



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

**Next Meeting:** Friday July 20th, 2018

**Time:** 7:00 PM

**Place:**

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

**Address:**

1900 Queens Road  
Charlotte, NC 28207

#### CAAC July 2018 Meeting

Program:

## Astronomy in Chile

Some of the world's most advanced observatories are high in the Andes in Chile. By 2022, about 70% of the world's astronomy infrastructure will be there. Based on his trip to Chile in January, Jack will discuss why Chile is a prime location for advanced research in astronomy, what is happening there now, the growing field of astrotourism in Chile, and two upcoming solar eclipses that will cross Chile and Argentina in 2019 and 2020.

Speaker bio:

Jack Howard teaches astronomy at Rowan-Cabarrus Community College. Since 2016, he has been a volunteer with the NASA Solar System Ambassador educational outreach program. In January of this year, he was also one of 12 educators selected for the Astronomy in Chile Educator Ambassador Program (ACEAP) and spent 10 days in Chile visiting some of the most advanced observatories now in use. Jack is a member of the Charlotte and Rowan County astronomy clubs.

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## **From the President**

Tom Blevins will be sharing items from the Scholarship committee elsewhere in this newsletter. It has been decided to have another auction at our August meeting. The purpose of this auction is to provide funds for the scholarship fund, no general club funds are used for the scholarship program.

We depend on donation of items from our members as well as items that have been donated to the club over the last couple of years. There are several telescopes that the club has received which will be a part of the auction. Please let Tom Blevins know of additional items that you might have for this auction.

In addition to donated items we also need bidders to make this endeavor a success. Please plan on taking part in this event which will be a part of our August meeting. Please note also the highlights of our last CAAC Board of Director’s meeting included with this newsletter.

Ken Steiner  
President

**CAAC Treasurer's Report as of 6/30/18**

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: 5/31/2018</b>	\$15,366.4
<b>2</b>	<b>Income</b>	
	Dues & Fees	30.00
	Prepaid Subscriptions	0.00
	Pad Fees	0.00
	Hat and Shirt Sale	0.00
	Donation	0.00
<b>3</b>	<b>Expenses</b>	
	GHRO Expenses	607.49
	GHRO Utilities	
	Fees for Credit Card Service	263.08
	Meeting Expense	1.17
		255.65
<b>4</b>	<b>Operating Fund Balance: 6/30/2018</b>	\$14,269.01

Part 2 of 2

**Non-Operating Funds**

Purpose: Administer gifts and donations for designated use.

<b>1</b>	<b>Balance 5/31/2018: Non-Operating Funds</b>	
	Scholarship Fund	3,315.00
	Contingency Fund	27933.94
	Long-Term Fund	7202.80
<b>2</b>	<b>Income</b>	
	Donation: Microsoft, BofA, Other	300.00
	GHRO Pad Purchase	0.00
	Interest	
<b>3</b>	<b>Expenses or Transfers</b>	.94
	<b>Balance 6/30/2018: Non-Operating Funds</b>	
	Scholarship Fund	3,315.00
	Contingency Fund	28,233.94
	Long-Term Fund	7203.74

Notes: GHRO expenses include \$460 for a new Nexus controller for the 24in reflector. Funds provided for by the donations amounting to \$475 in memory of Laura Heavner (funds not yet transferred as of this report).

-Benton Kesler  
CAAC Treasurer

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## CAAC Outreach Updates

*Don't forget we have another outreach event this weekend.*

*We'll need boots on the ground with scopes. Setup at 6PM.*

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*Event Name:  
Star Party Outreach: Dowd YMCA*

*Date:  
Sat 7/21/2018*

*Time:  
8 PM - 11:30 PM*

*Location:  
Dowd YMCA,  
400 E Morehead St, Charlotte, NC 28202*

*Top of the parking deck corner of Lexington Ave/S. Caldwell St. (Dowd YMCA on Morehead for GPS)*

*Email maxton747@gmail.com with any questions.*

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*Thanks and see you there!*

*Make sure you are registered at the Night Sky Network so that you can receive automatic email notifications of upcoming events.*

*If you are interested in getting more involved with CAAC Community Outreach please contact Kevin Moderow, kevinmoderow@gmail.com*

Kevin Moderow  
CAAC Outreach Coordinator

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## News from GHRO

1. There will be telescope training for the solar, 8" refractor and the 16" reflector on Saturday night, **July 28** beginning at 6 PM. If you haven't been trained, or want a refresher, come on down.

