

The Focal Point

The Atlanta Astronomy Club
Established 1947
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Editor: Tom Faber

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The February AAC Meeting

By Ken Poshedly, AAC Program Chair

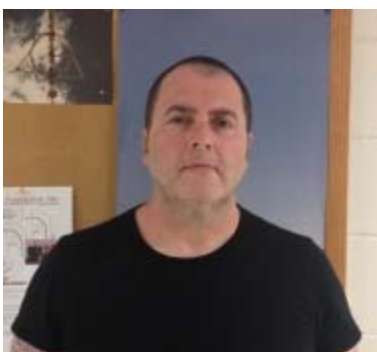
Friday, February 15 at 8 PM.

“The Rise and Fall of Single-Dish Radio Astronomy”

It used to be that professional research astronomy was symbolized by pretty much two different kinds of apparatus. Giant optical telescopes like the 200-inch Hale reflector atop Mt. Palomar and giant single-dish radio telescopes like the 300-foot one at Green Bank Observatory in West Virginia. But alas, things change. Large single-mirror optical scopes are being replaced with larger scopes equipped with segmented mirrors and large single-dish radio telescopes are being replaced by arrays of small-dish radio telescopes -- both capable of out-performing their older siblings.

So join us at 8 p.m., on February 15, at the Fernbank Science Center Resource Center (formerly the library room) when Dr. Loris Magnani, professor of astronomy at the University of Georgia, tells of the accomplishments of the big radio dishes from the mid-1950s until now and how many have been supplanted by interferometers (which see different things), hence the “Fall”.

Dr. Magnani received his BA in Astrophysics from Columbia University (New York City) in 1980 before going on to get both his MS in 1982 and PhD in Astronomy 1986 from the University of Maryland (College Park). He served as research associate at the National Astronomy and Ionosphere Center at Arecibo, Puerto Rico, from 1987 to 1991 before joining the UGA Department of Physics and Astronomy in 1991.



His research interests and list of published works is absolutely humongous and can be seen at https://www.physast.uga.edu/people/loris_magnani

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

Finally, and weather-permitting, all will be invited upstairs to Ralph Buice Observatory to view through the 0.9 meter (36-inch) Cassegrain reflecting telescope inside the 10 meter (30 ft.) dome.

The Fernbank Science Center is located at 156 Heaton Park Dr. NE, Atlanta, GA 30303. (Phone: 678-874-7102).



300-Foot Telescope Collapse - At 9:43 p.m. EST on Tuesday, November 15, 1988, the 300-foot telescope in Green Bank collapsed. The collapse was due to the sudden failure of a key structural element - a large gusset plate in the box girder assembly that formed the main support for the antenna.



The old 300 ft radio telescope was replaced with the Green Bank Telescope, which began operation in 2000.



Credit: Google Maps

January Meeting Report

Photos by Tom Faber

The January meeting of the AAC was held at the Fernbank Science Center Resource Center, beginning at 8PM, on Friday, January 18. There were about 30 members and guests present. After various announcements, AAC Program Chair Ken Poshedly (top right) introduced our guest speaker, AAC/CEA member and astro-imager Steve Siedentop. Steve presented a very interesting and informative talk about the newest technology options available for controlling telescope mounts, cameras, and other equipment. Thanks to Steve for being our speaker and Fernbank Science Center for hosting our meeting!



The December Charlie Elliott Meeting

Submitted by Mike Mardis, Secretary, Charlie Elliott Chapter

Meeting Minutes: 12/08/2018 at the Charlie Elliott Aquatic Building

Pre-meeting start time: NA

Presenter NA

Topic NA

Meeting:

Date/Time 12/08/2018 at 1500-2200

Facilitator Mike Shaw

Meeting Attendees 19

Agenda: Announcements, Potluck Dinner, Briefings, Q&A / discussion.

Field Participants Rained out.

Outreach Reported by Mike Shaw - Four upcoming in Jan/Feb. 01/17/19 and 01/31/19 in Grayson schools, one in Dacula, and one at Bakery Elementary.

