

# The Focal Point

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The Atlanta Astronomy Club  
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Editor: Tom Faber

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## December Holiday Potluck & Meeting

The AAC's annual Holiday Potluck and Meeting will be at the AFS building in Smyrna, on Saturday, December 9 beginning at 6PM. We will supply ham, turkey, soft drinks & coffee and ask you to bring the sides and/or desserts for 6-10 people. Family favorites and ethnic dishes are especially welcome. If you could drop me a line (Treasurer@AtlantaAstronomy.org) or a call at 770-941-4640 to tell me what you plan to bring, it would help prevent too many duplicate dishes. Also, if you have any folding tables & chairs that you can bring, it would really help us out. Suggested dishes to bring are:

**APPETIZERS:** Deviled Eggs, Chips & Dip, Pretzels, Cheese & Crackers

**SIDES:** Pickles/Relish Tray, Buns & Rolls

**VEGGIE SIDES:** Mashed Potatoes, Stuffing, Sweet Potatoes, Pasta/Rice, Green Bean Casserole, Corn Pudding, Peas, Carrots, Tossed Salad, Jelled Salad, Coleslaw

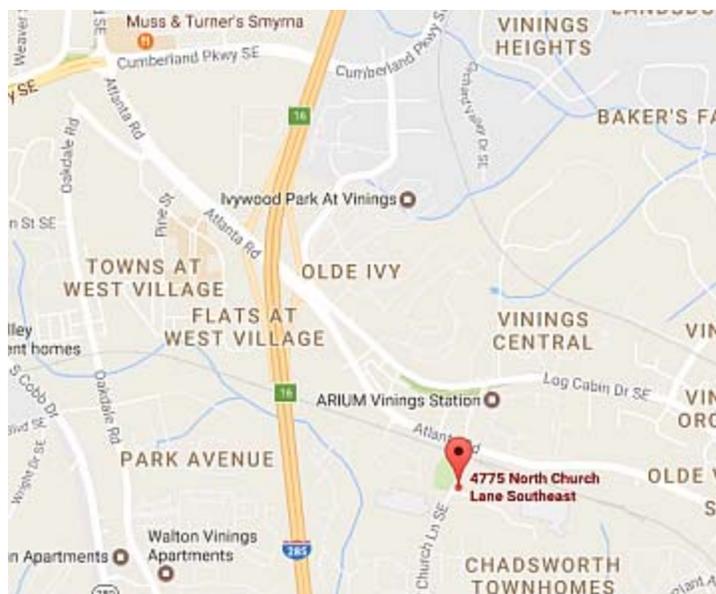
**DESSERTS:** Cookies, Squares, Cake, Pies, Puddings

You can RSVP with your dish at: [www.PerfectPotluck.com/BFOD9078](http://www.PerfectPotluck.com/BFOD9078)

After we have dinner there will be a short program, topic TBA.

**LOCATION:** Atlanta Freethought Hall, 4775 North Church Lane, Smyrna 30080 / Atlanta 30339

Our tentative speaker will be AAC member Daniel Herron, who will repeat his talk about his trip to Wyoming to view and photograph the total solar eclipse on August 21, for those who missed the November meeting. Please join us for this very interesting and informative talk. All Astronomy club meetings are free and open to the public. For more information on the Club go to [www.atlantaastronomy.org](http://www.atlantaastronomy.org)



Credit: Google Maps



One of the many images of the total eclipse taken by Daniel Herron.