**The new NEXUS DCS (Digital Setting Circles) has been installed and is operational. Special instructions in the use of this outstanding new controller will be held on Saturday July 28 as part of the telescope training mentioned above. The NEXUS training will begin at 7:30 PM.**

2. The next star party will on Saturday, **August 4**, come on down!!! It's a third quarter moon, so we're good until midnight.
3. Cosmic Camporee is right around the corner, **October 5-7**, with a backup date of **October 12-14**. There will be burgers and dogs provided by CAAC to accompany the side items and desserts provided by each of you. We'll start the menu coordination in September.

### **GHRO Information** (see <http://1drv.ms/1m2wPUu>)

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 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.

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## CAAC Scholarship Guidelines

### Available to:

- College undergraduates (second semester freshman through first semester seniors) in a 4-year college or university in the USA.
- High school graduates who are CAAC members or children of CAAC members and are currently accepted for a subsequent term in a 4 year college or university in the USA.

### Selection Criteria:

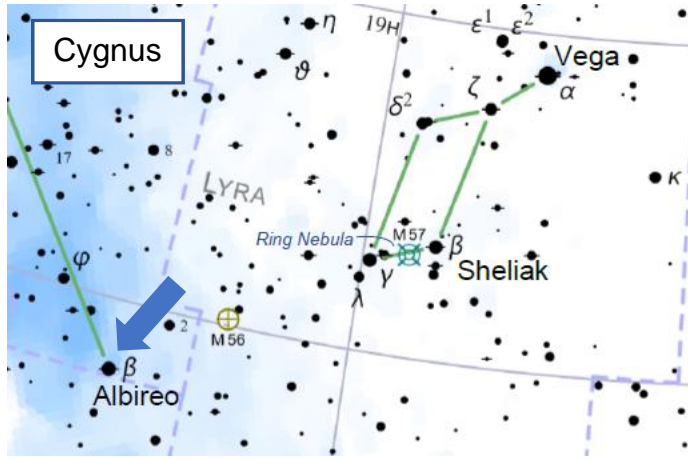
- Students majoring in physics or astronomy
- Preference to applicants who are residents of the geographic or service area of the Charlotte Amateur Astronomers Club (Mecklenburg and adjacent counties).
- Extra-curricular activities/campus involvement/ community considered

### Procedure:

- Applicant to provide a short paragraph describing her/his current and future plans of study in physics or astronomy
- Winners of scholarship to make a short presentation related to their field of study at a CAAC Meeting
- Amount of award to be determined based on available funds
- Funding source to be auction of donated astronomy equipment or means to be determined by the CAAC Board of Directors
- Scholarship committee to make recommendation of candidates to the CAAC Board of Directors for final decision on successful applicants and amount of award.

# July Sky Challenge

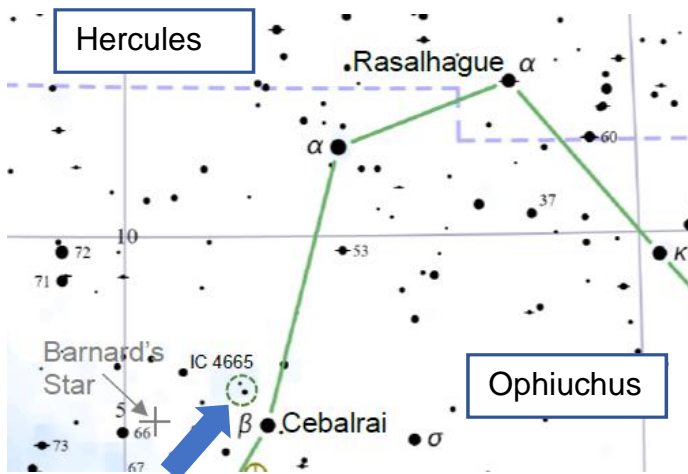
Are you looking for something to discover in the night sky? Try these with a modest size telescope, with some patience and persistence! Or come down to the GHRO and get a really fine look! This month, one easy (double) star to find, one hard to find (dwarf) star (for those of you really looking for a challenge!) and a cluster!



Because Cygnus lies in the Milky Way, it contains rich star fields and a wealth of open clusters visible with binoculars or small telescopes. However, the showpiece of Cygnus is not some large cluster containing hundreds of stars, but a lonely star that marks the head of the swan.

**Albireo** is one of the most beautiful double stars in the sky, probably the finest in the heavens for small telescopes. The two components are known as Beta Cygni A and B. "A" is the

primary member of the system, a golden yellow or "topaz" star shining at 3rd magnitude, while "B" is known as the companion, a fainter 5th-magnitude star with a beautiful bluish color. The two components have a wide separation of 35 arcseconds; this means that the system can be seen separately through the smallest of telescopes, and even with good binoculars.



