

# The Focal Point

The Atlanta Astronomy Club  
Established 1947  
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Editor: Tom Faber

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## Charlie Elliott January Mtg & Observing

Join us at 4:00 p.m. on Saturday, January 25th, 2025, at the Charlie Elliott Wildlife Center Campbell Aquatics Building for our next meeting when Jay P. Dunn gives a talk on his research on intragalactic winds within active galactic nuclei! These powerful outflows of gas and plasma expelled from the central region of a galaxy, driven by the immense energy released from the supermassive black hole at its core, effectively blows this material

out into the surrounding intergalactic medium shaping the characteristics of the galaxies we love to observe and image.

Current serving as Assistant Professor of Physics at Georgia Perimeter College, Dunn's work is an integral part of the pipeline producing tomorrow's PhD candidates who will drive future research. Recruiting his two-year students at Perimeter to join him in research, together they work to analyze data from NASA's Hubble Space Telescope as well as archival data from the Far Ultraviolet Spectroscopic Explorer, or FUSE, a NASA astrophysics satellite/telescope that stopped transmitting in 2007. Many students have subsequently gone on to pursue their own research and graduate degrees thanks to this early exposure. "Most of my students — particularly my physics students — are aware of the value of research and know getting their feet wet here is huge for them at this level," he says. "It will go a long way for recommendations for graduate school, post-baccalaureate work and scholarships."

Sunset will be at 6:00 p.m. and the main gate closes to new entry at 7:00 p.m. If you are not a member and plan to arrive after 7:00 p.m., please make arrangements with a member for entry.

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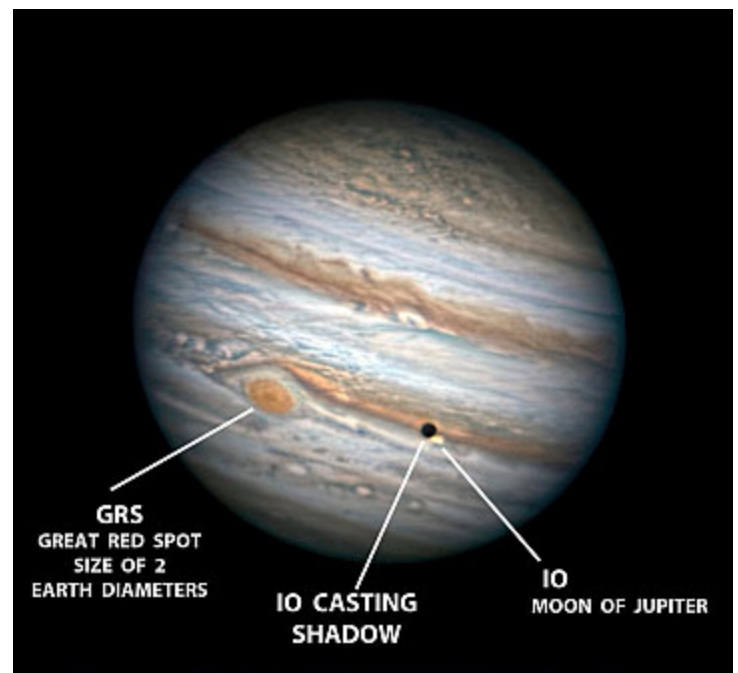


## The January AAC Meeting

The next AAC meeting will be on Saturday, January 18 starting at 6:00PM at our meeting location in Sandy Springs. Our speaker will be Dan Llewellyn. Dan's topic is "Beginning to Intermediate Planetary Imaging."

**Abstract:** Stuck in the city around lots of light pollution? Planetary imaging is the solution. Nothing has impacted amateur astronomy more than planetary imaging because it contributes to real science. The Hubble-like images of British amateur Damian Peach paved the way for amateurs to make new contributions to scientific study. In the last 25 years these imagers have made significant contributions to the British Astronomical Association, NASA, and other organizations.

Planetary imaging is viable in light-polluted skies on a reasonable budget. Overly complicated interface programs are unnecessary, and processing takes less than an hour. A complete walk through including cameras, scopes, software, and best practices will be presented. Non-imaging enthusiasts will also find it informative and interesting.



*Image by Dan Llewellyn*

Biography: Dan Llewellyn has been a planetary & deep-sky imager for over 24 years. He authored an article in the April, 2014, issue of Sky & Telescope entitled "Redeeming Color Planetary Cameras." His images have been featured in Sky & Telescope, Photonics Spectra, The Atlanta Journal & Constitution (Picture of the year, 2010), Journal of British

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## Observing on the Jon Wood Astronomy Field

Plan to treat this outing like you would a camping trip and be prepared. Dress appropriately for the weather and the environment, bring snacks and drinks if needed, and plan to take your trash with you.