Awards Reported by David Whalen - None.

Briefing Speaker/Topic:

Steve Seidentop "Perspectives" on Mars, Neptune, Comet 47P, and Cassiopeia.

Handouts: None

Other News:

ALPO Theo said that an ALPO meeting would be held at the Barnesville Gordon College in July of 2019

Atlanta Astronomy Club Meeting Upcoming meeting of the AAC at the Fernbank.

Upcoming cosmic event Ultima Thule flyby on 01/01/2019. Comet 46P could be naked eye on 12/16/2018.

Next Meeting Charlie Elliott Conference Rm A on 01/05/2019 at 3pm

The January Charlie Elliott Meeting

Submitted by Mike Mardis, Secretary, Charlie Elliott Chapter

Meeting Minutes: 1/5/2019 at the Charlie Elliott Conference Room A

Pre-meeting start time: 1PM

Presenter Mike Shaw

Topic Board pre-meeting discussing programs for the new year

Meeting:

Date/Time 1/5/2019 at 1500-2200

Facilitator Mike Shaw

Meeting Attendees 20

Agenda: Announcements, Potluck Dinner, Briefings, Q&A / discussion.

Field Participants 30

Outreach Reported by Dan Thoman - Starling Elem 1/17, Civil Air Patrol 1/22, Tripp 1/31, Puckett's Mill 2/7, Morgan Co 2/12

Ken Poshedly Annitown Elem 1/24

Awards Reported by David Whalen - None.

Briefing Speaker/Topic:

Mike Shaw Welcome and introduction to attendees.

Steve Seidentop "Perspectives" on Wolf Moon and Gemini.

Mark Woolridge Astrophotography for Visual/Bino, Quadrantid Meteor shower, Beginner/Intermediate, and Advanced (Rosette)

Richard Kapela Ultima Thule

David Whalen Programs offered by, and history of the Astronomical League

Handouts:

Ken Poshedly Skymap

Other News:

Ken Poshedly ALPO Journal, Upcoming lunar eclipse on 1/20, Atlanta Astronomy Club Meeting upcoming meeting of the AAC at the Fernbank.

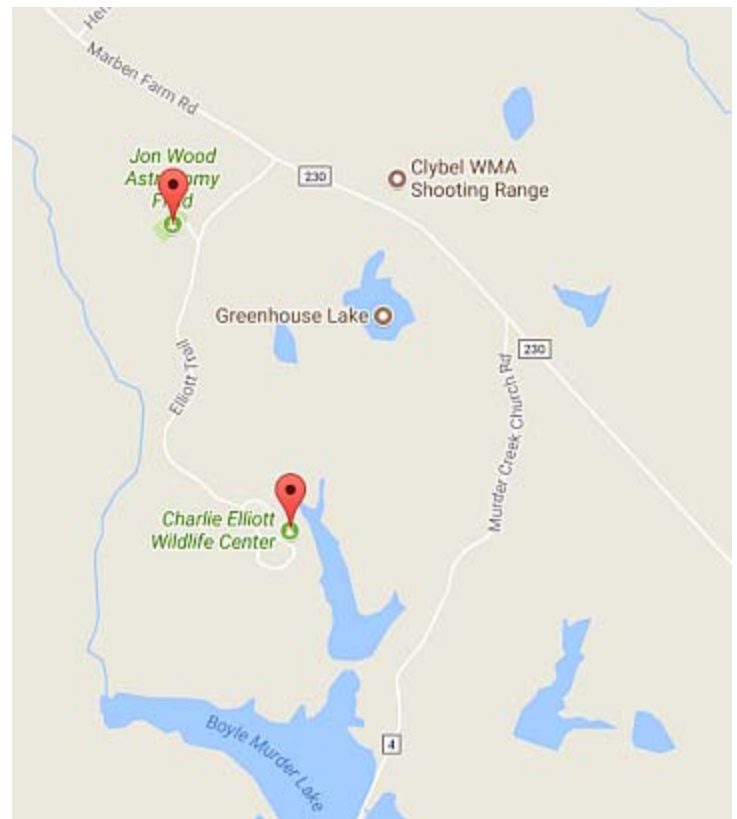
Theo Ramaker Solar images

Next Meeting Charlie Elliott Conference Room B on 2/2/2019 at 3pm

Upcoming Charlie Elliott Meetings

Upcoming Charlie Elliott meetings will be held on: February 2, March 9, April 6, May 4, and June 1, 2019. 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.



