

# The Focal Point

The Atlanta Astronomy Club  
Established 1947  
May 2021

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Editor: Tom Faber

## Table of Contents

- Page 1...** AAC & CE Mtgs, Fernbank Virtual Programs
- Page 2...** CE Chapter June meeting.
- Page 3...** M101 image by Richard Jakiel, The 2021 PSSG
- Page 4...** M106 by Richard Jakiel, HST tracks Fast Radio Bursts
- Page 5...** NGC 4298 & NGC 4302 image by Richard Jakiel
- Page 6...** NGC3718 image by Dan Llewellyn
- Page 7...** AAC Online, Memberships, Contact Info
- Page 8...** Calendar, AAC List Serv Info, Focal Point Deadline

## No Summer AAC Meetings

Due to a decision made by the AAC Board of Directors, the Atlanta Astronomy Club will not hold meetings during the summer months of June, July, and August. This decision was made due to low attendance at the summer meetings and the difficulty in finding speakers for the summer months. So the next meeting of the Atlanta Astronomy Club will be in September at a time and location to be announced. Check out the AAC web page and Facebook page for updates about the September meeting, and summer activities such as the dark sky observing dates.

The Charlie Elliott Astronomy chapter of the Atlanta Astronomy Club will hold meetings during the summer and have observing after their meetings, weather permitting. AAC members are encouraged to attend these meetings.

Because of not having meetings during the summer, the *Focal Point* will not be published during the summer months either. The next issue of the *Focal Point* will be the September issue, which will be published in late August or early September. Have a great summer, and clear skies!

## May AAC Meeting Cancelled

There will be no May meeting of the Atlanta Astronomy Club due to the ongoing COVID-19 pandemic 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 starting in September.

In the mean time, you are encouraged to attend the Charlie Elliott Astronomy observing events and meetings when they are held. See the article to the right for details for their next one.

## Charlie Elliott June Meeting

The next regular in-person “semi-potluck dinner” meeting of the Charlie Elliott chapter of the Atlanta Astronomy Club with sky observing immediately afterwards (weather permitting).

When: 7 p.m., Saturday, June 12, 2021

Where: Campbell Aquatics Building on Murder Creek Church Rd, inside

the Charlie Elliott Wildlife Center, just south of Mansfield, Georgia. To reach the meeting location, take Hwy 11, then turn onto Marben Farm Rd. (the entrance to the Charlie Elliott Wildlife Center), then turn right onto Murder Creek Church Rd. (you will pass Elliott Trail on the right.) Follow Murder Creek Church Rd. until you reach the Aquatics Building on the left. For those using GPS to get at least TO the park, the address of the CEWC Visitor Center is 543 Elliott Trail, Mansfield, GA 30055. (Remember, this is NOT the actual meeting site.) Phone 770-784-3059 (the office closes at 4:30 p.m.). See map on the next page.

Program: This will be our first venture back into dinner meetings, but very carefully. Thus, all are invited to bring your own meal and nonalcoholic drinks for the evening, but NO SHARING. The meeting itself will begin with welcoming remarks by Chapter Director Mike Shaw, followed by Observing Director Dave Whalen’s always factual (and entertaining) sky tour of the current month’s celestial objects. Afterwards will be the

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## 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>



featured presentation, this month by longtime friend of Atlanta astronomy and Celestron Specialty Accounts Sales Manager Greg Bragg, whose topic will be “The State of Our Astronomy Industry”.

He describes it as answers to at least some questions on our collective minds, including: What has been happening the last 10 years or so in our industry? How big is this hobby? How many dealers are there? How many manufacturers are there? What has happened since the COVID-19 pandemic started and what can we expect going forward? How much does it cost to place a full-page ad in the astronomy magazines?

Greg’s credentials are extremely impressive and include almost 30 years in the photography industry, both in retail sales and as a manufacturer’s representative. Prior to Celestron, he has worked in various levels of sales and management with Pentax Sport Optics, Explore Scientific, Olivon USA, Meade Instruments, multiple photo industry manufacturers, Wolf Camera and Olympus Camera.

So bring your own dinner and lots of questions for Greg.

It was just great when we met on May 8 for the following:

- Reelection of the current slate of officers by unanimous acclamation.
- Marie Lott distributing Night Sky Network certificates and accompanying pins to awardees for their volunteering with outreach astronomy activities in 2020.
- Dave Whalen’s always entertaining and informative review of the current celestial sights, including solar system and deep sky objects, as well as target dates for various events.
- Amy Little (aka “Amy Astro”) with her presentation (with PowerPoint images) of her own comparison of three different light pollution filters showing the differences between the three.

