

The Focal Point

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The Atlanta Astronomy Club
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September AAC Meeting Cancelled

There will be no September meeting of the Atlanta Astronomy Club due to the ongoing COVID-19 pandemic, particularly the Delta Variant, and the requirements to limit group gatherings to prevent further spread of the disease. While we are not able to hold our monthly meetings right now, please continue to follow AAC on its web page and Facebook page for updates until we are able to have our regular meetings again. Hopefully we will be able to resume in person meetings soon.



Fernbank Science Center's Planetarium At Home Programs

While we have been unable to have in-person AAC meetings at the Fernbank Science Center for a while now, our host, Fernbank Science Center's planetary geologist Scott Harris, has been having a series of virtual programs about astronomy and planetary sciences on Fernbank's Facebook page. Recent programs have been about the 50th anniversary of the Apollo 14 mission and the upcoming launch of the James Webb Space Telescope. For more information about Scott's upcoming programs check out Fernbank's Facebook page here: <https://www.facebook.com/fernbankcenter>

The 2021 Peach State Star Gaze!

Ready to get back under dark skies? Then you'll want to be at the 2021 Peach State Star Gaze!

Due to the COVID-19 pandemic, the AAC had to cancel the 2020 Peach State Star Gaze. But now with the widespread availability of the vaccines things are looking up (pun intended!).

So the Atlanta Astronomy Club's 27th annual Peach State Star Gaze is scheduled for Sunday, October 31 to Sunday, November 7, 2021 at the Deerlick Astronomy Village near Sharon, Georgia. New Moon will be on Thursday November 4.

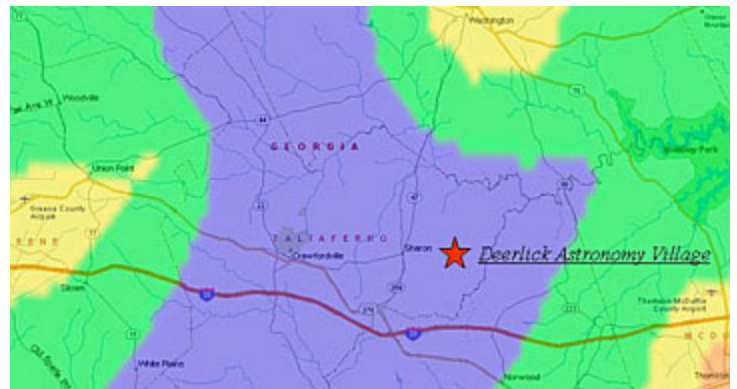
More information and online registration can be found here:

<https://www.atlantaastronomy.org/PSSGO/index1.html>

See page 4 for recent news about the PSSG.



The observing field at DAV during the 2016 PSSG - Photo by Tom Faber.



Charlie Elliott October Meeting

Charlie Elliott Astronomy Meeting & Observing Session on October 9

(September 6, 2021) Though attended by perhaps only a dozen or so intrepid souls, our September 4 observing session proved to be fairly rewarding, as shown in images by various folks, including our own Dennis Ruzeski of a beautiful transit by the Jovian moon Io and its shadow crossing Jupiter — this, despite the atmospheric seeing conditions being rather poor (clear, but turbulent). Look for Dennis’s Jupiter image in the

Charlie Elliott Astronomy Facebook group.

Now we’re planning once more for another in-person meeting at the Charlie Elliott Campbell Aquatics Building, this time at 5 p.m., on Saturday, October 9, when CE program coordinator Steve Siedentop will be the featured speaker; check back here soon for an update as to exactly what you’ll learn that evening. After the meeting (and weather-permitting), we’ll head over to the Jon Wood Astronomy Field.

Due to the strong resurgence of the Covid Delta variant, our meeting plans may change, so check back here often.

Sunset is at approximately 7:07 p.m. on October 9 and “dark dark” is at about 8:30 p.m.

