



Celestial Observer

www.aosny.org

OFFICIAL NEWSLETTER

October 2021

The Amateur Observers' Society of New York

The Amateur Observers' Society

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The **Celestial Observer** is the Official Newsletter of the Amateur Observers' Society of NY, Inc. A 501(c)3 organization.

Visit us at www.aosny.org and join us on [Facebook](#).

The AOS expresses its deepest appreciation to the Custer Institute for hosting our Observatory, and the [Sierra Club Long Island Group](#) for the 20" telescope.



This Month's Issue

President's Message
October Observing Highlights
Member Astro Photos
Constellation Hunter Update

Next Meetings (online): Sunday **October 3rd**, 1:15PM

Contact AOSSecretary@aosny.org for a meeting invitation

The President's Message

By Sue Rose

Welcome to Fall. Let's make use of these cool and clear observing nights. The Holiday Light Show will shortly prevent us from using our special observing site so let's try to rack up some starlight while we can. Mark your calendars for club observing on Oct 1&2, 8&9, 16, 29&30, Nov 5&6, 18 and possibly 26&27.

Unfortunately, our plan to return to in-person meetings was thwarted by the increase in virus case here in Nassau County. We're not sure when that event will finally take place so stay tuned to the hotline and website for updates.

We greatly appreciate the time **Prof Alan Calder** of Stony Brook University has once again given us as he discussed the **Juno Mission-10 Years Later**. We are always pleased when he brings us his expertise.

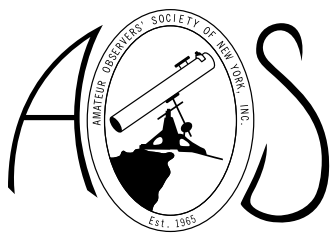
I have visited the Greenwich Observatory in England several times and it is always a treat. I learned something new on my last journey 2 years ago that the ball on top, visible to the ships on the Thames River, drops everyday at

noon, thereby allowing the navigators to set their time pieces and be able to plot their courses accurately. I did get to see it also. The exhibit space has been greatly improved since my prior visit. If you're ever over the pond, it is a stop you must make. History exists in every footstep you take. The reason I tell you this is because of our speaker on Sept 26, **Prof Mike Edmunds**, President of the Royal Astronomical Society, London, England - "The

Antikythera Mechanism & The Mechanics of the Universe". We are very pleased he was able to join us and

fill us in on this amazing piece of antiquity, a several thousand-year-old analog computer, possible owned by Archimedes himself, and maybe the only one ever constructed. Truly a work of art and genius, rivaling the technology of today. To have been a fly on his wall. Maybe I can work out an in-person chat on my next trip, hopefully next Spring. Thank you very much Prof Edmunds. On Oct 3, another UK visitor, **Prof Karl Friston** of the





Institute of Neurology, University College of London, England will join us and discuss "The Mathematics of the Mind - Consciousness of Possible Futures" and on Nov 7 **Prof Przemek Mroz** of the University of Ohio Physics Department will provide us with the latest info on "Gravitational Lensing & Discovery of Rogue Planets". Sorry, they will not visit in person but will join our meetings digitally. If you miss a presentation, members can receive a link for the recording from Jason. This ability to bring speakers from all over the world has been an unusual by-product of the terrible pandemic. Thanks to Jason for making lemonade out of lemons.

Keep watching the hotline and website for updates to the speaker schedule.

Outreach Activities are Returning

"Thanks to all of our volunteers!!"
– Linda P

Pride Day and Sea Cliff have been canceled. The Cradle of Aviation will hold an observing night on Oct 19. Volunteers are needed. Contact Linda.

Observing Sites

Please do whatever you can to stay safe.

Susan Rose Observatory on the grounds of Custer Institute in Southold. **Director Bill C**, with help from **Jason C** and **Bill B**, has continued to bring the night sky objects into view for the public using digital means to project images captured by our C14

within the 8-foot dome to a monitor outside. He can always use extra help. Since this experiment has worked so well, and been well received by the visitors, we will be continuing to use this even after in-person viewing resumes. To that end, we have purchased new digital equipment. A generous donation from **Wendy & Ira L** and those received in memory of member **Bryan B**, an avid astro-photographer and twin brother of our **Corresponding Secretary Bill B**, will help to pay for these items. If anyone would like to donate toward this project, please contact **Treasurer Harvey M**.

Sagamore Hill is patiently awaiting our return to bring the night sky views back to their visitors as is the new Jones Beach Nature & Energy Center. We are hoping that at some point in the not-too-distant future we will be back there with all our equipment and seeing the public once again.

