



Charlotte Amateur Astronomers Club
www.charlotteastronomers.org

Next Meeting: Friday July 19th, 2019

Time: 7:00 PM

Place:

Myers Park Baptist Church
Education Building – Shalom Hall (Basement)

Address:

1900 Queens Road
Charlotte, NC 28207

CAAC July 2019 Meeting

Vortices in Beams of Light and Vortex Coronagraphy

Speaker

Greg Gbur is a Professor of Physics and Optical Science at the University of North Carolina at Charlotte, specializing in theoretical classical optics. He has nearly 100 peer-reviewed publications in scientific journals, and has published two textbooks, *Mathematical Methods for Optical Physics and Engineering* (Cambridge University Press, 2010) and *Singular Optics* (CRC Press, 2017). His first popular science book, *Falling Felines and Fundamental Physics*, will be published by Yale University Press in October 2019. He runs a weblog on popular science and other subjects at *Skulls in the Stars*.



From the President

Our CAAC Constitution enables the President to “appoint persons for specific tasks to further the mission of the Organization”. I am delighted to announce that two people have agreed to serve in new positions. Scott Goforth has agreed to serve as Assistant Treasurer and Tom Blevins has consented to serve as Assistant Secretary.

Both of these individuals expressed interest in Treasurer and Secretary when those positions become vacant. They will assist the current officers. This will enhance a smooth transition when they are elected to office. They will be invited to sit in on the Board of Directors’ meeting with voice, but not vote, as a part of their increasing involvement.

The CAAC is also in need of individuals to serve on one of the standing committees to enhance the functioning of the club. Here is a list of committees that could use your involvement:

Meeting Room Prep: Arrange chairs, put up posters, start up sound system

Refreshments: Assist with refreshments

Hospitality: Greet guests and new members

Southern Star: Help facilitate our annual astronomy convention at Wildacres

Mentoring: Help new members with observing and operating their scopes

Please let me know if you would be willing to help out on one of these committees.

Ken Steiner
President
ksteiner30@gmail.com

CAAC Treasurer's Report as of 06/30/2019

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: 05/31//2019	12,442.38
2	Income	
	Dues & Fees	135.00
	Expenses	
	GHRO Utilities	266.08
	Fees for Credit Card Service	2.78
	Meeting Expense	230.25
	GHRO Maintenance	249.49
	Sproles Equipment 10in repair	
		108.30
4	Operating Fund Balance: 06/30/2019	11,720.48

Part 2 of 2

Non-Operating Funds

Purpose: Administer gifts and donations for designated use.

1	Balance 05/31/2019: Non-Operating Funds	
	Scholarship Fund	3989.36
	Contingency Fund	27,636.77
	Long-Term Fund	7247.86
2	Income	
	Donation: Microsoft, BofA, Other	0.00
	Interest	.96
	Expenses or Transfers	
3		
	Balance 6/30/2019: Non-Operating Funds	
	Scholarship Fund	3989.36
	Contingency Fund	27,637.73
	Long-Term Fund	7247.86

Endowment Fund Balance

\$1240.06

Benton Kesler
CAAC Treasurer

CAAC Outreach Updates

On the evening of July 27th, we have been invited to assist Cane Creek Campground by facilitating an informal late-night Summertime Star Gazing session.

They have a nice spot for us at the rear of their Lakeside Lodge with about 85% of the sky visible. It's also outside of the immediate glare of the city lights and should offer a better sky than average. They're looking for just 2-3 telescopes. So, if you would like to come on down and delight in the reactions that come with peoples first views of Jupiter and the brighter star clusters, please RSVP and let me know.

See you out there!

Neil Easden

If you are interested in getting more involved with CAAC Community Outreach please contact Neil Easden at naeasden@gmail.com

Secretary's Report:

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.

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.

From the Southern Star Planning Committee Chair

!! ADDITIONAL VOLUNTEERS NEEDED FOR SOUTHERN STAR !!

Much effort goes into planning and running Southern Star and many of our dedicated committee members have worked on the convention for a number of years. We need new people who are willing to work with the current committee members to learn the various planning and operational aspects of Southern Star. This will give us better bench strength in case of unexpected absences and allow current members to rotate off the committee in the future knowing they have a trained replacement.

Some of the roles require just learning Southern Star operations and details of a particular job, but some specific interests or skills are helpful for important tasks. These include, but are not limited to: computer skills in generating attractive flyers, forms, videos, and webpages; AV know-how to learn and operate the sound system, projector, and microphones in the Wildacres auditorium; Sales and solicitation skills to get door prize donations from vendors. But please volunteer even if you are not interested in these particular areas, we have other jobs that are vitally important.

If you can help, please email Steve Harris at sostarchair2020@gmail.com. Thanks in advance!

