



Charlotte Amateur Astronomers Club
www.charlotteastronomers.org

An Introduction to Globular Clusters, Part 2

Globular clusters are not just gorgeous objects to look at. They're laboratories and windows for the study of the history of galaxy formation and evolution, stellar chemical processes, stellar evolution, and stellar kinematics, just to name a few topics. Many are as old as the first galaxies themselves, serving as artifacts of the early universe. We'll look at what we know concerning the nature of these remarkable objects as well as some of what remains elusive about them. How exactly did they and do they form? Why do older globulars show multiple chemical populations of stars when their star formation ended billions of years ago? What are blue stragglers and how can they be explained? Eye candy? Absolutely. But there's more...

Speaker: Butch Phaneuf

Butch Phaneuf joined CAAC when he retired from teaching in 2021. He taught high school social studies for 30 years, the last 22 of which were in Union County Public Schools. He also taught Introduction to Astronomy his last five years at Cuthbertson High, when the outgoing science teacher recommended him as his replacement.

Butch grew up in central Florida and following the manned space program during the 60s and 70s fired his lifetime love for all things astronomy. His visual astronomy journey began when he retired and could use evenings for observing and sketching with a 10" Sky Watcher Dob in a field near his home in Waxhaw. He's married to his wife of 46 years and they have four grown kids and seven grandkids... so far



CAAC October 2024 Meeting

Next Meeting: Friday October 18th, 2024 Time: 7pm ET	Place: <i>Myers Park Baptist Church Education Building – Shalom Hall (Basement) <u>Or Zoom Virtual Meeting</u> (See info on next page)</i>	Address: 1900 Queens Road Charlotte, NC 28207
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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>

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

Passcode: **893125**

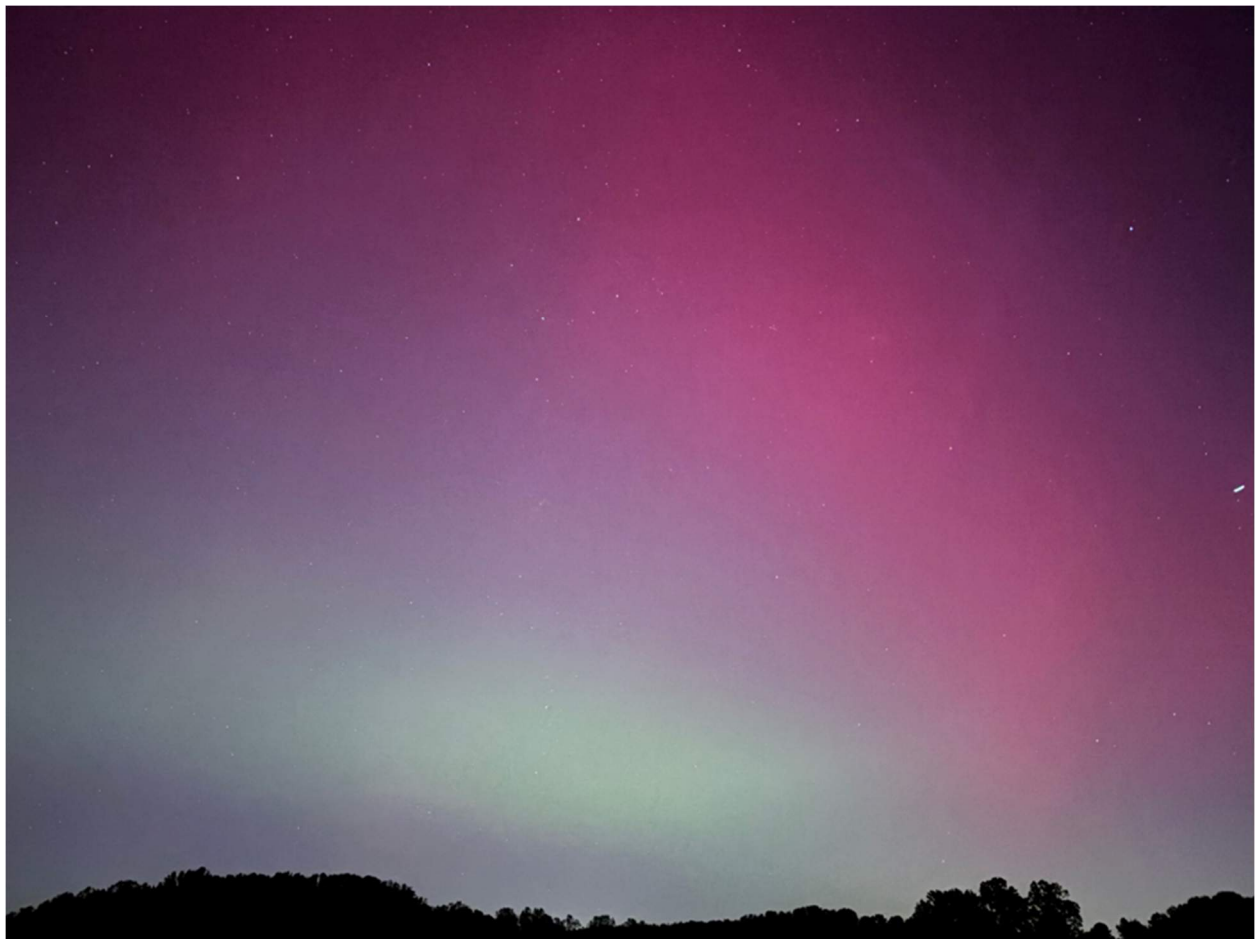
This manual “log in” rather than invitation to everyone prevents all the emails showing up on the invite. This is a security issue for your privacy.

