



Charlotte Amateur Astronomers Club
www.charlotteastronomers.org

The Joys and Pains of a Commercial Observatory

Speaker: Greg Funderburk

Greg Funderburk, a long time member of the club, got seriously bitten by the astro imaging bug, and has been making a serious go of it for almost 8 years.

In the last few years, he decided to expand that passion by starting a commercial observatory business, and has been out in New Mexico getting that off of the ground. Please come out and enjoy his tale of joy, pain, passion, and dedication!.



CAAC June 2025 Meeting

<p><u>Next Meeting:</u> Friday June 20th, 2025</p> <p><u>Time:</u> 7pm ET</p>	<p><u>Place:</u> <i>Myers Park Baptist Church Education Building – Shalom Hall (Basement)</i> <i>Or Zoom Virtual Meeting</i> (See info on next page)</p>	<p><u>Address:</u> 1900 Queens Road Charlotte, NC 28207</p>
---	---	--

CAAC Virtual Meeting Login Instructions

1. If you have not used Zoom before, go to Zoom.com and download the Zoom program onto your computer.
2. **To Log In:**

Click on the meeting link below:

[https://us06web.zoom.us/j/82489334922?
pwd=dWRsdDFkMjJOWFVNUFIIN1IFL1NoQT09](https://us06web.zoom.us/j/82489334922?pwd=dWRsdDFkMjJOWFVNUFIIN1IFL1NoQT09)

If needed Meeting ID: **824 8933 4922**

Passcode: **893125**

This manual “log in” rather than invitation to everyone prevents all the emails showing up on the invite. This is a security issue for your privacy.

3. When on the Zoom screen to prevent chaos and overloading bandwidth:
 - a. Mute your microphone-icon lower left of screen
 - b. Mute Video icon on the lower left of screen.
 - c. You will be able to see and hear leaders of the meeting when they are speaking
4. If you wish to ask questions of the speaker after the main presentation:
 - a. Submit on the chat feature which is at the bottom of the screen. You will then type out your question and hit enter.
5. Excellent Zoom tutorials are available on You Tube:
 - a. <https://www.youtube.com/user/ZoomMeetings>

From the President:

Greetings friends,

Let me begin by thanking the membership for their support and encouragement as I begin my term as your president. The previous presidents have set a very high bar and I hope to meet your expectations.

The summer solstice is upon us (the night of our meeting!), so our nights will begin to get longer again. Please use this as an excuse to come out to GHRO and make use of the facility.

If you have any thoughts, concerns, or suggestions, please don't hesitate to reach out to me at president@charlotteastronomers.org

Sincerely yours,

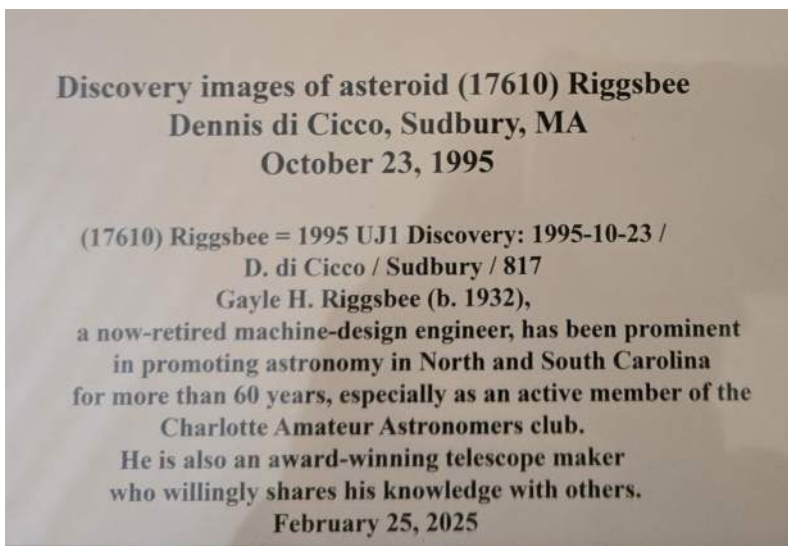
Justin
CAAC President

Asteroid named for Gayle Riggsbee

Please join us in congratulating Gayle Riggsbee, our distinguished CAAC member, who was recognized at the recent Southern Star event where it was announced that an Asteroid has been named in Gayle's honor.



