



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

### CAAC June 2022 Meeting

<p><b><u>Next Meeting:</u></b> Friday June 17th, 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) <u>Or Virtual Meeting</u> - From the comfort of your home</i></p> <p><b><u>Address:</u></b> 1900 Queens Road Charlotte, NC 28207 <u>Or Zoom</u> web conference link (See newsletter info below)</p>
---	--

### Astronomical Photographic Data Archive (APDA)

The APDA located at Pisgah Astronomical Research Institute (PARI) near Brevard, NC is dedicated to the collection, preservation and storage of astronomical photographic data. Over 400,000 glass plates from 65 collections from various observatories date from 1898. The presentation will give an overview of PARI and the beginnings of the APDA Collection with examples of images including not only star fields, but also spectra of stars. The plate archives are used for contemporary astronomy research and education with inquiries from researchers from all over the world. The archive provides a continuum of photographic data from earliest photographic glass plates to the advent of modern CCD cameras.

#### Speaker: Thurburn Barker

Thurburn Barker's background is in computer programming (operating systems, hardware simulations, and database programming). Barker has worked at NASA MSC Houston (S-IVB configuration management), Western Instrument Corp. Ventura, CA, (ocean engineering - systems modeling), and Northern Arizona University (NAU) as Sr. Management Analyst. In 2005, he retired from NAU and moved to western North Carolina. In 2006, he began volunteering at PARI working with Dr. Michael Castelaz, Science Director. Since 2007, he has been the director of PARI's Astronomical Photographic Data Archive (APDA) performing archival functions, coordinating acquisition of glass plate collections and related equipment.



## CAAC Virtual Meeting Login Instructions

1. If you have not used Zoom before, go to [Zoom.com](https://zoom.us) and download the Zoom program onto your computer.
2. We ask that you do not join the Zoom meeting until **6:50 PM**, 10 minutes before the start of the meeting.
3. **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.

4. 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
5. 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.
6. Excellent Zoom tutorials are available on You Tube:
  - a. <https://www.youtube.com/user/ZoomMeetings>

---

## **From the President:**

Greetings Friends,

We returned to in-person meetings last month and this month we are pleased to announce that our partners at MPBC have lifted the vaccination requirement for meetings at their facility. As such - while we encourage members to be vaccinated, it is no longer required.

We request that you consider your fellow members and do not attend meetings, or events at GHRO if you are feeling ill.

Spring has sprung and summer triple digit heat is upon us. All the better reason to spend the cool nights looking at the stars!

Remember that we have monthly star parties and you are always welcome to use the facilities.

In case you missed it, we have another "Star" in our midst. Ken Steiner represented the club on TV this month - the link can be found in the newsletter.

We continue to be blessed with incredibly talented club members who make our mission possible with tireless efforts and hard work. Thank you!

Best,  
Joel Levy  
CAAC President

---

## Secretary's Report:

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 clubs 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)

## CAAC Treasurer's Report as of 5/31/2022

### 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: 04/30/2022</b>	<b>\$9,537.98</b>
2	<b>Income:</b> Dues and Fees \$1,580.00 Donation \$228.48 GHRO Infr. Improv. Expenses: X-fer (April) \$357.60  <b>Expenses:</b> Monthly Meeting \$14.98 2 S&T annual subscriptions \$87.90 GHRO Utilities (alarm, elec, internet) \$386.90 GHRO Facility \$234.00 Service fee to accept credit cards \$49.84	
3	<b>Operating Fund Balance: 05/31/2022</b>	<b>\$10,930.44</b>

### Non-Operating Funds

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

1	<b>Non-Operating Fund Balance: 04/30/2022</b> Scholarship Fund \$1,489.36 CAAC Self Insurance Fund \$20,000.00 Contingency Fund \$7,365.36 GHRO Infrastructure Improvement \$4,499.54	
2	<b>Income:</b> Interest \$0.28	
3	<b>Expenses or Transfers:</b> GHRO Infr. Improv. Expenses(april) \$357.60	
4	<b>Non-Operating Funds Balance: 05/31/2022</b> Scholarship Fund \$1,489.36 CAAC Self Insurance Fund \$20,000.00 Contingency Fund \$7,365.64 GHRO Infrastructure Improvement \$4,141.94	

---

## **CAAC Outreach:**

CAAC was recently featured in an interview on WBTV. Here is the link:

<https://qclife.wbtv.com/2022/05/27/charlotte-amateur-astronomers-club-is-sharing-its-passion-stars/>

Discovery Place will begin opening to the public daily starting June 20. Saturn will be the subject for a CAAC party with Discovery Place mid-August (final date to be determined). Plans are underway for a joint venture with Discovery Place at an Uptown Charlotte Park in November with an alignment of the planets. Stay tuned for details.