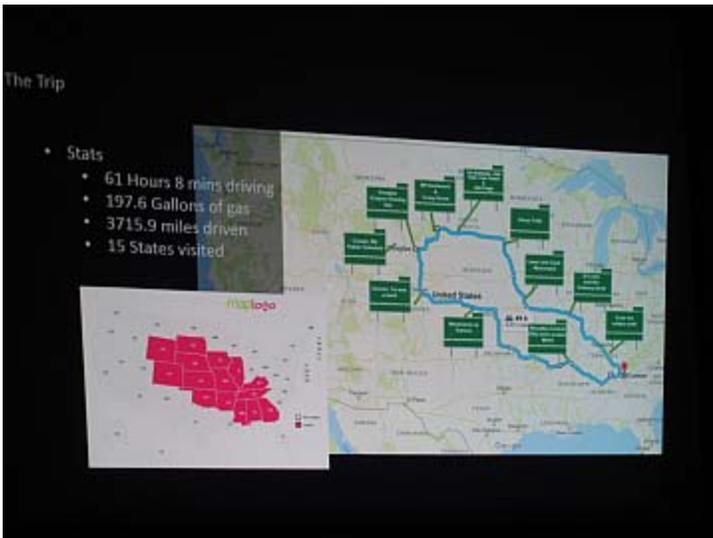
# November AAC Meeting Report

Photos by Tom Faber unless noted

The November AAC general meeting was held on Saturday, November 11th at the AFS building in Smyrna. About 25 members and guests were present. Our featured speaker was long time AAC member Daniel Herron. Daniel presented a talk about his trip to view and photograph the total solar eclipse on August 21 (photo below). Daniel took a 1.5 week road trip to view and photograph the solar eclipse from a location in eastern Wyoming. He talked about how he prepared for the trip and how he was set up to do imaging of the eclipse using computer controlled DSLRs, the trip to Wyoming, and his experiences during the eclipse. After Daniel's talk he answered a number of questions. After the Q&A there were announcements by AAC officers about upcoming events and activities. The meeting then adjourned and a number of attendees went to a nearby restaurant for dinner and more astronomy discussions.



An image showing the "Diamond Ring" effect.



Above: An amazing image Daniel made showing Earthshine on the moon during totality.

## The Next Charlie Elliott Meeting

### Meeting Details - Potluck!

Join us on Saturday December 16th, 2017 at 3:00 p.m. in the Campbell Aquatics Building at Charlie Elliott Wildlife Center for our quarterly potluck! If you have been to one of our potlucks, you're probably looking forward to the good food (banana pudding!!) and good company 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 (John!), barbecue, and mac & cheese, we need help with set up and clean up as well. If you can bring some food or offer a few minutes of your time for setup or clean up, click here to find out how you can help. Note that we'll be meeting in the Campbell Aquatics Building rather than our normal venue in the Shepard Building. Don't worry, it's not far. You can see our usual meeting place across the pond.



*Credit: Google Maps*

### All of the Above!

David Whalen, Charlie Elliott Astronomy Observing Supervisor and close friend of Father Scopemas, will give a short talk about what you can expect to see in the sky this month with binoculars and small telescopes, as well as the monthly observing challenge. If you've been to one of our meetings, you know that David is a dynamic and engaging speaker and always delivers a lot of great information with plenty of laughs! Be sure to ask for the monthly target list and a SkyMap! David will be joined by Astrophotography Coordinator Mark Woolridge who will cover the imaging challenges of the month and tips on how to image them.

### Observing After the Meeting

All are invited to Jon Wood Astronomy Field immediately after the meeting for observing (weather-permitting).

### Technical Workshops

Astrophotographer and Charlie Elliott Astronomy member Tim Geib will join us for an image processing primer on the Veil Nebula and PixInsight. Tim will also cover the unique details of capturing wide field data of this target with a prototype imaging rig he's developing. This workshop will be approximately 20 to 30 minutes long. The Tech Talks are your chance to share something you've learned. If you have an idea for a 15-30 minute discussion or presentation that you would like to see or would like to give, contact the Charlie Elliott Program Coordinator, Steve Siedentop.

Future Charlie Elliott meetings will be held on: January 20, February 17, March 17, April 14, May 12, June 16. Meetings start approximately 2 hours before sunset.

## The October Charlie Elliott Meeting

Stephanie Dickson, Secretary, Charlie Elliott Chapter

**Meeting Minutes:** 10/21/17

**Attendees:** Meeting 24, Field 15

Meeting time: 5:05pm, Meeting called to order by: Mike Shaw

Outreach: 11/4 - Becoming an Outdoor Woman, 1-4:30pm, 11/17 - South Salem Elem 9am-2pm, TBD - Covington Municipal Airport

**Other news:**

Ken (ALPO)

10/27-10/28 GA Regional Astronomy Association. Saturday night ALPO award Dinner \$30

10/15/17 Peach State Star Gaze

Tim - Got solar panel off shed, needs to be replaced/repaired. Shed is being reorganized for better access.

David gave his presentation on "All of the Above" at: 5:19pm - 11/13 Jupiter and Venus at .30 degrees separation, 11/5 Daylight Savings time ends, Constellation Update, Nov. Target List: Relaxing (Naked eye/binocular), Intriguing (Small-Med Scope), Challenge - NGC404 Ghost of Mirach, Celestial Events to note, 11/18/17 next meeting.

Mark (AP Coordinator) Targets M31, Gave beginner list, intermediate list (M31), advanced list (flying horse nebula aka wizard), narrow-band target.

Main Presentation started at: 5:45pm:

Presenter: Richard Jakiel, Subject: Charles Messier - The Comet Ferret

Notes: History of life, Known for object list, But also a serious comet hunter, Good draftsman, esp with stars, Discovered/Co-discovered 20 comets, Saw 44 of 50 available at time.