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 asking everyone to keep our friends and neighbors in western North Carolina in their thoughts and prayers. While I've not seen anything first hand, the devastation was immense and unforgiving. I just spoke with Philip Blumenthal of the Blumenthal Foundation, the owner of Wild Acres Retreat and they are hoping to be back up and running next spring. The buildings are intact, access on 226A was just restored up to Wild Acres Road last Thursday. Several houses on 226A are gone. Water is still an issue, but all of the staff are accounted for. We are still planning Southern Star for late April. I want to give a huge shout-out to Rick Bassham, your esteemed Observatory Director, for a fine Cosmic Camporee a couple of weeks ago. It was hotter than we'd hoped for, but the skies remained clear for both solar and nighttime observing. Every indication was that a good time was had by all. There was some leftover food and it was donated to the pilots that were operating out of JAARS (an airport near Cane Creek) supporting the efforts to provide supplies to western North Carolina. It's been great viewing recently, even if Luna has been a little bright. The aurora was clearly visible on Thursday, Oct 10, as seen in the photo I took from a location about 10 miles east of Mooresville. There was a gathering at GHRO that same evening and no one was disappointed. Comet C/2023 A3 is still visible as I write this, a clear western horizon and no clouds is all you really need, but binoculars will definitely help. Good luck to all and I hope to see you at GHRO soon.



Clear skies,

Jim
President, CAAC

Secretary's Report:

1. October is the start of the **2025 CAAC annual membership**:
 - 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. Our gratitude to new joining members and to our renewing members. Your participation is greatly appreciated.
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)

5. 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.

6. 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.



7. Sign up for CAAC 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.

8. 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 9/30/2024

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: 08/31/2024	\$8,686.20
2	Income: Dues and Fees	\$395.00
3	Expenses: Zoom charge GHRO Utilities (alarm, elec, internet) Outreach event Magazine subscription Service fee to accept credit cards	\$25.99 \$141.90 \$40.00 \$57.75 \$13.27
4	Operating Fund Balance: 09/30/2024	\$8,802.29

Non-Operating Funds

Purpose: Administer gifts and donations for designated use.

1	Non-Operating Fund Balance: 08/31/2024 Scholarship Fund CAAC Self Insurance Fund Contingency Fund	\$6,706.87 \$20,000.00 \$7,429.59
2	Income: Interest	\$0.29
3	Expenses or Transfers:	\$0.00
4	Non-Operating Funds Balance: 09/30/2024 Scholarship Fund CAAC Self Insurance Fund Contingency Fund	\$6,706.87 \$20,000.00 \$7,429.88