Stargazing in the NYS Parks

It's a good idea to put a note on the hotline and let others know you're going so you might get some company. ALWAYS tell someone where you will be. You might also call the NYS Police at 631-669-2500 to let them know you'll be there. PLEASE, make sure it is in your cell phone in a speed dial. Star Gazing Permits-They are again available from the NYS Parks Dept, either by mail or in person at offices in Bethpage, Jones Beach or Robert Moses after Labor Day. This would allow you to observe in designated areas after sunset. Many of our members have been doing this since outreach has been canceled. Rest rooms are not open in the winter. They expire Dec 31 when new ones for 2022 will need to be purchased. Due to the lack of available observing locations, it

may be a good idea to get a permit. They are for the vehicle, regardless of how many people are in the vehicle, and you must have some star gazing equipment, such as a chart.

October Observing Highlights

[The Sky Scrapers this month](#)

[Skymaps.com](#)

[The Night Sky This Month](#)

[In-the-Sky.org](#)

[Astronomy Mag Sky This Week](#)

[Sky & Telescope Magazine Sky at a Glance](#)

[Globe at Night](#)

[EarthSky](#)

[What's Up each month \(video\)](#)

[Tonight's Sky](#)

[Comet Watch 2021](#)

Light Pollution Effects

Light Pollution from Streetlamps Linked to Insect Loss

Scientists say light pollution may be contributing to "worrying" declines in insects seen in recent decades. Modern LED streetlights appeared to have the biggest impact. [Read it here.](#)

Observing Projects and Useful Websites

Keep the dates!

Astronomical League's 75th Anniversary Challenge

Due to the timing of the mechanics of our Solar System, 2021 also coincides with almost a complete apparition of Jupiter (January 29, 2021 at 1213 through March 5, 2022). See details and requirements at <https://www.astroleague.org/content/al-observing-challenge-special-observing-award>

Did you see the partial annular eclipse? Did you catch the eclipse bug? What a good excuse to

travel and see the world. On Nov 19, 2021, watch for a near total lunar eclipse and May 16 & Nov 8, 2022 for total lunar eclipses. If you don't mind the cold, you can travel to the Antarctic on Dec 4, 2021 for a total solar eclipse or maybe try a cruise <https://www.chimuadventures.com/en-au/antarctica/ocean-endeavour-solar-eclipse-voyage>. Contact James McAloon at james.mcalloon@chimuadventures.com. On April 20, 2023, there's a hybrid solar eclipse over Australia/Indonesia, <https://siriustravel.com/solar-eclipse-tours/2023-western-australia-total-solar-eclipse-tour/>. On Oct 14, 2023, there will be an annular solar eclipse over the south and mid-west US, only partial here in NY. On April 8, 2024, the US will once again be treated to a total solar eclipse, this time stretching from Mexico, up through the center of the country over Buffalo, into Canada, etc. The Moon will nearly cover the Sun from here on Long Island, but with the totality path sooooo close, why wouldn't you travel? Don't miss this one. It's time to start making plans. Who wants to help with this? Contact Sue. Our San Antonio contingent, **John E**, will be in great position for the last 2. See more info at <https://www.greatamericaneclipse.com/future-eclipses/eclipseglobe>.

On April 20, 2023, there's a hybrid solar eclipse over Australia/Indonesia.

On Oct 14, 2023, there will be an annular solar eclipse over the south and Midwest US.

On April 8, 2024, the US will once again be treated to a total solar eclipse, this time stretching from Mexico, up through the center of the country into Canada, over Buffalo, etc. It's time to start making plans. Who wants to help with this? Contact Sue.

Luckily, the partial annular on

June 10, 2021 will be visible locally at sunrise. We will be there.

Constellation Hunter Observing Program with Sue Rose

So far, I've included the following constellations: Andromeda, Antlia, Aries, Aquila, Auriga, Bootes, Cancer, Canes Venatici, Canis Major & Minor, Capricornus, Cassiopeia, Coma Berenices, Corona Borealis, Corvus, Crater, Cygnus, Delphinus, Equuleus, Gemini, Hercules, Hydra, Leo Major & Minor, Lepus, Lynx, Lyra, Microscopium, Monoceros, Orion, Pegasus, Perseus, Pisces Austrinus, Pyxis, Sagitta, Sagittarius, Scorpius, Sextans, Taurus, Triangulum, Ursa Major & Minor, Virgo, Vulpecula. If you'd like to catch up, you can find my posts in the hotline messages or send me an email. Let's hope we can get together at our new location and work on these together. So, you can see which stars are within the boundaries, download and print the constellation charts from <https://www.iau.org/public/themes/constellations/>. If you stay out late enough, the winter constellations are already making their reappearance.