The constellation Ophiuchus bears many fine examples of nearly every type of deep sky object. Some are big and splashy, while others appear as modest enhancements of the background star field. IC 4665 lies somewhere in between.

This large open cluster just northeast of Beta Ophiuchi is a nice binocular sight, consisting of several dozen 7th- and 8th-magnitude stars. Though its stellar density is not very high, IC 4665 stands out well thanks to the sparseness of its environment. On dark, clear nights, and

just with the naked eye, the cluster may be seen as a hazy spot measuring nearly two Full Moons across. Looking for something a little hard to find but worthwhile...

Nearby and discovered by the American astronomer Edward Emerson Barnard at Chicago's Yerkes Observatory in 1916, **Barnard's Star** is a red dwarf, with a radius 15% that of the Sun. Because the star is only 5.96 light-years away, it veritably screams across the sky at a break-neck pace of 10 arcseconds per year. That is racing!

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)

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!**

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!**



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**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.

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**CAAC CONTACTS**

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President	Ken Steiner	<a href="mailto:Ksteiner30@gmail.com">Ksteiner30@gmail.com</a>
Vice President	Fred DeAngelis	<a href="mailto:deangelisf@queens.edu">deangelisf@queens.edu</a>
Treasurer	Benton Kesler	<a href="mailto:benton.kesler@gmail.com">benton.kesler@gmail.com</a>
Secretary	Nazim Mohamed	<a href="mailto:info@charlotteastronomers.org">info@charlotteastronomers.org</a>
Observatory Director	Jim Gaiser	<a href="mailto:jegaiser@carolina.rr.com">jegaiser@carolina.rr.com</a>
Public Outreach Coordinator	Kevin Moderow	<a href="mailto:kevinmoderow@gmail.com">kevinmoderow@gmail.com</a>

# Charlotte Amateur Astronomers Club

Officer's Meeting – Saturday June 2<sup>nd</sup> - 10AM to 11:30AM

## Meeting highlights

### *Attendees:*

Ken Steiner, Fred DeAngelis, Benton Kesler, Karen Achor, Nazim Mohamed, Jim Gaiser, Steve Harris, Gayle Riggsbee

### Meeting Notes

- [10:04] Ken opened the meeting with welcoming remarks and introducing Fred & Steve to the room. Motion was made to approve meeting minutes from the last officer's meeting. **Motion approved.**
- [10:05] The floor was given to Gayle to raise his questions/concerns to the Board. Gayle brought up below items:
  - VP and Outreach director should consider a field trip to the Roper Mountain Science Center in August to look at Mars and other planets. Ken provided some history on how past field trips in CAAC were conducted (carpool, etc). **ACTION REQUIRED:** Fred/Ken to work with Kevin on feasibility on field trip.
  - Planetary viewing star party scheduled at McAlpine Greenway Park on July 14<sup>th</sup>, with a raindate of July 15<sup>th</sup>. Gayle called the need for CAAC members to volunteer (bring scopes) for event, and possibly to get news/media involved.
  - Gayle recently purchased replacement gears for 8" Alvan Clark for \$60. Benton approved the invoice for as a club expenditure.
  - A fork mount for 24" scope is not being used. There is a working drive/gear box, but a custom mount needs to be built to custom specifications for a potential buyer. Gayle asked for approval to purchase scrap steel for approximately \$100 and prepare mount for sale. Gayle estimated sale price of the fork mount to be \$1000. A motion was raised to approve purchase steel/parts and look for a buyer. **Motion approved.**
  - Paper newsletter archives – Gayle will continue collecting paper copies unless told otherwise
  - Gayle to donate an old club overhead projector (for transparencies)
  - The Sky Commander unit is missing, and we need to find it
  - The new Nexus computer (replacing the Argo Navis) to be used on 24" should be delivered by the end of June. The funds from Laura Heavner memorial fund was used to purchase the Nexus.
  - Gayle reported his findings on possible use of Tyvola Senior Center as CAAC monthly meeting space:
    - No PA system or projector/screen
    - No closets
    - Capacity is 100 people
    - Refreshments can easily be accommodated
    - Cost is \$100 per night
    - Ken suggested Board members shop around for other venues. Steve suggested we trial the Tyvola Center for one meeting.
- [10:38] Treasurer's update from Benton
  - All bills have been paid
  - Scholarship fund has \$3000
  - Net profit from Southern Star 2018 was \$3200, not including Obsession auction
  - Further updates/figures are included in monthly newsletters
- [10:42] GHRO Updates – Jim Gaiser
  - Greg Funderburk's observatory
    - Greg hired Backyard Astronomy to build personal observatory in 4 days. Greg donated extra wood for GHRO use.