#### “All of the Above”

Observing Supervisor David Whalen will be on hand to discuss what you can see and image in the night sky this month. His presentation — complete with PowerPoint and audio! — will cover observing targets ranging from our own solar system to distant galaxies. And yes, questions are encouraged!

To reach the meeting location, take Hwy 11, then turn onto Marben Farm Rd. (the entrance to the Charlie Elliott Wildlife Center) and follow it to Murder Creek Church Rd. (You will pass Elliott Trail on the right.) Turn right onto Murder Creek Church Rd. and follow it until you reach the Aquatics Building on the left.

#### Observing on the Jon Wood Astronomy Field

With our in-person meeting wrapping up by probably 8:30 p.m., we plan for observing immediately afterwards at the Jon Wood Astronomy Field (which is on the right, shortly after turning onto Elliott Trail from Marben Farm Rd). As always, this event is free.

According to the Sky Safari astronomy app, sunset at our location near Mansfield, Georgia, will be at 8:45 p.m., so those with scopes and related equipment should plan on an earlier arrival time for equipment set-up. In consideration of any astro-imagers, astronomical dusk ends at 10:28 p.m. Remember, Daylight Saving Time is in effect.

**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!** Face masks are required and we remind all attendees that the CDC’s 6-foot social distancing requirement remains in effect. Note also that NO refreshments will be served, so bring your own.

#### 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.

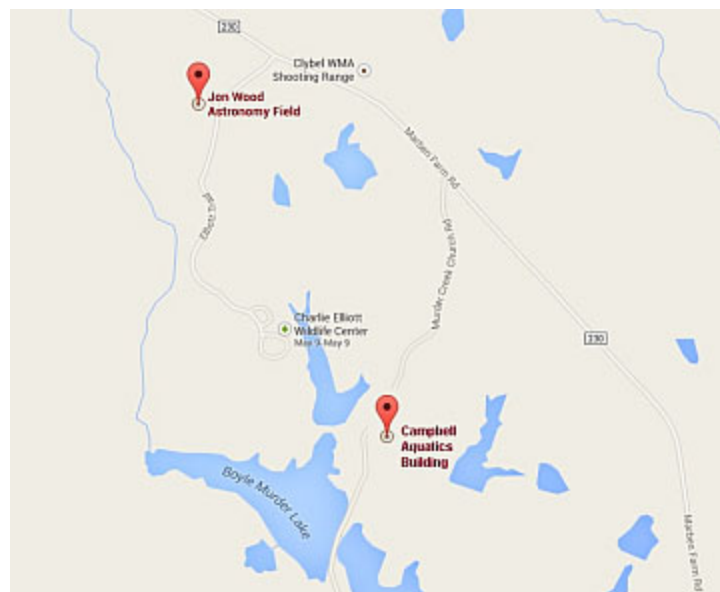
#### Workshops

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 Sidentop 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 2020-2021 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.





## Galaxy M101 by Richard Jakiel

The Pinwheel Galaxy, M101 in Ursa Major. Imaged with a 6-inch RC at f/5.7, using a Canon 1000 XS at ISO = 1600. This image was made from 12 x 5 min subs, and was imaged at the 2011 Mid South Star Party.

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## 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 wide-spread availability of the vaccines things are looking up (pun intended!).

So the Atlanta Astronomy Club's 27th annual Peach State Star Gaze is tentatively 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.

**Note: These dates are subject to change and have been chosen for planning purposes.** Be sure to check the AAC webpage and Facebook page regularly over the summer for updates on this event.



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



## Galaxy M106 by Richard Jakiel

For small telescope showcase, it is the large spiral M106 in Canes Venatici. Imaged with a 6-inch RC at f/5.7 using a Canon 1000 XS.

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## Hubble Tracks Down Fast Radio Bursts to Galaxies' Spiral Arms

NASA/STScI News Release May 20, 2021

They come from anywhere in the sky: mysterious flashes of radio energy that disappear in the blink of an eye. They're called fast radio bursts (FRBs), and astronomers have spotted roughly 1,000 of them over the past 20 years. But they come and go so quickly that researchers have only been able to trace about 15 of them to their home galaxies, all are massive and far from Earth. After that, their trail runs cold. Astronomers haven't been able to track the bursts to the neighborhoods where the radio waves were beamed. Their location could offer clues to the cause of one of the most enigmatic events in modern astronomy.

Astronomers using the Hubble Space Telescope have traced the locations of five brief, powerful radio blasts to the spiral arms of five distant galaxies.

Called fast radio bursts (FRBs), these extraordinary events generate as much energy in a thousandth of a second as the Sun does in a year. Because these transient radio pulses disappear in much less than the blink of an eye, researchers have had a hard time tracking down where they come from, much less determining what kind of object or objects is causing them. Therefore, most of the time, astronomers don't know exactly where to look.

