



Charlotte Amateur Astronomers Club
www.charlotteastronomers.org

CAAC July 2022 Meeting

<p><u>Next Meeting:</u> Friday July 15th, 2022</p> <p><u>Time:</u> 7pm ET</p>	<p><u>Place:</u> <i>Myers Park Baptist Church Education Building – Shalom Hall (Basement) <u>Or Virtual Meeting</u> - From the comfort of your home</i></p> <p><u>Address:</u> 1900 Queens Road Charlotte, NC 28207 <u>Or Zoom web conference link</u> (See newsletter info below)</p>
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A Treasure Trove of Growing, Massive Black Holes in Dwarf Galaxies

A discussion of their recently published work unveiling a previously overlooked category of growing, massive black holes ("active galactic nuclei" or AGN) in dwarf galaxies. These "star-forming AGN" were neglected due to conflicting information, yet careful theoretical and observational analysis reveals they make up the majority of dwarf AGN detected using optical spectroscopy. Also, they present new work combining star-forming AGN with dwarf AGN detected by a variety of multi-wavelength methods, dramatically increasing the known inventory of dwarf AGN. These results have important implications for the growth and evolution of both massive black holes and their galaxy hosts, including Sgr A* in the Milky Way.

Speakers: Sheila Kannappan and Mugdha Polimera

Sheila Kannappan is a Professor of Physics & Astronomy at the University of North Carolina at Chapel Hill. She is Principal Investigator of the RESOLVE (RESolved Spectroscopy Of a Local VolumE) and ECO (Environmental CONtext) galaxy surveys. These surveys have an unusual design – whereas most astronomical surveys select samples that favor big and bright galaxies, RESOLVE and ECO are complete inventories of huge volumes of the present-day universe, and thus include dwarf galaxies in their natural high abundance.

Mugdha Polimera is an Astrophysics PhD candidate at UNC Chapel Hill, working with Sheila Kannappan on the RESOLVE and ECO surveys. Her research interest is to hunt for massive black holes in dwarf galaxies. She is the lead author of a recent paper by the Kannappan group that uncovers a hidden trove of growing massive black holes in dwarf galaxies, which were previously overlooked due to the rapid star formation and primordial elemental composition typical of these galaxies.



Photo courtesy of Johnny Andrews/UNC-Chapel Hill

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,

I hope everyone is having a wonderful summer. We are officially halfway through the year... and on track for standard summer thunderstorms. There is a saying in amateur astronomy that “for every inch of aperture you purchase, you can guarantee one week of cloudy skies.” If that is true, congratulations to the person who bought the 30 inch telescope.

I sincerely hope that you continue to take advantage of our facilities down at GHRO. Please be sure to stay signed up for our monthly star parties and special events.

Please note that we are about to begin our annual auction. We have built up quite the inventory of donations for you, and hope that you take the time to look over the catalog. There truly is something for everyone every price point! Please read the auction documentation carefully to ensure that you are aware of closing dates and bidding procedures.

Thank you for your ongoing participation both in person and on zoom. As a reminder, you are no longer required to be vaccinated to attend meeting. We do ask that if you are feeling ill, you consider your fellow club members and attend virtually.

Clear skies,

Joel
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

Please note that we have started sending out the newsletters from the club's email address info@charlotteastronomers.org. Please double check if it may have been filtered into your Junk/Spam folder. The newsletter can also be found on the CAAC website, <http://www.charlotteastronomers.org/> under Newsletter Archive. I apologize for any inconveniences this change in newsletter delivery may have caused.

My Do
CAAC Secretary

CAAC Treasurer's Report as of 6/30/2022

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	Operating Fund Balance: 05/31/2022	\$10,930.44
2	Income: Dues and Fees	\$530.00
	Expenses: Monthly Meeting	\$114.25
	GHRO Utilities (alarm, elec, internet)	\$387.90
	GHRO Facility	\$166.71
	Service fee to accept credit cards	\$15.29
3	Operating Fund Balance: 06/30/2022	\$10,776.29

Non-Operating Funds

Purpose: Administer gifts and donations for designated use.

1	Non-Operating Fund Balance: 05/31/2022 Scholarship Fund	\$1,489.36
	CAAC Self Insurance Fund	\$20,000.00
	Contingency Fund	\$7,365.64
	GHRO Infrastructure Improvement	\$4,141.94
2	Income: Interest	\$0.27
3	Expenses or Transfers:	\$0.00
4	Non-Operating Funds Balance: 06/30/2022 Scholarship Fund	\$1,489.36
	CAAC Self Insurance Fund	\$20,000.00
	Contingency Fund	\$7,365.91
	GHRO Infrastructure Improvement	\$4,141.94

Scott Goforth
CAAC Treasurer

News from GHRO

1. The next star party is Saturday, July 30 beginning at dusk. The next training is the Saturday before the star party, July 23 beginning at 6PM. If it's clear afterwards, you can use your new skill to practice. Please e-mail me at jegaizer@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. The Clear Sky Clock is found at the bottom of the left side of our home page...www.charlotteastronomers.org.
3. There is a secondary weather page, thanks to hard work by Rick Bassham. This weather page uses the same data as above, but it also has an ASCOM compliant interface. Go to <https://weather.ghro.club> The ASCOM driver can be found here...

Rick Bassham: If anyone wants to use the data from this weather station in an ASCOM client, you can now. Just download the ASCOM driver for the station at <https://git.foxhollow.cc/hairlesshobo/ascom-weewx-driver/releases> When you configure the device, the URL of the weather report is at: <https://weather.ghro.club/weewx.json>

4. 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.
5. 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 jegaizer@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.

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 Tomorrow:

Bequests

A bequest is one of the easiest gifts to make. The CAAC Endowment has sample language that can be used to include a planned gift to the CAAC Stewardship Foundation in your estate plan. Always consult your attorney before executing a new will or other estate planning document.

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

Ken Steiner, Chair, CAAC Stewardship Foundation

CAAC CONTACTS

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