

# The Focal Point

The Atlanta Astronomy Club  
Established 1947  
November 2019

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Editor: Tom Faber

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## The November AAC Meeting

**Saturday, November 16 at 1:30 PM**

### At the Fernbank Science Center

The next general meeting of the Atlanta Astronomy Club will be held on Saturday, November 16, starting at 1:30PM. Our guest speaker will be club member Richard Jakiel, who will present a talk on a topic TBA.

As always, the AAC program is FREE and open to the public.

The program will be in the Fernbank Science Center's Resource Center (formerly the library). The Fernbank Science Center is located at 156 Heaton Park Dr. NE, Atlanta, GA 30303. (Phone: 678-874-7102).



## December Charlie Elliott Meeting

Come for the food, stay for the stars! Join us December 7th, 2019 at 3:30 p.m. at the Campbell Aquatics Building at the Charlie Elliott Wildlife Center for our quarterly potluck! Let us know you're coming by adding your name to our Potluck Signup Sheet:

<https://perfectpotluck.com/meals.php?t=NGRG4786>

If you've already been to any of our potlucks, you're probably looking forward to the good food (banana pudding!!) and good company that these events have become known for. Potlucks are great when everyone chips in and ours are no different. In addition to all of the good things like banana pudding, barbecue, and mac & cheese, we need help with set-up and clean-up as well. Please take a moment to sign up to bring something and/or help out at the link above.

Remember that our potluck dinners are NOT held at the usual meeting location. Instead stay on Marben Farm Rd, then turn right onto Murder Creek Church Rd and follow it to the aquatics building.

Check out our Facebook Page! 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/CharlieElliott>

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

### All of the Above

Observing Coordinator David Whalen will be on hand to discuss what you can see and image in the night sky this month. His short presentation will cover observing targets ranging from our own solar system to distant galaxies.

### Observing After the Meeting

All are invited to Jon Wood Astronomy Field immediately after the meeting (weather-permitting). As always, the event is free and open to the public.

### Workshops

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

## Upcoming Charlie Elliott Meetings

Upcoming Charlie Elliott meetings will be held on: December 7, 2019, January 25, February 22, March 21, April 18, May 23, 2020. Meetings start approximately 2 hours before sunset. Meeting rooms and start times vary, so please check back for updates or changes at: <http://ceastronomy.org/blog/home> Public stargazing on Jon Wood Astronomy Field follows the meeting, weather permitting.

# The 2019 Peach State Star Gaze - Pt 1

Photos by Tom Faber unless noted otherwise

The 2019 Peach State Star Gaze was held from Sunday, October 20th to Sunday, October 27th.

For the first time in many years, the weather was somewhat uncooperative this year. On Saturday, Oct 19 tropical system Nestor, which had developed in the western Gulf of Mexico, went through south Georgia bring rain to the PSSG area. We had clear to mostly clear skies with good observing on Sunday, Tuesday, and Wednesday nights, but the other evenings turned into movie nights.

Our keynote speaker this year was John O'Neal, NC Stargazer, who presented talks on both Friday and Saturday. John has been an avid amateur astronomer and astrophotographer for over 45 years. John is also a NASA Solar System Ambassador. On Friday John presented a primer on solar observing and imaging, and on Saturday John presented a talk about the NASA Parker Solar Probe.

Also on Friday Dave Lacko and Ed Albin (with input from Jim Roberts) presented a talk about radio astronomy activities at the Deerlick Astronomy Village. On Saturday Tom Faber presented a talk about the early history of the NASA manned space program leading up to the Apollo 11 landing on the moon in July 1969.

Friday evening the AAC hosted a brownie and ice cream social on the DAV pavilion.

After John O'Neal's talk on Saturday the door prize drawing was held. A number of attendees won various prizes. The big prizes this year were a motorized focuser from PrimaLuce Labs in Italy and a hard shell 20 quart ICER Cooler, both procured by Amy Little, and a Star Adventure Pro Pack tracking mount for cameras.

GC was back with Micki's Kitchen serving breakfasts, sandwiches, snacks, and dinners during the day and plenty of coffee, tea, hot chocolate, and brownies at night to keep us observers awake! We all had a great time and look forward to seeing everyone at the 2020 PSSG, which will be held October 11-18.

On the next several pages are images from the 2019 Peach State Star Gaze. Check back next month for more photos from the PSSG 2019, including some of the door prize winners.