News from GHRO

1. The August Star Party at GHRO will be August 3, weather permitting. There's a 2.7 day old moon, so we should have a reasonably dark skies after sunset. The next telescope training is September 7, the September Star party is the 21st.
2. Please come down and use the outstanding facility. Remember, it's your observatory, so please use it. We do ask that you clean up before you leave. A good practice is to act as if you are going camping...pack out what you pack in.
3. Finally, several of us are doing remote imaging. If you're at GHRO, please be careful around the private observatories...the roofs can roll off at any time.
4. I plan to have a work day at GHRO in October prior to the Cosmic Camporee. Stay tuned!!
5. Speaking of Cosmic Camporee, mark your calendars for October 26, 2019. It's a little later than the past few years, let's hope that buys us some crisp autumn air.

GHRO Information (see <http://1drv.ms/1m2wPUh>)

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.

***** WARNING *****

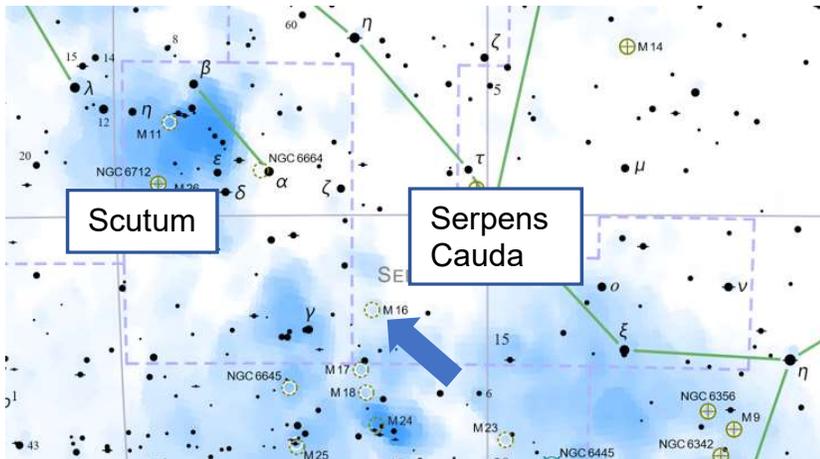
This facility and adjoining area may contain uneven terrain, dangerous wildlife, low light conditions, and dangerous man-made obstacles.

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.

July 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 in Scorpius.

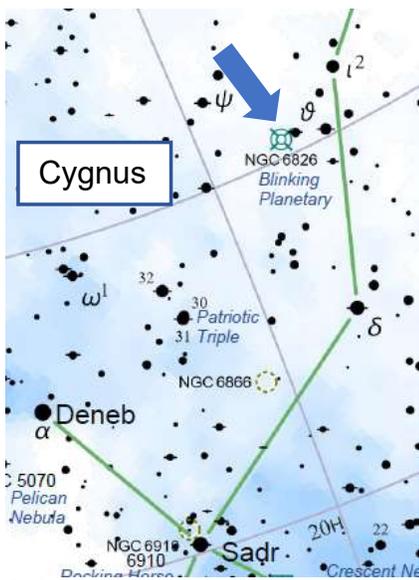


Serpens is a unique constellation, for it is split into two separate halves. It represents a snake coiled around the serpent holder, Ophiuchus. On one side of Ophiuchus lies Serpens Caput, the serpent's head, which is the larger and more prominent half; on the other side of Ophiuchus lies Serpens Cauda, the serpent's tail.

Within the boundaries of the serpent's tail, Serpens Cauda, and just 3° north of the Swan Nebula, backyard astronomers will find a large scattered star cluster immersed in a vast diffuse

nebula. This is the **Eagle Nebula**, also known as Messier object, **M16**, one of the showcases of the night sky. UHC or O-III filters help show the nebulosity.

Small telescopes show about five dozen suns scattered across half a degree of sky, members of the NGC 6611 cluster, within the nebula. The nebulosity threaded among the cluster stars is modestly bright at best, even with larger apertures.



NGC 6826 is a planetary nebula located in the constellation Cygnus. The colorful planetary nebula phase of a sun-like star's life is brief. Almost in the "blink of an eye" - cosmically speaking - the star's outer layers are cast off, forming an expanding emission nebula. This nebula lasts perhaps 10 thousand years compared to a 10 billion year stellar life span. This remnant of a red giant star leaves behind a hot, dense white-dwarf star.

It is commonly referred to as the "Blinking Planetary", although many other nebulae exhibit such "blinking". When viewed through a small telescope, the brightness of the central star overwhelms the eye when viewed directly, obscuring the surrounding nebula. However, it can be viewed well using averted vision, which causes it to "blink" in and out of view as the observer's eye wanders.

Acknowledgements:

Wikipedia, www.wikipedia.com

Astronomy Picture of the Day, www.apod.nasa.com

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!**

**NEW January, 2019 Revision
is POSTED!**

Our CAAC member, Mark Hoecker, has used the *Mag 7 Star Atlas – Color Milky Way version* (available on 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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