

# The Focal Point

The Atlanta Astronomy Club  
Established 1947  
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Editor: Tom Faber

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## The March AAC Meeting

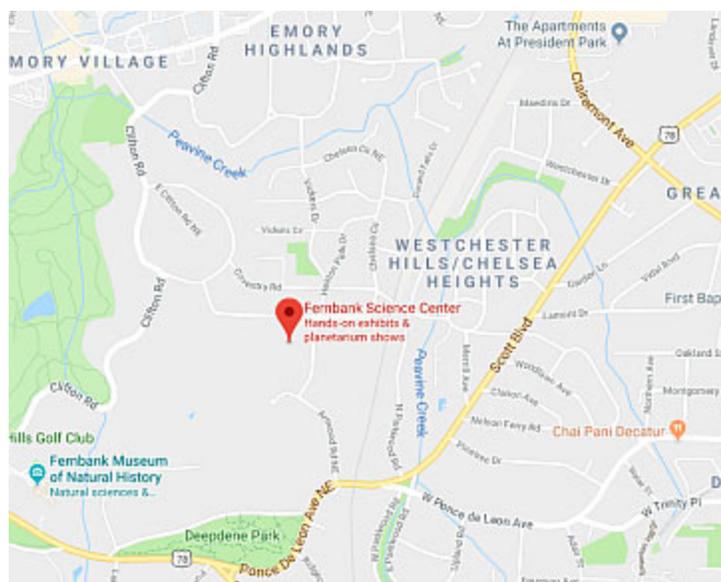
**Saturday, March 21 at 1:30 PM**

**At the Fernbank Science Center**

The next general meeting of the Atlanta Astronomy Club will be held on Saturday, March 21, starting at 1:30PM. Our guest speaker and topic are To Be Determined.

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).



Credit: Google Maps

## March is Membership Renewal Month

The AAC has moved to a “one-date-for-all” membership renewal. ALL CLUB MEMBERS, with certain exceptions, should submit their \$30 dues for 2020 by the end of March. Please send your renewals to AAC Treasurer Sharon Carruthers, renew online using PayPal, or you can bring your renewal to the meeting. For more information see:

[http://atlantaastronomy.org/?page\\_id=22](http://atlantaastronomy.org/?page_id=22)

***Thank You for your support of the AAC!***

## The 2020 Peach State Star Gaze

Be sure to mark our calendars for the next Peach State Star Gaze. This year the PSSG will be held from Sunday, October 11 through Sunday, October 18. New Moon will occur on Friday, October 16. More details will be provided as they become available.

## Upcoming Charlie Elliott Meetings

March 21, 2020 (5:30 p.m.), April 18, 2020 (6 p.m.), May 23, 2020 (6:30 p.m.). Start times may change as the meeting date approaches. Meetings start approximately 2 hours before sunset. Meeting rooms and start times vary and occasionally meeting dates change under unusual circumstances, so please check back here for details. Public stargazing on Jon Wood Astronomy Field follows the meeting, weather permitting.

## The Astronomical League

As a member of the **Atlanta Astronomy Club** you are automatically also a member of the **Astronomical League**, a nation wide affiliation of astronomy clubs. Membership in the AL provides a number of benefits for you. They include:

- \* You will receive *The Reflector*, the AL’s quarterly newsletter.
- \* You can use the Book Service, through which you can buy astronomy-related books at a 10% discount.
- \* You can participate in the Astronomical League’s Observing Clubs. The Observing Clubs offer encouragement and certificates of accomplishment for demonstrating observing skills with a variety of instruments and objects. These include the Messier Club, Binocular Messier Club, the Herschel 400 Club, the Deep Sky Binocular Club, and many others.

To learn more about the Astronomical League and its benefits for you, visit <http://www.astroleague.org>

# February AAC Meeting Report

Photos by Ken Poshedly

The February meeting of the AAC was held at the Fernbank Science Center Resource Center, beginning at 1:30PM, on Saturday, February 15. There were about 20 members and guests present. Our guest speaker was AAC Observing Chairman Daniel Herron. Daniel presented a talk about how to do a “Messier Marathon.”