Credit: Google Maps

Lunar Eclipse Image by Dan Llewellyn

Image of the January 20-21 Total Lunar Eclipse - Taken from my driveway at the Deerlick Astronomy Village. Scope, Esprit 120 APO F7, camera, Sony A7r2 unmodified ISO 5000 exposure 1/2 second.



At 11:35PM, about 6 minutes before totality began. ISO 200, 2 seconds.

Lunar Eclipse Images by Tom Faber

The following images were taken with a Canon SX160IS camera on an iOptron SkyTracker Pro mount. Processing was done with PhotoShop Elements and IrfanView.



At 10:38PM, about 4 minutes into the partial phase. ISO 100, 1/1250 sec.



At 11:18PM, about 23 minutes before totality began. ISO 100, 1 second.



At 11:44PM, about 3 minutes after totality began. ISO 200, 15 seconds.



At 12:15AM, about 3 minutes after mid-totality. ISO 200, 15 seconds.

Continued on next page



At 12:42AM, about 2 minutes before totality ended. ISO 200, 8 seconds.



At 12:48AM, about 4 minutes after totality ended. ISO 200, 8 seconds.



At 1:28AM, about 23 minutes before partial ended. ISO 200, 1/250 second.



The morning after the eclipse I (Tom Faber) got up to take this photo of Venus and Jupiter in the morning sky, along with an Iridium Flare near Antares in Scorpius. This photo was taken at 6:55AM on January 21. It was a 10 second exposure at ISO 200 with the same Canon SX160IS I used for the eclipse images. The flare was about magnitude -6 and was produced by satellite Iridium 45. As you may have heard, the flare producing first generation of the Iridium satellites are being replaced by second generation ones, which will not produce flares. As the new ones are brought on line the old satellites are being deorbited. There are only a few of the old satellites left in orbit and the flares are becoming few and far between. If you have not yet seen one, try to catch one of the remaining few. Go to the Heavens-Above web site (www.heavens-above.com), enter your location (be as precise as you can - location makes a big difference in how bright the flares appear), then click on the Iridium Flares link to see any upcoming ones at your location.

2019 Zombie Star Party

by Daniel Herron, AAC Observing Chair

This year's Zombie Party is scheduled for Thursday, April 4 thru Sunday, April 7 (3 nights) at the Deerlick Astronomy Village.

The Zombie party is a no-frills, open to the public, 3 night star party hosted by the Atlanta Astronomy Club. No speakers, workshops, or sessions – just observing. This event is open to all, beginners and experts alike, AAC members, and non-members (how else are we going to get you hooked!).

The event is \$15 per person per night due upon arrival, no refunds for bad weather once paid. See you there!

Weather:

General rule if the weather looks to be rainy during the night we will just cancel for that night and start the party the next day. We will make the go/nogo decision for Thursday by Wednesday night.

Note:

The Zombie party got its name from the way we all look the next morning after staying awake all night observing and has nothing to do with the undead that are occasionally rumored to walk the area!

Check <http://atlantaastronomy.org/> for updates.

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 2019 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 March Meeting. For more information see: http://atlantaastronomy.org/?page_id=22

Thank You for your support of the AAC!

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>

New Horizons’ Newest and Best-Yet View of Ultima Thule

The wonders – and mysteries – of Kuiper Belt object 2014 MU69 continue to multiply as NASA’s New Horizons spacecraft beams home new images of its New Year’s Day 2019 flyby target.

