Charlotte Amateur Astronomers Club

www.charlotteastronomers.org

CAAC October 2022 Meeting

Next Meeting: Friday October 21st, 2022 **Time:** 7pm ET	**Place:** *Myers Park Baptist Church* *Education Building – Shalom Hall (Basement)* **Address:** 1900 Queens Road Charlotte, NC 28207 *and* **Zoom:** for Cosmic Camporee Attendees, Zoom web conference link (See newsletter info below)

Asteroid Formation 101

NASA's recent DART mission successfully crashed a spacecraft into a small asteroid in an effort to redirect its orbital path as part of a planetary defense mission. As the spacecraft approached the never-before-seen asteroid, it collected spectacular images of a rough, bouldered surface. Dr. Reynolds will place these observations into the larger context of asteroid formation and classification, and highlight other space missions that have contributed to asteroid evolution models used by scientists.

Speaker: Dr. Valerie Reynolds

Originally from Asheville, NC, Dr. Valerie Reynolds earned her PhD in Geology at the University of Tennessee where she studied the geochemistry of rocks from Hawaii, Mars, and asteroids. She worked as a post-doctoral researcher at the Smithsonian Museum of Natural History in Washington, DC for 2 years while continuing research on meteorites from Mars in addition to iron and stony-iron meteorites from asteroids. She is currently an Assistant Teaching Professor in the Department of Geography and Earth Sciences at UNC Charlotte.

CAAC Virtual Meeting Login Instructions:

The CAAC October 2022 Meeting is being live broadcast to Cosmic Camporee at GHRO via Zoom. Please use the instructions below to join the Zoom presentation at Cosmic Camporee:

Charlotte Amateur Astronomers Club is inviting you to a scheduled Zoom meeting.

Topic: CAAC Monthly Meeting- October 21
Time: Oct 21, 2022 07:00 PM Eastern Time (US and Canada)

Join Zoom Meeting
https://us06web.zoom.us/j/81452020054?pwd=aGJnLzRPeHUwNTZPdnd0ZEU0Qk5rdz09

Meeting ID: 814 5202 0054
Passcode: 323595
One tap mobile
+13092053325,,81452020054#,,,,*323595# US
+13126266799,,81452020054#,,,,*323595# US (Chicago)

Dial by your location
- +1 309 205 3325 US
- +1 312 626 6799 US (Chicago)
- +1 646 931 3860 US
- +1 929 205 6099 US (New York)
- +1 301 715 8592 US (Washington DC)
- +1 346 248 7799 US (Houston)
- +1 386 347 5053 US
- +1 564 217 2000 US
- +1 669 444 9171 US
- +1 669 900 6833 US (San Jose)
- +1 719 359 4580 US
- +1 253 215 8782 US (Tacoma)

Meeting ID: 814 5202 0054
Passcode: 323595
Find your local number: https://us06web.zoom.us/u/kbwVJDhLfh

From the President:

Dear Friends,

The leaves are turning from green to orange and that can only mean that fall is upon us.

One of the great things about the fall weather in the Carolinas are the cool clear skies. I hope that you will take advantage of the winter sky opportunities that nature will provide us down at GHRO.

As a reminder, the November meeting will be our last meeting for 2022, and we hope that you will join us in December for the annual club holiday party. Please stay tuned for more information.

Please be sure to pay your annual dues which can now be done via our new CAAC website. We are deeply grateful to the website revitalization team, and we know that you will be excited by the changes.

Clear skies,

Joel
CAAC President

Secretary's Report:

1. October is the start of the 2023 CAAC annual membership.
   - Annual individual/family membership, which includes access to the CAAC darksky **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. We are excited to announce the launch of the new CAAC website, https://charlotteastronomers.org/! With great appreciation to the Website Modernization Team (our talented team of volunteers, Mark Hoecker, Tom Clarkson, Steve Rogish, Justin Peatross, and Rick Bassham), the CAAC website 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.

