



Charlotte Amateur Astronomers Club
www.charlotteastronomers.org

Next Meeting: Friday, September 15, 2017
Time: 7:00 PM
Place: Myers Park Baptist Church
Address: 1900 Queens Road

CAAC September 2017 Meeting

Program:

Exploring the Milky Way Through Radio Eyes

The discovery of radio frequency radiation from the Milky Way by Karl Jansky in the early 1930s marked the birth of radio astronomy. The full potential of this new subfield was not realized until a few decades later with the discovery of radio emission from atomic hydrogen and interstellar molecules such as OH, NH₃, H₂O, and CO. It was realized that a more complete picture of our Universe could be formed by combining these new radio images with those taken in visible light. In this talk, I will discuss the birth of radio astronomy, some modern instruments used for radio frequency research, and some of the research in which I am involved with Davidson students.

Speaker Bio:

Dr. Kristen Thompson is an Assistant Professor of Physics at Davidson College. She received a B.S. in Physics and Astronomy from Mount Union College in Alliance, Ohio in 2006 and a M.S. and Ph.D. from the University of Kentucky in 2009 and 2012, respectively. Kristen joined the physics department at Davidson in Fall 2013. While at Davidson, she has taught physics, astronomy, and writing courses and have worked with students on various radio astronomy research projects. Her research program focuses on determining the strengths of magnetic fields throughout the Milky Way Galaxy using some of the largest telescopes in the world.

From the President:



The big event at the GHRO each year is the Cosmic Camporee. This year's Camporee is scheduled for Saturday, September 23. As of this writing our Observatory Director is stranded in the Caribbean but be assured the event will go on.

Cosmic Camporee is a special event for families and individuals to share in a fun time, food and, of course, observing the great sky we have at the GHRO. Saturday we will have activities for the kids beginning at 2:00 pm. The popular rocket model rocket launches will

be at 4:00 pm. At 5:00 pm will be the potluck dinner. We ask that members bring a dessert, salad or other side items to share with the provided meat (BBQ, chicken or hotdogs). Solar viewing will be available during the day Saturday. Saturday evening will be a time for members and families to share the night sky.

Earlier in the day Saturday you can take in hiking at the nearby 40 Acre Rock. Campers are welcome anytime Friday thru Sunday. We have tent camping as well as RV sites. A shower in the Outreach Center provides added comfort for your stay. The Sunday morning Pancake Breakfast will be available for the overnight campers.



We look forward to your joining us for food and fellowship on September 23 at the Gayle Riggsbee Observatory (GHRO). Reminder, you may well want to bring your own lawn chairs.

Ken Steiner
President



CAAC Treasurer's Report as of 8-31-2017

Part 1 of 2

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 net Southern Star income (or expense).
- Funds are expended to meet operating obligations of the club.

1	Operating Fund Balance: 7-31-2017	\$11,932.03
2	Income	
	Dues & Fees	360.00
	Donation - Microsoft	1600.00
	Prepaid Subscriptions	0.00
3	Expenses	
	GHRO Expenses	288.03
	GHRO Utilities	85.00
	Fees for Credit Card Service	5.55
	Meeting Expense	34.60
	Administrative	0.00
4	Operating Fund Balance: 8-31-2017	\$13,478.85

Part 2 of 2

Non-Operating Funds

Purpose: Administer gifts and donations for designated use.

1	Balance 7-31-2017: Non-Operating Funds	
	Scholarship Fund	5,315.00
	Contingency Fund	21,654.00
	Long-Term Fund	2,822.21
2	Income	
	Donation: Bank of America	0.00
	Donation: Duke Energy	0.00
	Interest	0.76
3	Expenses or Transfers	\$0.00
4	Balance 8-31-2017: Non-Operating Funds	
	Scholarship Fund	5,315.00
	Contingency Fund	21654.00
	Long-Term Fund	2,822.97

Wonderful things are happening with the Charlotte Amateur Astronomy Club. Opportunities for exploration and outreach are growing. **Membership dues for the 2017/2018 fiscal club year are due in October** as usual. Currently dues are \$60 per family which includes access and privileges of the club's observatory (GHRO) in South Carolina. Dues can be paid online with your credit card, go to <https://squareup.com/store/charlotte-amateur-astronomers-club-2> and select Renewal Membership - Full Year. I can still accept your cash or check (made out to The Charlotte Amateur Astronomy Club) at our monthly meeting. We look forward to sharing the wonders of the night sky with you.

-Benton Kesler
CAAC Treasurer

CAAC Outreach Updates

Community Outreach needs you and your expertise. Outreach events connect CAAC members with groups in the Charlotte metro area who request star parties, presentations or training.

