



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

**Next Meeting:** Friday March 16, 2018

**Time:** 7:00 PM

**Place:**

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

**Address:**

1900 Queens Road  
Charlotte, NC 28207

**CAAC March 2018 Meeting**

Program:

## From Classroom to the Space Station

Each year since 2014, Carmel Christian High School students conceive, design, build, test, integrate, and ultimately launch, operate and retrieve a microLab experiment to be conducted aboard the International Space Station. The launch date for this year is May 1, 2018.

Students present high quality information on various platforms through the development of an experiment. These platforms include website design and maintenance, professional conferences by video presentation, scheduled open community discussions, technical documentation for NASA, and peer presentations. The process is just as important as the results of the actual experiment.

Our students are designing this experiment as research preparation for STEM careers later on. The STEM team includes several teams such as mechanical, software, electrical, documentation, and public relation teams working together to produce the best experiment for space research. Students are able to experience “real life” research and development settings, gaining knowledge from professional mentors and working under tight deadlines from NASA. Engineers from Honeywell have also invested in 3D printing parts for the STEM team project as the experiment is prepared for its launch.



CCS is the only school or high school level organization to partner with the Quest Institute and Nanoracks, to run the ISS Project on the east coast. The Quest Institute ISS Program, working with partner schools, launches more science experiments to the ISS per year than any other organization, including NASA.

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**From the President**

We have opportunities for members to serve in various ways to assist the club.  
The room set up committee prepares the room for the meeting and puts items away after the meeting.  
With several helpers this takes about 15 minutes and we do this at 6:00 pm to be ready prior to members arriving for the meeting.  
We also have opportunities to serve on Hospitality, Mentoring and assisting with start parties.  
Please let me know your interest helping the club with these tasks.

Your CAAC Board of Directors met for their quarterly meeting on Saturday March 10<sup>th</sup>, 2018. Please find the highlights of the meeting minutes attached (embedded link)

  Click to open embedded link (using Adobe)

Ken Steiner  
President

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**From the South Star Planning Committee:**

**Southern Star 2018!!!!!!!!!!**

**April 5<sup>th</sup> 2018 – April 8<sup>th</sup> 2018**

**Registration is now OPEN!!**

Visit this link for all the details and access to registration form:

<http://charlotteastronomers.org/southernstar/index.html>

*All registrations should be received by **March 16, 2018***

**CAAC Treasurer's Report as of 2/28/18**

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.

<b>1</b>	<b>Operating Fund Balance: 1/31/2018</b>		\$14,691.63
<b>2</b>	<b>Income</b>		
	Dues & Fees		461.00
	Prepaid Subscriptions		0.00
	Pad Fees		319.00
	Hat and Shirt Sale		30.00
	Transfer from savings for Scholarship Awards		2000.00
<b>3</b>	<b>Expenses</b>		
	GHRO Expenses		299.50
	2018 CAAC Scholarship Awards		
	GHRO Utilities	2000.00	
	Fees for Credit Card Service		277.08
	Meeting Expense (Room Rent)		19.59
	GHRO Annual Insurance		236.25
			798.00
<b>4</b>	<b>Operating Fund Balance: 2/28/2018</b>		\$13,871.21

Part 2 of 2

**Non-Operating Funds**

Purpose: Administer gifts and donations for designated use.

<b>1</b>	<b>Balance 1/31/2018: Non-Operating Funds</b>		
	Scholarship Fund		5,315.00
	Contingency Fund		27933.94
	Long-Term Fund		2827.80
<b>2</b>	<b>Income</b>		
	Donation: Microsoft, BofA, Other		0.00
	GHRO Pad Purchase		0.00
	Interest		
<b>3</b>	<b>Expenses or Transfers</b>	.78	
	Transfer to Checking for Scholarship Awards		
		2000.00	
	<b>Balance 2/28/2018: Non-Operating Funds</b>		
	Scholarship Fund		3,315.00
	Contingency Fund		27,933.94
	Long-Term Fund		2828.58

-Benton Kesler  
CAAC Treasurer

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## CAAC Outreach Updates

*CAAC 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.*

*Hold The Date: Apr 27. We need a big turnout with members bringing their telescopes to the star party at Pharr Family Preserve near Midland in partnership with the Catawba Lands Conservancy . Rain date is Apr 28th.*

*More outreach events are in the planning stages. Make sure you are registered at the Night Sky Network so that you will automatically be notified of upcoming outreach events.*

*If you are interested in getting more involved with CAAC Community Outreach please contact Kevin Moderow, [kevinmoderow@gmail.com](mailto:kevinmoderow@gmail.com).*

Kevin Moderow  
CAAC Outreach Coordinator

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### **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.