After pulling up the dirt driveway from Elliot Trail and onto the astronomy field, please orient your vehicle to face the field exit gate so as not to cause problems with headlights when leaving. After pulling up the dirt driveway from Elliot Trail and onto the astronomy field, please orient your vehicle to face the field exit gate so as not to cause problems with headlights when leaving.

There is a regularly serviced Porta-Potty on the field.

The main gate on Elliott Trail closes to new entry by vehicle at 7 p.m., but will automatically open for exiting traffic at all times. If you are not a member and plan to arrive after 7 p.m., please make arrangements with a club member for access at least a day in advance.

Please refrain from using white light on the field. Red headlamps are cheap and easy to find at your favorite store. They're even cheaper to make with a spare flashlight and red nail-polish on the lens.

For more information about Charlie Elliott Wildlife Center, visit:

<https://georgiawildlife.com/charlie-elliott-wildlife-center>

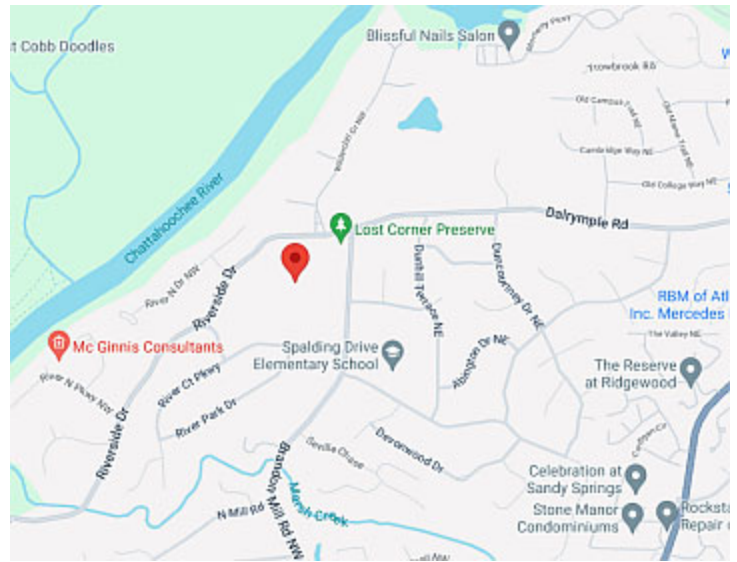
## Our Monthly Meetings and Public Observing Nights

Our monthly meetings and public observing nights are free and open to the public. Visit the "Our Calendar" tab at the top of the page for our 2025 meeting, observing, and outreach schedule. Start times vary through the year so please check back for details. View our Full Calendar of all meetings & outreach events here: <http://ceastronomy.org/blog/outreach/charlie-elliott-astronomy-calendar>

It's easy to become a member of Charlie Elliott Astronomy! Pay dues here: <http://atlantaastronomy.org/membership/>



*Credit: Google Maps*



*Lost Cottage at Lost Corner Preserve. Credit: Google Maps*

Astronomical Association, and in publications of the Association of Lunar and Planetary Observers, the Astronomical League, and Fernbank Science Center. Dan has lectured at the Northeast Astro Imaging Conference, Georgia Tech, the ALPO and ALCON conferences, the Peach State Star Gaze, the Mid-South Star Gaze, the Chiefland Star Party, the Atlanta Astronomy Club, previously here at the Enchanted Skies Star Party, and at Dragon Con in the Science Trek. His latest Saturn and Jupiter results are published in the November, 2023, and August, 2024, issues of Sky & Telescope magazine.

Lost Cottage at Lost Corner Preserve, 7300 Brandon Mill Road Northwest, Sandy Springs, GA 30328. See map on next page.

<https://www.sandyspringsga.gov/places/lost-corner-preserve>

We need volunteers for speakers and topics so let's do it this way:

- \* If you have a topic you want to hear about let us know we may find a speaker for it.
- \* If you have a topic and would like to talk let us know.
- \* If you know a student or anyone that may like an audience let us know.

After the talks we will handle club business, Q&A, and meet & greets. If you have any equipment questions or need help, bring your scopes and we will also try to help.

