Charlotte Amateur Astronomers Club
www.charlotteastronomers.org

Cell Phone Astrophotography

Tanner Dilworth will present his work and explain some of the techniques he uses to obtain the images he's achieved.

Speaker: Tanner Dilworth

Tanner is an amateur astronomer who has been using his cell phone to capture the night skies and making presentations of his work to audiences for the past few years. He is a recent college graduate living in St. Louis, MO, while working on his masters degree in youth work.

CAAC November Meeting

Next Meeting:	**Place:**	**Address:**
Friday November 20th, 2026 **Time:** 7pm ET	*Myers Park Covenant Church Education Building – Shalom Hall (Basement)* *Or Zoom Virtual Meeting* (See info on next page)	1900 Queens Road Charlotte, NC 28207

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=dWRsdDFkMjJOWFVNUFllN1lFL1NoQT09

   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,

As we wrap up the year, I am so thankful for all of our members. Thank you for helping to make this a welcoming community to enjoy the night sky together.

With our clocks reset back to "normal", please take advantage of the earlier and longer nights and head out to GHRO!

As is our custom, there is no club meeting in December. In lieu of a meeting, the club is invited to attend a potluck dinner hosted by Charlie and Gwen Clayton on Saturday, December 5 at 6 PM. Anyone who plans to attend is asked to call the Claytons before December 4th and find out what they would like you to bring. Their phone number is (704) 821-9891.

The Claytons reside at 306 Riverton Rd in Matthews. We look forward to seeing you!

Clear skies,

Justin
CAAC President

Secretary's Report:

Save the Date for Southern Star 2027!

It is **April 8-11, 2027** at Wild Acres Retreat in the beautiful NC mountains. This 4 day/3 night event brings together up to 110 amateur astronomers from across the Southeast for excellent talks by world renowned speakers as well as the opportunity to enjoy time with other amateurs from outside out club. Registration will begin in late January, but save the date until registration opens.

1. The **2027 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

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.

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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 10/31/2026

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: 9/30/2026**	**$12,982.15**
2	**Income:**	
	Dues and Fees	$4,860.00
3	**Expenses:**	
	Cosmic Camporee	$318.87
	Monthly meeting	$26.99
	GHRO Utilities (alarm, elec, internet)	$282.90
	Service fee to accept credit cards	$171.39
4	**Operating Fund Balance: 10/31/2026**	**$17,042.00**

Non-Operating Funds

Purpose: Administer gifts and donations for designated use.

1	**Non-Operating Funds Balance: 9/30/2026**	
	Scholarship Fund	**$4,706.87**
	CAAC Self Insurance Fund	**$30,000.00**
	Contingency Fund	**$7,437.15**
2	**Income:**	
	Interest	$0.36
3	**Expenses or Transfers:**	
4	**Non-Operating Funds Balance: 10/31/2026**	
	Scholarship Fund	**$4,706.87**
	CAAC Self Insurance Fund	**$30,000.00**
	Contingency Fund	**$7,437.51**

Scott Goforth
CAAC Treasurer

News from GHRO

1. Cosmic Camporee was blast, many thanks for everyone that helped with preparation and cleanup.
2. There is **no training scheduled during December**, but we're having the final star party of the year on December 12, starting at dusk. Fingers crossed for clear skies. Moonset it around 8:30.
3. 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.
4. Please follow the posted startup and shutdown procedures for any club owned scopes. This helps other members when they go to use our equipment. Please ask if you are unsure.
5. 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/
6. The binocular observatory building is complete and the binoculars are repaired after a focus issue was identified…ready for training on September 19. Please do **not** go in the binocular building as all the fail safes are not in place.
7. If you are a pad or observatory owner, please contact me to see how you can help to keep GHRO fully operational. Everything from IT support to bathroom scrubbing to weed whacking to donated telescope inventory needs to be done and the observatory committee would certainly appreciate the help.
8. The complete GHRO calendar for 2026 is shown below.

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.

2026 GHRO Star Party and Telescope Training Schedule

	Star Party Date	Moon Illumination on Star Party date	Moon rise/set time	Training Date	Training start time (PM)
January	17	3% waning	4:26 PM (set)	24	4:30
February	21	16%	10:58 PM (set)	28	5:00
March	21	6% waning	10:57 PM (set)	14	6:00
April	18	1% new	9:52 PM (set)	No training, Southern Star	
May	16	1% new	5:42 AM	23	6:30
June	13	6% waning	4:15 AM	20	6:30
July	11	15% waning	2:53 AM	18	6:30
August	15	8% waxing	9:47 PM (set)	22	6:30
September	12	1% new	8:13 PM (set)	19	5:30
October	10	0% new	6:40:00 PM (set)	17	5:00
November	7	4% waning	4:10 PM (set)	14	4:30
December	12	9% waxing	8:21 PM (set)	No training in December	

Jim Gaiser
CAAC Observator

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 November 2026

Scheduled:

11/21/2026 Morrow Mountain State Park - Lunar

49104 Morrow Mountain Rd., Albemarle

Setup: 4:00 PM

Program: 5:00 - 7:30 PM

12/18/2026 Palisades H.S. Astronomy Classes - Lunar, Planetary, Brighter D.S. Objects, Constellations @ GHRO Heritage Learning Center

1427 Bloomwood Dr, Lancaster, SC 29720

Setup: 3:30 PM

Program: 4:30 - 8:00 PM

01/14/2027 Talent School - Lunar, Planetary, Brighter D.S. Objects, Constellations @ GHRO Heritage Learning Center