*Micki's Kitchen next to the check-in building.*



*Amy Little's astrophotography for sale.*





*A colorful sunset fades as Jupiter appears Tuesday evening.*



*A 22 degree halo and sundogs at Monday's sunset.*

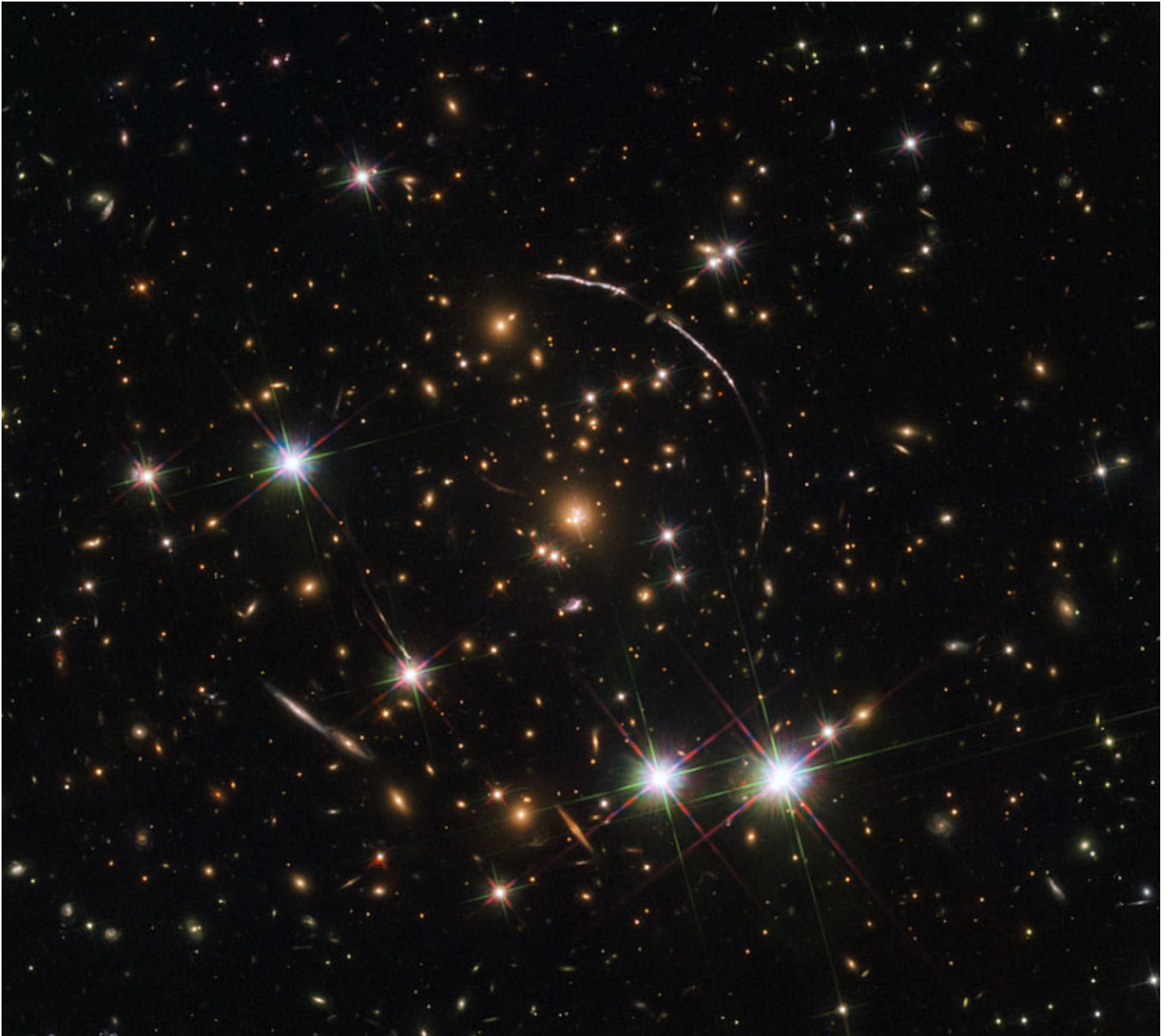




*The observing field and SW sky Wednesday evening. Taken with a Canon T5i on an iOptron SkyTrackerPro camera mount using a 18-135mm lens set at 18mm and a 30 second exposure at ISO-3200.*



Check back next month for more photos of the 2019 PSSG, including the speakers and door prize winners.



