



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

**Next Meeting:** Friday April 20, 2018  
**Time:** 7:00 PM  
**Place:**  
Myers Park Baptist Church  
Education Building – Shalom Hall (Basement)  
**Address:**  
1900 Queens Road  
Charlotte, NC 28207

**CAAC April 2018 Meeting**

Program:

## The Planetarium in Astronomy Education

Planetariums have played an important role in astronomy education. Beginning with a brief history of planetariums, we'll look at the work being done at the Woodson Planetarium at Horizons Unlimited in Salisbury. We'll conclude with a look at the exciting developments coming to planetariums in the greater Charlotte area in the next couple of years.

### Speaker Bio:

Neil Pifer moved back to teach in Rowan-Salisbury schools after being the science department chair at Mt. Pleasant High in Cabarrus County for 10 years. A graduate of the College of William and Mary with a BS in Kinesiology and Mississippi State University with an MS in geosciences has fueled a 21-year career in science education. The last three years, Neil has been the planetarium director at the Margaret C. Woodson planetarium in Salisbury, NC. In addition to his passion for space and education, Neil and his wife Anne love to travel and curl with their friends at the Charlotte Curling Association.



Neil and Anne in Tuscany in the summer of 2017

---

**From the President**

Congratulations to Jim Gaiser and his Southern Star Team on an excellent Southern Star convention. The speakers and comradery was enjoy by all of the attendees.

**Election of Officers:**

Per our constitution the Board of Directors presents a slate of officers for the coming year at the April meeting with the new officers taking office at the end of the May meeting.

The slate to be presented at April 2018 meeting is:

- President: Ken Steiner
- Vice President: Fred DeAngelis
- Secretary: Nazim Mohamed
- Treasurer: Benton Kesler
- Observatory Director: Jim Gaiser
- At Large Board of Directors: Joel Levy and Karen Ackor

Nominations may be made from the floor at the time of election.

Please note that Kevin Moderow, Outreach Coordinator and Steve Harris, Southern Star Chair for 2019, serve as members ExOfficio.

Ken Steiner  
President

**CAAC Treasurer's Report as of 3/31/18**

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: 2/28/2018</b>		\$13,871.21
<b>2</b>	<b>Income</b>		
	Dues & Fees		175.00
	Prepaid Subscriptions		0.00
	Pad Fees		0.00
	Hat and Shirt Sale		0.00
	Southern Star Receipts		24,730.00
<b>3</b>	<b>Expenses</b>		
	GHRO Expenses		0.00
	Admin, Miscellaneous		
	GHRO Utilities	5.75	
	Fees for Credit Card Service		296.08
	Meeting Expense (Room Rent)		2.57
	Trailer Registration		236.25
			27.51
<b>4</b>	<b>Operating Fund Balance: 3/31/2018</b>		\$38,208.05

Part 2 of 2

**Non-Operating Funds**

Purpose: Administer gifts and donations for designated use.

<b>1</b>	<b>Balance 2/28/2018: Non-Operating Funds</b>		
	Scholarship Fund		3,315.00
	Contingency Fund		27,933.94
	Long-Term Fund		2828.58
<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>	.87	
	<b>Balance 3/31/2018: Non-Operating Funds</b>		
	Scholarship Fund		3,315.00
	Contingency Fund		27,933.94
	Long-Term Fund		2829.45

-Benton Kesler  
CAAC Treasurer

---

## CAAC Outreach Updates

*CAAC Outreach needs boots on the ground (with telescopes) for these two upcoming events:*

*April 21: Star Party At Discovery Place, 7:30PM  
Rooftop stargazing, free parking*

*April 27: Star Party with the Catawba Lands Conservancy, 7:00PM  
Pharr Family Preserve near Midland*

*Please try to attend one or both events. Check the CAAC Night Sky Network Events calendar for more details.*

*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

---

### **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.

---

## News from GHRO

1. There will be telescope training for the solar, 8" refractor and the 16" reflector on Saturday night, May 26 beginning at 6 PM. I realize this is the Memorial Day weekend, but it's the only available weekend. If you haven't been trained, or want a refresher, come one down
2. The May star party will on Saturday, May 12, come on down!!! Keep in mind, Mother's Day is the next day.
3. I plan to have a GHRO work day on Saturday, May 19. Boy Scout Troop 405 from Charlotte will be camping at GHRO that weekend and will help us with any projects we have. Please send me an e-mail at [jegaizer@carolina.rr.com](mailto:jegaizer@carolina.rr.com) to let me know you will be attending.

