



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

### CAAC September 2022 Meeting

<p><b><u>Next Meeting:</u></b> Friday September 16th, 2022</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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### Why Go to Asteroids? NASA's Lucy, Psyche, and DART Missions

Asteroids hold clues about the formation and history of our Solar System. Not all asteroids are the same. Scientists also want to develop protective measures to mitigate dangers posed to Earth by potentially hazardous asteroids. This talk will discuss 3 upcoming NASA missions, one of them already underway.

#### Speaker: Carole Holmberg

Carole Holmberg has been Planetarium Manager of the Settlemyre Planetarium at the Museum of York County in Rock Hill since 2013. She has been a volunteer JPL/NASA Solar System Ambassador for the past 20 years. Carole is a member of the Carolina Skygazers and a lifetime member of the Southwest Florida Astronomical Society. Prior to moving to South Carolina, Carole was Planetarium Director at the Calusa Nature Center and Planetarium in Fort Myers, Florida. She loves sharing her passion for astronomy and space exploration with others! She lives with her husband, 6 cats, and 2 pet hedgehogs.



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## From the President:

Dear Friends,

The rain clouds of the summer are officially behind us and we will soon transition into cool clear winter skies. This is a great time for viewing!

We hope that you will take the opportunity to join us for the year's remaining star parties and the upcoming Cosmic Camporee. As a reminder, our facilities are there for your benefit and you are welcome to use them once you've been properly trained. Please see the Observatory Director if you have any questions about training.

As we look towards October, a friendly reminder that our club annual dues ... are due. Please look at the bulletin to find out what dues category is appropriate for you and your family.

Round one of the auction was a resounding success! We hope that you took the opportunity to get some great deals on donated items. If you missed out, fret not as round two will be occurring shortly. Please continue to watch the announcements for more information.

I am pleased to announce that the new website is making substantial progress and will go live in October. Also - With the upgraded Internet capabilities at our GHRO facility, we also foresee the opportunity to broadcast live for astronomical events.

Reminder: There are only two remaining club meeting events this year as is our tradition to take December off as members focus on the holiday season.

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**Notice:** All club meetings are recorded and uploaded for later review by the larger club audience and prospective club members. It is possible that your name, image and / or voice will be captured by the recording equipment.

Club meeting videos are posted to the public and therefore may be viewed by the public.

We are currently not editing meeting videos to remove individual questions, images or details relating to the meeting.

If there is a private concern you do not wish captured on video, please address it outside of the live club meeting.

You should assume that anything discussed in a public forum, such as our club meetings, is for public consumption.

Clear skies,

Joel  
CAAC President

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## Secretary's Report:

September is the last month of the 2022 CAAC annual membership and the 2023 CAAC annual membership starts in October.

- Annual individual/family membership, which includes access to the CAAC darksky [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

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!

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)

Please note that we have started sending out the newsletters from the club's email address [info@charlotteastronomers.org](mailto:info@charlotteastronomers.org) Please double check if it may have been filtered into your Junk/Spam folder. The newsletter can also be found on the CAAC website, <http://www.charlotteastronomers.org/> under Newsletter Archive. I apologize for any inconveniences this change in newsletter delivery may have caused.

My Do  
CAAC Secretary

## CAAC Treasurer's Report as of 8/31/2022

*\*\*Note that July Auction proceeds will be placed in the scholarship fund, to be reflected in September report.*

### 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: 07/31/2022</b>	<b>\$9,182.02</b>
2	<b>Income:</b> July Auction proceeds Dues and Fees Donations GHRO Infr. Improv. Expenses: X-fer  <b>Expenses:</b> Monthly Meeting GHRO Infrastructure Improvements GHRO Facility GHRO Utilities (alarm, elec, internet) Website team expense Service fee to accept credit cards	 \$6,217.51 \$180.00 \$392.30 \$2,007.86  \$221.23 \$207.86 \$848.27 \$403.90 \$49.00 \$6.12
3	<b>Operating Fund Balance: 08/31/2022</b>	<b>\$16,243.31</b>

### Non-Operating Funds

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

1	<b>Non-Operating Fund Balance: 07/31/2022</b> Scholarship Fund CAAC Self Insurance Fund Contingency Fund GHRO Infrastructure Improvement	 \$1,489.36 \$20,000.00 \$7,366.19 \$4,141.94
2	<b>Income:</b> Interest	 \$0.28
3	<b>Expenses or Transfers:</b> GHRO Infr. Improv. Expenses	 \$2,007.86
4	<b>Non-Operating Funds Balance: 08/31/2022</b> Scholarship Fund CAAC Self Insurance Fund Contingency Fund GHRO Infrastructure Improvement	 \$1,489.36 \$20,000.00 \$7,366.47 \$2,134.08

