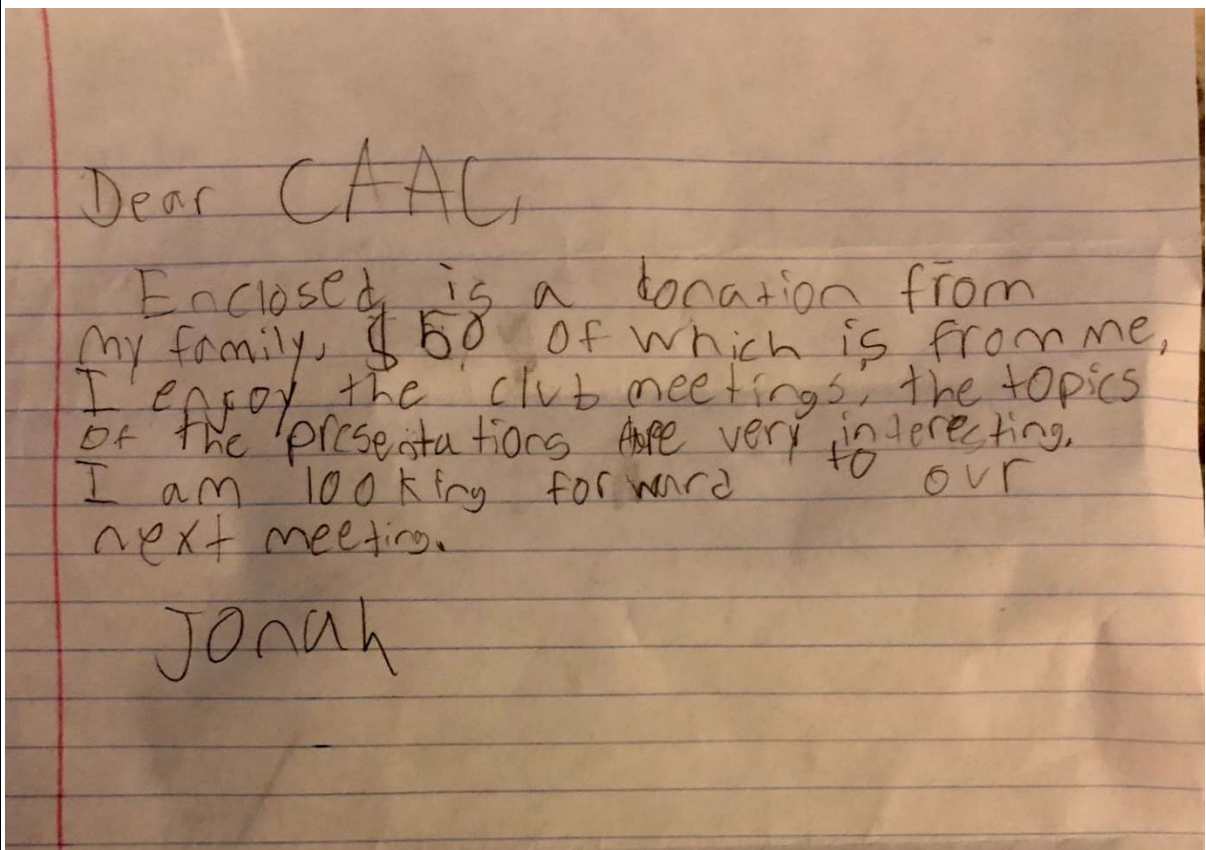




Charlotte Amateur Astronomers Club  
[www.charlotteastronomers.org](http://www.charlotteastronomers.org)

### Endowment Corner

Each newsletter I have a brief item concerning our endowment. Here is a letter we received from our youngest member regarding his contribution to the CAAC Stewardship Foundation (Endowment). This is an inspiration for us all.



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

Ken Steiner,  
Chair, CAAC Stewardship Foundation

## CAAC January 2022 Meeting

<b><u>Next Meeting:</u></b> Friday January 21st, 2022 <b><u>Time:</u></b> 7pm ET	<b><u>Place:</u></b> <i>Virtual Meeting - From the comfort of your home</i> <b><u>Address:</u></b> Zoom web conference link (See newsletter info below)
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## CAAC – State of the Organization

The month's program we take a moment to hit the reset button for CAAC members.