New Citizen Science Projects

Searching for galaxies which look like jellyfish is a new Citizen Science project for 2021. Jellyfish Galaxies research <https://www.zooniverse.org/projects/apillepich/cosmological-jellyfish/about/research>

NASA is asking citizen scientists to help hunt exoplanets in the vast trove of images gathered by the Transiting Exoplanet Survey Satellite. <https://tinyurl.com/4h5mkjt4>

NASA's Exoplanet Watch Needs You! Help NASA find exoplanets. Use your own telescope - or even

a remote robotic telescope - to observe transit events and share your data as part of the Exoplanet Watch citizen science project! https://nightsky.jpl.nasa.gov/news-display.cfm?News_ID=969

The East Meadow Library will be hosting a NASA exhibit on exoplanets in the Spring which we will be a part of. Catch up on the subject by participating in these projects.

Laser Interferometer Gravitational-wave Observatory (LIGO) - The Gravity Spy project enlists citizen scientists who will have the opportunity to learn to characterize and classify potentially new sources of noise in the LIGO system; working in concert with machine-learning algorithms to amplify the work of the citizen scientists, this project helps scientists narrow their focus to gravitational wave sources and develop citizen science methods that can scale with upcoming data-intensive scientific endeavors.

The Most Breathtaking Six Hours Of Your Life

To gaze upon Earth from space - to take in the astounding views and vivid colors - is an unforgettable spectacle that astronauts call life-altering. We have re-imagined space travel. Instead of rocketing away from the Earth at high velocity, you ascend on a gentle, yet thrilling journey and look back at our planet from an entirely new perspective. 2024 is already sold out. \$125,000 is a bargain. <https://tinyurl.com/5eb5udnc>

Northern Lights Trip

Ever want to visit Iceland and see the northern lights and volcanoes and other geothermal features? We had discussed making a club trip just before the pandemic broke so maybe it's time to try

again. Anyone want to help organize? [Learn more about a tour he's already arranged.](#) Maybe we could get a group rate? Contact **Sue Rose**.

20 of the Best Places to View the 2024 Great North American Eclipse

Scope out your spot for the 2024 total solar eclipse. <https://tinyurl.com/t5pwukae>

NASA 2017-2018 Software Catalogue Released

Available for free download, without any royalty or copyright fees. Worth downloading. Visit www.sciencealert.com/nasa-s-just-released-a-bunch-of-its-software-for-free

Light Pollution Projects

The Globe at Night, www.globeatnight.org/, constellation for Sept 17-Oct 6 is Pegasus. See the charts at <https://www.globeatnight.org/finding/leo>. Adjust for your latitude.

Lunar X & V Observations See <https://skynews.ca/lunar-x-marks-the-spot/>. Nov 11 at 5:29pm.

Meteor Showers www.theskyscrapers.org/meteor-showers and www.amsmeteors.org/ Meteor Showers displayed in space with Earth crossing path <http://www.ianww.com/meteor-showers/>

Star Parties, Special Events, Conventions, Online Programs, etc.

ALCON 2022 The in person event is scheduled for July 28-30, 2022 in Albuquerque, with a visit to the VLS on July 31. The website should be up by January.

Amateur Astronomers Association, AAA www.aaa.org for calendar of upcoming events

Custer Institute & Observatory <http://www.custerobservatory.org>

Stargazing every clear Sat eve Call 631-765-2626 Fundraising to replace the telescope in the dome. Help at www.gofundme.com/custer. Donations welcome

Explore Scientific Online Presentations <https://youtu.be/bOzZjO8QWfc>

Montauk Observatory <http://www.montaukobservatory.com/> Star Parties (weather permitting) Montauk County Park (formerly Theodore Roosevelt County Park) Entrance off Rt 27 (Montauk Hwy) at the Ross School Tennis Center, 20 Goodfriend Drive, East Hampton, NY 11937

NYSkies Seminars 1st and 3rd Fri of each month. 6:30-9PM McBurney Hall, 125 W 14th St, 6/7 Ave, NYC www.nyskies.org/seminar.htm Join their hotline for local activities at nyskies@nyskies.org

Rockland Summer Star Party Rescheduled for 2022 www.rocklandastronomy.com

Stony Brook University Astronomy Open Night Fall 2021

Season Astronomy Open Nights will be held virtually on the first Fri of the month via Zoom at 7:30PM. Please make sure to copy all of the link (including the part following the question mark) into your browser in order to avoid having to supply a passcode) You will need to have the free Zoom client software (available at https://www.zoom.us/download#client_4meeting) installed on your device. This link will remain valid throughout the 2021 Open Night season. When joining the meeting please have your microphone and video camera turned off until instructed otherwise. <https://stonybrook.zoom.us/j/96446568983?pwd=b2cvVlVI>

