



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

### CAAC April 2020 Meeting

<p><b>Next Meeting:</b> Friday April 17, 2020</p> <p><b>Time:</b> 7pm ET</p>	<p><b>Place:</b> <i>Virtual Meeting - From the comfort of your home</i></p> <p><b>Address:</b> Zoom web conference link (See newsletter info below)</p>
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## Perseverance – The Mars 2020 Rover

The Mars 2020 Rover, Perseverance, is still on schedule for a mid-July to early August launch from Cape Canaveral. Find out about some of the instruments aboard, as well as the improvements in Entry, Descent, and Landing features of this newest of NASA rovers to Mars.

### Speaker

Ken Brandt is a NASA/JPL Solar System Ambassador, volunteering to educate the public about space exploration. He also directs the Robeson Planetarium in Lumberton, NC.

Ken Brandt

Director, Robeson Planetarium  
JPL/NASA Solar System Ambassador  
Past-President, SouthEastern Planetarium Association  
Chair-elect, Astronomy and Space Science Committee, American Association of Physics Teachers

## Virtual Meeting Login Instructions

1. If you have not used Zoom before go to Zoom.com and download the Zoom program onto your computer.
2. **To Log In;**
  - a. Click on the meeting link below:  
<https://us02web.zoom.us/j/87623796765?pwd=SnArNUFaR0d4TFg0RzhYZDA3cHZLdz09>
  - b. Enter password: **023073**
  - c. If needed Meeting ID: **876 2379 6765**
  - d. This manual “log in” rather than invitation to everyone prevents all the emails showing up on the invite. This is a security issue for your privacy.
3. When on the Zoom screen to prevent chaos and overloading bandwidth::
  - a. Mute your microphone-icon lower left of screen
  - b. Mute Video icon on the lower left of the screen.
  - c. You will be able to see and hear leaders of the meeting when they are speaking
4. If you wish to ask questions of the speaker after the main presentation:
  - a. Submit on the chat feature which is at the bottom of the screen. You will then type out your question and hit enter.
5. Excellent Zoom tutorials are available on You Tube:
  - a. <https://www.youtube.com/user/ZoomMeetings>

This is our first attempt to remain more connected as a club. Please be patient if there are some bumps in the road. I do solicit your feedback and suggestions following this our first virtual meeting.

Ken Steiner (ksteiner30@gmail.com)

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### From the President:

This month is our first attempt at having a virtual meeting. Hopefully it will have value for you during this challenging time when we are unable to meet in person with each other.

It is always a delight to hear about members who literally grew up in our club and had their exposure to astronomy as part of our club community. I am including a couple of emails I received from Rebecca Gaskins who, along with her father Phil Gaskins, attended many of our meetings during her growing up years.

Hello,

My dad texted and said you'd like an update on what I'm currently doing. I'm currently working in the Intuitive Planetarium at the US Space and Rocket Center (Huntsville, AL) as a planetarium specialist.

I've helped write several different presentations (although two were cancelled — one due to the projector cooling system breaking in January and last Sunday's due to the current pandemic), wrangle girl scouts for solar and night time telescopes during a girl scout day, and usually give several shows per week. I generally do our seasonal sky show, and I've also given a show dedicated to the New Horizons space craft. Spring Skies is currently a lot of fun, because we have some gorgeous galaxy images that look amazing on the big screen and we can actually fly around the great star cluster in Hercules. One of my coworkers campaigned for us to include the antennae galaxies, which have become one of my favorite things to show. It just about makes up for losing the Orion Nebula and the Pleiades!

I think you might actually know my boss — David Weigel said he's also a former PARI intern. The planetarium itself is just over a year old and runs Digistar 6 software on a converted IMAX dome. The projectors are entirely digital and can project in an effective 6k resolution. We can use them to show movies as well as our own original content and purchased shows. Most of our shows are given live and controlled via an iPad and xbox controller. We're currently shut down for at least three weeks due to the pandemic, but normally run between five and seven shows daily, with special shows on the second Sunday and first and third Friday evenings of the month. We're trying to coordinate with the museum's education department to come up with more digital content at the moment — one of the more promising options was to create short videos for each planet. Whatever we come up with will end up on the museum's social media.

Hope you're doing well,

Rebecca Gaskins

Later Rebecca sent me the following info that might well be of interest in this time of staying home:

I'm sorry about Southern Star, I'd really hoped to spend some time in the mountains doing astronomy in the real world instead of a dome! Ah well. Anyway, I thought you and the Charlotte Astronomy Club might be interested in some of the stuff the planetarium has been putting out over the last few weeks?