Field conditions: Cloudy. End time: 6:50pm

## The November Charlie Elliott Meeting

Stephanie Dickson, Secretary, Charlie Elliott Chapter

**Meeting Minutes:** 11/18/17

Pre-meeting start time: 2:30pm, Pre-meeting presenter: Valerie Whalen, Pre-meeting topic: Constellation Hunter Northern Sky Program/Requirements

**Attendees:** Meeting 23, Field 0

Meeting time: 3:09pm, Meeting called to order by: Mike Shaw, Director  
New visitor greeting

Outreach: Nov 2017 Girl Scouts, Nov 2017 Newton Airport, Jan 2018 Berkley Lakes, Feb 2018 Morgan Center, March 2018 Elementary School

**Other news:** Going forward Q/A on Facebook. Board will answer on Facebook and bring a few selected questions to the next meeting.

Tim Geig, Equipment Coordinator: New homeless mount, grey (from Mike Mardis/Rich), One 16" going to Deerlick, Laminated instructions, Protect tubes from insects, Work on solar panels.

Ken Poshedly, ALPO: Bring AAC meetings back to Fernbank. (Now in Smyrna, not an ideal location), Villa Rica observing site decommissioned. Need home for 20" scope with mount.

December meeting - Christmas Pot Luck on 16th. Tim Geig will have a pre-meeting on AP/Nebula, etc.

David Whalen gave his presentation on "All of the Above" at: 3:29pm: Current conditions - Yucky! New moon, Only planet by naked eye is Saturn until 11/23 when Mercury creeps up, Comet - ASASSN1, 29P, 24P, 62P, Geminid Meteor Shower Dec 13-14, Constellation Updates, Nov/Dec

*Continued on pg 5*

# Solar System's First Interstellar Visitor Dazzles Scientists

JPL News | November 20, 2017

Astronomers recently scrambled to observe an intriguing asteroid that zipped through the solar system on a steep trajectory from interstellar space—the first confirmed object from another star.

Now, new data reveal the interstellar interloper to be a rocky, cigar-shaped object with a somewhat reddish hue. The asteroid, named 'Oumuamua by its discoverers, is up to one-quarter mile (400 meters) long and highly-elongated—perhaps 10 times as long as it is wide. That aspect ratio is greater than that of any asteroid or comet observed in our solar system to date. While its elongated shape is quite surprising, and unlike asteroids seen in our solar system, it may provide new clues into how other solar systems formed.

The observations and analyses were funded in part by NASA and appear in the Nov. 20 issue of the journal *Nature*. They suggest this unusual object had been wandering through the Milky Way, unattached to any star system, for hundreds of millions of years before its chance encounter with our star system.

“For decades we've theorized that such interstellar objects are out there, and now - for the first time - we have direct evidence they exist,” said Thomas Zurbuchen, associate administrator for NASA's Science Mission Directorate in Washington. “This history-making discovery is opening a new window to study formation of solar systems beyond our own.”

Immediately after its discovery, telescopes around the world, including ESO's Very Large Telescope in Chile, were called into action to measure the object's orbit, brightness and color. Urgency for viewing from ground-based telescopes was vital to get the best data.

Combining the images from the FORS instrument on the ESO telescope using four different filters with those of other large telescopes, a team of astronomers led by Karen Meech of the Institute for Astronomy in Hawaii found that 'Oumuamua varies in brightness by a factor of 10 as it spins on its axis every 7.3 hours. No known asteroid or comet from our solar system varies so widely in brightness, with such a large ratio between length and width. The most elongated objects we have seen to date are no more than three times longer than they are wide.

“This unusually big variation in brightness means that the object is highly elongated: about ten times as long as it is wide, with a complex, convoluted shape,” said Meech. “We also found that it had a reddish color, similar to objects in the outer solar system, and confirmed that it is completely inert, without the faintest hint of dust around it.”

These properties suggest that 'Oumuamua is dense, composed of rock and possibly metals, has no water or ice, and that its surface was reddened due to the effects of irradiation from cosmic rays over hundreds of millions of years.

A few large ground-based telescopes continue to track the asteroid, though it's rapidly fading as it recedes from our planet. Two of NASA's space telescopes (Hubble and Spitzer) are tracking the object the week of Nov. 20. As of Nov. 20, 'Oumuamua is travelling about 85,700 miles per hour (38.3 kilometers per second) relative to the Sun. Its location is approximately 124 million miles (200 million kilometers) from Earth -- the distance between Mars and Jupiter - though its outbound path is about 20 degrees above the plane of planets that orbit the Sun. The object passed Mars's orbit around Nov. 1 and will pass Jupiter's orbit in May of 2018. It will travel beyond Saturn's orbit in January 2019; as it leaves our solar system, 'Oumuamua will head for the constellation Pegasus.

