

Join the Amateur Observers' Society of NY (AOSNY)

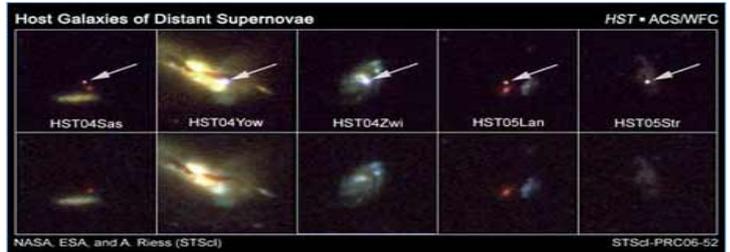
Sunday November 1st, 2020 at 1:30PM

Guest Presenter from University of California - Riverside:

Dark Matter - Exploring the Dark Sectors

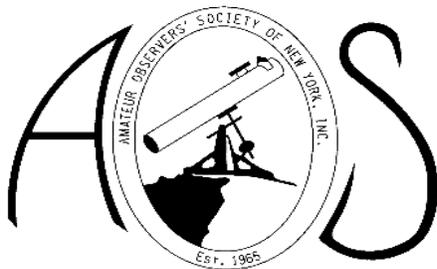
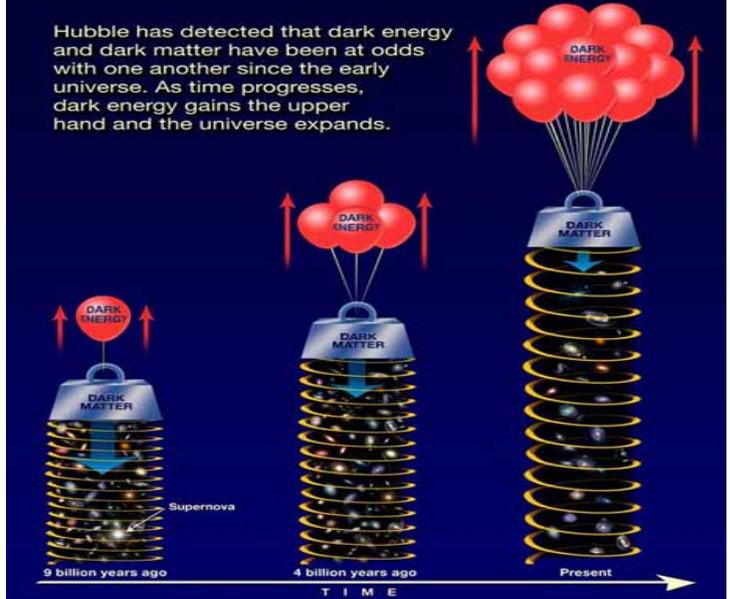
Presentation by Dr. Hai-Bo Yu

Dr. Yu, Associate Professor - Dept. of Physics & Astronomy, will speak about the history of Dark Matter, the cosmological evidence, and terrestrial searches. Dark Matter distributions in galaxies, the Universe and potential hidden sectors carrying their own forces.



Hubble witnesses a cosmic tug of war

Hubble has detected that dark energy and dark matter have been at odds with one another since the early universe. As time progresses, dark energy gains the upper hand and the universe expands.



Bringing Quality Astronomy Programing from The Far Reaches of The Universe to Your Home

www.aosny.org

Celestial Observer

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

NOV 2020



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Next Meeting: Sunday, Nov 1, 1:30pm
Online Digital

For Meeting Invitation Contact AOSSecretary@aosny.org

www.facebook.com/pages/Amateur-Observers-Society-of-New-York-AOSNY/368529386242

The President's Message-Sue Rose

Thanks very much to **Jason C** who has been arranging all of our online presentations via Webex and acquiring a myriad of speakers from near and far for our astronomical education. Some of the past programs have been recorded. Contact Jason for information. We greatly appreciate all those who have graciously given us their time on a Sunday afternoon and for those who we will visit with in the upcoming months. He's been my right hand these last 8 months and I can't thank him enough.