Our director has been hosting weekly livestreams on Friday nights about different topics — the first week was spring skies, the second week was Mars, and last week was black holes. I have no idea what this week will be, but they've been popular so there will likely be something. He also made some tutorial videos for the online free World Wide Telescope software. I wrote a series of videos about each of the planets that have been going up one/day since last week, which other presenters voiced and made visuals for, using the main digistar planetarium software we use for shows. Once those finish, I also wrote a shorter series on some spring constellations.

All of those are on the US Space and Rocket Center facebook page, but I'll also link them below.

Friday night livestreams:

Black holes: <https://www.facebook.com/RocketCenterUSA/videos/221303142616100/>

Mars: <https://www.facebook.com/RocketCenterUSA/videos/272390247091287/>

Spring skies: <https://www.facebook.com/RocketCenterUSA/videos/2641851629197669/>

World Wide Telescope Tutorials:

Part 1: <https://www.facebook.com/RocketCenterUSA/videos/2586343178300425/>

Part 2: <https://www.facebook.com/RocketCenterUSA/videos/141462423911715/>

Part 3: <https://www.facebook.com/RocketCenterUSA/videos/224751482059150/>

Planets series:

Mercury: <https://www.facebook.com/RocketCenterUSA/videos/237777944028086/>

Venus: <https://www.facebook.com/RocketCenterUSA/videos/1115718472146740/>

Earth: <https://www.facebook.com/RocketCenterUSA/videos/1012111255850008/>

Moon: <https://www.facebook.com/RocketCenterUSA/videos/222170192230512/>

Mars: <https://www.facebook.com/RocketCenterUSA/videos/577095653155490/>

Jupiter: <https://www.facebook.com/RocketCenterUSA/videos/268776557460686/>

Saturn: <https://www.facebook.com/RocketCenterUSA/videos/223724015505900/>

Uranus & Neptune: Should go up around 3pm tomorrow

Pluto: Should go up around 3pm the day after tomorrow

If anyone has kids at home, the US Space and Rocket Center's education department has also put up a number of kid-friendly activities and experiments — making a marshmallow mars rover, galaxy swirl crayons, that kind of thing.

Later in this newsletter you'll find highlights from the recent Board of Director's meeting held on March 28<sup>th</sup>, 2020

Ken Steiner  
President

**CAAC Treasurer's Report as of 3/31/2020**

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	<b>Operating Fund Balance 2/29/2020</b>	\$9924.42
2	<b>Income</b>	
	Dues & Fees	210.00
	<b>Expenses</b>	
	GHRO Utilities	539.43
3	GHRO Facility	614.65
	Fees for Credit Card Service	7.30
	Lightning Strike 10/31/19 (balance of deductible)	388.52
	Meeting Expense	230.25
	Southern Star	293.90
4	<b>Operating Fund Balance: 3/31/2020</b>	\$8576.59

Part 2 of 2

**Non-Operating Funds**

Purpose: Administer gifts and donations for designated use.

1	<b>Balance 2/29/2020: Non-Operating Funds</b>	
	Scholarship Fund	3989.36
	Contingency Fund	27,355.58
2	<b>Income</b>	
	Interest	.74
3	<b>Expenses or Transfer</b>	
4	<b>Balance 3/31/2020: Non-Operating Funds</b>	
	Scholarship Fund	3989.36
	Contingency Fund	27,356.19

-Benton Kesler  
CAAC Treasurer

## For Sale by Owner

Like New Zhumell Z12 Deluxe Dobsonian Reflector w/several eyepieces, filters & case.  
Hardly every Used. No scratches, dings or dents inside or out.  
All items New are \$1350+/- Sell & Deliver in Charlotte Area or GHRO for \$950.  
Will not sell individual items. Great deal on a big light bucket!

- Eyepiece Bag w/
- Celestron 25mm Kellner
- Celestron 8-24mm Zoom w/case
- Zhumell wide field 30mm 2"
- Zhumell Plossl 12.5mm fully coated
- Zhumell Plossl 6mm fully coated
- Zhumell Plossl 32mm fully coated
- Zhumell Plossl 9mm Fully coated
- Zhumell Plossl 4mm fully coated
- Zhumell 2x Barlow
- Zhumell Collimator
- Filters:
- Zhumell No. 21
- Zhumell Crystalizing Moon Filter
- Zhumell Polarizing #3
- Kellner Moon Filter
- Zhumell #82A
- Zhumell #23A
- Zhumell #56, #12 & #47.



Contact:

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## News from GHRO

1. Star parties and telescope training are still on hold for the foreseeable future.
2. Construction is about to finished at GHRO on a new observatory, and trenching to deliver utilities will be complete soon. Please still be careful.