*This NASA Hubble Space Telescope photo reveals a cosmic kaleidoscope of a remote galaxy, which has been split into multiple images by an effect called gravitational lensing.*

*Gravitational lensing means that the foreground galaxy cluster is so massive that its gravity distorts the fabric of space-time, bending and magnifying the light from the more distant galaxy behind it. This “funhouse mirror” effect not only stretches the background galaxy image, but also creates multiple images of the same galaxy.*

*The lensing phenomenon produces at least 12 images of the background galaxy, distributed over four major arcs. Three of these arcs are visible in the top right of the image, while one counter arc is visible in the lower left — partially obscured by a bright foreground star within the Milky Way.*

*The galaxy, nicknamed the Sunburst Arc, is almost 11 billion light-years from Earth and has been lensed into multiple images by a massive foreground cluster of galaxies 4.6 billion light-years away.*

*Hubble uses these cosmic magnifying glasses to study objects that would otherwise be too faint and too small for even its extraordinarily sensitive instruments. The Sunburst Arc is no exception, despite being one of the brightest gravitationally lensed galaxies known.*

*The lens makes images of the Sunburst Arc that are between 10 and 30 times brighter than the background galaxy would normally look. The magnification allows Hubble to view structures as small as 520 light-years across that would be too small to see without the turboboost from the lensing effect. The structures resemble star forming regions in nearby galaxies in the local universe, allowing astronomers to make a detailed study of the remote galaxy and its environment.*

*Hubble’s observations show that the Sunburst Arc is similar to galaxies which existed at a much earlier time in the history of the universe, perhaps only 150 million years after the Big Bang.*

*Credits: NASA, ESA, and E. Rivera-Thorsen (Institute of Theoretical Astrophysics Oslo, Norway)*

## Hubble Captures a Dozen Galaxy Doppelgangers

NASA/STScI News Release - November 07, 2019

This NASA Hubble Space Telescope photo reveals a cosmic kaleidoscope of a remote galaxy, which has been split into multiple images by an effect called gravitational lensing.

Gravitational lensing means that the foreground galaxy cluster is so massive that its gravity distorts the fabric of space-time, bending and magnifying the light from the more distant galaxy behind it. This “funhouse mirror” effect not only stretches the background galaxy image, but also creates multiple images of the same galaxy.

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Hubble’s observations show that the Sunburst Arc is similar to galaxies which existed at a much earlier time in the history of the universe, perhaps only 150 million years after the Big Bang.

## Hubble Captures Galaxies' Ghostly Gaze

NASA/STScI News Release - October 28, 2019

When astronomers peer deep into space, they don't expect to find something staring back at them.

In this new Hubble Space Telescope image, an uncanny pair of glowing eyes glares menacingly in our direction. The piercing "eyes" are the most prominent feature of what resembles the face of an otherworldly creature.

But this is no ghostly apparition. Hubble is looking at a titanic head-on collision between two galaxies.

Each “eye” is the bright core of a galaxy, one of which slammed into another. The outline of the face is a ring of young blue stars. Other clumps of new stars form a nose and mouth. The entire system is catalogued as Arp-Madore 2026-424 (AM 2026-424), from the Arp-Madore “Catalogue of Southern Peculiar Galaxies and Associations.”

Although galaxy collisions are common—especially back in the young universe—most of them are not head-on smashups, like the collision that likely created this Arp-Madore system. The violent encounter gives the system an arresting "ring" structure for only a short amount of time, about 100 million years. The crash pulled and stretched the galaxies' disks of gas, dust, and stars outward. This action formed the ring of intense star formation that shapes the nose and face.

Ring galaxies are rare; only a few hundred of them reside in our larger

cosmic neighborhood. The galaxies have to collide at just the right orientation to create the ring. The galaxies will merge completely in about 1 to 2 billion years, hiding their messy past.

The side-by-side juxtaposition of the two central bulges of stars from both galaxies also is unusual. Because the bulges that make the eyes appear to be the same size, it is evidence that two galaxies of nearly equal proportions were involved in the crash, rather than more common collisions where small galaxies are gobbled up by their larger neighbors.