Observations from large ground-based telescopes will continue until the object becomes too faint to be detected, sometime after mid-December.



*Artist's concept of interstellar asteroid 1I/2017 U1 ('Oumuamua) as it passed through the solar system after its discovery in October 2017. The aspect ratio of up to 10:1 is unlike that of any object seen in our own solar system. Image credit: European Southern Observatory / M. Kornmesser*

NASA's Center for Near-Earth Object Studies (CNEOS) continues to take all available tracking measurements to refine the trajectory of 1I/2017 U1 as it exits our solar system.

This remarkable object was discovered Oct. 19 by the University of Hawaii's Pan-STARRS1 telescope, funded by NASA's Near-Earth Object Observations (NEOO) Program, which finds and tracks asteroids and comets in Earth's neighborhood. NASA Planetary Defense Officer Lindley Johnson said, “We are fortunate that our sky survey telescope was looking in the right place at the right time to capture this historic moment. This serendipitous discovery is bonus science enabled by NASA's efforts to find, track and characterize near-Earth objects that could potentially pose a threat to our planet.”

Preliminary orbital calculations suggest that the object came from the approximate direction of the bright star Vega, in the northern constellation of Lyra. However, it took so long for the interstellar object to make the journey - even at the speed of about 59,000 miles per hour (26.4 kilometers per second) -- that Vega was not near that position when the asteroid was there about 300,000 years ago.

While originally classified as a comet, observations from ESO and elsewhere revealed no signs of cometary activity after it slingshotted past the Sun on Sept. 9 at a blistering speed of 196,000 miles per hour (87.3 kilometers per second).

The object has since been reclassified as interstellar asteroid 1I/2017 U1 by the International Astronomical Union (IAU), which is responsible for granting official names to bodies in the solar system and beyond. In addition to the technical name, the Pan-STARRS team dubbed it 'Oumuamua (pronounced oh MOO-uh MOO-uh), which is Hawaiian for “a messenger from afar arriving first.”

Astronomers estimate that an interstellar asteroid similar to 'Oumuamua passes through the inner solar system about once per year, but they are faint and hard to spot and have been missed until now. It is only recently that survey telescopes, such as Pan-STARRS, are powerful enough to have a chance to discover them.

“What a fascinating discovery this is!” said Paul Chodas, manager of the Center for Near-Earth Object Studies at NASA's Jet Propulsion Laboratory, Pasadena, California. “It's a strange visitor from a faraway star system, shaped like nothing we've ever seen in our own solar system neighborhood.”

Target List: Relaxing, Intriguing, Taxing, Observing Challenge: One of the comets, Celestial Events to note.

AP - Mark Woolridge: Beginner list, Intermediate Target - M45 - Pleiades, Advanced M33, Narrowband/Expert Horsehead Nebula.

Main Presentation started at: 4:14pm

Intro: Tim Geig

Presenter: Lloyd Smith, Subject: Deep Sky West.

Notes: Helped design Deep Sky West, From Roswell GA, Went over his astronomy history and how it got him started, Looked at taking AP remote but where? Want durability. Built on a friend's land in NM, Went over how DSW runs, redundancies, worst case, Who has spaces. 22 piers on site. (Currently only 3 available), Showed process photos. Opened August 2015. Took 3 months for initial build. To expand took 2 months. Went over security of site, fully insured. 3 part-time staffers. Can watch for power outages & reset/reboot remotely. People can rent pier for a year with support or choose an annual membership with a group based on the desired targets. Membership ship vary between \$600-2400/year. Team can submit requests and then DSW sends data. Download free data at [deepskywest.com](http://deepskywest.com). You have to process LRGB stack.

Meeting Ended: About 5:45pm.