1427 Bloomwood Dr, Lancaster, SC 29720

Setup: 5:30 PM

Program: 6:30 - 8:30 PM

02/12/2027 Trail Life Troop NC 0611 - Lunar & Planetary @ GHRO Heritage Learning Center

1427 Bloomwood Dr, Lancaster, SC 29720

Setup: 5:30 PM

Program: 6:30 - 8:30 PM

03/12/2027 Cub Scout Pack 1 - Lunar + Planets @ GHRO Heritage Learning Center

1427 Bloomwood Dr, Lancaster, SC 29720

Setup: 6:00 PM

Program: 7:00 - 8:30 PM

03/13/2027 Cub Scout Pack 108 - Lunar + Planets @ Cane Creek Park - Amphitheater

5213 Harkey Rd, Waxhaw, NC 28173

Setup: 6:00 PM

Program: 7:00 - 8:30 PM

03/18/2027 Christ Covenant Trail Life Troop - Lunar + Planets

800 Fullwood Lane, Matthews

Setup: 7:00 PM

Program: 8:00 - 9:30 PM

If you would like to volunteer with any outreach programs, please contact Tom Blevins at, publicoutreach@charlotteastronomers.org

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 26-001: 2002 *Celestron NexStar 11 GPS telescope* for sale with original tripod, optics, wedge, and other accessories. Purchased in 2002 and it has never used. It has been stored in a JMI (Jim!s Mobile incorporated) hard case.
Asking $850.

- Roger Alexander, rtalexander@mac.com 509-339-5270

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, jegaiser@gmail.com

The Night Sky in November 2026

The monthly Sky Challenges provide three levels or degrees of observations ranging from Binoculars, to Small Telescope, to the Challenge Object. The fun is in the hunt for each object and to take time to carefully observe, may be sketch, and share your observations.

Deep Sky Challenge – NGC 7814 - NGC 281 Pac Man Nebula

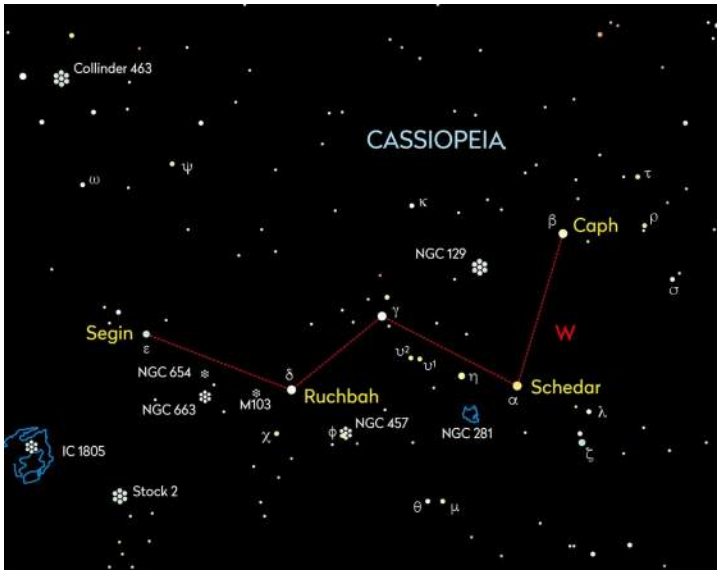
Magnitude of 7.4 is deceiving. The nebula is large and diffuse. A UHC filter will help show the nebula. Head to GHRO to view this one through a larger aperture telescope.
Mag. 7.4 **R.A.** 00 hrs. 52 min. **Declination** +56 deg. 37 min. 18.8 sec.

Urban Challenge – NGC 663

As a bonus with a low power eyepiece, you may be able to capture Mag. 7.9 NGC 659 in the same field of view.
Mag. 7 **R.A.** 1 hr. 48 min. **Declination** +61 deg 21 min. 06 sec.

Double Star Challenge – Eta Cassiopeia (Easter Egg Double)

Beautiful color contrast.
R.A. 2 hr. 5 min. **Declination** +42 deg.
G0V type Mag. 3.4 primary K7V | Mag. 7.5 secondary

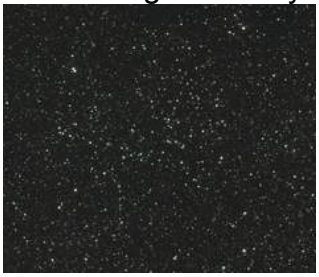


Small Scope Objective – N/A

Mag. _ **R.A.** _. **Declination** +_.

Binocular Challenge – Stock 2 (Muscle Man Cluster)

Easily found by slowly scanning southeast from Epsilon Cassiopeia (bottom star in the W at this time of year) toward the Double Cluster. The cluster is unmistakable.
Mag. 5.7 Easy in 10 X 50 binoculars.



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

Celestial Objects *Map courtesy of Stellarium*

We would like to acknowledge the star field map for this report was edited from information courtesy of Mag Star 7 Star Atlas Project © 2005 Andrew L. Johnson for star maps

If you would like to download a map of each month's night sky, use this link, http://www.skymaps.com/downloads.html 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

Gifts for The Present

Qualified Charitable Distributions:

If you are 70½ or older, you may make a tax-free gift directly from your IRA. That gift does not count as taxable income, but does count toward your annual Required Minimum Distribution (RMD).

This is a great way to direct your RMD to a good cause and to avoid the income tax normally incurred.

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

FYI: The CAAC Stewardship Foundation (Endowment) investment portfolio is now approximately $35,430.75.

Ken Steiner
Chair, CAAC Stewardship Foundation

CAAC CONTACTS

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