Ken Poshedly writes about the talk: “AAC Observing Chairman Dan Herron as he educates and inspires the crowd of about 20 visitors and guests with his presentation at the club’s February 15 meeting on how to properly do a Messier Marathon. Dan’s program included everything from a little background on Charles Messier to which objects to go for first and to the final objects to try for and when. Remarkably, he also included his own recommendation as to “qualified” break times, when certain objects have been logged and there’s slack time before the next group is easily caught. The presentation is available online as a pdf file for downloading at:”

[http://www.atlantaastronomy.org/documents/Marathon\\_Du\\_Messier-Dherron.pdf](http://www.atlantaastronomy.org/documents/Marathon_Du_Messier-Dherron.pdf)



## March Charlie Elliott Meeting

### Potluck Dinner! A Feast for All!

Come for the food, stay for the stars! Join us Saturday, March 21, 2019 at 5:30 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.

Also, check out our Facebook Page! 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/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.

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*Photo: Science educator Christi Whitworth of the Roper Mountain Observatory & Science Center (Greenville, SC) presented a program "Astronomers and the Public" on January 25, where she covered the history of how celestial discoveries were announced and how important this was, considering that in some cultures, astronomical data was used for astrological prognostication. Also, the study of astronomy has a history of receiving financial and social support from many institutions, especially the Church, which was its largest source of support between the 12th century to the Enlightenment (17th to 19th century).*



## January Charlie Elliott Mtg Minutes

By Mike Mardis

Meeting Minutes 1/25/2020 at the Charlie Elliott Aquatic Center:

**Pre-meeting:** N/A

### Meeting:

Date/Time 1/25/2020 at 1530-2200

Facilitator Mike Shaw

Meeting attendees 20

### Agenda:

Announcements:

- T-shirt/sticker pickup
- New gate code
- Peach State Star Gaze
- 1/25/2020/4pm AAC speaker subject "Science Communicators in History"
- Welcome/Overview
- Radcliffe Wave discovered in Milky Way
- 5-7bil old dust discovered in meteorite
- SpaceX Starlink testing painting some of their low orbit satellites black to protect the night sky

Speaker ( Christi Whitworth )

Q&A / discussion

Field participants: 20

### Outreach by Marie Lott:

- Trip Elementary in Grayson
- Pucket's Mill
- Morgan Co
- Covington
- Starling

Awards by: David Whalen N/A

### Briefing speaker/topic:

**David Whalen** "January Update"

Weather, Solar System, Solar update, Lunar orbit dynamics, Venus, Mercury, Jupiter, Mars, Saturn, Comet Panstarrs, Constellation Update, Targets

**Ken Poshedly** ALPO Journal

**Christi Whitworth** "Astronomers and the Public" (photo left)  
Historical path of astronomy information to laymen, Radio, Print, TV, Internet, Youtube, Facebook, Twitter, Instagram, Pinterest, LinkedIn, Ticktok, Tour of the largest refractor telescope in America