---

## News from GHRO

1. The next star party is Saturday, June 25 beginning at dusk. This is the latest start time for a star party given the proximity to the summer solstice. The next training is the Saturday after our next meeting, June 18 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 [www.charlotteastronomers.org/weather](http://www.charlotteastronomers.org/weather). 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 are asking for volunteers to help clear this area. Please contact Jim Gaiser at [jegaiser@gmail.com](mailto:jegaiser@gmail.com) if you can come down some weekend with a chainsaw and help get this final step started.

## GHRO Information

GHRO is located at [1427 Bloomwood Drive, Lancaster, SC](https://www.google.com/maps/place/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 \*\*\*

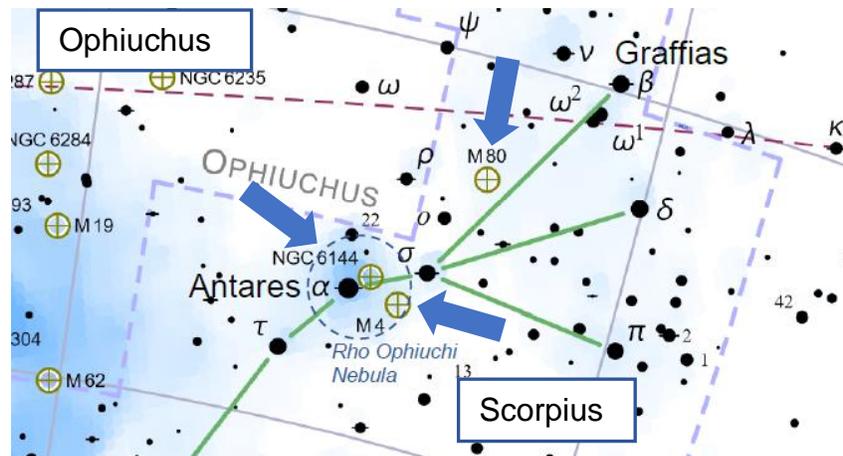
This facility (GHRO) and adjoining area may contain uneven terrain, dangerous wildlife, low light conditions, and dangerous man-made obstacles.

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.

# June 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 let's look at three globular clusters, all in Scorpius.



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.

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 9<sup>th</sup> 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.

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 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 the Present:

### Appreciated Assets

You can give appreciated stocks, bonds, or mutual funds and receive an income tax deduction. In fact, there is a double tax benefit because neither you nor the CAAC Endowment is taxed on the capital gains of your appreciated assets.

FYI update: The CAAC Stewardship Foundation (Endowment) investment portfolio is now approximately \$22,000 with the addition of a recent gift along with a contribution from a member that was matched by his employer.

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

Ken Steiner  
Chair, CAAC Stewardship Foundation

---

### CAAC CONTACTS

President	Joel Levy	<a href="mailto:levyjoelh@yahoo.com">levyjoelh@yahoo.com</a>
Vice President	Benton Kesler	<a href="mailto:benton.kesler@gmail.com">benton.kesler@gmail.com</a>
Treasurer	Scott Goforth	<a href="mailto:scottgoforth8@gmail.com">scottgoforth8@gmail.com</a>
Secretary	My Do	<a href="mailto:info@charlotteastronomers.org">info@charlotteastronomers.org</a>
Observatory Director	Jim Gaiser	<a href="mailto:jegaizer@gmail.com">jegaizer@gmail.com</a>
Public Outreach Coordinator	Ken Steiner	<a href="mailto:Ksteiner30@gmail.com">Ksteiner30@gmail.com</a>