- Observatory includes 12" Planewave and 4" refractor which independent network connectivity
  - Boy Scouts group helped dig the trench for powerline to Greg's observatory
  - Alarms have been set up, network connection set up
- **ACTION REQUIRED:** Ken will be adding Greg & Jim's observatory in club's insurance plan. They will pay the club for their portion of the insurance.
- Still need permanent mailbox at GHRO location. **ACTION REQUIRED:** Jim to confirm with post master in Lancaster on best option for secure mail delivery.
- Cosmic Camporee date has been schedule for 10/6/18 to 10/7/18, with 10/13-14 as backup
- Board agreed that another all-members pad is not an urgent need right now. **ACTION REQUIRED:** To help with overflow on the existing All-members pad, Jim will email private pad owneres for permission to use their pads if they won't be there for large events.
- George & Mary are in planning stage of building a dome on their pad to house their equipment.
- [10:55] Update on Obsession sale
  - Ken provided an update that the new owner of the 15" Obsession auctioned at Southern Star questioned the coating of the mirror. Ken will follow up and take care of any additional work needed on the coating.
  - Use of funds still TBD, but Board discussed putting the funds into scholarship, endowment, or general GHRO budget.
- [10:58] Endowment update
  - Endowment committee met recently and legal application is still in progress. Benton will apply for the 501c tax exception status, but a permanent address is still needed.
- [11:03] Scholarship update
  - Tom Blevins to work on Scholarship Guidelines for Board review. If a reward will be issued for the Fall semester, application process needs to get started in July/Aug. Ken to follow up with Scholarship Committee.
  - An auction to raise additional scholarship funds needs to be setup. Possible auction items: donated/loaner scopes as well as items to be donated to the auction by members.
- [11:05] Monthly program update
  - Fred is targeting August meeting to have auction or Show & Tell program (but not both)
  - On attracting guest speakers, Fred asked if there is a budget for speakers to travel into Charlotte for the monthly talks. Jim & Gayle provided some guidelines on out-of-own speakers. Typical to cover costs for hotel, dinner, and gas, and small gift if they within driving distance (couple hundred miles).
- [11:14] Northern Observing site
  - Feedback from star party in April: limited southern view, small gravel lot, no facilities
  - Jim raised a motion to poll members if a secondary northern site at Pharr Farms Conservatory would interest them. **Motion Approved** to create a Survey Monkey.
- [11:23] Astro League involvement
  - Board discussed if CAAC as a club should agree to host a potential Astroleague events and include our club as an Astro League club. Due to per-member costs of our membership body, Board agreed not to pursue Astro League involvement.
- [11:31] Library Loaner program.
  - Ken to follow up with library on feedback on the program so far. There may be a potential source of a grant for the Library Loaner program via a foundation. Ken to follow-up.
- [11:34] Gayle & Steve updated the Board they plan to attend Stellafane Convention
- [11:35] Meeting adjourned

**APPENDIX 2 – CAAC Scholarship Application**



**APPLICATION  
CHARLOTTE AMATEUR ASTRONOMERS CLUB  
PHYSICS SCHOLARSHIP**

Name: \_\_\_\_\_

Local Address: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

E-mail address: \_\_\_\_\_

Current Status:

**High School Senior** \_\_\_ Freshman \_\_\_ Sophomore \_\_\_ Junior \_\_\_ Senior \_\_\_

When do you expect to graduate: \_\_\_\_\_

Do you currently receive any financial aid? \_\_\_\_\_

Please detail your area of interest or specialization in Physics. \_\_\_\_\_

Please list any honors or awards you have received related to your major.

\_\_\_\_\_

List any extracurricular activities or organizations you participate in:

\_\_\_\_\_

\_\_\_\_\_

Current Grade Point Average: \_\_\_\_\_

Attached a typed statement up to two pages long outlining your expected career and how this scholarship will enhance your reaching that goal, and why you have chosen to major in Physics.

\_\_\_\_\_

\_\_\_\_\_

Signed

Date

\*Please note the winner of this scholarship will be required to attend a meeting of the Charlotte Amateur Astronomers Club to be presented with the check for scholarship funds.