Nancy R

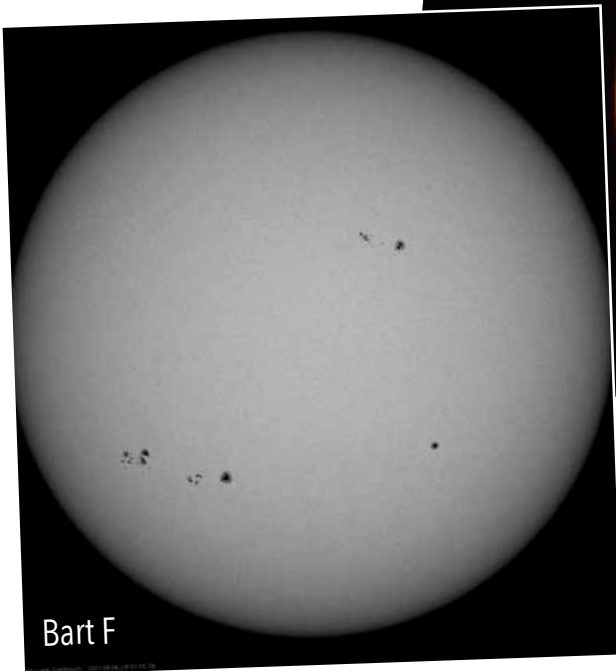


Member Photos

Avi W



Bart F



Steven B



**AOS
Picture
Page**



Weird Ways to Observe the Moon

By David Prosper

International Observe the Moon Night is on October 16 this year- but you can observe the Moon whenever it's up, day or night! While binoculars and telescopes certainly reveal incredible details of our neighbor's surface, bringing out dark seas, bright craters, and numerous odd fissures and cracks, these tools are not the only way to observe details about our Moon. There are more ways to observe the Moon than you might expect, just using common household materials.

Put on a pair of sunglasses, especially polarized sunglasses! You may think this is a joke, but the point of polarized sunglasses is to dramatically reduce glare, and so they allow your eyes to pick out some lunar details! Surprisingly, wearing sunglasses even helps during daytime observations of the Moon.

One unlikely tool is the humble plastic bottle cap! John Goss from the Roanoke Valley Astronomical Society shared these directions on how to make your own bottle cap lunar viewer, which was also suggested to him by Fred Schaaf many years ago as a way to also view the thin crescent of Venus when close to the Sun:

"The full Moon is very bright, so much that details are overwhelmed by the

glare. Here is an easy way to see more! Start by drilling a 1/16-inch (1.5 mm) diameter hole in a plastic soft drink bottle cap. Make sure it is an unobstructed, round hole. Now look through the hole at the bright Moon. The image brightness will be much dimmer than normal - over 90% dimmer - reducing or eliminating any lunar glare. The image should also be much sharper because the bottle cap blocks light from entering the outer portion of your pupil, where imperfections of the eye's curving optical path likely lie." Many report seeing a startling amount of lunar detail!

You can project the Moon! Have you

than enough light to project from even relatively small telescopes. Large telescopes will project the full Moon and its phases, with varying levels of detail; while not as crisp as direct eyepiece viewing, it's still an impressive sight! You can also mount your smartphone or tablet to your eyepiece for a similar Moon-viewing experience, but the funnel doesn't need batteries.

Of course, you can join folks in person or online for a celebration of our Moon on October 16, with International Observe the Moon Night - find details at moon.nasa.gov/observe. NASA has big plans for a return to the Moon with the Artemis

program, and you can find the latest news on their upcoming lunar explorations at nasa.gov.

Sun Funnels in action! Starting clockwise from the bottom left, a standalone Sun Funnel; attached to a small refractor to observe the transit of Mercury in 2019; attached to a large telescope in preparation for evening lunar observing; projection of the Moon onto a funnel from a medium-size scope (5 inches).

Safety tip: NEVER use a large telescope with a Sun Funnel to observe the Sun, as they are designed to project the Sun using small telescopes only. Some eager astronomers have melted their Sun Funnels, and parts of their own telescopes, by pointing them at the Sun - large telescopes create far too much heat, sometimes within seconds!

However, large instruments are safe and ideal for projecting the much dimmer Moon. Small telescopes can't gather enough light to decently project the Moon, but larger scopes will work.

Discover more about our stellar neighborhood at nasa.gov! This article is distributed by NASA Night Sky Network-The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit nightsky.jpl.nasa.gov to find local clubs, events, and more!



heard of a "Sun Funnel"? It's a way to safely view the Sun by projecting the image from an eyepiece to fabric stretched across a funnel mounted on top. It's easy to make at home, too - directions are here: bit.ly/sunfunnel. Depending on your equipment, a Sun Funnel can view the Moon as well as the Sun- a full Moon gives off more