### Handouts by:

David Whalen Evening Sky Map, Target List

Ken Poshedly ALPO Journals

### Other news by:

Next meeting - Charlie Elliott Conference Room B at 4:30pm on 2/22/2020



### **M31 Image by Amy Little (a.k.a. Amy Astro)**

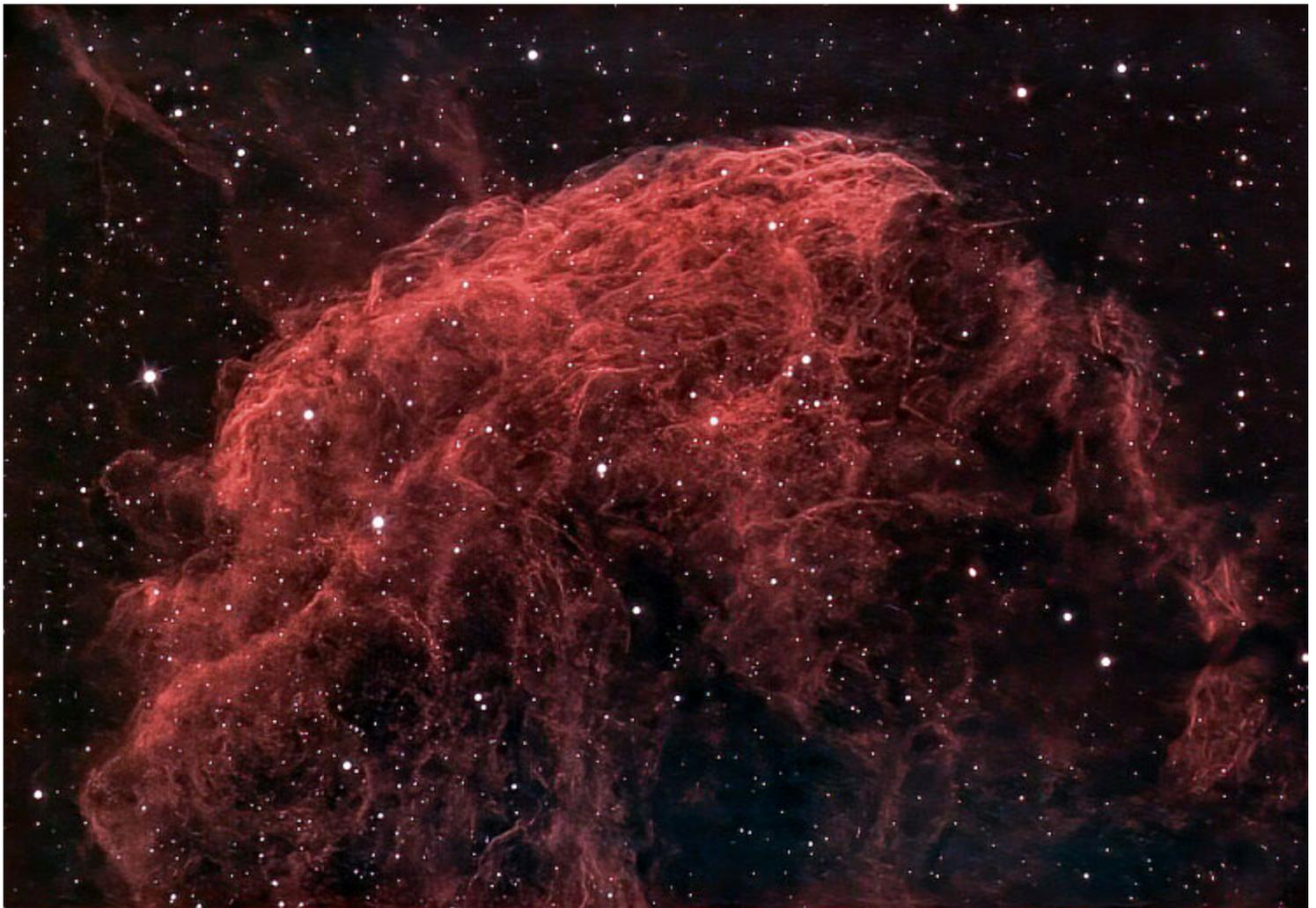
Image made September 2019 using the following equipment: Telescope: Explore Scientific 102 FCD100, Image Camera: ZWO ASI1600mmPro-Cool, Mount: Sky Watcher EQ6R-Pro, LRGB, 2 min exposures approx 100 images per filter, 2 Panel Mosaic processed with PixInsight. This image required about 13 hours gathering data, and another 20 hours to process into a finished image.

M31 aka The Andromeda Galaxy. Andromeda was the daughter of king Cepheus and his wife Cassiopeia. Cassiopeia would boast that Andromeda was more beautiful than the Nereids (the nymph daughters of the sea god Nereus). This angered Poseidon. Poseidon then sent the sea monster Cetus to ravage Andromeda as divine punishment. King Cepheus then chained Andromeda to a rock as sacrifice to sate the sea monster. Along comes Perseus to save Andromeda and slay the sea monster. Ahhh so romantic.



### **The Pacman Nebula by Amy Little**

Image data acquired over 4 nights in September 2019 using an Explore Scientific 102 FCD100, ZWO ASI1600mm Pro-Cool, Mount EQ6R Pro, 240 Sec, 100 each Ha, SII, OIII. Gain 139, Offset 21.



## Jellyfish Nebula by Dan Llewellyn

Here is the end of the Jellyfish Nebula turned 90 degrees. This was taken on February 14, 2020 around 9:30pm EST. Shot through my 16 RC at 3250 focal length. Obviously, the whole Jellyfish does not fit in my field of view, but I framed it to get as much intricate nebulosity as I could. Seeing was bad again, but a stack of 25 subs of 52 seconds each got enough signal for some aggressive processing. It has a lot of faults due to this (background is a mess), but I like the details brought out. Always a trade off, but I like the detail, so try and see past the warts and all....Sony A7s modified and cooled, and a OPT QUAD filter.