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## News from GHRO

1. There will be telescope training for the solar, 8" refractor and the 16" reflector on FRIDAY night, April 13 beginning at 6 PM. If you haven't been trained, or want a refresher, come one down. Rain date will be on Saturday, April 21 at 5 PM.
2. The April star party will on Saturday, April 14, come one down!!!

### **GHRO Information** (see <http://1drv.ms/1m2wPUn>)

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.

### **SkyMaps**

Check out <http://skymaps.com/downloads.html> for a printable PDF map of the night sky.

### **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 \*\*\*

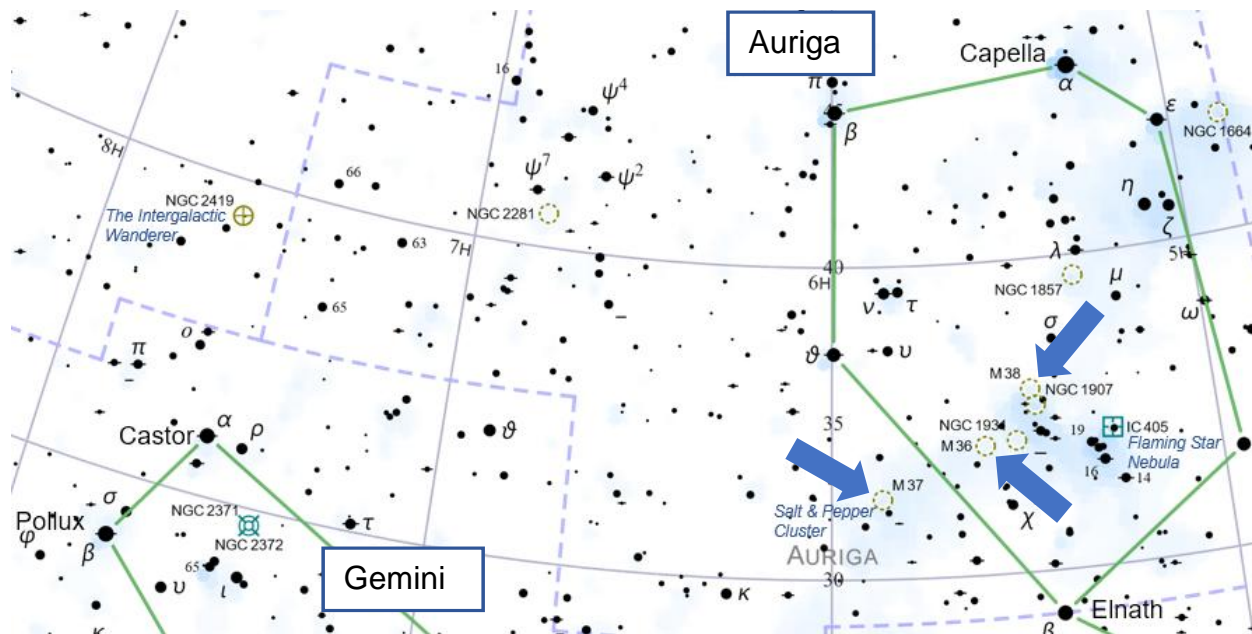
This facility and adjoining area may contain uneven terrain, dangerous wildlife, low light conditions, and dangerous man-made obstacles.

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.

## March 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 “triple play” of clusters – all in constellation Auriga.



### Auriga M36, M37, & M38

The constellation Auriga is home to three fine open star clusters, which show as glows in binoculars and small splashes of stardust in a small telescope.

**M36** is the first of these three, and can be found five degrees southwest of Theta Aurigae. The cluster contains some 60 member stars of magnitudes between 9 and 14 and is 4,100 light years distant. If you look carefully, you will notice that several of its brightest stars are arranged in roughly parallel rows.

**M37** is nearly 4 degrees east-southeast of M36. It is an easy and rewarding object for small telescopes or binoculars, and appears as a rich, somewhat triangular grouping of closely packed together stars. Look for a bright, orange star near the center.

Shift almost 2 degrees northwest of M36 and you will sweep into a big, bright showpiece of an open cluster. M37 is also known as the “Salt & Pepper Cluster” and is the brightest of these three open clusters in Auriga.

**M38** is a scattered group of irregular form, composed of some 100 stars about magnitude 10 and fainter. The full diameter of the cluster is about 20 arcminutes, and is best seen at medium magnifications.

All three of these clusters were discovered by the Italian astronomer, Giovanni Battista Hodierna (1597-1660).

### 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)

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 just follow the link.

**Happy Observing!**

## CAAC CONTACTS

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