Observatory Director Jim Gaiser will discuss the GHRO observatory, its usage and technology, loaner program, and club "etiquette". Club Treasurer Scott Goforth will update our members on our finances, and Club President Joel Levy will give a brief summary of important scientific discoveries of 2021 with some interesting things to watch for in 2022.

Please feel free to ask questions of any presenter.

## 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/85169643345?pwd=eEhMcGJpTXpPRWlrSmhCbkhNa3dMdz09>

If needed Meeting ID: **851 6964 3345**

Passcode: **2022**

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>

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From the President:

Happy New Year! As we “Boldly Go” into 2022, I want to thank everyone for being a part of our vibrant CAAC community. It has been a tough several years for our club and the nation but I am hopeful that we can return to some sense of normalcy in the new year.

We continue to grow and have an impact on the community. In 2021, our outreach was limited but we were quoted in the Charlotte Observer, helped the cadets of the Civil Air Patrol, and received several donations of time, talent and treasure. We had to delay several events due to COVID, but we remain on the forefront of the community’s mind on issues of astronomy.

Our goal is to return to in-person meetings as soon as possible and I hope you have taken the opportunity to visit your facilities in South Carolina. As a reminder, we have loaner telescopes for your use free of charge which you can keep at your home for temporary personal use.

On behalf of the Board, we thank you for your support and we look forward to an exciting 2022.

Best,  
Joel Levy  
CAAC President

## **CAAC Treasurer's Report as of 12/31/2021**

### **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: 11/30/2021</b>	<b>\$11,483.44</b>
2	<b>Income:</b> Donation to CAAC Sale of CAAC owned mount (completes trans.) Dues and Fees CAAC Endowment Donations GHRO Infr. Improv. Expenses: X-fer  <b>Expenses:</b> Transfer to CAAC Endowment fund 2nd payment for Road project- CAAC improv. GHRO Utilities (alarm, elec, internet) GHRO Facility GHRO Infrastructure Improvements Service fee to accept credit cards	 \$50.00 \$500.00 \$860.00 \$2,500.00 \$1,862.76  \$2,500.00 \$961.78 \$346.90 \$133.67 \$1,862.76 \$45.71
3	<b>Operating Fund Balance: 12/31/2021</b>	<b>\$11,405.38</b>

### **Non-Operating Funds**

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

1	<b>Non-Operating Fund Balance: 11/30/2021</b> Scholarship Fund CAAC Self Insurance Fund Contingency Fund GHRO Infrastructure Improvement	 \$1,489.36 \$20,000.00 \$7,363.74 \$16,529.61
2	<b>Income:</b> Interest	 \$0.38
3	<b>Expenses or Transfers:</b> GHRO Infr. Improv. Expenses	 \$1,862.76
4	<b>Non-Operating Funds Balance: 12/31/2021</b> Scholarship Fund CAAC Self Insurance Fund Contingency Fund GHRO Infrastructure Improvement	 \$1,489.36 \$20,000.00 \$7,364.12 \$14,666.85

Scott Goforth  
CAAC Treasurer

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## News from GHRO

1. There is currently a power and water outage at GHRO due to the ice storm. Once the power comes back on, we will have to manually restart the water pump...so there may be some time when the toilets are not available. I'll send out an e-mail to the community when all services are restored.
2. While scheduled star parties are on hiatus due to Corona Virus concerns, GHRO is open for your personal use and maintenance. We have had several members that have tested positive and they have let others know and have self-quarantined. Please do not come to GHRO if you think you have been exposed AND ARE ASYMPTOMATIC for a minimum of 5 days, per CDC guidelines.
3. If you are interested in becoming part of the Observatory Committee, please let me know. The committee helps the Director maintain the facility and provide insight and advice on operations and maintenance of GHRO.
4. We have done some extensive trenching in the southern observing field, please be careful as you walk through this area. In addition, there is construction underway in this area, please be on the lookout for low hanging rafters and the like.
5. The next training session will be Saturday, February 19 beginning at 5 PM. Please contact Jim Gaiser at [jegaizer@gmail.com](mailto:jegaizer@gmail.com) to register. Dress warmly.