### 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.

### 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 \*\*\*

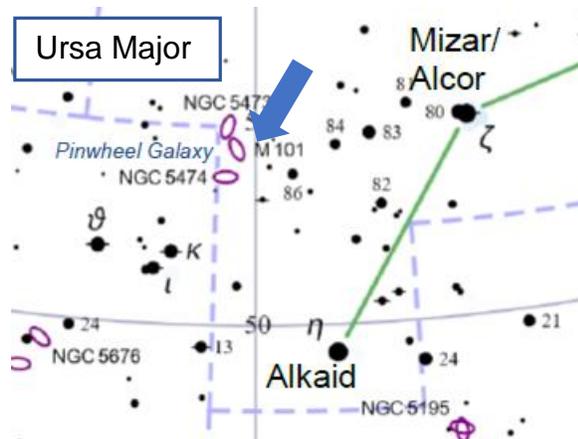
This facility and adjoining area may contain uneven terrain, dangerous wildlife, low light conditions, and dangerous man-made obstacles.

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.

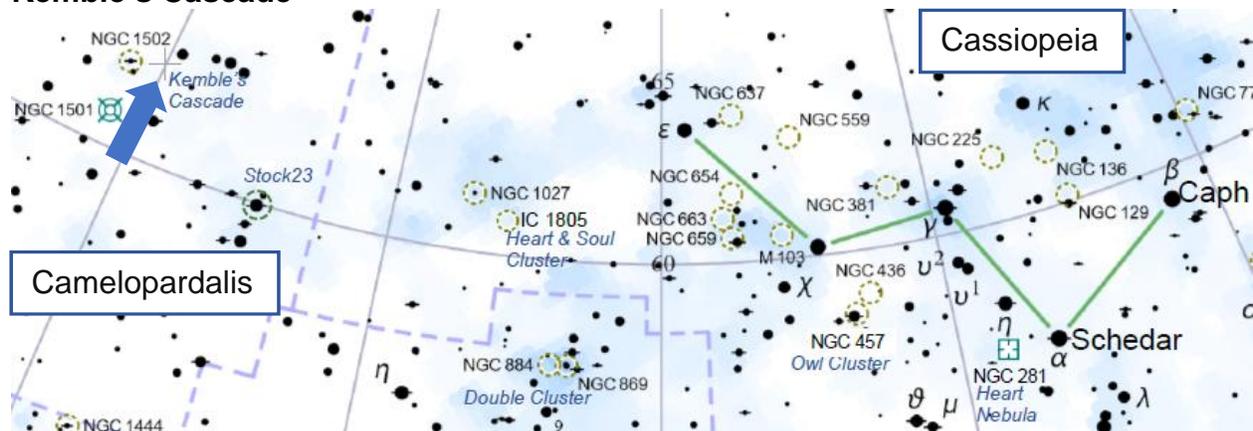
# April Sky Challenge

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 and a cascade of stars!



**101** is a bright galaxy in Ursa Major, located 24 million light years from Earth. To find it, center your attention on Mizar, the middle star in the handle of the Big Dipper. Looking through your finder scope shift from Mizar to nearby Alcor, then two degrees farther east until you come to 81 Ursae Majoris, the westernmost member of a string of four 5th-magnitude stars. Follow the string to 86 Ursae Majoris, marking the eastern tip. From there look to the north for three 7th-magnitude stars set in a right triangle. M101 lies just east of the midpoint along the triangle's hypotenuse.

## Kemble's Cascade



Of all the northern circumpolar constellations, Camelopardalis is the least distinct. It was created by the German astronomer Jakob Bartsch in 1624 to represent a camel, but was later reidentified as a giraffe.

Step outside on a clear night and aim your binoculars at a point halfway between Polaris and Capella, then shift about one binocular field ( $7^\circ$ ) toward Alpha Persei. You should see a long string of stars measuring about  $3^\circ$  in extent, popularly known as **Kemble's Cascade**.

Lucian Kemble, a Franciscan monk from Alberta, Canada, chanced upon this cluster in the late 1970s while observing with  $7\times 35$  binoculars. He described it as "a beautiful cascade of faint stars tumbling from the northwest down to the open cluster NGC 1502". This striking stellar arrangement is composed of about 20 stars, mostly 9th-magnitude, with a lone 5th-magnitude sun about midway.

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

---

President	Ken Steiner	<a href="mailto:Ksteiner30@gmail.com">Ksteiner30@gmail.com</a>
Vice President	Jack Howard	<a href="mailto:jackthoward@earthlink.net">jackthoward@earthlink.net</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>