Scott Goforth
CAAC Treasurer

News from GHRO

1. The next **Star Party is Saturday, November 2nd** beginning at dusk.
2. **Telescope training** for new members (and those wishing to get a review) will be held on **Saturday, November 9th, beginning at 4:30 PM**. This training is required for all new members who wish to use the facilities at GHRO. The training will take place even if it is cloudy, it will be canceled only if it is actively raining or snowing. If it's clear, you can practice your newfound skills immediately after the training. To sign up please contact Rick Bassham.
3. Cosmic Camporee was a huge success. Thank you to everyone who helped out, brought food, or just came out to enjoy some beautiful skies and good friends.
4. We have a scout troop visiting GHRO Friday, October 18th through Sunday, October 20th. Anyone who can help run a telescope at GHRO, please reach out to Rick Bassham.
5. 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.
6. 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 Rick Bassham if you are interested in giving up or selling your pad or building.
7. 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.
8. Please follow the posted startup and shutdown procedures for any club owned scopes. This helps other members when they go to use our equipment.
9. 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/>
10. 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 Rick Bassham (ghro@charlotteastronomers.org).
11. Anyone interested in helping out with grounds maintenance, please contact Rick Bassham. 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.

12. The complete GHRO calendar for 2024 is below:

2024 Star Party and Training Schedule

Month	New Moon Date	Star Party Date	Moon Illumination	Moon Rise	Training Date	Training Start Time (PM)
January	11	13	7% waxing	9:28:00 AM	20	4:30:00 PM
February	9	10	1% waxing	7:58:00 AM	17	5:00:00 PM
March	10	9	1% waning	6:25:00 AM	16	6:00:00 PM
April	8	6	6% waning	5:52:00 AM	13	6:00:00 PM
May	7	4	16% waning	4:21:00 AM	11	6:30:00 PM
June	6	8	6% waxing	7:46:00 AM	15	6:30:00 PM
July	5	6	1% waxing	6:35:00 AM	13	6:30:00 PM
August	4	3	1% waning	5:27:00 AM	10	6:30:00 PM
September	2	7	18% waxing	11:05:00 AM	14	5:30:00 PM
October	2	5	8% waxing	9:57:00 AM	12	5:30:00 PM
November	1	2	1% waxing	8:50:00 AM	9	4:30:00 PM
November	30	30	0% new moon	6:43:00 AM	No training	
December	30	28	5% waning	5:33:00 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, Rick Bassham at ghro@charlotteastronomers.org.

Rick Bassham
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 October 2024

Scheduled:

10/18 – 10/20 GHRO BSA Scout Troop (Girls) Campout

GHRO Observatory
[1631 Pleasant Plains Rd](#)
[Matthews, NC 28105](#)

If you can assist with this event, please let us know.

10/19 Cub Scout Camporee

Belk Scout Camp
[9408 Belt Rd](#)
[Midland, NC 28107](#)

- 5:00pm – 6:30pm dinner with our Pack at Campsite
- 6:30-8pm: You guys can set up your equipment in the back field
- 8:00pm: Campfire program ends, Scouts will start making their way to you guys
- 10:00pm: Lights Out / All Quiet - except for Astronomy
- 11pm all done

There are 300 plus scouts and parents expected. This is a large event so we still need some more volunteers.

There is electricity but not sure how much. Bring extension cords & batteries just in case.

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:** *Meade 8" LX200GPS Field Tripod w/ 2" steel legs, in very good condition*, for sale in Charlotte

Asking \$75. Can be picked up in Charlotte or other arrangements may be accommodated, contact:

- Steve Deskevich, Marshbum@gmail.com



- Item 24-003:** *Meade 8" LX200GPS Fork Mount With AC Power Supply, Hand Controller And Serial Cable that creates connection with PC*, for parts in Charlotte

LX200GPS Fork Mount (very good condition)

- 12V 2.5amp power adaptor
- AutoStar II hand controller (updated to latest firmware for GPS fix)
- Meade 8x50mm finder scope and mounting bracket
- Serial cable for connection from LX200GPS fork mount to PC



Offering for parts, \$0. Can be picked up in Charlotte or other arrangements may be accommodated, contact:

- Steve Deskevich, Marshbum@gmail.com

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.