There were numerous events this past month due to the eclipse. CAAC members made presentations and handed out hundreds of eclipse viewing glasses for free. We also had a big night at "Summer Stargazing" at Blair Mill Park in Stallings in August which was coordinated with the Town of Stallings Department of Parks and Rec. Special thanks to all the club members who brought their telescopes that made this event in Stallings so successful.

Finally, ask Kevin Moderow about "The Sun Is Also A Star" Community Read events in association with the Charlotte-Mecklenburg Library. More outreach events for the fall season have already been planned. Contact Kevin Moderow if you are interested in getting involved with outreach.

Kevin Moderow
CAAC Outreach Coordinator

FROM THE SECRETARY:

ATTENTION:

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.

But, in addition to that over the next several weeks I will be undergoing a membership maintenance effort to identify former members who are not current on their dues and clean up the name tags, email, and NSN lists.

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)

Meeting Gathering Several CAAC members gather at Panera Bread (601 Providence Road, just a few blocks from our meeting place) at 5:30 prior to the monthly meeting. Anyone interested in sharing a meal with them is welcome.

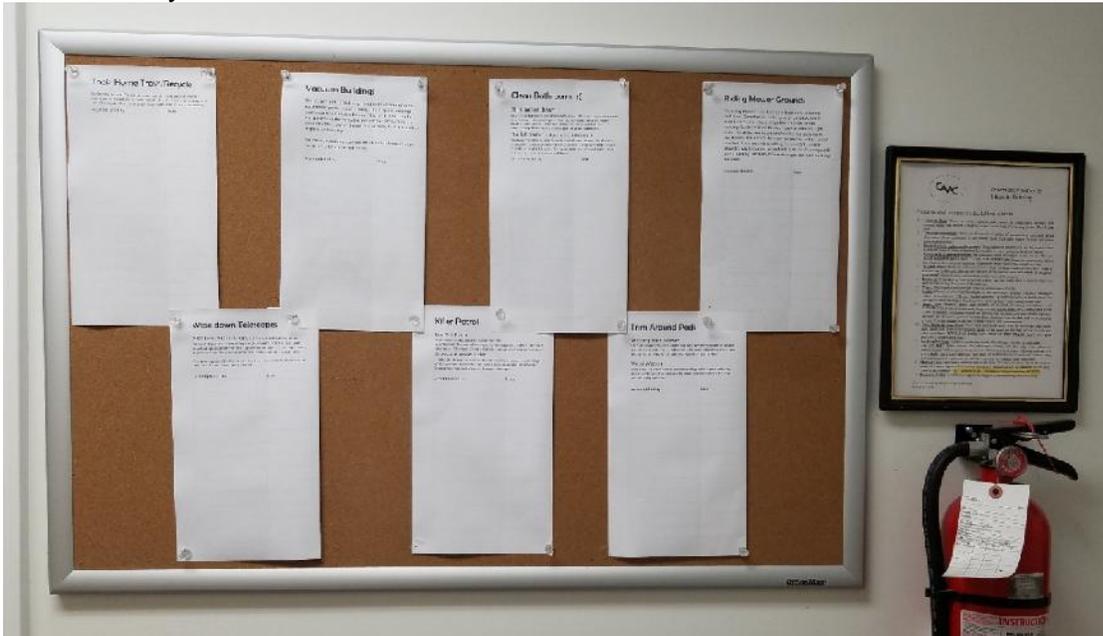
News from GHRO – Chris Skorlinski, Director

“**WARNING**” – Board of Directors recently approved new signs at GHRO to alert our visitors to watch their step while on grounds of GHRO. You’ll notice the new signs when you drive in, they’re big, they’re yellow and slightly reflective.



Now Can I help?

Looking for ways to help out at GHRO but don't know how? We recently updated the bulletin board with list of activities need to keep GHRO maintained as wonderful resource for all members. When you arrive, select an activity, directions provided, then jump in and lend a hand. Date and sign when complete to help track what was done when and by whom. We'd like to know who to thank!



Saturday, September 16th CAAC “Self-Serve” Star Party

Chris Skor is still working in the Carribbean. And many of our GHRO Committee members will not be available to host this star party, BUT if the weather looks clear, we still welcome members to make use of the dark skies at GHRO for their own personal observing. We may not have members driving the club scopes, but if you have gone through the basic training and have experience operating them, they are open for you as well!

If weather looks cloudy in Charlotte, it may still be clear the observatory. For current conditions check the Sky Camera from our club's weather page at <http://charlotteastronomers.org/weather/>
Check out <http://skymaps.com/downloads.html> for downloadable list of objects and map for our August night sky.