Locating where these blasts are coming from, and in particular, what galaxies they originate from, is important in determining what kinds of astronomical events trigger such intense flashes of energy. The new Hubble survey of eight FRBs helps researchers narrow the list of possible FRB sources.

### Flash in the Night

The first FRB was discovered in archived data recorded by the Parkes radio observatory on July 24, 2001. Since then astronomers have uncov-

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## Galaxies NGC 4298 & NGC 4302 by Richard Jakiel

NGC 4298 (right) and the edge-on spiral NGC 4302 in Virgo.. 6 inch RC at f/5.7, 10 x 5 min subs, Canon 1000 XS. Imaged at DAV

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ered up to 1,000 FRBs, but they have only been able to associate roughly 15 of them to particular galaxies.

“Our results are new and exciting. This is the first high-resolution view of a population of FRBs, and Hubble reveals that five of them are localized near or on a galaxy's spiral arms,” said Alexandra Mannings of the University of California, Santa Cruz, the study's lead author. “Most of the galaxies are massive, relatively young, and still forming stars. The imaging allows us to get a better idea of the overall host-galaxy properties, such as its mass and star-formation rate, as well as probe what's happening right at the FRB position because Hubble has such great resolution.”

In the Hubble study, astronomers not only pinned all of them to host galaxies, but they also identified the kinds of locations they originated from. Hubble observed one of the FRB locations in 2017 and the other seven in 2019 and 2020.

“We don't know what causes FRBs, so it's really important to use context when we have it,” said team member Wen-fai Fong of Northwestern University in Evanston, Illinois. “This technique has worked very well for identifying the progenitors of other types of transients, such as supernovae and gamma-ray bursts. Hubble played a big role in those studies, too.”

The galaxies in the Hubble study existed billions of years ago. Astronomers, therefore, are seeing the galaxies as they appeared when the universe

was about half its current age.

Many of them are as massive as our Milky Way. The observations were made in ultraviolet and near-infrared light with Hubble's Wide Field Camera 3.

Ultraviolet light traces the glow of young stars strung along a spiral galaxy's winding arms. The researchers used the near-infrared images to calculate the galaxies' mass and find where older populations of stars reside.

### **Location, Location, Location**

The images display a diversity of spiral-arm structure, from tightly wound to more diffuse, revealing how the stars are distributed along these prominent features. A galaxy's spiral arms trace the distribution of young, massive stars. However, the Hubble images reveal that the FRBs found near the spiral arms do not come from the very brightest regions, which blaze with the light from hefty stars. The images help support a picture that the FRBs likely do not originate from the youngest, most massive stars.

These clues helped the researchers rule out some of the possible triggers of types of these brilliant flares, including the explosive deaths of the

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## Galaxy NGC3718 by Dan Llewellyn

Here is a unique galaxy resembling a spiral seashell. It is theorized its shape is due to the interaction with the galaxy next to it, NGC 3729. It's part of the Ursa Major galaxy cluster in the constellation Ursa Major. It is approximately 52 million light years away. Taken on April 13, 2021 with the Planewave 12.5. I made a few mistakes in acquisition and I probably should have guided but didn't. The seeing was poor as well. It's a stack of 18 - 2 minute subs with a Sony A7s3, Still turned out pretty reasonable given circumstances.

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youngest, most massive stars, which generate gamma-ray bursts and some types of supernovae. Another unlikely source is the merger of neutron stars, the crushed cores of stars that end their lives in supernova explosions. These mergers take billions of years to occur and are usually found far from the spiral arms of older galaxies that are no longer forming stars.

### **Magnetic Monsters**

The team's Hubble results, however, are consistent with the leading model that FRBs originate from young magnetar outbursts. Magnetars are a type of neutron star with powerful magnetic fields. They're called the strongest magnets in the universe, possessing a magnetic field that is 10 trillion times more powerful than a refrigerator door magnet. Astronomers last year linked observations of an FRB spotted in our Milky Way galaxy with a region where a known magnetar resides.

"Owing to their strong magnetic fields, magnetars are quite unpredictable," Fong explained. "In this case, the FRBs are thought to come from flares from a young magnetar. Massive stars go through stellar evolution and become neutron stars, some of which can be strongly magnetized, leading to flares and magnetic processes on their surfaces, which can emit radio light. Our study fits in with that picture and rules out either very young or very old progenitors for FRBs."