Directions: The Campbell Aquatics Building is located inside the Charlie Elliott Wildlife Center on Murder Creek Church Rd. The CEWC itself is just south of Mansfield, Georgia. Take Hwy 11, then turn onto Marben Farm Rd. (the entrance to the CEWC); continue past Elliott Trail (on the right) then turn right onto Murder Creek Church Rd. For more details, phone 770-784-3059 BEFORE 4:30 p.m. (when the office closes). Masks are optional for those who are vaccinated. If you are not vaccinated, please wear a mask and kindly maintain a safe distance from others in accordance with the latest CDC guidelines.

The Jon Wood Astronomy Field is also located inside the Charlie Elliott Wildlife Center. From the Aquatics Building location, follow Murder Creek Church Rd back to Marben Farm Rd, then turn left. Turn left once more



onto Elliott Trail and the Astronomy Field dirt driveway will be on the right. No headlights or white flashlights.

From Hwy 11, follow Marben Farm Rd., then turn right onto Elliott Trail and the Astronomy Field dirt driveway will be on the right. No headlights or white flashlights.

Observing on the Jon Wood Astronomy Field

NOTE: It is your own responsibility to monitor the weather forecast for your own comfort and safety. Be advised to dress appropriately and have extra clothing on hand should it also be needed. There are no inside bathroom facilities, running water, electricity or warm-up buildings at this location. There is, however, a “porta-potty” at the edge of the observing field that is regularly serviced. There are indoor bathroom facilities at the Campbell Aquatics Building for those who prefer it before we head out to the Jon Wood Astronomy Field.

Note that the Elliott Trail automatic road gate closes for incoming traffic at 7 p.m. Afterwards, a five-digit combination must be entered on a keypad near the gate for it to open. That combination is available only to dues-paying Club members. Therefore, non-Club members planning to join us on the observing field should enter the park before 7 p.m. Club members who arrive after 7 p.m. and do not have the gate combination should contact a club officer at least 24 hours prior to their visit to obtain the gate combination. The gate opens automatically for exiting traffic as you approach it to leave, no matter what time it is.

Covid Requirements

IMPORTANT! Masks are optional for those that are vaccinated. If you are not vaccinated, please wear a mask and kindly maintain a safe distance from others in accordance with the latest CDC guidelines.

More About the Charlie Elliott Astronomy Club

Check out the Charlie Elliott Astronomy Facebook page at <https://www.facebook.com/groups/ceastronomy>. There you’ll find a welcoming group of people sharing ideas and tips as well as organizing ad-hoc observing and imaging sessions on the Jon Wood Astronomy Field.

For those not familiar with the Charlie Elliott Wildlife Center, go to <https://georgiawildlife.com/charlie-elliott-wildlife-center>

The CEWC phone is 770-784-3059, Monday through Saturday 9 a.m.–4:30 p.m.

Workshops

If you have an idea for a 15 to 20-minute pre-meeting presentation about something you’ve learned or a project you’re working on, contact Steve Siedentop or Ken Poshedly.

Our Monthly Meetings and Public Observing Nights

The status of in-person meetings will be announced monthly as the COVID situation changes. Visit the “Our Calendar” tab at the top of the page for our 2021-2022 meeting, observing, and outreach schedule. Start times vary throughout the year so please check back for details.

All Charlie Elliott Astronomy events are free and open to the public and you don’t have to be a member to attend our meetings or join us on Jon Wood Astronomy Field. However, we would encourage you to consider a yearly paid membership for less than the cost of a couple of pizzas. Your membership dues allow us to continue our science outreach programs in area schools and youth organizations, merit badge programs with area Scout Troops, and allow us to maintain the facilities on Jon Wood Astronomy Field. To become a member, you can fill out our Membership Form or contact an officer.



Credit: Google Maps



A Perseid Meteor by Tom Faber

My wife Kat and I were on the beach at Tybee Island, Georgia to watch the Perseid meteor shower on both the mornings of August 12 and August 13. While we saw a number of meteors both mornings, there were more on the 13th (lucky 13!), plus there were fewer clouds that morning. The best meteor we saw occurred as we walked to the beach from our B&B early on the morning of the 13th. It was bright and left a trail that lasted nearly 10 seconds! Both mornings I set up my camera on a tripod and took a number of photos in hopes of catching some of them. Unfortunately most appeared in a different part of the sky from where my camera was aimed! Out of nearly 200 images taken during the two mornings I only captured about 10 meteors, most rather faint. The best one from the 13th is shown above. The photo was taken at 5:40AM, about 20 minutes after astronomical twilight had begun at Tybee Island. The image was a 30 second expose using a Canon T5i at ISO 1600. The lens was an 18-135mm at 18mm and f/5.6.

Below is a crop from the same image to better show the meteor, which looks slightly reddish.





Open Cluster M11 by Richard Jakiel

Rich made this image of M11 using a 6 inch Ritchey Chretien telescope with 6 x 5 min subs at 400 ISO.

The 2021 Peach State Star Gaze!

Here is some late news on the 2021 Peach State Star Gaze: Our keynote speaker will be Wanda Harding: From Atlanta to Mars and Back Overview: Atlanta native, Wanda Harding, shares her experience of working with the Mars Science Laboratory Mission, launched in November 2011. She served as the mission manager for the launch services at NASA's Kennedy Space Center in Florida. Wanda will provide an overview of the spacecraft and launch vehicle integration process, and how NASA works with spacecraft developers to send missions off the planet. She will also share highlights of the mission over the past 10 years. Wanda has recently returned to her home state, and is now a science teacher at the Jean Childs Young Middle School in Atlanta, GA

Other speakers will include solar observer John O'Neal and Ed Albin as well. The topics of their talks are TBA.

Micki's Kitchen will also be there providing meals, sandwiches, snacks, cold drinks, hot chocolate, hot coffee, and of course her world famous brownies!