### **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.

### **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 \*\*\***

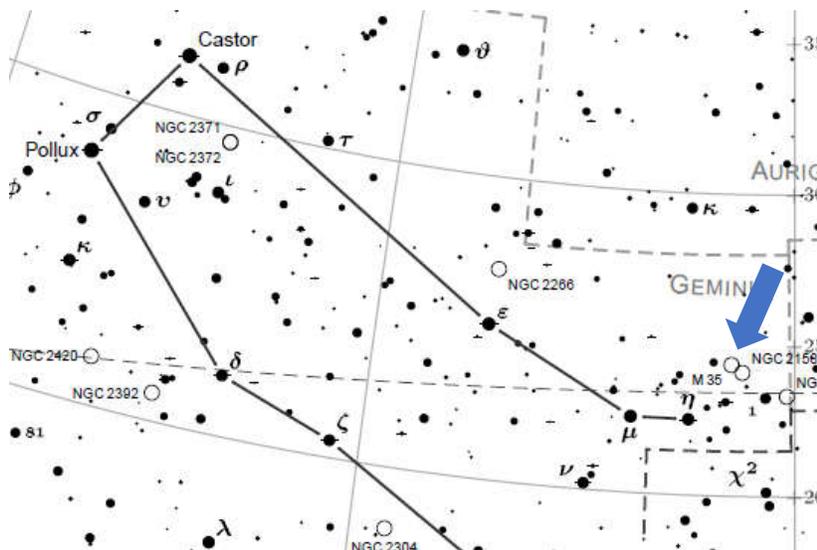
This facility and adjoining area may contain uneven terrain, dangerous wildlife, low light conditions, and dangerous man-made obstacles.

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.

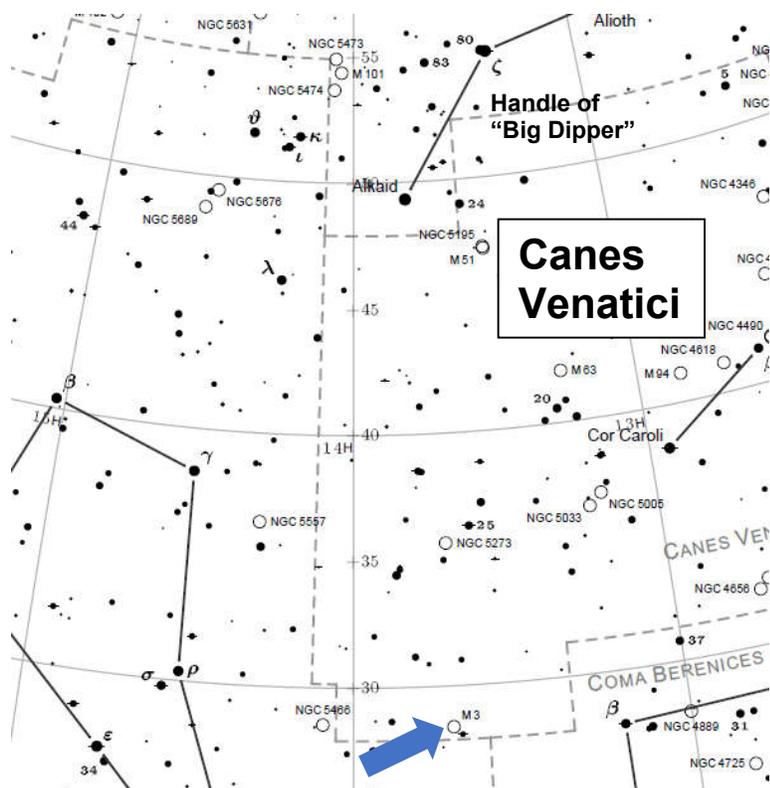
# April Sky Challenge

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!



## Gemini

**M35 Open Star Cluster** ...can be found in the constellation Gemini, near the feet of the twins, close to the border with Taurus. It contains over one hundred member stars scattered across an area as large as the full Moon. Binoculars show the cluster as a mottled patch enveloped in mist, but small telescopes clearly show individual stars, of 8<sup>th</sup> magnitude and fainter. If you have never observed M35 before, this is a “must see” object.



## Canes Venatici

### M3 Globular Cluster

....looks great even through the smallest backyard telescope. The cluster has a wide, bright center that accounts for about half of its apparent width. Surrounding the center are dozens of stars whose density gradually decreases with their distance from M3's core. Larger telescopes with a high power will reveal hundreds of stellar points, massing to a central blaze, with glittering streams of stars running out on all sides. The French astronomer Charles Messier discovered M3 on the evening of May 3, 1764, and this marked an important point in the history of astronomy.

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?

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.