Field conditions: Very overcast

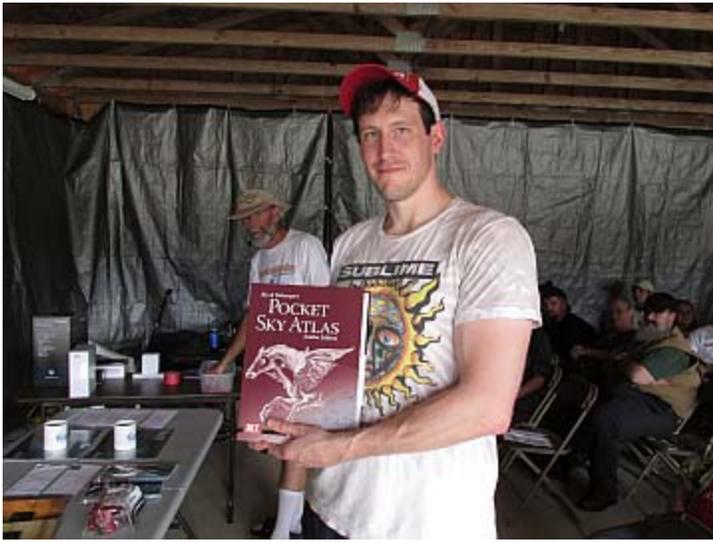
## The 2017 Peach State Star Gaze - Pt 2

Photos by Tom Faber unless noted otherwise

Here are more photos from the 24th annual Peach State Star Gaze which was held from Sunday, October 15th to Sunday, October 22nd.

**The door prize drawing:**





The grand prize, an ED102 Air-Spaced Triplet refractor provided by *Explore Scientific*, was won by Marie Lott. Scott W. Roberts of *Explore Scientific* drew the prize winning ticket then presented the prize to Marie.



Images to the right & on the next page: Some thin cirrus moved through on Saturday and brought some amazing atmospheric optics displays. The photo right shows sundogs to the right and left of the sun. Circling the sun is a faint 22° halo. Above the sun and dipping down to touch the 22° halo is the Upper Tangent Arc. Just above the Upper Tangent Arc is the rarer Parry arc.



Top: A bright 120° parhelion along a section of the Parhelic Circle. The 120° parhelia form at 120° to the right and left of the sun.

Bottom: 22° halo with a fainter Upper Tangent Arc..

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)

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**Recording Secretary:** Lilli Lindbeck,  
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**Board Chair:** Sharon Carruthers [Treasurer@AtlantaAstronomy.org](mailto:Treasurer@AtlantaAstronomy.org)

**Board:** Brigitte Fessele, Contact info TBA

**Board:** Open

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

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

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**Elliott Astrophotography Coordinator:** Mark Wolridge

**Elliott Chapter ALCor:** Jack Fitzmier

**Elliott Coordinator:** Lacy Mitchell, [Lacy.Mitchell@dnr.ga.gov](mailto:Lacy.Mitchell@dnr.ga.gov)

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**Elliott Outreach Coordinator:** Dan Thoman  
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[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 Trespass:** Ken Edwards, Contact info TBA

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

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

## AAC Events are listed in BOLD

- Dec 3rd, Sunday: Full Moon near Aldebaran.
- Dec 7th, Thursday: Earliest Sunset in Atlanta: ~5:27PM EST.
- Dec 9th, Saturday: **AAC Holiday Potluck at the AFS Building at 6PM.**
- Dec 11th, Monday: Moon Last Quarter.
- Dec 13th, Wednesday: Moon near Mars morning. Mercury at inferior conjunction.
- Dec 14th, Thursday: Moon near Jupiter morning. Gemmid Meteor Shower morning.
- Dec 16th, Saturday: **CEA Chapter Meeting.**
- Dec 18th, Monday: New Moon.
- Dec 21st, Thursday: Winter Solstice at 1:28AM. Saturn in Conjunction with Sun. Ursid meteor shower peaks after midnight.
- Dec 26th, Tuesday: Moon First Quarter.
- Dec 30th, Saturday: Moon occults Aldebaran: Disappears ~6:09PM, reappears ~6:52PM.
- Jan 1st, Monday: Mercury at Greatest Elongation West.
- Jan 2nd, Tuesday: Full Moon.
- Jan 4th, Thursday: Earth at Aphelion. Latest Sunrise in Atlanta: ~7:42 AM.
- Jan 7th, Sunday: Conjunction Mars and Jupiter morning.
- Jan 8th, Monday: Moon Last Quarter.
- Jan 9th, Tuesday: Venus at superior conjunction.
- Jan 12th, Friday: Conjunction Mercury and Saturn morning.
- Jan 13th, Saturday: **AAC Meeting. Location and time TBA.**
- Jan 15th, Monday: Grouping of Moon, Mercury, and Saturn morning.
- Jan 16th, Tuesday: New Moon.
- Jan 20th, Saturday: **CEA Chapter Meeting.**
- Jan 24th, Wednesday: Moon First Quarter.

For more event listings 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 January is Friday, December 22. Submissions received after the deadline will go in the following issue.**



FIRST CLASS



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



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

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Newsletter of The Atlanta Astronomy Club, Inc.

FROM:

