

The Focal Point

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The Atlanta Astronomy Club
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Editor: Tom Faber

Table of Contents

- Page 1...** January AAC General Meeting, Lunar Eclipse
Page 2... December Meeting Report & Photos
Page 3... December Meeting Report & Photos
Page 4... December Meeting Report & Photos
Page 5... Jan CEA Mtg, Nov Mtg Minutes, AL Info.
Page 6... Image by Dan Llewellyn, New Horizons at Ultima Thule.
Page 7... AAC Online, Memberships, Contact Info
Page 8... Calendar, AAC List Serv Info, Focal Point Deadline

The January AAC Meeting

By Ken Poshedly, AAC Program Chair

Friday, January 18 at 8 PM.

Join with us at 8 p.m. on Friday, January 18, 2019, at the Fernbank Science Center, when area astronomer and astro-imager Steve Siedentop will present the newest technology options available for telescope mounts and controls.

While basic, inexpensive store-bought telescopes purchased by and for beginners are often little-used due to flimsy construction and poor optics, telescopes that cost only a little more have considerably better optics and often include drive motors for tracking sky objects.

Steve's presentation will describe what's new for the astro-observer and imager faced with how to manage the tangle of cords connected to those drive motors, including alternatives to bulky laptops and expensive accessories that interface with popular astronomy apps such as SkySafari.

A computer software designer/engineer himself, Steve started out with a 12-inch unguided Dobsonian-mounted reflecting telescope but quickly looked for ways to leverage technology for observing. Eventually, he moved into astrophotography, often observing while imaging. As most people who venture into imaging do, Steve began to work on managing the tangle of cables that accompanies imaging equipment. Unfortunately, he found that even with the best cable management practices, having a laptop tethered to a moving telescope was less than desirable.

The meeting is FREE and open to the public. It will be held in the Fernbank Science Center's Resource Room (formerly the library room).

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).



Credit: Google Maps

The January Total Lunar Eclipse

On the night of Sunday January 20-21 there will be a total lunar eclipse. The full eclipse will be visible from the Atlanta area, if skies are clear.

The moon will enter the penumbra of the Earth's shadow at 9:35pm EST, but the dimming during the early penumbral phase is pale, so it won't be noticeable until around 10:10pm EST. The timing of events for the rest of the eclipse is as follows (all times are EST):

| | |
|-------------------------|--------------|
| Partial eclipse begins: | 10:34PM |
| Total eclipse begins: | 11:41PM |
| Middle of totality: | 12:12AM |
| Total eclipse ends: | 12:44AM |
| Partial eclipse ends: | 1:51AM |
| Penumbra last visible: | about 2:15AM |

The moon leaves the penumbra of the Earth's shadow at 2:50AM but this phase of the eclipse won't be visible either.

This will be the last total lunar eclipse fully visible from the Atlanta area until May 2022, so be sure to go out and take a look!

December Meeting & Potluck Report

Photos by Tom Faber

The December AAC Holiday potluck dinner and meeting was held on Saturday, December 15, starting at about 6:00PM, in the lobby of the lower level of the Math and Science Building at Emory University. About 40 members and guests were present. The AAC provided turkey, ham, and coffee, while the attendees provided a number of yummy side dishes, desserts, soft drinks, and tea. After everyone enjoyed the dinner we went to the planetarium where we heard a very interesting talk (pg 4) about Astrobiology by Dr. Alissa Bans, a lecturer in the Emory University Dept. of Physics. Thanks to the Emory University Physics department for hosting us, and Dr. Bans for presenting the talk! Here are some photos of the evening's activities.



Setup begins in the lobby.



Every year Sharon Carruthers makes a delicious Cookie Christmas Tree for the potluck. Here it is before being devoured!



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What had to happen for the Universe to support life?
 As Carl Sagan famously said: "We're made of star stuff" ... as is the planet we are standing on.