This image, taken during the historic Jan. 1 flyby of what’s informally known as Ultima Thule, is the clearest view yet of this remarkable, ancient object in the far reaches of the solar system – and the first small “KBO” ever explored by a spacecraft.

Obtained with the wide-angle Multicolor Visible Imaging Camera (MVIC) component of New Horizons’ Ralph instrument, this image was taken when the KBO was 4,200 miles (6,700 kilometers) from the spacecraft, at 05:26 UT (12:26 a.m. EST) on Jan. 1 – just seven minutes before closest approach. With an original resolution of 440 feet (135 meters) per pixel, the image was stored in the spacecraft’s data memory and transmitted to Earth on Jan. 18-19. Scientists then sharpened the image to enhance fine detail. (This process – known as deconvolution – also amplifies the graininess of the image when viewed at high contrast.)

The oblique lighting of this image reveals new topographic details along the day/night boundary, or terminator, near the top. These details include numerous small pits up to about 0.4 miles (0.7 kilometers) in diameter. The large circular feature, about 4 miles (7 kilometers) across, on the smaller of the two lobes, also appears to be a deep depression. Not clear is whether these pits are impact craters or features resulting from other processes, such as “collapse pits” or the ancient venting of volatile materials.

Both lobes also show many intriguing light and dark patterns of unknown origin, which may reveal clues about how this body was assembled during the formation of the solar system 4.5 billion years ago. One of the most striking of these is the bright “collar” separating the two lobes.

“This new image is starting to reveal differences in the geologic character of the two lobes of Ultima Thule, and is presenting us with new mysteries as well,” said Principal Investigator Alan Stern, of the Southwest Research Institute in Boulder, Colorado. “Over the next month there will be better color and better resolution images that we hope will help unravel the many mysteries of Ultima Thule.”

New Horizons is approximately 4.13 billion miles (6.64 billion kilometers) from Earth, operating normally and speeding away from the Sun (and Ultima Thule) at more than 31,500 miles (50,700 kilometers) per hour. At that distance, a radio signal reaches Earth six hours and nine minutes after leaving the spacecraft.

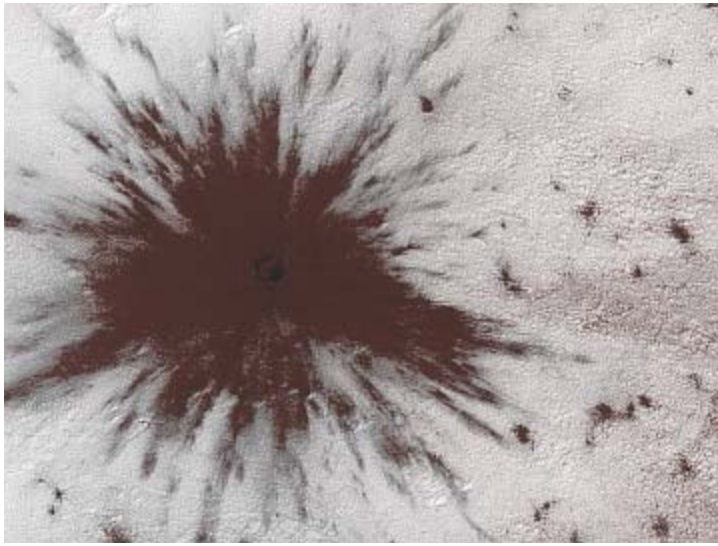
Image credit: NASA/Johns Hopkins University Applied Physics Laboratory/Southwest Research Institute



Insight Operations on Mars Update

On February 2, the Insight spacecraft’s robot arm placed the Wind and Thermal Shield on top of the seismometer, which was deployed on December 20. Image credit: NASA/JPL.





Impact Near Mars' South Pole

This image by the HiRISE camera on the Mars Reconnaissance Orbiter shows a new impact crater that formed between July and September 2018. It's notable because it occurred in the seasonal southern ice cap, and has apparently punched through it, creating a two-toned blast pattern.