Hubble Discovers Hydrogen-Burning White Dwarfs Enjoying Slow Aging

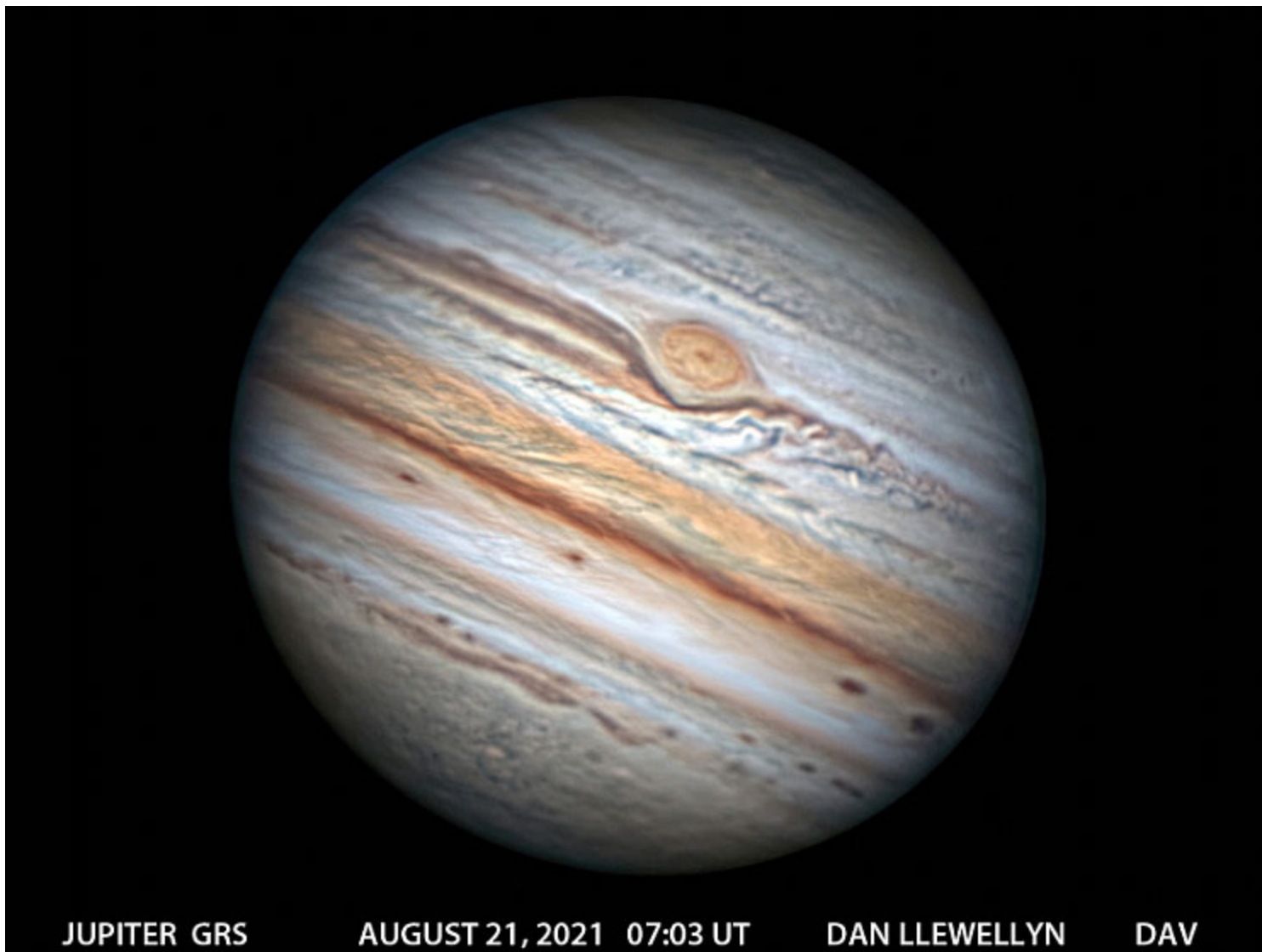
NASA/STScI News Release - September 6, 2021

Could dying stars hold the secret to looking younger? New evidence from NASA's Hubble Space Telescope suggests that white dwarf stars could continue to burn hydrogen in the final stages of their lives, causing them to appear more youthful than they actually are. This discovery could have consequences for how astronomers measure the ages of star clusters, which contain the oldest known stars in the universe.

These results challenge the prevalent view of white dwarfs as inert, slowly cooling burned-out stars where nuclear fusion has stopped. Now, an international group of astronomers has discovered the first evidence that white dwarfs can slow down their rate of aging by burning hydrogen on their surfaces.

"We have found the first observational evidence that white dwarfs can still undergo stable thermonuclear activity," explained Jianxing Chen of the Alma Mater Studiorum Università di Bologna and the Italian National

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Jupiter by Dan Llewellyn

Best Jupiter of the year for me. The clouds slowly drifted out and seeing was very stable, Sunday Aug 21 at 3am. Taken using a C14, TMB 1.8 barlow, and QHY 5III 462C (color) camera. Stack of 8,000 frames.

Institute for Astrophysics, who led this research. “This was quite a surprise, as it is at odds with what is commonly believed.”

White dwarfs have cast off their outer layers during the last stages of their lives. They are common objects in the cosmos; roughly 98% of all the stars in the universe will ultimately end up as white dwarfs, including our own Sun. Studying these cooling stages helps astronomers understand not only white dwarfs, but also their earlier stages as well.

To investigate the physics underpinning white dwarf evolution, astronomers compared cooling white dwarfs in two massive collections of stars: the globular clusters M3 and M13. These two clusters share many physical properties such as age and metallicity (the abundance of heavier elements), but the populations of stars which will eventually give rise to white dwarfs are different. This makes M3 and M13 together a perfect natural laboratory in which to test how different populations of white dwarfs cool.

