



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

**Next Meeting: Friday, February 16, 2018**  
**Time: 7:00 PM**  
**Place: Myers Park Baptist Church**  
**Address: 1900 Queens Road**

**CAAC February 2018 Meeting**

Program:

## High Altitude Weather Balloon Team at RCCC

Starting in 2014, NASA funded the NC Carolina Space Grant in order to provide the ability for students to design, build, test, and launch a near space weather balloon. In August 2017, the High Altitude Weather Balloon Team, in which Aaron is the faculty leader, launched a payload for the Great North American Total Solar Eclipse. Now in its fourth year, the team is currently working on their best payload to date, anticipated to launch April 7, 2018.

Speaker bio: Aaron T. Cameron

Aaron T. Cameron was born and raised in a small town called Granite Quarry just on the outskirts of Salisbury, NC. He attended East Rowan High School where he was the president of the school's astronomy club and rocketry team. After graduation, he majored in Mechanical Engineering Technology at Rowan-Cabarrus Community College and the University of North Carolina at Charlotte. After spending some time in industry, Aaron now teaches engineering at Rowan-Cabarrus Community College and enjoys his amateur radio hobby in his spare time.

**CAAC Treasurer's Report as of 1/31/2018**

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: 12/31/2017</b>                | <b>\$15,228.45</b> |
| <b>2</b> | <b>Income</b>  |                    |
|          | Dues & Fees  | 825.00             |
|          | Prepaid Subscriptions                                    | 0.00               |
|          | Pad Fees   | 0.00               |
| <b>3</b> | <b>Expenses</b>  |                    |
|          | <b>GHRO Expenses</b>                                     | <b>0.00</b>        |
|          | GHRO Utilities   | 352.93             |
|          | Fees for Credit Card Service                             | 22.64              |
|          | Meeting Expense (Room Rent)                              | 236.25             |
|          | Administrative (CPA services, filing 2016-17 Tax Return) | 750.00             |
| <b>4</b> | <b>Operating Fund Balance: 1/31/2018</b>                 | <b>\$14,691.63</b> |

Part 2 of 2

**Non-Operating Funds**

Purpose: Administer gifts and donations for designated use.

|          |  |               |
|----------|--|---------------|
| <b>1</b> | <b>Balance 12/31/2017: Non-Operating Funds</b> |               |
|          | Scholarship Fund                               | 5,315.00      |
|          | Contingency Fund                               | 25,754.00     |
|          | Long-Term Fund                                 | 2826.91       |
| <b>2</b> | <b>Income</b>                                  |               |
|          | Donation: Microsoft, BofA, Other               | 1179.94       |
|          | GHRO Pad Purchase                              | 1000.00       |
|          | Interest                                       |               |
| <b>3</b> | <b>Expenses or Transfers</b>                   | <b>\$0.00</b> |
|          |  | .89           |
| <b>4</b> | <b>Balance 1/31/2018: Non-Operating Funds</b>  |               |
|          | Scholarship Fund                               | 5,315.00      |
|          | Contingency Fund                               | 27,933.94     |
|          | Long-Term Fund                                 | 2827.80       |

-Benton Kesler  
CAAC Treasurer

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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 12, 2018*

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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.*

*On Friday, Feb 23rd CAAC members are encouraged to bring a telescope to "Stargazing with Stallings" at Blair Mill Park. This event is sponsored by the Town of Stallings and is open to anyone interested in astronomy. The park is located at 1025 Fair Oaks Dr. Please arrive before the scheduled start time of 7:00 PM.*

*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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**For Sale by Owner**



Aperture fever has me selling my 12.5" Meade F4.8 Starfinder. This is heavily modified with a split tube and the GEM splits also for transport. Upgraded focuser with great optics. You can have with original Dob mount, GEM, or both. Make offer based on what you want.

Contact:  
Scott Goforth  
704-421-4743  
scottgoforth8@gmail.com

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## News from GHRO

1. Please take a moment when you leave GHRO to ensure the door is locked and alarm is set. On two occasions this year I have found either the door open or the alarm not set. If you encounter difficulties with either, do not hesitate to contact me at 704-339-7293
2. Our Internet usage seems to be under control, thanks to everyone for adhering to our usage guidelines.
3. There will be telescope training for the solar, 8" refractor and the 16" reflector on Saturday, March 10 beginning at 4 PM. If you haven't been trained, or want a refresher, come one down. Rain date will be on Saturday, March 17 at 4 PM.
4. The March star party will on March 17, come one down and let's view an all the M objects we can.