Below is a photo of the plaque that Johnny Horne constructed and presented to Gayle. This is a great honor for a well deserving member of CAAC.



Secretary's Report:

1. The **2025 CAAC annual membership** began in October and we want to express our gratitude to new joining members and to our renewing members. Your participation is greatly appreciated.
 - 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. 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!

3. 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)

4. **Are you looking for ways to participate in the club?** We would appreciate volunteers for the following standing committees to better serve our members:
 - Room Set Up
 - Refreshments
 - Audio/ Video
 - Web Master/ Social Media. Please be on the lookout in the next couple of weeks for emails with more details and how to participate. Please contact the CAAC Officers and let us know which committee interests you. Thank you for your consideration. The club is adding a new CAAC Astronomy Equipment Sales page to the newsletter. Please check out the offerings at the end of the newsletter.



5. Sign
CAAC



up for
Slack



/ chat!

Chat with fellow astronomy and astrophotography enthusiasts on our discussion group. This is a free service, we are using the basic plan. See who's going to GHRO, ask questions, or just be sociable. You can access via webpage or native applications on all major platforms and mobile phones. Sign up, introduce yourself, talk to your peers, tell your stories, ask your questions, and share your wisdom!

How do I sign up?

- Visit this link: <http://slack.south40astro.com> or email caac-slack@jamieandamy.com

If you run into issues signing up, email Jamie at caac-slack@jamieandamy.com and he will help you get on the team.

6. The **CAAC website**, <https://charlotteastronomers.org/> 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.

Best,

My Do
CAAC Secretary

CAAC Treasurer's Report as of 5/31/2025

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	Operating Fund Balance: 4/30/2025	\$15,042.05
2	Income: Dues and Fees	 \$480.00
3	Expenses: Zoom GHRO Utilities (alarm, elec, internet) GHRO Maintenance Southern Star Expenses Service fee to accept credit cards	 \$25.99 \$173.90 \$80.71 \$1,483.31 \$17.82
4	Operating Fund Balance: 5/31/2025	\$13,740.32

Non-Operating Funds

Purpose: Administer gifts and donations for designated use.

1	Non-Operating Funds Balance: 4/30/2025 Scholarship Fund CAAC Self Insurance Fund Contingency Fund	 \$6,706.87 \$20,000.00 \$7,431.86
2	Income: Interest	 \$0.29
3	Expenses or Transfers:	
4	Non-Operating Funds Balance: 5/31/2025 Scholarship Fund CAAC Self Insurance Fund Contingency Fund	 \$6,706.87 \$20,000.00 \$7,432.15