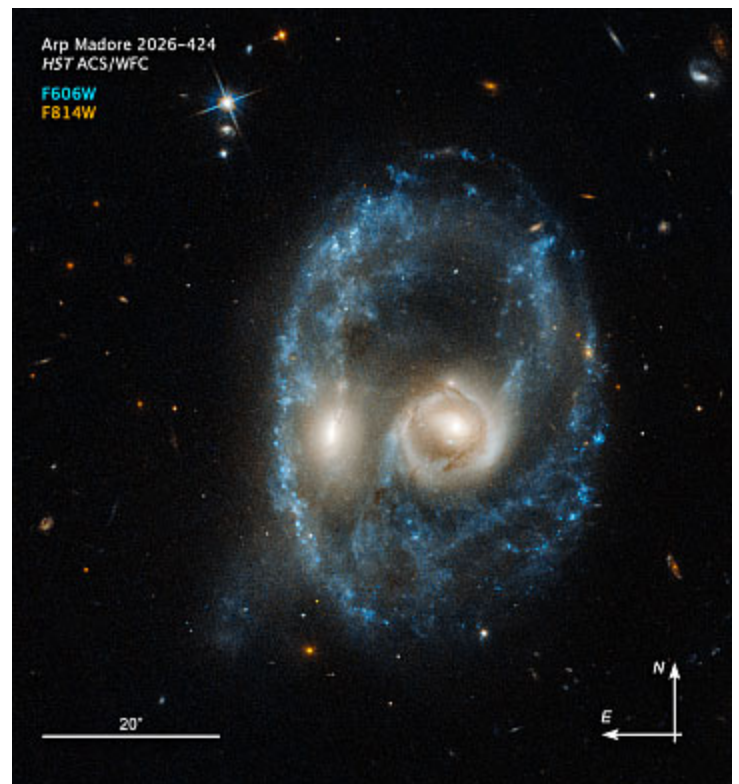
Hubble observed this unique system as part of a “snapshot” program that takes advantage of occasional gaps in the telescope’s observing schedule to squeeze in additional pictures.

Astronomers plan to use this innovative Hubble program to take a close look at many other unusual interacting galaxies. The goal is to compile a robust sample of nearby interacting galaxies, which could offer insight into how galaxies grew over time through galactic mergers. By analyzing these detailed Hubble observations, astronomers could then choose which systems are prime targets for follow-up with NASA’s James Webb Space Telescope, scheduled to launch in 2021.

Astronomer Halton Arp published his compendium of 338 unusual-looking interacting galaxies in 1966. He later partnered with astronomer Barry Madore to extend the search for unique galactic encounters in the southern sky. Several thousand galaxies are listed in that survey, published in 1987.

The Hubble image of AM 2026-424 was taken June 19, 2019, in visible light by the Advanced Camera for Surveys. The system resides 704 million light-years from Earth.

Credits: NASA, ESA, and J. Dalcanton, B.F. Williams, and M. Durbin (University of Washington)



## The Night Sky Network (NSN)

As a member of the Atlanta Astronomy Club, you have a free membership in NASA's Night Sky Network (NSN). The Night Sky Network was started in 2004 and is a nationwide coalition of more than 400 amateur astronomy clubs that was developed and is operated for NASA by the Astronomical Society of the Pacific.

It functions to educate the public about NASA missions through local astronomy clubs by providing the clubs with information and outreach materials about NASA activities. Only members of registered astronomy clubs can become members of the NSN.

On a more practical level, the NSN provides the AAC with a website on which the AAC can maintain a club roster of members, maintain a calendar of events and send out e-mails to our members about Club activities. (In these days of anti-spam filters on most e-mail programs, this has been an invaluable resource for keeping members informed.)

When you are enrolled on the NSN you receive an e-mail from them on behalf of the AAC, with your User ID and your password. You can then go in and edit your membership information. If, for example, you do not wish to receive e-mails about upcoming events, you can check the box requesting no e-mails; or you can delete your e-mail address if you do not want ANY e-mails sent to you from the NSN.

If you do this, or make other changes (such as updating your contact information), PLEASE either forward a note to me at [Treasurer@AtlantaAstronomy.org](mailto:Treasurer@AtlantaAstronomy.org), or make a note in the "Notes on Membership" box, as I may think the change was an oversight when you were registered and not a deliberate choice on your part and I would re-enter the information.

Daniel Herron, Mark Banks and Sharon Carruthers are the AAC's NSN coordinators. If you have a problem or question, contact us for help.