## AAC December Meeting Report

Photos by Tom Faber

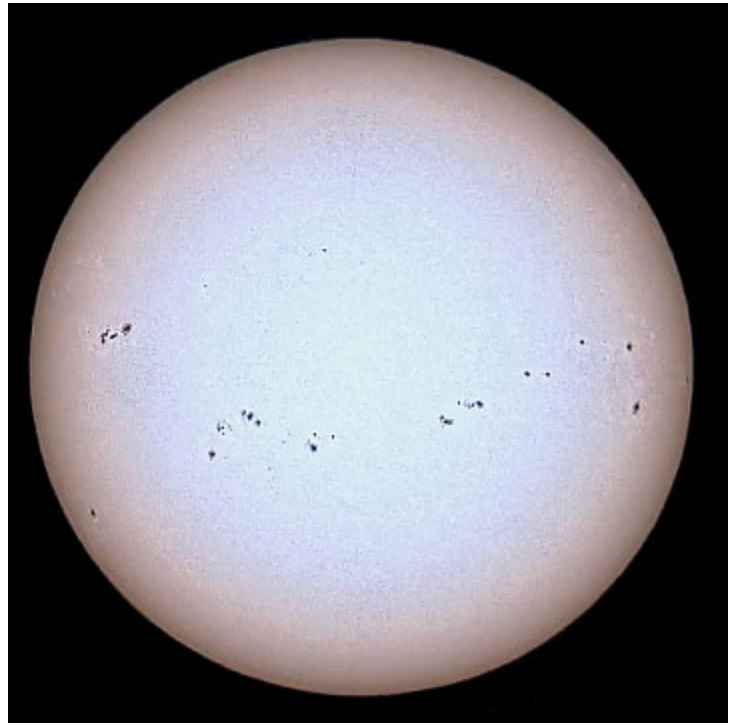
The Atlanta Astronomy Club's December general meeting and Holiday potluck was held on Saturday, December 14, at Atlanta Freethought Society building in Smyrna starting at 5:00PM. About 10 club members and guests were present. The Club provide turkey, ham, and drinks while the attendees brought a number of yummy side dishes and deserts!

After we had dinner Club President David Lumpkin presented an interesting talk about celestial navigation. He showed various charts that were used for celestial navigation and demonstrated the sextant he owns.

*Photos from the event are on the next page.*



*This eerie scene of the nearly full moon greeted us as we left the meeting. It looked more fitting for Halloween than for Christmas.*



## Aphelion Sun and Perihelion Suns by Richard Jakiel

These two images by Richard Jakiel show the difference in the apparent size of the sun between when the Earth is at the aphelion and perihelion of its orbit. The left image was made on July 16, 2024 (1.5 weeks after aphelion) and the right image was taken on January 4, 2025 at perihelion. The Earth's distance from the sun at aphelion and perihelion are 152 Mkm and 147 Mkm. Can you see the difference in the sun's size (the scale is EXACTLY the same for both images)? Both were imaged with a SeeStar s50 and a Baader solar filter.

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## JWST Finds Planet-Forming Disks Lived Longer in Early Universe

NASA/STScI News Release December 16, 2024

NASA's James Webb Space Telescope just solved a conundrum by proving a controversial finding made with the agency's Hubble Space Telescope more than 20 years ago.

In 2003, Hubble provided evidence of a massive planet around a very old star, almost as old as the universe ( <https://hubblesite.org/contents/news-releases/2003/news-2003-19.html> ). Such stars possess only small amounts of heavier elements that are the building blocks of planets. This implied that some planet formation happened when our universe was very young, and those planets had time to form and grow big inside their primordial disks, even bigger than Jupiter. But how? This was puzzling.

To answer this question, researchers used Webb to study stars in a nearby galaxy that, much like the early universe, lacks large amounts of heavy elements. They found that not only do some stars there have planet-forming disks, but that those disks are longer-lived than those seen around young stars in our Milky Way galaxy.

"With Webb, we have a really strong confirmation of what we saw with Hubble, and we must rethink how we model planet formation and early evolution in the young universe," said study leader Guido De Marchi of the European Space Research and Technology Centre in Noordwijk, Netherlands.

### A Different Environment in Early Times

In the early universe, stars formed from mostly hydrogen and helium, and

very few heavier elements such as carbon and iron, which came later through supernova explosions.

"Current models predict that with so few heavier elements, the disks around stars have a short lifetime, so short in fact that planets cannot grow big," said the Webb study's co-investigator Elena Sabbi, chief scientist for Gemini Observatory at the National Science Foundation's NOIRLab in Tucson. "But Hubble did see those planets, so what if the models were not correct and disks could live longer?"