The Origin of the Solar System Elements

| | | | |
|--------------------------|-------------------------|---------------------------|-------------------|
| Big bang nucleosynthesis | Stellar nucleosynthesis | Supernova nucleosynthesis | Interstellar dust |
| Hydrogen | Helium | Lithium | Boron |
| Carbon | Nitrogen | Oxygen | Neon |
| Sodium | Magnesium | Aluminum | Silicon |
| Sulfur | Chlorine | Argon | Potassium |
| Calcium | Scandium | Titanium | Vanadium |
| Chromium | Manganese | Iron | Cobalt |
| Nickel | Copper | Zinc | Gallium |
| Germanium | As | Se | Br |
| Kr | Rb | Sr | Y |
| Zr | Nb | Mo | Tc |
| Ru | Rh | Pd | Ag |
| Cd | In | Sn | Sb |
| Te | Pb | Bi | Po |
| Ast | At | Rn | Ac |
| Th | Pa | U | Np |
| Pu | Am | Cm | Bk |
| Cf | Es | Fm | Md |
| No | Lr | | |

Credit: J. Johnson

Astrobiology

Looking at life's connection to space

What had to happen for the Universe to support life?

RARE EARTH FACTORS

- Right distance from star
- Right mass of star
- Stable planetary orbit
- Right planetary composition
- Liquid water available
- A Moon
- Shield from asteroids
- Large ocean
- The right tilt
- Fine sand beaches
- The right amount of vegetation
- Right atmospheric composition
- Biological evolution
- Evolution of oxygen
- Right kind of galaxy
- Right position in galaxy
- Right Time
- Wild cards

Specifics of a rocky planet in the habitable zone may be important!

Astrobiology

Looking at life's connection to space

Estimated 30 billion Earth-like planets in our galaxy alone.
 (That's a pretty promising sign)

The January Charlie Elliott Meeting

Meeting Details

Join us Saturday, January 5th, 2018 at 3:30 p.m. at the Charlie Elliott Conference Center, Conference Room B, at Charlie Elliott Wildlife Center for our January meeting! Details are still being hammered with the speaker, so check back soon!

Perspective

Observing Coordinator Steve Siedentop will be on hand to discuss what you can see and image in the night sky. His short presentation will cover observing from both a visual and a contemplative perspective. Steve started out as an observer, moved into astrophotography and enjoys doing both, finding observing particularly therapeutic. That's a good thing,



Credit: Google Maps

because he needs all the therapy he can get! Steve will be joined by Astrophotography Coordinator Mark Woolridge who will cover the imaging challenges of the month and tips on how to image them as well as tips for beginners so you don't have to do everything the hard way!

Observing After the Meeting

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

Tech Talks

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, Kevin Snedden.

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>

The November Charlie Elliott Meeting

Submitted by Mike Mardis, Secretary, Charlie Elliott Chapter

Meeting Minutes: 11/10/2018 at the Charlie Elliott Conference Room B Building

Pre-meeting start time: NA

Presenter NA

Topic NA

Attendees: Meeting - 20, Field - 30

Meeting:

Date/Time 11/10/2018 at 1500-2200

Facilitator Mike Shaw

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

Outreach Reported by Dan Thorman - Upcoming session not scheduled until Jan/Feb 2019. Steve Seidentop - Starling Elementary 11/17 and 11/31. Marie Lott - Presented to Girl Scouts on the Jon Wood field.

Awards Reported by David Whalen - None.

Briefing Speaker/Topic:

Russel White, PhD "Discoveries of Young Planets Constrained Theories of Formation and Migration with Chara Array"

Steve Seidentop "Perspectives"

Mark Woolridge "AP Targets"

Ken Poshedly ALPO Journal overview

Handouts:

Ken Poshedly "The Evening Sky Map"

Other News:

ALPO Ken Poshedly provided an update.

Hoodie? Ken Poshedly canvassed for interest in a club hoodie.

Atlanta Astronomy Club Oct Meeting Ken Poshedly briefed on the upcoming meeting of the AAC at Fernbank.

Upcoming cosmic event Geminid meteor shower on 12/14.

Potluck Quarterly potluck scheduled on 12/08/2018 in the Charlie Elliott Aquatics Center at 4pm.

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>

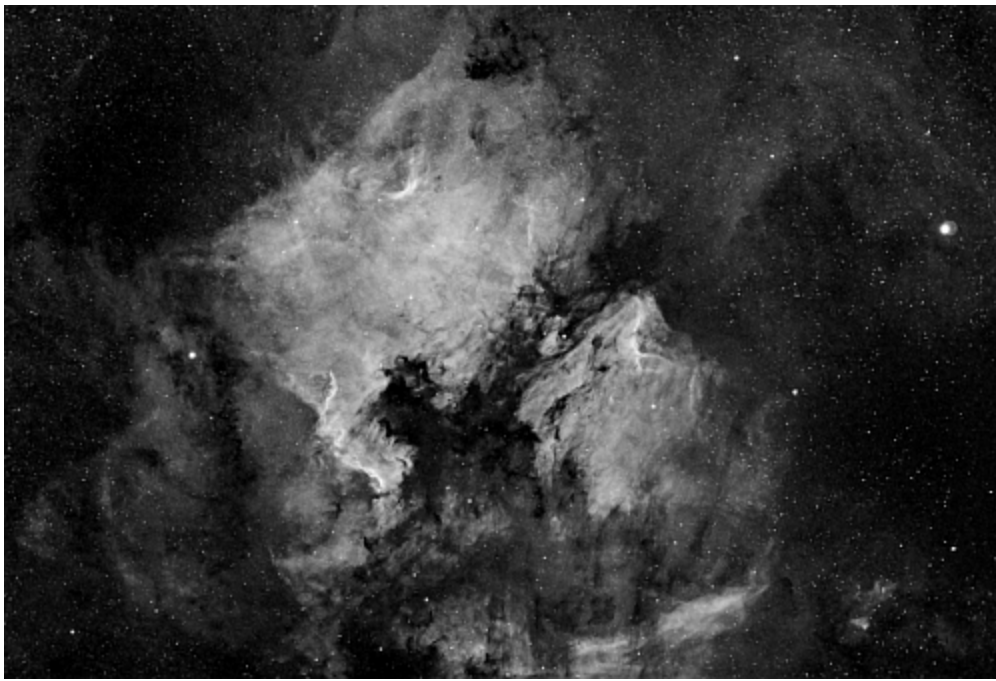
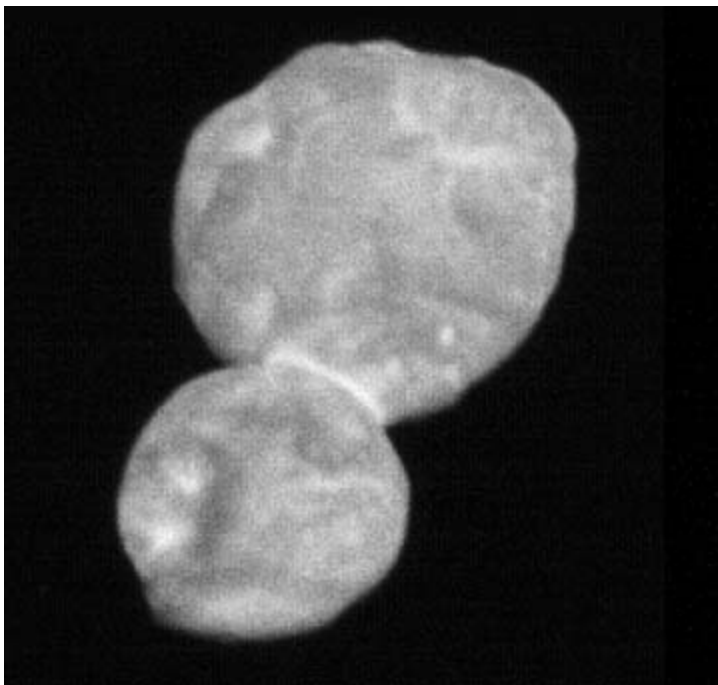