“The superb quality of our Hubble observations provided us with a full view of the stellar populations of the two globular clusters,” continued Chen. “This allowed us to really contrast how stars evolve in M3 and M13.”

Using Hubble’s Wide Field Camera 3 the team observed M3 and M13 at near-ultraviolet wavelengths, allowing them to compare more than 700 white dwarfs in the two clusters. They found that M3 contains standard white dwarfs, which are simply cooling stellar cores. M13, on the other hand, contains two populations of white dwarfs: standard white dwarfs and those which have managed to hold on to an outer envelope of hydrogen, allowing them to burn for longer and hence cool more slowly.

Comparing their results with computer simulations of stellar evolution in M13, the researchers were able to show that roughly 70% of the white dwarfs in M13 are burning hydrogen on their surfaces, slowing down the rate at which they are cooling.

This discovery could have consequences for how astronomers measure the ages of stars in the Milky Way galaxy. The evolution of white dwarfs has previously been modeled as a predictable cooling process. This relatively straightforward relationship between age and temperature has led astronomers to use the white dwarf cooling rate as a natural clock to

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Galaxy NGC253 by Richard Jakiel

The “Silver Dollar Galaxy”, NGC 253 in Sculptor. Rich made this image at the Deerlick Astronomy Village using a 120 mm f/7 APO telescope. The image consists of 12 x 5 min subs taken with a Canon 4i at ISO 1600.

determine the ages of star clusters, particularly globular and open clusters. However, white dwarfs burning hydrogen could cause these age estimates to be inaccurate by as much as 1 billion years.

“Our discovery challenges the definition of white dwarfs as we consider a new perspective on the way in which stars get old,” added Francesco Ferraro of the Alma Mater Studiorum Università di Bologna and the Italian National Institute for Astrophysics, who coordinated the study. “We are now investigating other clusters similar to M13 to further constrain the conditions which drive stars to maintain the thin hydrogen envelope which allows them to age slowly.”

The Hubble Space Telescope is a project of international cooperation between NASA and ESA (European Space Agency). NASA’s Goddard Space Flight Center in Greenbelt, Maryland, manages the telescope. The Space Telescope Science Institute (STScI) in Baltimore, Maryland, conducts Hubble science operations. STScI is operated for NASA by the Association of Universities for Research in Astronomy in Washington, D.C.



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To investigate the physics underpinning white dwarf evolution, astronomers compared cooling white dwarfs in two massive collections of stars: the globular clusters M13 (image 2010) and M3 (Image 2019). These two clusters share many physical properties such as age and metallicity, but the populations of stars which will eventually give rise to white dwarfs are different. This makes M13 and M3 together a perfect natural laboratory in which to test how different populations of white dwarfs cool.

Credits: Science: ESA, NASA, Giampaolo Piotto



The **Atlanta Astronomy Club, Inc.**, one of the South's largest and oldest astronomical society, meets at **3:00 P.M.** on the 3rd Saturday of each month at the Fernbank Science Center in Decatur, or occasionally at other locations or times. Membership fees are **\$30** for a family or single person membership. College Students membership fee is **\$15**. These fees are for a one year membership.

Magazine subscriptions to *Sky & Telescope* or *Astronomy* can be purchased through the club for a reduced rate. The fees are **\$33** for Sky & Telescope and **\$34** for Astronomy. Renewal forms will be sent to you by the magazines. Send the renewal form along with your check to the Atlanta Astronomy Club treasurer.

The Club address: Atlanta Astronomy Club, Inc., P.O. Box 76155, Atlanta, GA 30358-1155. AAC Web Page: <http://www.AtlantaAstronomy.org>. Send suggestions, comments, or ideas about the website to webmaster@AtlantaAstronomy.org. Also send information on upcoming observing events, meetings, and other events to the webmaster.

