 catalogue of 1,000 clusters and nebulae and acknowledged her as the discoverer.



**R Leporis** (R Lep), sometimes called **Hind's Crimson Star**, is a well-known variable star in the constellation Lepus, near its border with Eridanus. It is a carbon star which appears distinctly red. It is named after famous British astronomer J. R. Hind, who observed it in 1845. Its apparent magnitude varies from +5.5 to +11.7 with a period of 418 - 441 days.

R Leporis has often been reported as an intense smoky red color, although this is not pronounced when the star is near its maximum brightness. It is reddest when it is dimmest, which occurs every 14.5 months. During these periods it is a candidate for the most-visible reddest star. The red coloration

may be caused by carbon in the star's outer atmosphere filtering out the blue part of its visible light spectrum. The star's discoverer, Hind, reported that it appeared "like a drop of blood on a black field."

Acknowledgements:

Wikipedia for excerpts.

Mag Star 7 Star Atlas Project © 2005 Andrew L. Johnson for star maps (clipped)

*Edited by Mark Hoecker*

# What's Up in the Sky?

**Highly Recommended** Download and print a good *FREE* star map (including interesting objects to look for) monthly from:

Skymap <http://www.skymaps.com/downloads.html>

You'll also find a good monthly sky map in each issue of *Sky & Telescope* or *Astronomy* magazines.

## New to the Night Sky?

Are you puzzled by folks in the club who point up in the sky and say "There's Gemini... and you can see Leo rising over there...and doesn't Regulus look clear tonight"? Are you trying to figure out where those darn constellations are? Those large star atlases are pretty intimidating... confusing... and expensive.

A good starting point could be called, *My First Star Atlas*.... but in reality it is 4 simple but very helpful *FREE* star chart pages from the Stephen F. Austin State University – called **SFA Star Charts**. Pages 2 & 3 show you about 90% of everything you need to get started. There are even a couple pages that explain how to use a star chart. Clear and straight-forward.

Go to this link and print out the pdf file on the largest paper you have available, though standard letter paper is fine:

<http://observe.phy.sfasu.edu/SFAStarCharts/SFAStarChartsAll.pdf>

While these charts do not show the myriad of deep sky objects, they DO show the constellations and brightest stars – a good introduction to the night sky!

**Happy Observing!**

## An **ENHANCED** Star Atlas – **FREE!**

Our CAAC member, Mark Hoecker, has used the *Mag 7 Star Atlas – Color Milky Way version* (available on the internet) and added some enhancements including:

- A star map index to quickly identify the individual star chart you are looking for.
- Blue directional arrows at the edge of each chart guiding you to the adjacent chart. Also large page numerals were added in the lower right corner, helpful when thumbing through the charts.
- Finally, he manually added common star names and a selection of deep sky object names to the star charts, helpful in finding your way around the sky.

Such enhancements are allowed under the Creative Commons License by Andrew L. Johnson, author of the original charts.

**SUGGESTION:** While printing at the largest paper size you have available is helpful, a great alternative if you have a "letter size" color printer with a manual auxiliary feed slot, is to print on "legal size" (8½ x 14-inch) heavy paper or even "card stock". You could

also punch holes and place in a legal-size report cover available at office supply stores. You would then have a wonderful star atlas to help you through the night skies!

If you have access to a color printer that can print on 11 x 17-inch paper (or card stock), you can print a magnificent copy whose readability will rival that of very nice, commercially available atlases.

To download your ***Mag-7 Star Atlas Milky Way version – ENHANCED***, go to the CAAC website and on the top menu bar, hover your cursor over “Resources” then select “Mag-7 Star Atlas”. Follow the directions to download.

***Happy Observing!***

## Endowment Corner

Gifts for the Present:

### Memorial designations:

One way to honor those who have passed on is to designate memorial gifts to the CAAC Stewardship Foundation.

To make a contribution or learn more, please visit  
<https://charlotteastronomers.org/endowment/>

Ken Steiner, Chair CAAC Stewardship Foundation

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### CAAC CONTACTS

President	Joel Levy	<a href="mailto:levyjoelh@yahoo.com">levyjoelh@yahoo.com</a>
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Observatory Director	Jim Gaiser	<a href="mailto:jegaizer@gmail.com">jegaizer@gmail.com</a>
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