Image by Dan Llewellyn

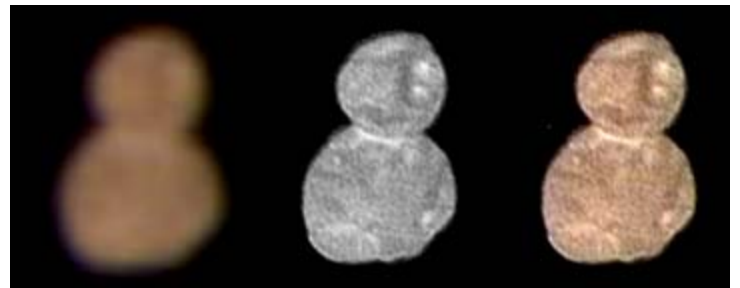
North America and Pelican Nebula, taken at the Deerlick Astronomy Village from my driveway. Single 10 minute shot with a narrow Halpha Filter on a Sony A7S camera through a William Optics Star 71.

New Horizons meets Ultima Thule

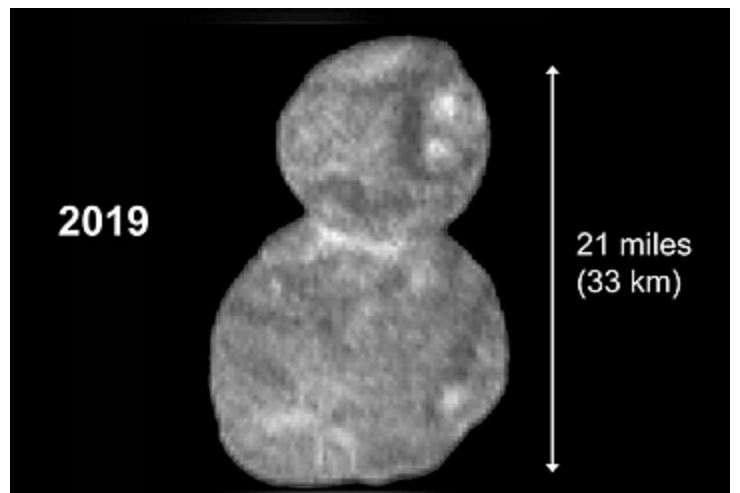
On January 1 the New Horizons spacecraft, 3.5 years and a billion miles beyond Pluto, performed a close flyby of the Kuiper Belt object 2014 MU69, nicknamed Ultima Thule. The first few images taken shortly before close encounter have now been downlinked from the spacecraft, and many more images and other data will be streaming back in the coming weeks and months. Here are some images from January 2 news conference. All images credit: NASA/Johns Hopkins University Applied Physics Laboratory/Southwest Research Institute.