## 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 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)



## Beyond the Brim, Sombrero Galaxy's Halo Suggests a Turbulent Past

STScI News Release - February 20, 2020

Surprising new data from NASA's Hubble Space Telescope suggests the smooth, settled "brim" of the Sombrero galaxy's disk may be concealing a turbulent past. Hubble's sharpness and sensitivity resolves tens of thousands of individual stars in the Sombrero's vast, extended halo, the region beyond a galaxy's central portion, typically made of older stars. These latest observations of the Sombrero are turning conventional theory on its head, showing only a tiny fraction of older, metal-poor stars in the halo, plus an unexpected abundance of metal-rich stars typically found only in a galaxy's disk, and the central bulge. Past major galaxy mergers are a possible explanation, though the stately Sombrero shows none of the messy evidence of a recent merger of massive galaxies.

"The Sombrero has always been a bit of a weird galaxy, which is what makes it so interesting," said Paul Goudfrooij of the Space Telescope Science Institute (STScI), Baltimore, Maryland. "Hubble's metallicity measurements (i.e.: the abundance of heavy elements in the stars) are another indication that the Sombrero has a lot to teach us about galaxy assembly and evolution."

"Hubble's observations of the Sombrero's halo are turning our generally accepted understanding of galaxy makeup and metallicity on its head," added co-investigator Roger Cohen of STScI.

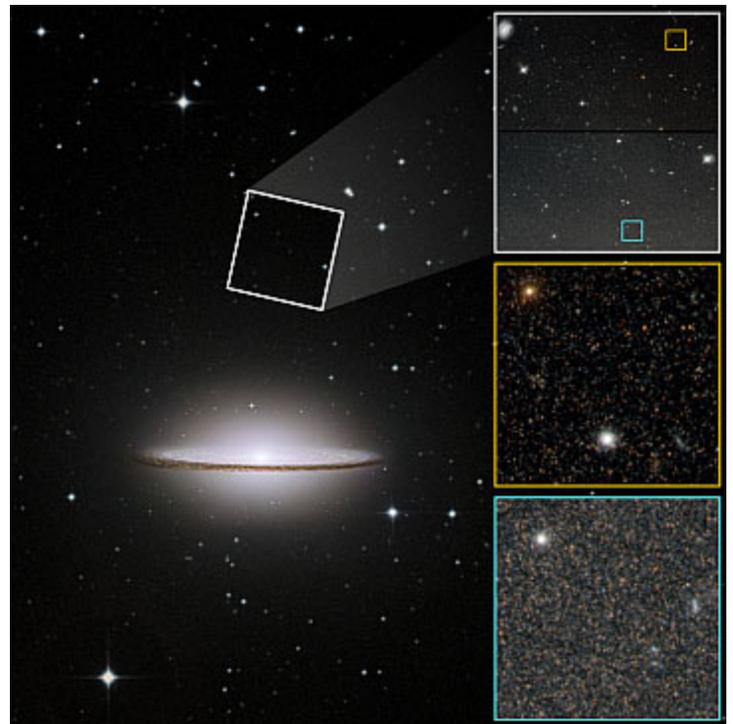
Long a favorite of astronomers and amateur sky watchers alike for its bright beauty and curious structure, the Sombrero Galaxy (M104) now has a new chapter in its strange story — an extended halo of metal-rich stars with barely a sign of the expected metal-poor stars that have been observed in the halos of other galaxies. Researchers, puzzling over the data from Hubble, turned to sophisticated computer models to suggest explanations for the perplexing inversion of conventional galactic theory. Those results suggest the equally surprising possibility of major mergers in the galaxy's past, though the Sombrero's majestic structure bears no evidence of recent disruption. The unusual findings and possible explanations are published in the *Astrophysical Journal*.

"The absence of metal-poor stars was a big surprise," said Goudfrooij, "and the abundance of metal-rich stars only added to the mystery."

In a galaxy's halo astronomers expect to find earlier generations of stars with less heavy elements, called metals, as compared to the crowded stellar cities in the main disk of a galaxy. Elements are created through the stellar

"lifecycle" process, and the longer a galaxy has had stars going through this cycle, the more element-rich the gas and the higher-metallicity the stars that form from that gas. These younger, high-metallicity stars are typically found in the main disk of the galaxy where the stellar population is denser — or so goes the conventional wisdom.

Complicating the facts is the presence of many old, metal-poor globular clusters of stars. These older, metal-poor stars are expected to eventually move out of their clusters and become part of the general stellar halo, but that process seems to have been inefficient in the Sombrero galaxy. The team compared their results with recent computer simulations to see what could be the origin of such unexpected metallicity measurements in the galaxy's halo.