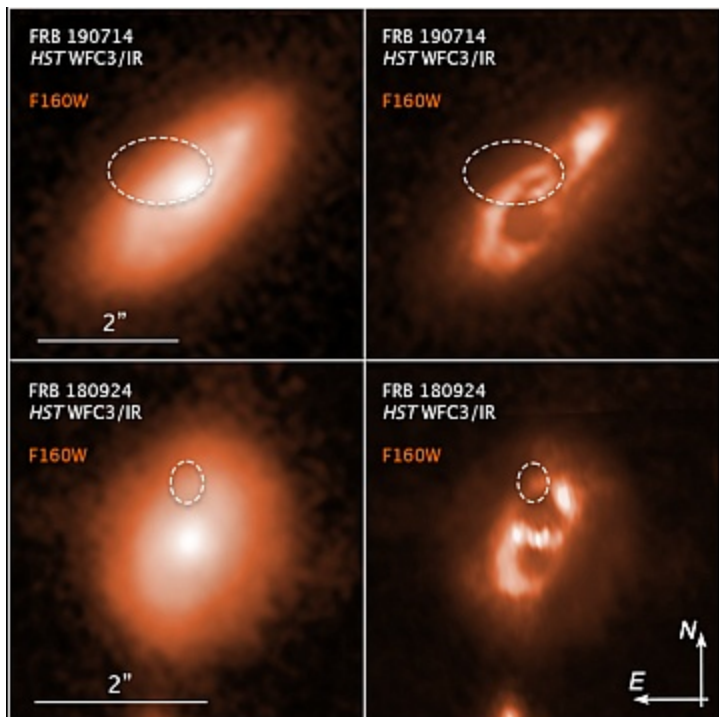
The observations also helped the researchers strengthen the association of FRBs with massive, star-forming galaxies. Previous ground-based observations of some possible FRB host galaxies did not as clearly detect underlying structure, such as spiral arms, in many of them. Astronomers, therefore, could not rule out the possibility that FRBs originate from a dwarf galaxy hiding underneath a massive one. In the new Hubble study,

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Careful image processing and analysis of the images allowed researchers to rule out underlying dwarf galaxies, according to co-author Sunil Simha of the University of California, Santa Cruz.

Although the Hubble results are exciting, the researchers say they need more observations to develop a more definitive picture of these enigmatic flashes and better pinpoint their source. "This is such a new and exciting field," Fong said. "Finding these localized events is a major piece to the puzzle, and a very unique puzzle piece compared to what's been done before. This is a unique contribution of Hubble."

The team's results will appear in an upcoming issue of *The Astrophysical Journal*



Credits: Science: NASA, ESA, Alexandra Mannings (UC Santa Cruz), Image Processing: Alyssa Pagan (STScI)

## 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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**Board:** Open

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**Elliott Astrophotography Coordinator:** Mike Mardis

**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

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**AAC Webmaster:** Daniel Herron

[Observing@AtlantaAstronomy.org](mailto:Observing@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 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.

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

## AAC Events are listed in BOLD

- May 26th, Wednesday: Full Moon.
- May 28th, Friday: Conjunction Mercury with Venus evening.
- May 31st, Monday: Grouping of the Moon, Jupiter, and Saturn morning.
- June 2nd, Wednesday: Moon Last Quarter.
- June 3rd, Thursday: Venus near cluster M35 evening.
- June 10th, Thursday: New Moon.
- June 11th, Friday: Moon near Venus.
- June 12th, Saturday: **CEA Chapter Meeting and Potluck 7PM.**
- June 13th, Sunday: Moon near Mars.
- June 17th, Thursday: Moon First Quarter.
- June 24th, Thursday: Full Moon.
- June 27th, Sunday: Moon near Saturn.
- June 28th, Monday: Moon near Jupiter.
- July 1st, Thursday: Moon Last Quarter.
- July 9th, Friday: New Moon.
- July 10th, Saturday: **CEA Chapter Meeting - Tentative**
- July 17th, Saturday: Moon First Quarter.
- July 23rd, Friday: Full Moon.
- July 31st, Saturday: Moon Last Quarter.
- Aug 8th, Sunday: New Moon.
- Aug 12th, Thursday: Perseid Meteor Shower.
- Aug 15th, Sunday: Moon First Quarter.
- Aug 22nd, Sunday: Full Moon.
- Aug 30th, Monday: Moon Last Quarter.

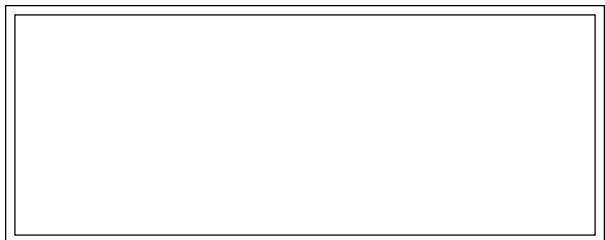
For more event listings and updates see the calendar at [www.atlantaastronomy.org](http://www.atlantaastronomy.org)

## 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 September is Sunday, August 22. 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*