To test this idea, scientists trained Webb on the Small Magellanic Cloud, a dwarf galaxy that is one of the Milky Way's nearest neighbors. In particular, they examined the massive, star-forming cluster NGC 346, which also has a relative lack of heavier elements. The cluster served as a nearby proxy for studying stellar environments with similar conditions in the early, distant universe.

Hubble observations of NGC 346 from the mid 2000s revealed many stars about 20 to 30 million years old that seemed to still have planet-forming disks around them. This went against the conventional belief that such disks would dissipate after 2 or 3 million years.

"The Hubble findings were controversial, going against not only empirical evidence in our galaxy but also against the current models," said De Marchi. "This was intriguing, but without a way to obtain spectra of those stars, we could not really establish whether we were witnessing genuine accretion and the presence of disks, or just some artificial effects." Now, thanks to Webb's sensitivity and resolution, scientists have the first-ever spectra of forming, Sun-like stars and their immediate environments in a nearby galaxy.

*Continued on page 7*



## NGC 2146 and Supernova by Charles Painter

The image is 4 hours of exposure in 3 minutes subs from my driveway in Alpharetta using an 8" RC telescope at F/5.9 and an ZWO ASI2600MC Pro camera. Processed with PixInsight.

For more information:

[https://en.wikipedia.org/wiki/NGC\\_2146](https://en.wikipedia.org/wiki/NGC_2146)

<https://www.wis-tns.org/object/2024abfl>

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## Image Next Page: M42, M43, and NGC 1977 by Clay Turner

Clay writes: "I dug up some old data (from 17 October 2021) and played around with processing. This is Messier 42 (Orion Nebula), Messier 43 (De Mairan's Nebula), and NGC 1977 (the Running Man Nebula)." Clay made this image using a RASA 11-inch scope at his home observatory (Event Horizon Observatory).

He used 90 x 60-second subs to produce this image.

For more information see: [https://en.wikipedia.org/wiki/Messier\\_42](https://en.wikipedia.org/wiki/Messier_42)



**M42, M43, and NGC1977 by Clay Turner**

Continued from page 4

“We see that these stars are indeed surrounded by disks and are still in the process of gobbling material, even at the relatively old age of 20 or 30 million years,” said De Marchi. “This also implies that planets have more time to form and grow around these stars than in nearby star-forming regions in our own galaxy.”

## A New Way of Thinking

This finding refutes previous theoretical predictions that when there are very few heavier elements in the gas around the disk, the star would very quickly blow away the disk. So the disk’s life would be very short, even less than a million years. But if a disk doesn’t stay around the star long enough for the dust grains to stick together and pebbles to form and become the core of a planet, how can planets form?

The researchers explained that there could be two distinct mechanisms, or even a combination, for planet-forming disks to persist in environments scarce in heavier elements.

First, to be able to blow away the disk, the star applies radiation pressure. For this pressure to be effective, elements heavier than hydrogen and helium would have to reside in the gas. But the massive star cluster NGC 346 only has about ten percent of the heavier elements that are present in the chemical composition of our Sun. Perhaps it simply takes longer for a star in this cluster to disperse its disk.

The second possibility is that, for a Sun-like star to form when there are few heavier elements, it would have to start from a larger cloud of gas. A bigger gas cloud will produce a bigger disk. So there is more mass in the disk and therefore it would take longer to blow the disk away, even if the radiation pressure were working in the same way.

“With more matter around the stars, the accretion lasts for a longer time,” said Sabbi. “The disks take ten times longer to disappear. This has implications for how you form a planet, and the type of system architecture that you can have in these different environments. This is so exciting.”

The science team’s paper appears in the Dec. 16 issue of *The Astrophysical Journal* (<https://iopscience.iop.org/article/10.3847/1538-4357/ad7a63>).