*Credits: NASA, Digital Sky Survey, P. Goudfrooij (STScI) and The Hubble Heritage Team (STScI/AURA)*

*Continued on next page*

The results also defied expectations, indicating that the unperturbed Sombrero had undergone major accretion, or merger, events billions of years ago. Unlike our Milky Way galaxy, which is thought to have swallowed up many small satellite galaxies in so-called “minor” accretions over billions of years, a major accretion is the merger of two or more similarly massive galaxies that are rich in later-generation, higher-metallicity stars.

The satellite galaxies only contained low metallicity stars that were largely hydrogen and helium from the big bang. Heavier elements had to be cooked up in stellar interiors through nucleosynthesis and incorporated into later generation stars. This process was rather ineffective in dwarf galaxies such as those around our Milky Way, and more effective in larger, more evolved galaxies.

The results for the Sombrero are surprising because its smooth disk shows no signs of disruption. By comparison, numerous interacting galaxies, like the iconic Antennae galaxies, get their name from the distorted appearance of their spiral arms due to the tidal forces of their interaction. Mergers of similarly massive galaxies typically coalesce into large, smooth elliptical galaxies with extended halos — a process that takes billions of years. But the Sombrero has never quite fit the traditional definition of either a spiral or an elliptical galaxy. It is somewhere in between — a hybrid.

For this particular project, the team chose the Sombrero mainly for its unique morphology. They wanted to find out how such “hybrid” galaxies might have formed and assembled over time. Follow-up studies for halo metallicity distributions will be done with several galaxies at distances similar to that of the Sombrero.

The research team looks forward to future observatories continuing the investigation into the Sombrero’s unexpected properties. The Wide Field Infrared Survey Telescope (WFIRST), with a field of view 100 times that of Hubble, will be capable of capturing a continuous image of the galaxy’s halo while picking up more stars in infrared light. The James Webb Space Telescope will also be valuable for its Hubble-like resolution and deeper infrared sensitivity.

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. Credits: NASA, ESA, and R. Cohen and P. Goudfrooij (STScI)

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

**Program Chair:** Open [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:** 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)

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**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  
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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:** Open

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

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

**Woodruff Observ. Coordinator:** Sharon Carruthers  
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**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

- Mar 9th, Monday: Full Moon.
- Mar 16th, Monday: Moon Last Quarter.
- Mar 18th, Wednesday: Moon near Mars and Jupiter morning.
- Mar 19th, Thursday: Spring Equinox at 11:50PM.
- Mar 20th, Friday: Mars near Jupiter.
- Mar 21st, Saturday: **AAC Meeting at Fernbank Science Center 1:30PM. CEA Chapter Meeting at 5:30PM.**
- Mar 23rd, Monday: Mars passes very near Pluto morning.
- Mar 24th, Tuesday: New Moon.
- Mar 26th, Thursday: Jupiter, Mars, and Saturn in a line morning.
- Mar 28th, Saturday: Moon near Venus and Pleiades evening.
- Mar 31st, Tuesday: Mars near Saturn morning.
- Apr 1st, Wednesday: Moon First Quarter.
- Apr 3rd, Friday: Venus passes through the Pleiades evening.
- Apr 7th, Tuesday: Full Moon.
- Apr 14th, Tuesday: Moon Last Quarter.
- Apr 18th, Saturday: **AAC Meeting at Fernbank Science Center 1:30PM. CEA Chapter Meeting at 6:00PM.**
- Apr 22nd, Wednesday: New Moon.
- Apr 26th, Sunday: Moon near Venus.
- Apr 30th, Thursday: Moon First Quarter.
- May 2nd, Saturday: Astronomy Day at Tellus Science Museum.
- May 7th, Thursday: Full Moon.
- May 14th, Thursday: Moon Last Quarter.

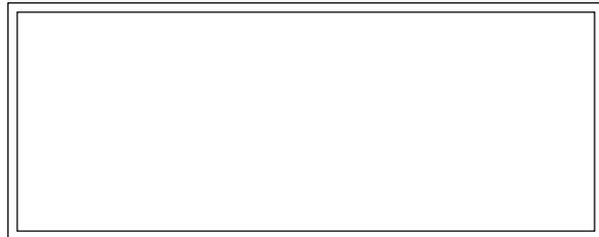
For more event listings and updates see the calendar at [www.atlantaastronomy.org](http://www.atlantaastronomy.org)

## 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 April is Sunday, March 29. 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.

# The Focal Point