Scott Goforth
CAAC Treasurer

News from GHRO

1. The next **Star Party is Saturday, June 21st** beginning at dusk.
2. The next telescope training date is **June 28th at 6:30pm**.
3. I am starting to plan for new pads for members now. If you have an interest in your own pad at GHRO, please reach out and make sure I have you on my list. Please do this even if you have already talked to me about it. I have reached out to a concrete guy the club has used in the past, but have not heard back from him in a while. I'll be reaching out again and to other concrete vendors.
4. If you have a pad or building at GHRO that you are no longer using, please consider selling to another member or donating it back to the club. We have a large number of people interested in their own pads at the observatory. Please reach out to Jim Gaiser if you are interested in giving up or selling your pad or building.
5. When observing at GHRO please ensure you minimize the amount of light you produce. Especially for imagers, **please take care to hide lights from your equipment and computers**. Plastic bins are available for use to put your laptop in.
6. Please follow the posted startup and shutdown procedures for any club owned scopes. This helps other members when they go to use our equipment.
7. Don't forget that the current sky conditions and weather and the Clear Sky Clock is found at the bottom of our homepage... <https://charlotteastronomers.org/>
8. Anyone interested in the "Sponsor a Telescope" program, please reach out. My vision on this is to pair up CAAC members who want to learn more about a particular club owned telescope and/or help pass on the knowledge and history of our club scopes. There would be no monetary commitment involved, only some time. Ideally we would have two members sponsor each telescope. Sponsors would be responsible for checking their telescope once a quarter and working with the observatory director to address any required maintenance or repairs needed. You would also be expected to attend a new-member training event once a quarter to help pass on your knowledge of the history and operation of the scope. As our club grows, maintenance and knowledge transfers become much more difficult to be done by just one person. If you are interested, please reach out to Jim Gaiser (ghro@charlotteastronomers.org).
9. Anyone interested in helping out with grounds maintenance, please contact Jim Gaiser. It currently takes about 5 hours for one person to mow and trim the full grounds, and any help would be appreciated. Special thanks to Dale Poole for doing a lot of mowing at GHRO and big thanks to Phil Foust, Jeff Geiss, and Rick Bassham for all the weed whacking.
10. The complete GHRO calendar for 2025 is below

2025 Star Party and Training Schedule

Month	New Moon Date	Star Party Date	Moon Illumination	Moon Rise	Training Date	Training Start Time (PM)
January	29	25	16% waning	4:18:43 AM	No training	
February	27	22	31% waning	3:06:53 AM	8	5:00:00 PM
March	29	29	New Moon	7:12:18 AM	1	6:00:00 PM
April	27	26	2% waning	5:41:56 AM	12	6:00:00 PM
May	26	24	9% waning	4:11:22 AM	3	6:30:00 PM
May					31	6:30:00 PM
June	25	21	19% waning	2:43:06 AM	28	6:30:00 PM
July	24	26	4% waxing	8:17:51 AM	No training	
August	23	23	New Moon	7:08:31 AM	2	6:30:00 PM
August					30	6:30:00 PM
September	21	20	1% waning	5:58:38 AM	27	5:30:00 PM
October	21	25	15% waxing	11:36:38 AM	No training	
November	20	22	5% waxing	9:22:37 AM	1	5:30:00 PM
November					29	4:30:00 PM
December	19	20	0.5% waxing	8:06:18 AM	No training	

What would you like to see at GHRO?

Please provide any suggestions on things you would like to see at GHRO! I want to make sure this facility is providing the maximum benefit to all of our members, and I can't do that without your feedback. GHRO is already a world class amateur astronomy location, but it can always be improved. You can always contact the GHRO director, Jim Gaiser at ghro@charlotteastronomers.org.

Jim Gaiser
CAAC Observatory Director

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.

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.

CAAC Outreach Report May 2025

Scheduled:

06/27/2025 **GHRO Heritage Learning Center - Cub Scouts**

[1427 Bloomwood Dr, Lancaster, SC 29720](#)

Setup: 6:00 PM

Program: 8:30 - 10:00 PM

06/28/2025 **Solstice Astronomy Program - Matthews Public Library**

[Depot Shopping Center, 230 Matthews Station St, Matthews, NC 28105](#)

Setup: 1:00 PM

Program: 2:00 - 3:30 PM

08/01/2025 **Solar Program - Autism Charlotte**

[2331 Crown Point Executive Dr. Charlotte, NC 28227](#)

Setup: 2:00 PM

Program: 3:00 - 4:00 PM

Clear Skies,

Tom Blevins
CAAC Public Outreach Coordinator

CAAC Astronomy Ad Listings

Welcome to the CAAC classifieds. If you would like to post an ad in the newsletter, please let us know at the beginning of each month and we will list your items. Please provide a brief description and your contact information.

- Item 24-001:** *Obsession 15 Classic f4.5 with Argo Navis, Custom Equatorial Platform, etc.* for sale in Chapel Hill. \$2700. Local pick up or seller is willing to drive for meet up. Ad can be viewed on AstroMart [here](#), or contact:
- Bob Clemen, rtclemen@gmail.com



Item 24-002: Sold

Item 24-003: Sold

- Item 24-004:** *Star Tracker for sale: iOptron SkyGuider Pro EQ camera & the optional iOptron SkyTracker Ball Head camera mount, lightly used & in excellent condition.* for sale in Charlotte
Included:

1. *iOptron SkyGuider Pro EQ camera (mount model #355)*

- internal rechargeable lithium battery, good for 20 hours of operation
- illuminated internal polar scope for polar alignment & built in bubble level
- built in camera trigger port & ST-4 guiding port
- Detachable counterweight shaft & 3-pound counterweight

2. *Includes the separately purchased iOptron SkyTracker Ball Head camera mount (model #3305A)*

- ball head mount allows for 360 degree panning & makes it easy to tilt a camera into position
- can support a heavy camera lens, bubble levels on each axis & also has a dovetail mounting bracket



List price for this package brand new with the optional ball head mount is \$463 today. Asking \$325 for the full package. Can be picked up in Charlotte or other arrangements may be accommodated, contact:

- David Harris, 704-577-8977, davidharris11@yahoo.com

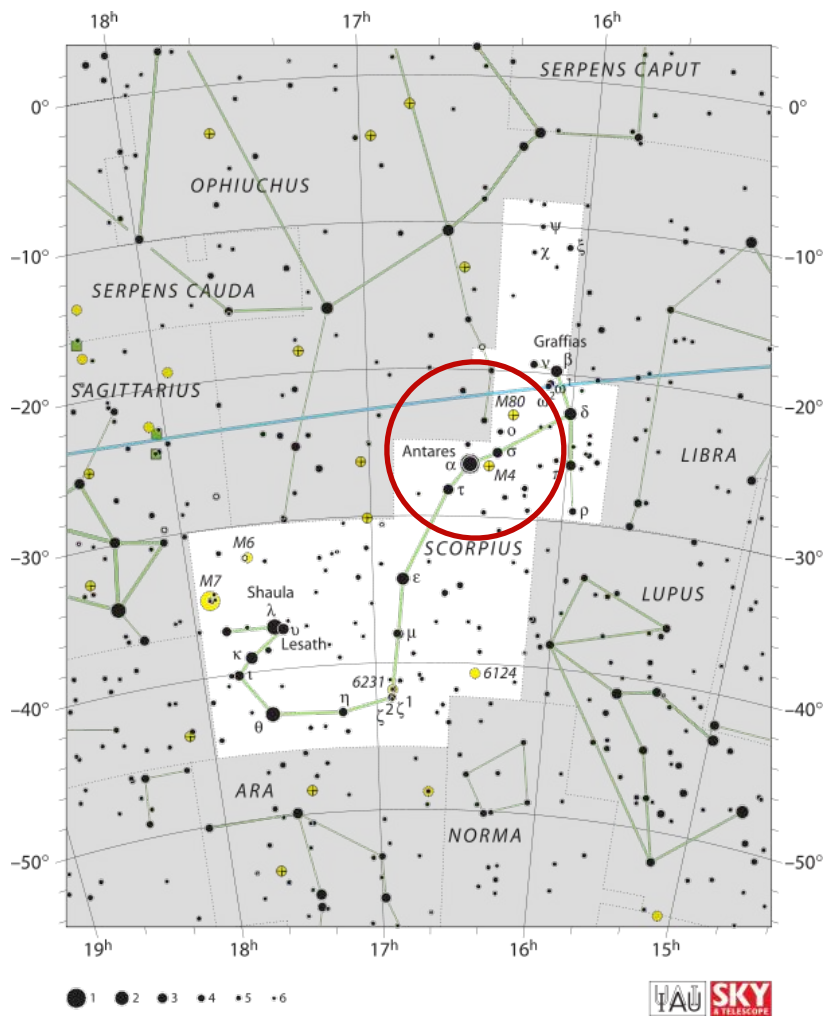
- Item 23-001:** *1958 Criterion Newtonian reflector*, 6" f/8 for sale with original mount. Asking \$600 with free delivery within the Charlotte area.
- David Friday, wdfriday@twc.com 704-579-1778.