### 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 \*\*\***

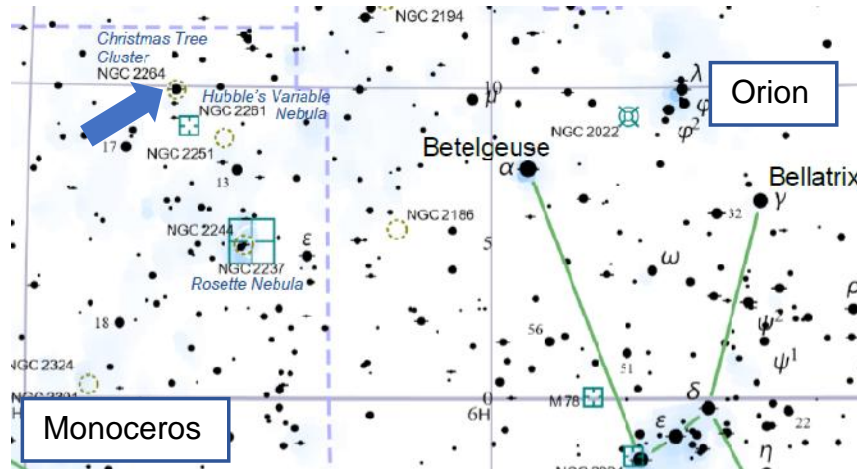
This facility and adjoining area may contain uneven terrain, dangerous wildlife, low light conditions, and dangerous man-made obstacles.

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.

# February Sky Challenge

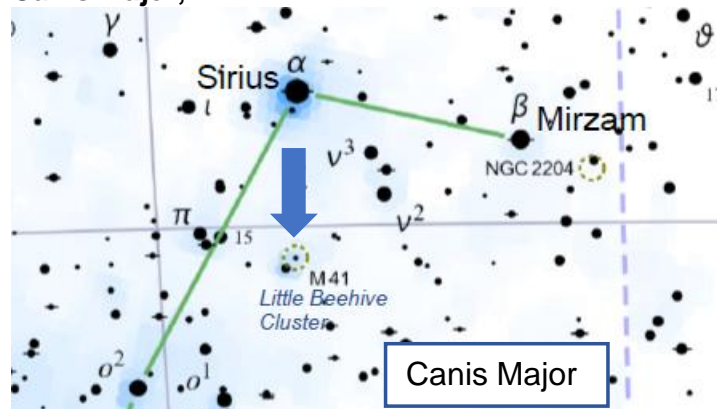
Are you looking for something to discover in the night sky? Try these with a modest size telescope, with some patience and persistence! Or come down to the GHRO and get a really fine look! This month, a “two-fer” in Monoceros and a cluster in Canis Major.



**Monoceros, NGC 2264** is a large and scattered cluster easily visible in finder scopes and binoculars. It is composed of about 20 bright stars arranged in a pattern that resembles a Christmas tree, which measures half a degree long. The “tree” is seen upside-down in the sky, but is reinverted by most astronomical instruments. Because of its large size, low power is

needed to see the entire cluster in a single field of view. The nebulosity seen is designated as the Cone Nebula. Two objects in one view! A little late, but Merry Christmas!!

## Canis Major, M41



... also known as the Little Beehive Cluster (not to be confused with M44, the Beehive Cluster). **M41** is one of the deep sky showpieces of winter, a beautiful open star cluster first documented in 320 B.C. by Aristotle. Finding it is extremely easy: center Sirius in your eyepiece's field and from here move the telescope four degrees south. However, before you do this first take a quick look at Sirius. It is the brightest star in the night sky, a hot sun

1.8 times as large and 24 times as luminous as our Sun. It is also the closest naked-eye star visible from mid-northern latitudes, located just 8.6 light-years away.

Shining at magnitude 4.6, M41 is visible with the naked-eye on clear nights and is partially resolvable into stars with binoculars. The cluster contains about 25 bright stars and many fainter ones scattered in a field of 30 arcminutes, as large as that covered by the Full Moon. Because it has such a large angular diameter M41 is best seen with a wide-field, low-power eyepiece. While most of the cluster is composed of blue and white (younger) stars, look for a deep orange-red star near the center.

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)

## 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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|                             |               |  |
|-----------------------------|---------------|--|
| President                   | Ken Steiner   | <a href="mailto:Ksteiner30@gmail.com">Ksteiner30@gmail.com</a>                   |
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| Secretary                   | Nazim Mohamed | <a href="mailto:info@charlotteastronomers.org">info@charlotteastronomers.org</a> |
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| Public Outreach Coordinator | Kevin Moderow | <a href="mailto:kevinmoderow@gmail.com">kevinmoderow@gmail.com</a>               |