



Charlotte Amateur Astronomers Club

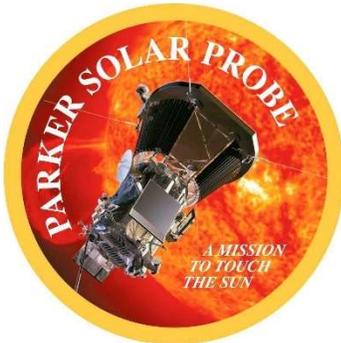
www.charlotteastronomers.org

CAAC May 2019 Meeting

<p>Next Meeting: Friday May 17th, 2019</p> <p>Time: 7:00 PM</p>	<p>Place: Myers Park Baptist Church Education Building – Shalom Hall (Basement)</p> <p>Address: 1900 Queens Road Charlotte, NC 28207</p>
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The Past, Present and Future of the NASA Parker Solar Probe

The NASA Parker Solar Probe has embarked on a seven year mission to the Sun's inner atmosphere armed with a payload of scientific instruments to measure the solar wind and atmosphere up close & personal. These measurements will revolutionize our understanding of the mechanisms that drive the solar wind and space weather, and will provide insights into methods of mitigating the sun's potentially catastrophic effects on technological advancements and on life on Earth as we know it.



Join NASA SOLAR SYSTEM AMBASSADOR John O'Neal, NC Stargazer on this journey of discovery to touch the Sun... Hear the entire 160 year old backstory and history of the mission and learn about Dr. Eugene Parker, the first person in the history of the space program to have a craft named after him. Ride along with John as the craft takes off on a whirlwind journey to the center of our solar system to an environment beyond our wildest imagining.

This comprehensive presentation will highlight the science behind the Parker Solar Probe and provide a close-up look at the instrument packages and their purposes. It will reveal the human and social reasons for visiting the sun, as well as the science objectives, the launch, the voyage from Cape Kennedy, the journey around Venus to the Sun, and will culminate in what we expect to learn from the probe and how it could conceivably save our entire species and world from the next solar extinction event.

Speaker Bio:

John O'Neal has been an avid AMATEUR ASTRONOMER and astrophotographer for over 45 years. He is a NASA Solar System Ambassador and a member of ALPO and the AAVSO and several Amateur Astronomy Associations around his home in Statesville, NC, including the CAAC. He is a Co-Founder of the Facebook group, SOLARACTIVITY, which now includes over 24,000 members worldwide.

He has authored numerous tutorials on solar imaging as well as equipment reviews and has recently been named as a Contributing Editor for Amateur Astronomy Magazine. The current issue (102) has his 8 page article about the Parker Solar Probe.)

Since retiring in 2016, John and his lovely wife, Dorothy have taken to traveling and he has given countless presentations to the general public and to amateur and professional astronomers across the US. His most recent solar star party contributions were at The Astronomy on the National Mall event in Washington DC which drew over 10,000 guests, at the SOLARACTIVITY Solar Star Party and Eclipse Presentation in Smiths Ferry, Idaho with over 4,000 participants in attendance.



In 2019 John has already committed to giving several presentations on Astrophotography topics and on Solar outreach and Star Parties throughout the U.S, including BoBfest, Tri-Star and The Annual Aurora Summit in Minnesota. You can visit John's website to learn more about his upcoming schedule, available programs, image galleries, videos and more. <http://www.ncstargazer.com>

From the President

I am presently planning on a CAAC Field trip to the South Carolina State museum in Columbia, SC on June 8, 2019. We will tentatively plan on meeting at the Myers Park Baptist Church at 8:30 am and caravan to Columbian, SC (approx. 1-1/2 hours).

The SC State museum has the Robert B. Ariail Telescope collection; our own Gayle Riggsbee will serve as our tour guide for this portion of the visit.

Another feature is an excellent display concerning Masers/Lasers and the role of Charles Towne (a native of Greenville, SC) who won the Nobel Prize for his work on the Masers/Lasers.

An added attraction is a special display celebrating the 50th anniversary of the Apollo Moon Landing. I will have more details concerning this field trip at the CAAC meeting on Friday. Let me know of your interest in this trip so we can check into group rates for admission. For information about the museum go to: <http://scmuseum.org/>

Finally:

For your long term planning save the date of November 11 for a Transit of Mercury. More information is available at Fred Espenak's website: <http://www.eclipsewise.com/oh/tm2019.html>

Ken Steiner
President

CAAC Treasurer's Report as of 04/30/2019

<p>Part 1 of 2 Operating Fund Purpose: Enable the CAAC to pursue our non-profit goals, maintain our facilities, and run our programs:</p> <ul style="list-style-type: none"> 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	Operating Fund Balance: 03/31//2019	\$36,681.77
2	Income Dues & Fees 420.00 Pad Fees 0.00 Southern Star Registrations 1990.00 Expenses GHRO Utilities 323.93 Fees for Credit Card Service 15.18 Meeting Expense 230.25	
3	Special Edition Star Atlas (591.00) Southern Star Expenses and Refunds 25,635.41	
4	Operating Fund Balance: 04/30/2019	13,478.00

<p>Part 2 of 2 Non-Operating Funds Purpose: Administer gifts and donations for designated use.</p>		
1	Balance 03/31/2019: Non-Operating Funds Scholarship Fund 3989.36 Contingency Fund 27,634.83 Long-Term Fund 7247.86	
2	Income Donation: Microsoft, BofA, Other 0.00 Interest .95 Expenses or Transfers	
3		
	Balance 4/30/2019: Non-Operating Funds Scholarship Fund 3989.36 Contingency Fund 27,635.78 Long-Term Fund 7247.86	

Endowment Fund Balance	\$1240.06
Southern Star 2019 Net Revenue	\$4000.31

-Benton Kesler
 CAAC Treasurer

CAAC Outreach Updates

News of upcoming outreach events coming soon.