Atlanta Astronomy Club Online

While this newsletter is the official information source for the Atlanta Astronomy Club, it is only up to date the day it is posted. So if you want more up to date information, go to our club's website. The website contains pictures, directions, membership applications, events, updates, and other information. <http://www.atlantaastronomy.org> You can also follow the AAC on Facebook by joining the AAC group, and on Twitter at <http://twitter.com/atlaastro>.

AAC Officers and Contacts

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Elliott Chapter AL Liaison: David Whalen
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PSSG Co-Chair: Open
Sidewalk Astronomy: Open
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Light Tresspass: Ken Edwards, Contact info TBA
Woodruff Observ. Coordinator: Sharon Carruthers
Treasurer@AtlantaAstronomy.org
AAC Webmaster: Daniel Herron
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Calendar by Tom Faber (Times EDT/EST unless noted)

AAC Events are listed in BOLD

- Sept 13th, Monday: Moon First Quarter.
- Sept 16th, Thursday: Moon near Saturn evening.
- Sept 17th, Friday: Moon near Jupiter evening.
- Sept 20th, Monday: Full Moon - Harvest Moon.
- Sept 21st, Tuesday: Mercury near Spica evening.
- Sept 28th, Tuesday: Moon Last Quarter.
- Oct 6th, Wednesday: New Moon.
- Oct 9th, Saturday: **CEA Chapter Meeting and Potluck 7PM.** Moon near Venus evening.
- Oct 12th, Tuesday: Moon First Quarter.
- Oct 13th, Wednesday: Moon near Saturn evening.
- Oct 14th, Thursday: Moon near Jupiter evening.
- Oct 15th, Friday: Venus near Antares evening.
- Oct 20th, Wednesday: Full Moon - Hunter's Moon. Orionids Meteor Shower.
- Oct 23rd, Saturday: Venus near M19 evening.
- Oct 28th, Thursday: Moon Last Quarter.
- Oct 31st, Sunday: **Peach State Star Gaze opens at 12PM**
- Nov 4th, Thursday: New Moon. Southern Taurids Meteor Shower.
- Nov 7th, Sunday: **Peach State Star Gaze closes.** Moon near Venus evening.
- Nov 11th, Thursday: Moon First Quarter.
- Nov 17th, Wednesday: Leonids Meteor Shower.
- Nov 19th, Friday: Full Moon.
- Nov 27th, Saturday: Moon Last Quarter.

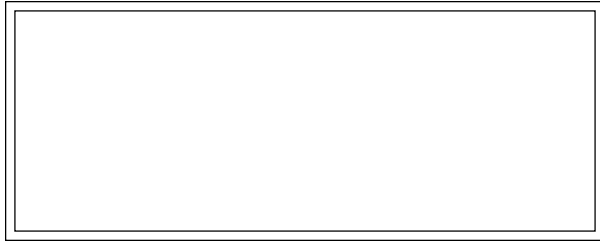
For more event listings and updates see the calendar at www.atlantaastronomy.org

Atlanta Astronomy Club Listserv

Because of the shutdown of Yahoo Groups, the Atlanta Astronomy Club Mailing List has been moved to IO Groups. You can visit the group, start reading messages and posting them here: <https://groups.io/g/AtlantaAstronomyClub>.

Focal Point Deadline and Submission Information

Please send articles, pictures, and drawings in electronic format on anything astronomy, space, or sky related to Tom Faber at focalpoint@atlantaastronomy.org. Please send images separate from articles, not embedded in them. Articles are preferred as plain text files with images separate but Word documents or PDFs are okay. **The deadline for October is Sunday, September 26. Submissions received after the deadline will go in the following issue.**



FIRST CLASS



www.bctagg.com



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On Twitter at <http://twitter.com/atlastro>

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Newsletter of The Atlanta Astronomy Club, Inc.

The Focal Point