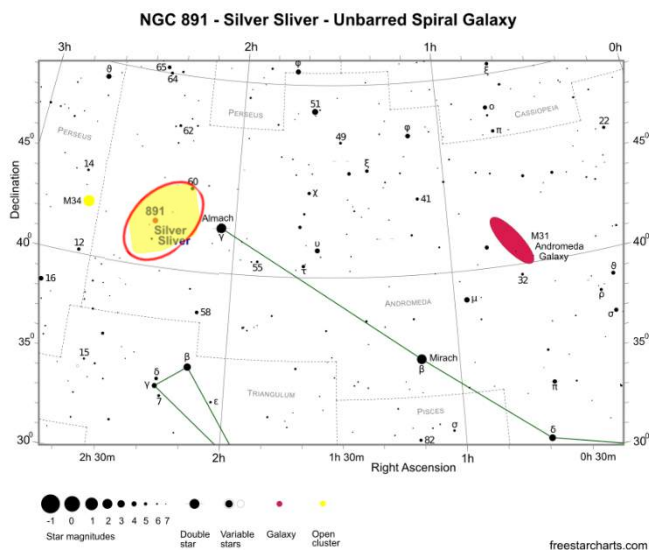
Item 23-002: *New SkyQuest Intelliscope XT8.* List Price \$ 1,300.00.
All manuals with it-including initial purchase paperwork

- **Make An Offer.**
- Contact Jim Gaiser



The Night Sky in October 2024

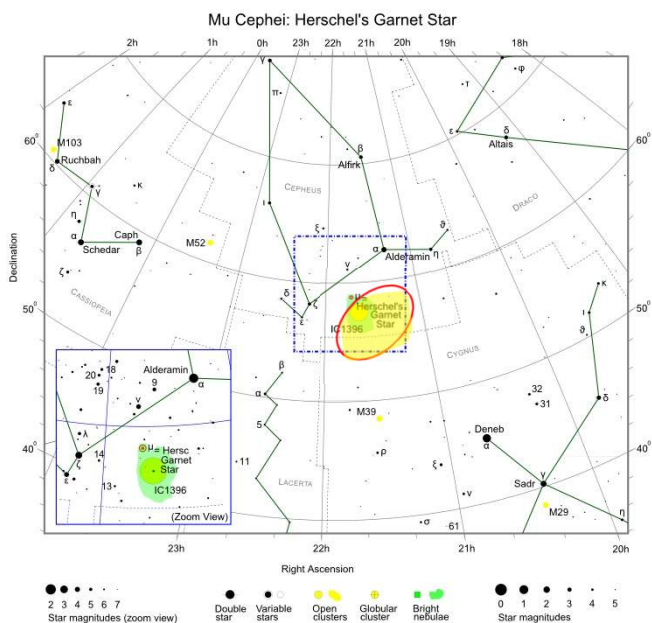
NGC 891



NGC 891 is one of the most striking examples of a spiral galaxy seen exactly edge-on. This ghostly spindle of light is located about midway between Gamma Andromedae and the open star cluster `lane. The dark band clearly bisects the galaxy in 8-inch telescopes at 150x. Using averted vision note the mottled extensions of the galaxy, and even a central bulge of sorts.

NGC 891 has an optical diameter of about one hundred thousand light years and the dust lane has a width of about 1.5 thousand light years.

Mu Cephei



Strongly colored stars have always fascinated astronomers. The long history of red-star observations begins in the early 19th century, with famous observers such as Angelo Secchi and Thomas Espin. And those who think that stars are not highly colored need only look at **Mu Cephei**.

Often called "**Herschel's Garnet Star**" (honoring both this cool, red star and William Herschel, who discovered infrared radiation), the color of this 4th-magnitude star, easily found in the constellation Cepheus, will leave you dazzled.

Classed as an M2 Ia supergiant, the "Ia" implying the brightest kind, Mu Cephei is among the most luminous and largest stars in the Galaxy. The Garnet Star is seen to radiate 350,000 times more energy than the Sun. The deep orange-red color of

this red giant is nicely brought out in 10x50 binoculars. It has a variability of a bit under a magnitude, but is usually around 4th magnitude.

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

Andromeda and Cepheus Constellation Maps courtesy of [Freestarcharts.com](http://freestarcharts.com), [Home | freestarcharts.com](http://Home|freestarcharts.com)

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!

Gifts for the Present

Cash

A gift of cash is simple, has immediate impact, and provides tax savings due to the charitable deduction that you can receive. The easiest way to make an outright gift is to write a check to the CAAC Stewardship Foundation.

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

Ken Steiner
Chair, CAAC Stewardship Foundation

CAAC CONTACTS

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