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

My Do
CAAC Secretary

CAAC Treasurer's Report as of 9/30/2022

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: 08/31/2022**	**$16,243.31**
2	**Income:**	
	Dues and Fees	$620.00
	Donations	$2,000.00
	GHRO Infr. Improv. Expenses: X-fer	$1,205.18
	Expenses:	
	Monthly Meeting	$213.74
	Parking lot clearing (from August)	$1,800.00
	X-fer to Scholarship fund from auction proceeds	$5,217.51
	Concrete Work GHRO ($690.53 to be reimbursed)	$2,655.00
	GHRO Facility	$942.97
	GHRO Utilities (alarm, elec, internet)	$432.90
	New website expenses	$684.08
	Service fee to accept credit cards	$15.76
3	**Operating Fund Balance: 09/30/2022**	**$8,106.53**

Non-Operating Funds

Purpose: Administer gifts and donations for designated use.

1	**Non-Operating Fund Balance: 08/31/2022**	
	Scholarship Fund	**$1,489.36**
	CAAC Self Insurance Fund	**$20,000.00**
	Contingency Fund	**$7,366.47**
	GHRO Infrastructure Improvement	**$2,134.08**
2	**Income:**	
	X-fer to scholarship fund from auction proceeds	$5,217.51
	Interest	$0.28
3	**Expenses or Transfers:**	
	GHRO Infr. Improv. Expenses	$1,205.18
4	**Non-Operating Funds Balance: 09/30/2022**	
	Scholarship Fund	**$6,706.87**
	CAAC Self Insurance Fund	**$20,000.00**
	Contingency Fund	**$7,366.75**
	GHRO Infrastructure Improvement	**$928.90**

Scott Goforth

News from GHRO

1. Well, it's final here!! October means Cosmic Camporee…October 21-23. Expect crisp, fall air…plenty of good times and good friends…burgers and dogs provided by the club, please bring a covered dish for sides and desserts. This is the only event where a reservation for an RV site is needed, so please contact me if you need one. Tent camping is always available at GHRO, and this is no exception. There will be badminton, cornhole, model rockets and all the fun you want to have. A day trip over to 40 Acre Rock is planned, so come dressed appropriately. Keep your fingers -crossed for clear skies. Jupiter and Saturn will rule the evening skies…just saying.

2. The next star party (after Cosmic Camporee) is Saturday, November 19 beginning at dusk. There is no telescope training in November.

3. Don't forget that the current sky conditions and weather can always be viewed at https://weather.ghro.club/. The Clear Sky Clock is found at the bottom of our home page…www.charlotteastronomers.org.

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. I am pleased to announce that the infrastructure project is complete as the parking lot across the road from the Outreach Center is finished. Many thanks to all who helped make these infrastructure improvements. It's been a sustained effort that has resulted in improved Internet access, new parking lot and much more. A complete report on the project will be in the November newsletter.

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.

CAAC Outreach Opportunities

1. **Discovery Place**: September 23, Main targets: Jupiter and Saturn over 100 people

Thanks to: Abbas Mokhtarz, Benton Kesler, Gayle Riggsbee, Jim Craig, Tom Blevins, Scott Goforth, Frank Westmorland and Matt White

2. **South Mecklenburg High School**: October 8, Targets: Moon along with Jupiter and Saturn. 50 people due to 1 week delay (130 registered for original date)

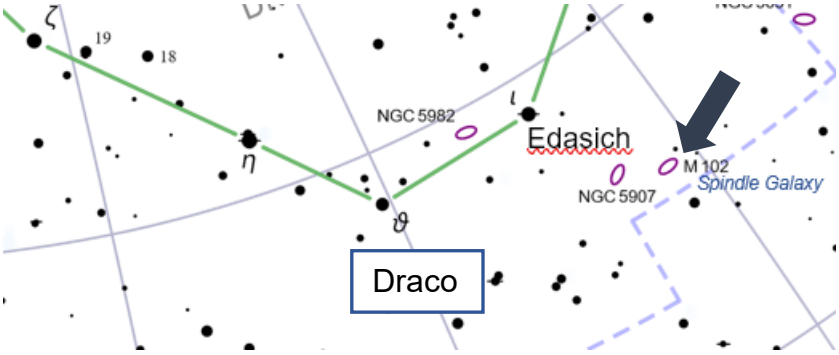
Thanks to: Abbas Mokhtarz, Jim Craig, Tom Blevins, Scott Goforth and Matt White