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



The **Atlanta Astronomy Club, Inc.**, one of the South's largest and oldest astronomical society, meets at **3:00 P.M.** on the 2nd 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:** Dave Lumpkin [President@AtlantaAstronomy.org](mailto:President@AtlantaAstronomy.org)

**Program Chair:** Ken Poshedly [Programs@AtlantaAstronomy.org](mailto:Programs@AtlantaAstronomy.org)

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

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

**Recording Secretary:** Lilli Lindbeck,

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

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

**Board:** Brigitte Fessele, [bhfessele1@gmail.com](mailto:bhfessele1@gmail.com)

**Board:** Open

**Board:** Steve Phillips [sandsphillips@att.net](mailto:sandsphillips@att.net)

**ALCor:** Ken Olson, [keneolson@yahoo.com](mailto:keneolson@yahoo.com)

**Elliott Chapter Director:** Mike Shaw [director@ceastronomy.org](mailto:director@ceastronomy.org)

**Elliott Observing Supervisor:** Steve Siedentop

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**Elliott Recording Secretary:** Daniel de la Reza

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**Elliott Outreach Coordinator:** Marie Lott

[outreach@ceastronomy.org](mailto:outreach@ceastronomy.org)

**Elliott Astrophotography Coordinator:** Mike Mardis

**Elliott Chapter AL Liaison:** David Whalen

**Elliott Facilities Coordinator:** Matt Harvey

[facilities@CEastronomy.org](mailto:facilities@CEastronomy.org)

**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:** Open

**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

Nov 11th, Monday: Mercury transits the Sun: First contact 7:35AM, Mid-transit 10:20AM, Last contact 1:04PM. (Last Mercury transit until Nov 13, 2032).

Nov 12th, Tuesday: Full Moon.

Nov 16th, Saturday: **AAC Meeting at Fernbank 1:30PM.** Leonid Meteor Shower peak.

Nov 19th, Tuesday: Moon Last Quarter.

Nov 23rd, Saturday: Venus near Jupiter evening.

Nov 24th, Sunday: Moon near Mars morning.

Nov 25th, Monday: Moon near Mercury morning.

Nov 26th, Tuesday: New Moon.

Nov 28th, Thursday: Moon near Venus evening. Mercury at greatest western elongation.

Nov 29th, Friday: Moon near Saturn evening.

Dec 4th, Wednesday: Moon First Quarter.

Dec 6th, Friday: Saturn, Venus, & Jupiter (very low) lined up in evening twilight.

Dec 7th, Saturday: **CEA Chapter Meeting & Potluck.**

Dec 8th, Sunday: Earliest Sunset in Atlanta: ~5:27PM EST.

Dec 12th, Thursday: Full Moon.

Dec 13th, Friday: Venus near Saturn evening.

Dec 14th, Saturday: Geminid Meteor Shower Peak.

Dec 19th, Thursday: Moon Last Quarter.

Dec 21st, Saturday: Winter Solstice 11:19PM.

Dec 23rd, Monday: Moon near Mars morning.

Dec 26th, Thursday: New Moon.

Dec 27th, Friday: Moon near Saturn evening. Jupiter conjunction with Sun.

Dec 28th, Saturday: Moon near Venus evening.

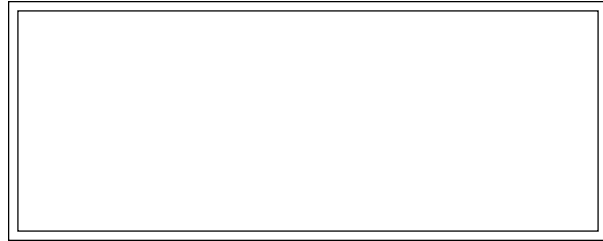
**For more event listings and updates see the calendar at [www.atlantaastronomy.org](http://www.atlantaastronomy.org)**

## Atlanta Astronomy Club Listserv

Subscribe to the Atlanta Astronomy Club Mailing List: The name of the list is: AstroAtlanta. The address for messages is: [AstroAtlanta@yahoogroups.com](mailto:AstroAtlanta@yahoogroups.com) . To add a subscription, send a message to: [AstroAtlanta-subscribe@yahoogroups.com](mailto:AstroAtlanta-subscribe@yahoogroups.com) .

## 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 December is Sunday, November 24. Submissions received after the deadline will go in the following issue.**



FIRST CLASS



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

Newsletter of The Atlanta Astronomy Club, Inc.