- Item 23-002:** **New SkyQuest Intelliscope XT8.** List Price \$ 1,300.00.
All manuals with it-including initial purchase paperwork
- **Make An Offer.**
 - Contact Jim Gaiser



The Night Sky in June 2025

M80



The southern summer Milky Way is rich in globular clusters. Several are within about a binocular field-width of bright, orange-red Antares. **M80** isn't so prominent, but can be located easily halfway between Graffias (Beta Scorpii) and Antares.

The discovery of **M80** has been credited to both Messier and Mechain, both of whom recorded the cluster in January 1781; Messier's observation seems to have preceded that of his friendly rival by about three weeks. Messier describes it as "A nebula without a star in the Scorpion, between the stars g [now Rho Ophiuchi] and Delta. It was compared with g to determine its position.

The nebula is round, its center brilliant and it resembles the nucleus of a small comet, surrounded by nebulosity." At magnitude +7.3 you'll easily sweep up **M80** through a 3-inch telescope. Its stars appear tightly packed, so at 70x it looks more like a tiny, glowing cloud with a bright core. Under excellent conditions (and fairly high power), one can begin to resolve delicate dark rifts in the central core, but even then there's no real resolution of the cluster into individual stars.

M4 and NGC 6144

The huge, loose cluster **M4** is only 1.3° west of brilliant Antares, the fiery orange heart of the Scorpion. The "M" stands for Charles Messier, and anything that made this 18th-century observer's list is an easy target for newcomers to astronomy. All the telescopes Messier used were quite small; not even one had as much light grasp as a good 4-inch telescope of today. Such an instrument at 70x will show many of **M4**'s individual stars, some of which seem to be arranged in a central bar that runs nearly north-south. This feature is most prominent in an 8-inch telescope, and in larger instruments, it appears enmeshed in a multitude of fainter stars. As with almost any globular cluster, the longer one stares, the more patterns seem to emerge.

Just slightly north and east (one degree away), you hopefully will find another globular cluster, **NGC 6144**. Dimmer, at 9th magnitude, with a 6-inch telescope or greater – and a steady dark sky – you should get a pleasing view. Though visually close to **M4**, in reality, it is three times further away.

We welcome and encourage our CAAC members to come and visit the **GHRO Observatory** to enjoy, learn, and observe these and other celestial wonders.

SCORPIUS Constellation Maps courtesy of IAU and Sky&Telescope, <https://www.constellation-guide.com/constellation-map/northern-constellations/>

We would like to acknowledge the content for this report was edited from information courtesy of NightSkyInfo, **Please note that NightSkyInfo has merged with Starlust.org and the original NightSkyInfo content has been migrated to the new site, Tom Urbain (Starlust.org) Acquire NightSkyInfo.com*

If you would like to download a map of each month's night sky, use this link, <https://www.skymaps.com/skymaps/tesmn2308.pdf> to download, print, and navigate the Evening Sky Map.

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

Matching Gifts:

Matching gifts from your employer can double and sometimes triple the value of your gift to the CAAC Endowment and your support of the astronomical programs important to you. To find out whether your employer offers a matching charitable gift program, please contact your human resources officer.

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

Ken Steiner
Chair, CAAC Stewardship Foundation

CAAC CONTACTS

President	Justin Peatross	president@charlotteastronomers.org
Vice President	Vacant	vicepresident@charlotteastronomers.org
Treasurer	Scott Goforth	treasurer@charlotteastronomers.org
Secretary	My Do	info@charlotteastronomers.org
Observatory Director	Jim Gaiser	ghro@charlotteastronomers.org
Public Outreach Coordinator	Tom Blevins	publicoutreach@charlotteastronomers.org
Southern Star	Jim Gaiser	southernstar@charlotteastronomers.org