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## News from GHRO

1. The next star party is Saturday, September 24 beginning at dusk. There is no telescope training in September, the next training is October 15 beginning at 6PM. If it's clear afterwards, you can use your new skill to practice. Please e-mail me at [jegaiser@gmail.com](mailto:jegaiser@gmail.com) if you plan to attend. Training is canceled ONLY if it is actively raining...we can train on the telescope usage with cloudy skies.
2. Don't forget that the current sky conditions and weather can always be viewed at <https://weather.ghro.club/>. The Clear Sky Clock is found at the bottom of the left side of our home page...[www.charlotteastronomers.org](http://www.charlotteastronomers.org).
3. 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.
4. The final part of the GHRO infrastructure overhaul is the extension of the parking lot across Bloomwood Dr. We contracted a local company to clear the woods and that has been completed. Many thanks to those that volunteered to come down with chain saws, see item 6 below before you pack it away. The new parking lot has settled and we'll be prepping for it's final surface this weekend. It should be available for Cosmic Camporee.
5. October means Cosmic Camporee...save the date...October 21-23. Expect crisp, fall air...plenty of good times and good friends...burgers and dogs provided by the club, please bring a covered dish for sides and desserts. This is the only event where a reservation for an RV site is needed, so please contact me if you need one. Tent camping is always available at GHRO, and this is no exception. There will be badminton, cornhole, model rockets and all the fun you want to have. A day trip over to 40 Acre Rock is planned, so come dressed appropriately. Keep your fingers -crossed for clear skies. Jupiter and Saturn will rule the evening skies...just saying.
6. Don't forget that this weekend, Saturday September 17, is WORK DAY at GHRO. Drainage work east of the RV sites, brush pile clearing and parking lot smoothing are all on the agenda...plus or minus as the needs arrive. An early start (8 AM) makes for working in cooler weather, bring your own lunch...drinks are on the house!! I need as many volunteers as possible, there is a mountain of work to do to get GHRO ready for the fall observing season. Please bring lawn tools...rakes, shovels, etc. There is also some carpentry work to be done so bring your hammers, saws and drill if you have them. We'll also be cleaning the club telescopes, so some rags and a bottle of 409 would go a long way.

Below is a partial list of things we'll be doing. Please contact me [jegaiser@gmail.com](mailto:jegaiser@gmail.com) and let me know that you'll be attending. We should be done by mid-afternoon. Please come down even if it's for only part of the day, we can use all the help we can get.

- a. Move a couple of brush piles
- b. Remove stone and roots from new parking lot. The lot is 100' x 40'. I'll need 10+ folks
- c. Install new ground covering over new parking lot. The same 10+ folks
- d. Level out two building sites, install concrete forms
- e. Trench electrical conduits from RV site 5 to new pads, Mike Z to new pad in south
- f. Load up excess metal siding and take to recycling center
- g. Clean/vacuum 8" telescope building. Clean exterior of all club owned telescopes.
- h. Replace door on the imaging telescope.
- i. Remove and replace inside paneling on imaging telescope.
- j. Replace dome wheels on imaging telescope, if the replacement arrives on time
- k. Spray weed killer on new road in south 40, assist with spreading gravel on roads

## **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**

Discovery Place and CAAC is teaming up for a star party on September 23 (cloud out date is September 30). From the top of their parking deck we will be targeting Saturn which is a real crowd pleaser. We are asking for volunteers to be a part of this event with their telescopes. Please advise if you can take part in this public outreach event.

We have another opportunity on Oct 1 at South Mecklenburg High school as they celebrate the NASA International Observe the Moon night. Due to contact with minors, for this event CAAC volunteers must fill out a volunteer form for Charlotte Mecklenburg Schools. Let me know if you can help out with this event and I will forward the volunteer form to you.

Best regards,

Ken Steiner

# September 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 summer flower, a bubble, and something magical – and all discovered by the extraordinary astronomer team, William and Caroline Herschel.



**NGC 7789** is an open cluster in Cassiopeia that was discovered by Caroline Herschel in 1783. Her brother William Herschel included it in his catalog as H VI.30. This cluster is also known as "**The White Rose**" Cluster or "Caroline's Rose" Cluster because when seen visually, the loops of stars and dark lanes look like the swirling pattern of rose petals as seen from above. All the stars in the cluster were likely born at the same time but the brighter and more massive ones have more rapidly exhausted the hydrogen fuel in their cores. These have evolved from main sequence stars like the sun into the gaggle of red giant stars.

**NGC 7635**, also known as the **Bubble Nebula**, Sharpless 162, or Caldwell 11, is an H II region emission nebula in the constellation Cassiopeia. It lies close to the direction of the open cluster Messier 52. The "bubble" is created by the stellar wind from a massive hot, 8.7 magnitude young central star, SAO 20575. The nebula is near a giant molecular cloud which contains the expansion of the bubble nebula while itself being excited by the hot central star, causing it to glow. It was discovered in 1787 by William Herschel. The Bubble Nebula has an apparent magnitude of 10 and is about 10 light years in diameter. The central star has a magnitude of 8.71 and a mass about 44 times that of the Sun.

**The Wizard Nebula, NGC 7380** whose catalog number actually refers to the open cluster of stars within the nebula. The nebula is a complex of emission, reflection, and dark nebulas referred to as SH2-142. It is about 7,200 light years away in the constellation of Cepheus and was discovered by Caroline Herschel in 1787. The nebula's apparent magnitude is 7.2. Although the nebula may last only a few million years, some of the stars being formed may outlive our Sun.

Acknowledgements:

Wikipedia and Astronomy Magazine 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 scroll down the left column to "Mag 7 Star Atlas" and follow the link.

**Happy Observing!**

## Endowment Corner

Gifts for Tomorrow:

### Bequests:

A bequest is one of the easiest gifts to make. The CAAC Endowment has sample language that can be used to include a planned gift to the CAAC Stewardship Foundation in your estate plan. Always consult your attorney before executing a new will or other estate planning document.

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

Ken Steiner, Chair, CAAC Stewardship Foundation

## CAAC CONTACTS

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