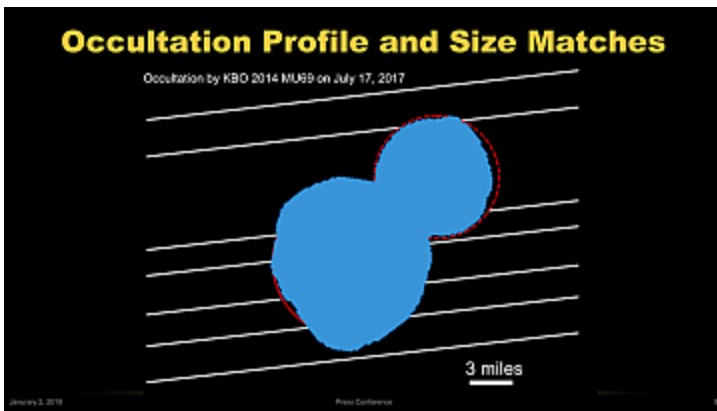
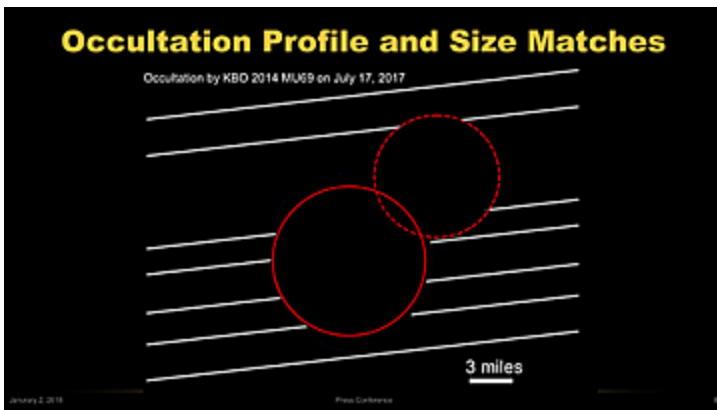
This image taken by the Long-Range Reconnaissance Imager (LORRI) is the most detailed of Ultima Thule returned so far by the New Horizons spacecraft. It was taken at 5:01 Universal Time on January 1, 2019, just 30 minutes before closest approach from a range of 18,000 miles (28,000 kilometers), with an original scale of 459 feet (140 meters) per pixel.



The first color image of Ultima Thule, taken at a distance of 85,000 miles (137,000 kilometers) at 4:08 Universal Time on January 1, highlights its reddish surface. At left is an enhanced color image taken by the Multispectral Visible Imaging Camera (MVIC), produced by combining the near infrared, red and blue channels. The center image taken by the Long-Range Reconnaissance Imager (LORRI) has a higher spatial resolution than MVIC by approximately a factor of five. At right, the color has been overlaid onto the LORRI image to show the color uniformity of the Ultima and Thule lobes. Note the reduced red coloring at the neck of the object.



Continued on page 7



The shape of Ultima Thule inferred from Earth based stellar occultation timing measurements on July 17, 2017 (Red Circles) compared to the actual shape from the images (Blue).



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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- Elliott Outreach Coordinator:** Dan Thoman
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- PSSG Chairman:** Peter Macumber pmacumber@nightsky.org
- 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

- Jan 1st, Tuesday: Saturn Conjunction with Sun.
- Jan 2nd, Wednesday: Earth at Perihelion.
- Jan 4th, Friday: Latest Sunrise in Atlanta: ~7:42 AM. Quadrantid Meteor Shower Peak.
- Jan 5th, Saturday: **CEA Chapter Meeting**, New Moon.
- Jan 14th, Monday: Moon First Quarter.
- Jan 18th, Friday: **AAC Meeting 8PM at the Fernbank Science Center**.
- Jan 21st, Monday: Full Moon. Total Lunar Eclipse.
- Jan 26th, Saturday: Venus near Jupiter Morning.
- Jan 27th, Sunday: Moon Last Quarter.
- Jan 30th, Wednesday: Moon near Jupiter Morning.
- Jan 31st, Thursday: Moon between Venus & Jupiter Morning.
- Feb 1st, Friday: Moon between Venus & Saturn Morning.
- 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.
- Feb 19th, Tuesday: Full Moon.
- Feb 23rd, Saturday: **College Night at the Deerlick Astronomy Village - Contact David Lumpkin for details**.
- Feb 26th, Tuesday: Moon Last Quarter.
- Feb 27th, Wednesday: Moon near Jupiter.
- Mar 6th, Wednesday: 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 February is Sunday, January 27. Submissions received after the deadline will go in the following issue.**



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The Focal Point

Newsletter of The Atlanta Astronomy Club, Inc.

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

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