Best regards,

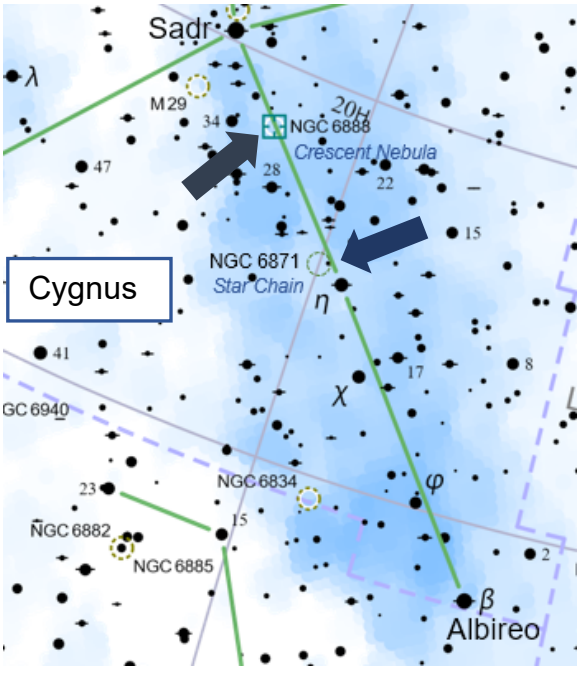
Ken Steiner

October 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, a galaxy, a chain, and a nebula.



M102, also known as the **Spindle Galaxy**, is an edge-on lenticular galaxy located in the northern constellation Draco. The Spindle Galaxy lies at a distance of 50 million light years from Earth and has an apparent magnitude of 10.7. It is estimated to contain 100 billion stars. M102 is very difficult to see with binoculars, but easily visible in small telescopes, which show a thin, nebulous patch under good conditions. 4-inch telescopes show a bright elliptical nebulous patch with a brighter core, while 6-inch and 8-inch instruments reveal a halo of light and hints of the galaxy's dark dust lane. Larger telescopes show the galaxy's well-defined bright center and more details of its structure.



NGC 6871 (Star Chain) is a small, young open cluster in the constellation of Cygnus. The cluster has less than 50 members, most of which are blue and white stars. It is located 5135 light-years from Earth. The cluster is dominated by a pair of double star systems comprised of SAO 69402 (mag 6.77) and SAO 69403 (mag 7.36) for the northern pair and SAO 69405 (mag 7.86) and SAO 69404 (mag 8.86) which make up the southern pair. NGC 6871 was discovered by Friedrich Georg Wilhelm von Struve (1793-1864) in 1825.

The **Crescent Nebula** (a.k.a **NGC 6888**, Caldwell 27, Sharpless 105) is an emission nebula in the constellation Cygnus, about 5,000 light-years away from Earth. It was discovered by William Herschel in 1792. It is formed by the fast stellar wind from the Wolf-Rayet star WR 136 (HD 192163) colliding with and energizing the slower moving wind ejected by the star when it became a red giant around 250,000 to 400,000 years ago. The result of the collision is a shell and two shock waves, one moving outward and one moving inward. It is a rather faint object located about 2 degrees SW of Sadr. For most telescopes it requires a UHC or OIII filter to see. Under favorable circumstances a telescope as small as 8 cm [3-inch] (with filter) can see its nebulosity.

Acknowledgements:

Messier-Objects.com, Wikipedia, and Astronomy Magazine for excerpts.
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!

Endowment Corner

Gifts for Tomorrow:

Matching Gifts:

Matching gifts from your employer can double and sometimes triple the value of your gift to the CAAC Endowment and your support of the astronomical programs important to you. To find out whether your employer offers a matching charitable gift program, please contact your human resources officer.

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

Ken Steiner, Chair, CAAC Stewardship Foundation

CAAC CONTACTS

President	Joel Levy	levyjoelh@yahoo.com
Vice President	Benton Kesler	benton.kesler@gmail.com
Treasurer	Scott Goforth	scottgoforth8@gmail.com
Secretary	My Do	info@charlotteastronomers.org
Observatory Director	Jim Gaiser	jegaiser@gmail.com
Public Outreach Coordinator	Ken Steiner	Ksteiner30@gmail.com