Article image link: <https://hubblesite.org/contents/media/images/2024/135/01JC4374VR4T3VEPGF2JQF44BQ?news=true>

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](mailto: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

**President:** David Lumpkin [President@AtlantaAstronomy.org](mailto:President@AtlantaAstronomy.org)

**Program Coordinator:** Jo Welsh [Programs@AtlantaAstronomy.org](mailto:Programs@AtlantaAstronomy.org)

**Observing Chair:** Daniel Herron [Observing@AtlantaAstronomy.org](mailto:Observing@AtlantaAstronomy.org)

**Corresponding Secretary:** Tom Faber

[Focalpoint@AtlantaAstronomy.org](mailto:Focalpoint@AtlantaAstronomy.org)

**Treasurer:** Sharon Carruthers [Treasurer@AtlantaAstronomy.org](mailto:Treasurer@AtlantaAstronomy.org)

**Recording Secretary:** Open

**Board Chair:** Sharon Carruthers [Treasurer@AtlantaAstronomy.org](mailto:Treasurer@AtlantaAstronomy.org)

**Board:** Mark Banks

**Board:** Chuck Biskobing (Charlie Elliott)

**Board:** Open

**ALCor:** Open

**Elliott Chapter Director:** Steve Siedentop  
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**Elliott Astrophotography Coordinator:** Mike Mardis

**Elliott Chapter AL Liaison:** David Whalen

**Elliott Facilities Coordinator:** Matt Harvey  
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**Georgia Astronomy in State Parks:** Sharon Carruthers  
[Treasurer@AtlantaAstronomy.org](mailto:Treasurer@AtlantaAstronomy.org)

**PSSG Chairman:** Peter Macumber [pmacumber@nightsky.org](mailto:pmacumber@nightsky.org)

**PSSG Co-Chair:** Steve Siedentop

**Sidewalk Astronomy:** Open  
[sidewalkastronomy@AtlantaAstronomy.org](mailto:sidewalkastronomy@AtlantaAstronomy.org)

**Light Tresspass:** Ken Edwards, Contact info TBA

**Woodruff Observ. Coordinator:** Sharon Carruthers  
[Treasurer@AtlantaAstronomy.org](mailto:Treasurer@AtlantaAstronomy.org)

**AAC Webmaster:** Daniel Herron  
[Observing@AtlantaAstronomy.org](mailto:Observing@AtlantaAstronomy.org)

# Calendar by Tom Faber (Times EDT/EST unless noted)

## AAC Events are listed in BOLD

- Jan 2nd, Thursday: Quadrantid Meteor Shower Peak. Latest Sunrise in Atlanta: ~7:42 AM.
- Jan 3rd, Friday: Moon near Venus.
- Jan 6th, Monday: Moon First Quarter.
- Jan 13th, Monday: Full Moon. Moon occults Mars.
- Jan 16th, Thursday: Mars at Opposition.
- Jan 17th, Friday: Venus near Saturn evening. Mars, Castor, and Pollux in a line.
- Jan 18th, Saturday: Venus near Saturn. **AAC Meeting at Lost Corners 6:00PM.**
- Jan 21st, Tuesday: Moon Last Quarter.
- Jan 25th, Saturday: **CE Chapter Meeting, 4:00PM.**
- Jan 29th, Wednesday: New Moon.
- Jan 31st, Friday: Moon near Saturn evening.
- Feb 1st, Saturday: Moon near Venus evening.
- Feb 4th, Tuesday: Moon First Quarter.
- Feb 12th, Wednesday: Full Moon.
- Feb 15th, Saturday: **AAC Meeting at Lost Corners 6:00PM.**
- Feb 20th, Thursday: Moon Last Quarter.
- Feb 22th, Saturday: **CE Chapter Meeting, 4:00PM.**
- Feb 27th, Thursday: New Moon.
- Mar 6th, Thursday: Moon First Quarter.
- Mar 9th, Sunday: Daylight Saving Times begins at 2:00AM.
- Mar 14th, Friday: Full Moon.
- Mar 20th, Thursday: Spring Equinox 5:01AM.
- Mar 22nd, Saturday: Moon Last Quarter.
- Mar 29th, Saturday: New Moon.

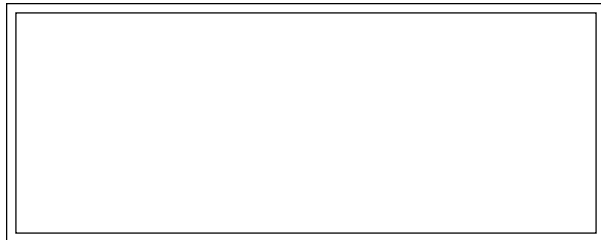
For more event listings and updates see the calendar at [www.atlantaastronomy.org](http://www.atlantaastronomy.org)

## 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](mailto: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 February is Saturday, January 25. Submissions received after the deadline will go in the following issue.**



FIRST CLASS



[www.betagg.com](http://www.betagg.com)



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We're here to help! Here's how to reach us:

Newsletter of The Atlanta Astronomy Club, Inc.

*The Focal Point*