## CAAC CONTACTS

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President	Ken Steiner	<a href="mailto:Ksteiner30@gmail.com">Ksteiner30@gmail.com</a>
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# Charlotte Amateur Astronomers Club

Officer's Meeting – March 28<sup>th</sup> 2020 - 10AM to 12PM

## Meeting Highlights

**NOTE:** Meeting was held virtually via Zoom online conference

**Attendees:**

Ken Steiner, Benton Kesler, Nazim Mohamed, Steve Harris, Jim Gaiser, Tommy Megremis, Jodie Funderburk, Scott Goforth, Neil Easden, Karen Achor

## Meeting Notes

- Treasurer's Update [Benton]
  - About \$33k-34k in scholarship /contingency fund. \$12k went to stewardship Foundation, and \$500 in checking account (in Foundation account)
    - Overall, no big financial challenges at this point. The contingency fund has a healthy amount of savings.
- Scholarship Update [Ken]
  - Johnathan Rupert was the only applicant who applied. The award amount this year is \$1000. A motion was made to award Johnathan the scholarship. **Motion Approved.**
- Logo Discussion [Nazim]
  - Nazim presented some new CAAC logo designs to include the lettering "Charlotte Amateur Astronomers Club" around the logo. The proposed designs were based on feedback from the last Board meeting. A motion was made to approve the design with the lettering arched above the upper stars in the elliptical pending approval from Land's End to print the lettering clearly on CAAC apparel. **Motion Approved.**
- Cloud Storage [Jim]
  - **ACTION:** Jim will create a cloud CAAC account Google Drive at a cost of 99 cents per month and Jim will try to figure out how to configure the different permission levels for different type of documents meant for different audiences like Board members, CAAC members, public, etc. Documents that will be housed in the cloud account will be legal/insurance/tax documents, officer documents, member documents, GHRO documents, etc.
- GHRO Updates [Jim]
  - Storage Container Discussion
    - Jim provided an update on procuring the 2<sup>nd</sup> storage container for member use. At the last Board meeting, a budget of \$1400 was approved. However, a container at this price point is not weather resistant.
    - Jim & Ken will install individual storage units. Each area will have it's own personal lock. The rental price for the individual storage units is still to be determined.
    - Benton suggested that Jim come up with internal storage layout plan, price the cost for the door, and rental cost. And target a 3 or 5 year payback proposal to recoup the upfront costs
    - Jim said that there's about 4 people who expressed interest and are ready to reserve storage space. The expectation is the storage units will be reserved by members quickly..
  - Haile Goldmine purchased the majority of the land property around GHRO. The land will be given to a Nature conservancy land trust. As a result, 95% of the land around GHRO will be tied up and not available for commercial or residential development
  - The insurance claim for the lightning damage to GHRO & private property that occurred in October 2019 was completed and deductible paid.
- Officers & Election update [Ken]
  - Ken asked the current officers to hold their positions temporarily beyond their April 2020 term until COVID-19 situation passes and the club can meet for election of officers and board members.

- Maintain a sense of community [Ken]
  - Ken communicated his thoughts, care, and concern to the Board about COVID-19 situation and the importance of keeping up engagement with the members as best as possible even with social distancing.
  - Everyone agreed to keep the monthly newsletter going even if the club isn't meeting.
  - Jim suggested Nazim sending out an email to the club members to check in with them and invite them to subscribe to FB page to keep updated online/virtually.
  - Jim suggested we do a virtual meeting via Zoom or FB live.
  - Karen was concerned to know if anyone in the club or their families got sick because of Coronavirus and keep the lines of communication open. Ken echoed Karen's thoughts and wants to be able to be supportive of each other in CAAC as the fellowship and camaraderie is like a family.

# Charlotte Amateur Astronomers Club

Officer's Meeting – April 4<sup>th</sup> 2020 – 11:00AM to 12PM

NOTE: Meeting was held virtually via Zoom online conference

## Meeting Highlights

### *Attendees:*

Ken Steiner, Benton Kesler, Nazim Mohamed, Jim Gaiser, Tommy Megremis, Scott Goforth, Neil Easden, Karen Achor, Allen Hill (guest from Greenville club, facing some of the same challenges as CAAC)

## Meeting Notes

- Virtual Meeting discussion [Ken]
  - Ken asked if we should have a virtual meeting for April & May and if Zoom is the preferred platform
  - Allen said the recording function works really well with Zoom, Jim said the Belmont club us FB Live.
  - Neil said Zoom can work well with business side club meetings to give every person chance to speak in front of club and share content
  - Jim suggested to use the newsletter as primary method of communicating to members and add more content, make it beefier
  - Nazim suggested to send out a quick survey about membership interest in attending a virtual club meeting
    - **ACTION:** Ken to send an email with the survey questions to poll interest of CAAC members and their comfort level with using Zoom.
  - Include instructions for Zoom and Zoom link in the April newsletter but in order to keep the meeting private to CAAC audience, don't publish the newsletter on the website until after the meeting concludes.
- COVID-19 Check in [Ken]
  - Ken checked in with everyone's health to see how everyone is doing