The impact hit on the ice layer, and the tones of the blast pattern tell us the sequence. When an impactor hits the ground, there is a tremendous amount of force like an explosion. The larger, lighter-colored blast pattern could be the result of scouring by winds from the impact shockwave. The darker-colored inner blast pattern is because the impactor penetrated the thin ice layer, excavated the dark sand underneath, and threw it out in all directions on top of the layer.

Credit: NASA/JPL/University of Arizona



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. 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
Program Chair: Ken Poshedly Programs@AtlantaAstronomy.org
Observing Chair: Daniel Herron Observing@AtlantaAstronomy.org
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Recording Secretary: Lilli Lindbeck,
Secretary@AtlantaAstronomy.org
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Board: Open
Board: Steve Phillips sandsphillips@att.net
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outreach@ceastronomy.org
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PSSG Co-Chair: Open
Sidewalk Astronomy: Open
sidewalkastronomy@AtlantaAstronomy.org
Light Tresspass: Ken Edwards, Contact info TBA
Woodruff Observ. Coordinator: Sharon Carruthers
Treasurer@AtlantaAstronomy.org
AAC Webmaster: Daniel Herron
Observing@AtlantaAstronomy.org

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

AAC Events are listed in BOLD

- Feb 2nd, Saturday: **CEA Chapter Meeting**, Moon near Saturn Morning.
- Feb 4th, Monday: New Moon.
- Feb 12th, Tuesday: Moon First Quarter.
- Feb 15th, Friday: **AAC Meeting 8PM at the Fernbank Science Center**.
- Feb 16th, Saturday: Venus near Saturn Morning (Closest on the 18th).
- Feb 19th, Tuesday: Full Moon.
- Feb 26th, Tuesday: Moon Last Quarter.
- Feb 27th, Wednesday: Mercury at greatest elongation evening. Moon near Jupiter.
- Mar 1st, Friday: Moon near Saturn Morning.
- Mar 2nd, Saturday: Moon near Venus Morning.
- Mar 2nd, Saturday: **College Night at the Deerlick Astronomy Village - Contact David Lumpkin for details. (Rescheduled from February due to bad weather)**.
- Mar 6th, Wednesday: New Moon.
- Mar 7th, Thursday: Neptune conjunction with Sun.
- Mar 9th, Saturday: **CEA Chapter Meeting**.
- Mar 10th, Sunday: Daylight Saving Time begins at 2:00AM.
- Mar 14th, Thursday: Moon First Quarter. Mercury at Inferior Conjunction.
- Mar 15th, Friday: **AAC Meeting 8PM at the Fernbank Science Center**.
- Mar 20th, Wednesday: Spring Equinox at 5:58PM EDT.
- Mar 21st, Thursday: Full Moon.
- Mar 28th, Thursday: Moon Last Quarter.
- Apr 4th-7th, Thursday-Sunday: **Zombie Star Party at DAV. Contact Daniel Herron for details**
- Apr 5th, Friday: New Moon.

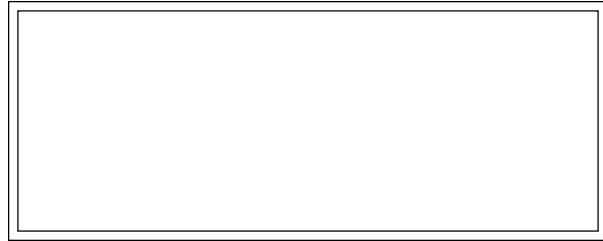
For more event listings and updates see the calendar at www.atlantaastronomy.org

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 . To add a subscription, send a message to: 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. 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 March is Sunday, February 24. Submissions received after the deadline will go in the following issue.**



FIRST CLASS



www.bctagg.com



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On Twitter at <http://twitter.com/atlastro>

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

Newsletter of The Atlanta Astronomy Club, Inc.