### 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 \*\*\*

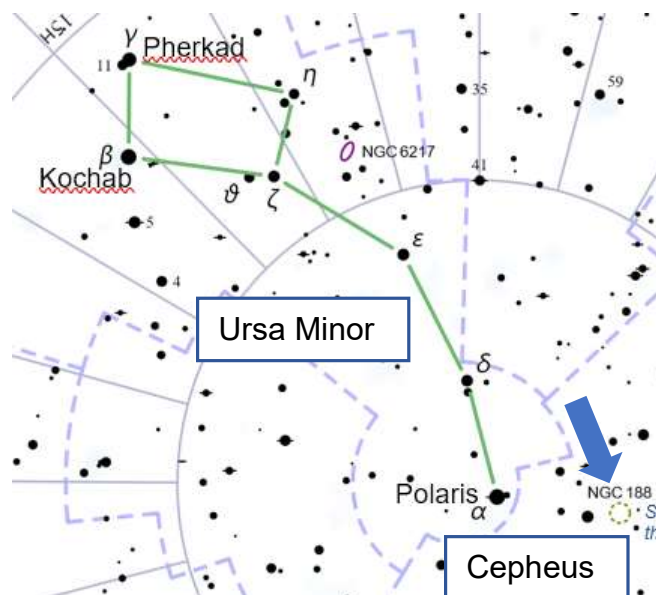
This facility (GHRO) and adjoining area may contain uneven terrain, dangerous wildlife, low light conditions, and dangerous man-made obstacles.

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.

# January Sky Challenge

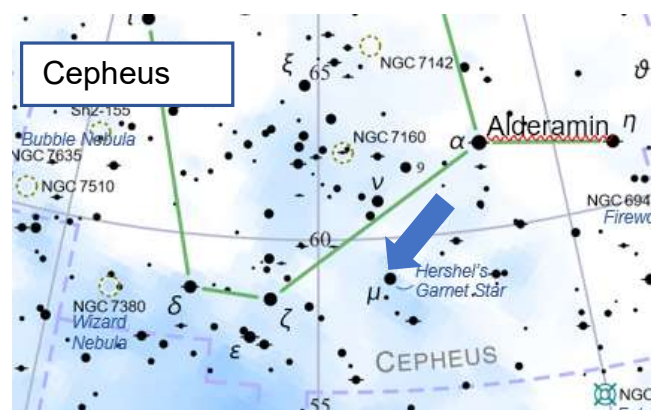
Are you looking for something to discover in the night sky? Try these with a modest size telescope, with some patience and persistence! Or come down to the GHRO and get a really fine look! Start the year looking North in Cepheus: a cluster and a red star.



On clear, chilly evenings, the dim constellation Cepheus is high in the north swinging above the pole. The stars of Cepheus are mostly 3rd magnitude or fainter, and not a single deep sky object here made it onto Messier's famous list. On the other hand, Cepheus has a galactic cluster of unusual interest: **NGC 188**. Located only 4° from Polaris, the North Star, NGC 188 consists of about 130 stars ranging from 12th to 17th magnitude. Together, they merge into an 8th-magnitude glow spanning some 15'.

While some keen-eyed observers have detected the dim presence of NGC 188 in 7×50 binoculars on extremely clear

and dark nights, the cluster's low surface brightness usually makes it a difficult find even in 4-inch instruments. With a 6-inch rich-field telescope, NGC 188 appears as a soft glow, speckled with tiny, often elusive, individual stars. Through a 10-inch or larger aperture the view is spectacular, and the whole field is scattered with diamond dust.



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. The deep orange-red color of this red giant is nicely brought out in 10×50 binoculars.

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,

## Acknowledgements:

NightSkyInfo [www.nightskyinfo.com/archive](http://www.nightskyinfo.com/archive) for target descriptions, adapted.

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 start 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!**



## CAAC CONTACTS

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President	Joel Levy	<a href="mailto:levyjoelh@yahoo.com">levyjoelh@yahoo.com</a>
Vice President	(Vacant)	
Treasurer	Scott Goforth	<a href="mailto:scottgoforth8@gmail.com">scottgoforth8@gmail.com</a>
Secretary	Nazim Mohamed	<a href="mailto:info@charlotteastronomers.org">info@charlotteastronomers.org</a>
Observatory Director	Jim Gaiser	<a href="mailto:jegaiser@gmail.com">jegaiser@gmail.com</a>
Public Outreach Coordinator	Neil Easden	<a href="mailto:naeasden@gmail.com">naeasden@gmail.com</a>