“Saturday, September 23rd - Annual Cosmic Camporee ” -- CAAC members and their guests are invited to GHRO for our annual Cosmic Camporee. We'll have a full day of events Saturday starting at 2pm, BBQ potluck dinner at 5pm, and dark clear skies for viewing Carolina Night Skies. Come down early Saturday and head over to 40 Acre Rock for easy hike.

Campers welcome Friday through Sunday.

Every year BBQ, chicken, and hotdogs are provided through generous member donations. Bring a dessert, salad, drink or side item to share. A "homemade", store bought Apple pie and ice-cream are still my favorite. Alcohol is allowed, sharing with GHRO Director and GHRO Volunteers is encouraged.

We'll finish up with 8am Pancake Breakfast for overnight campers.



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 *****

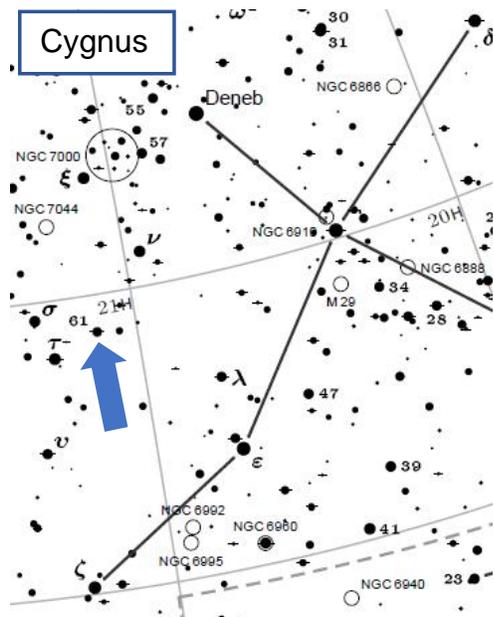
This facility and adjoining area may contain uneven terrain, dangerous wildlife, low light conditions, and dangerous man-made obstacles.

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.

September 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 an unusual double star and a planetary nebula.

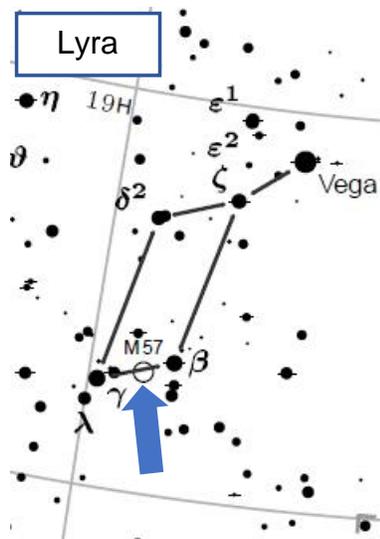


61 Cygni

With a small telescope at 60x you will see 61 Cygni as a bright warm white primary with a slightly dimmer secondary, also warm white, lying about 30" to the south-southeast.

61 Cygni is more interesting for another of its characteristics. Like Barnard's Star, 61 Cygni has an unusually high proper motion, causing it to move visibly against the more distant stellar background over the course of relatively few years. Since 1838, 61 Cygni also holds a grand place in astronomical history. That year, it became the first star to have its parallax measured. Using the Fraunhofer heliometer at Königsberg Observatory, German astronomer Friedrich Wilhelm Bessel determined that 61 Cygni has a parallax of 0.31" (very close to the modern value of 0.29"), implying that the star was 10.3 light

years from Earth (today's accepted value is 11.41 light years). The Royal Astronomical Society awarded him its Gold Medal for this achievement, which marked the first step towards accurately measuring stellar distances.



M57 in Lyra

Despite their name, planetary nebulae have absolutely nothing to do with planets. They got their name because early observers thought they resembled the disks of Uranus and Neptune. Instead planetaries are old, highly evolved stars which have thrown off their outer layers. The best-known planetary nebula is the **Ring Nebula M57**, easily found about halfway between Beta and Gamma Lyrae. This celestial smoke ring roughly 500 times the diameter of our solar system was discovered by the French astronomer Antoine Darquier, only a few days before Charles Messier.

He described it as a "perfectly outlined disk as large as Jupiter, but dull in light and looking like a fading planet". This comparison to a planet may have influenced William Herschel who found that the object resembles the planet

newly discovered by him, Uranus, and introduced the name "Planetary Nebulae". Small telescopes show M57 as a faint hazy spot, slightly larger than the disk of Jupiter. Apertures of at least 4 inches are needed to discern its ring shape and its elliptical outline. Observers using larger telescopes and high magnifications will notice a few darker zones on the eastern and western edges of the ring, and maybe some faint nebulosity inside the disk

Acknowledgements:

NightSkyInfo www.nightskyinfo.com/archive for target descriptions, adapted.

Mag Star 7 Star Atlas Project © 2005 Andrew L. Johnson for star maps (clipped)

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!

CAAC CONTACTS

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