Neil

If you are interested in getting more involved with CAAC Community Outreach please contact Neil Easden at neileasden@me.com

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

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.

Nazim Mohamed
CAAC Secretary

News from GHRO

1. The May 4th Star Party at GHRO was a wash, let's hope for better weather in June. The June Star Party at GHRO is June 1, sunset is around 8:30 PM, so arrive a little early and setup up in the twilight. Telescope training is May 25th, a 3rd quarter moon. June's training on June 22.
2. The Cub Scouts are visiting on May 18, please plan accordingly. I could use a couple of volunteers to assist with the telescopes that evening.
3. Construction has finished at GHRO of the two new observatories, and trenching to deliver utilities is complete. Please still be careful as you walk the grounds in the dark, you never know when a rogue dirt clod can trip you up.
4. **There will be a fix up day at GHRO on Saturday, May 18. We need to replace the south wall on the 24" observatory, move the replacement wind speed indicator back up on the tower and get everything else cleaned up and dusted off as required. I have a list of 10 items I'd like to accomplish, so please let me know if you can help. Drop me an e-mail at jegaiser@carolina.rr.com if you can help. We plan to start at 9:00 AM. I need at least 10 volunteers that can work approximately 4 hours.**
5. Please come down and use the outstanding facility. Remember, it's your observatory, so please use it. We do ask that you clean up before you leave. A good practice is to act as if you are going camping...pack out what you pack in.
6. Many thanks to Paul Imirie for bringing his drone down and getting a new ariele shot of GHRO. It's on our website's home page.
7. Finally, several of us are doing remote imaging. If you're at GHRO, please be careful around the private observatories...the roofs can roll off at any time.

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 ***

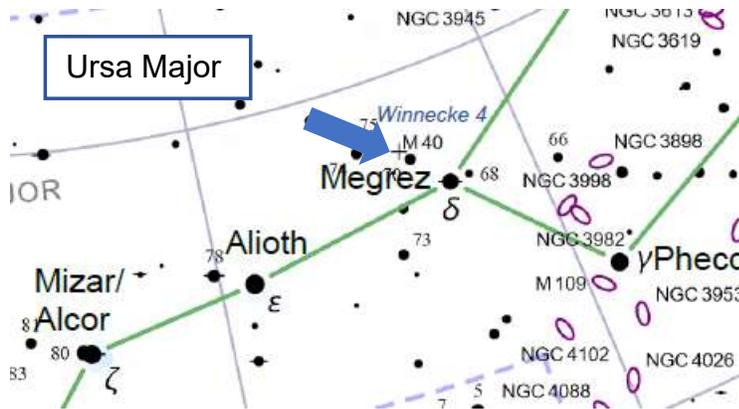
This facility and adjoining area may contain uneven terrain, dangerous wildlife, low light conditions, and dangerous man-made obstacles.

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.

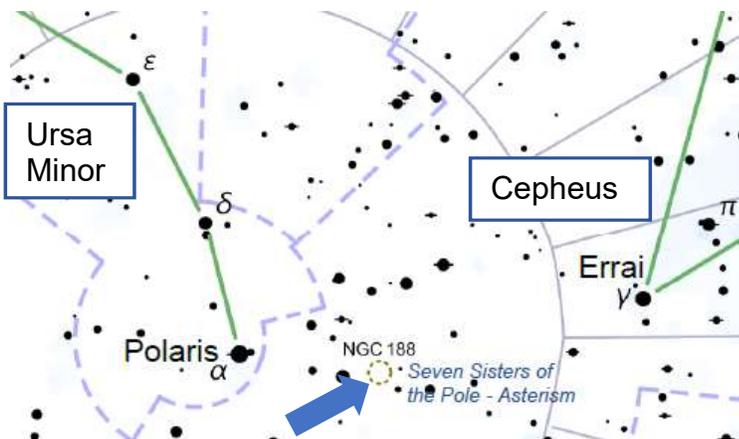
May Sky Challenge

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 double star with a history and a very old cluster.



Winnecke 4, a.k.a. **M40** is a double star found by Charles Messier when searching for a reported nebula. Not finding nebula, he recorded seeing a double star. The double star was rediscovered by German astronomer, Friedrich August Theodor Winnecke and given his catalog number, Winnecke 4. American astronomer Robert Burnham believe Messier had

erred in identifying M40 as a double star – but history proved it to be a true double star (not just an optical double). The earlier reported nebula may have been NGC 4290 – too dim for the telescopes of Messier. Small and medium telescopes will reveal one orange-yellow and one white star.



The most northern and oldest cluster visible from Earth is **NGC 188**. Estimates place its age at five *billion* years compared to many other clusters whose age is measured in only *millions* of years (for example, the Double Cluster in Perseus is about 3 – 5 million years old). Given this extreme age, notice there are no blue or white stars -- they have all “aged out” to yellow and orange stars that we see now.

NGC 188 was discovered by John Herschel – son of the famous father, astronomer Sir William Herschel. Though none of its stars are brighter than third magnitude, with this northern treat you can observe an interesting pattern. Look for several bright stars that have become known as the Seven Sisters of the Pole – a beautiful asterism. A 4-inch telescope will reveal about 30 stars. Enjoy the views of this ancient cluster!

Acknowledgements:

NightSkyInfo 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 start 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!

**NEW January, 2019 Revision
is POSTED!**

CAAC CONTACTS

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