Thanks very much to **Danielle Adams**, Resident Staff Astronomer and Deputy Director for Marketing and Communications at Lowell Observatory, for her informative presentation about the Arabian view of the night sky. We become so Grecco/Roman oriented that we sometimes forget about other cultural investigations of the celestial sphere. Although many of the star names are Arabic, we've lost their constellations, mostly, Expect other cultural adventures in the future. Thanks to **Dave Prosper**, Night Sky Network - Program Manager for Amateur Astronomy Outreach at the Astronomical Society of the Pacific and Ambassador of the Night Sky Network, for keeping us up to date on all the programs the NSN has and continues to provide for the amateur astronomers in our country. AOS has been the recipient of each of the NSN "Astronomy in a Box" toolkits which provides all the needed materials, including suggested scripts, and are available for any club member who would like to use them for a public outreach program. Speak with **Linda P**.

On Nov 1st, **Dr. Hai-Bo Yu**, Theoretical Physicist from USC-Riverside, will discuss "The Absence of Dark Matter." There has been much discussion of this subject lately so it's a timely topic. See <https://www.syfy.com/syfywire/why-dark-matter-is-missing-from-these-galaxies>. On Nov 15th, **Brother Guy Consolmagno**, Director of the Vatican Observatory and President of the Vatican Observatory Foundation, will present "Discarded Worlds: Astronomical ideas that were almost correct." This has me greatly intrigued. I'll bet most of you didn't even know that the Pope had an astronomer on staff and several observatories, including one in the US southwest. The Vatican has come a long way since Galileo.

We are always looking for people who wish to share their research, observations, theories, techniques, etc. If you would like to be among this distinguished list, or know of someone who would, please contact Jason.

All AOS members will be sent a private invitation to attend any upcoming meetings. This is for your use only. If you know of anyone else who would like to attend, please send their email to our Secretary, **Bill B**, at AOSSecretary@aosny.org, and they will be sent an invitation. Please DO NOT send your invitation to others. This is so we can monitor the number of attendees (we have a limit of 100), and to ensure that the only people who participate are those we were expecting, not like the difficulties that have arisen from other meeting services. We have also been invited to attend online meetings of ASLI, AAA, UACNJ and KAS. Details will be posted on the hotline as they are received. Use of the hotline will be extremely vital during these times of confinement so make sure that you have access. If you do not, please let **Bill B** know.

Hoping to see everyone at our online meetings. The next one is Sunday, Dec 6, 1:30pm.

Remember, the only dumb question is the one you don't ask.

***Friends are like stars. You don't always see them,
but you know they are always there!***

Please, everyone, be safe and be careful. We will get together at some point. Till then,



The AOS expresses its deepest appreciation to Custer Institute for hosting our Suffolk Observatory and the Sierra Club, Long Island Group, for the 20" telescope, <http://newyork.sierraclub.org/longisland/>

AOS Calendar-It's that time of year again when we discuss this highly successful and informative AOS publication. We need a consensus, however. Since we are not meeting in person, all calendars would have to be mailed which increases the cost to \$18. We need to see if there is interest in doing it this year. **So far, only 2 people have expressed an interest.** Without a reasonable number, we can't get this low a price. Let Sue know ASAP.

Observers' Handbook from RASC-John P, our contact for obtaining this yearly publication at a reasonable cost, is not able to commit to the endeavor this year. He sends out about 100. Is there someone in AOS who would like to take on the job, either for us or John's whole list? Let me know ASAP. My best suggestion to obtain this excellent publication is to go through the Astronomical League. AOS members are members of the AL and get a discount. Your name is on file because you get the Reflector Magazine from them. Go to <https://store.astroleague.org/index.php> for the US edition. S&H is included.

Observing-The nights are getting longer as the Sun sinks faster into the western horizon. Since temps are still reasonable, don't miss the opportunity to go out and do some observing. Try the www.Globeat-Night.org program to help map light pollution. Work on one of the Astronomical League or AOS observing programs. If you need suggestions, let Sue know or put a note on the hotline. Since we've lost most of our observing locations, and we may not get them back for a while (we are working on that), I might suggest the you purchase a StarGazing permit from the NYS Parks Dept. Offices are at the beaches or at the main office off the Southern State exit 37N. Be aware, the restrooms are not open during the cold months. The permit is good from Jan 1-Dec 31 each year and is for the vehicle, regardless of the number of occupants. Just be sure you have some star gazing equipment, like a star map. Always make sure that you tell someone you'll be going observing, when and where. Maybe put a note on the hotline and get a few others to join you.

Our observatory in Southold at the Custer Institute is open on clear Sat nights under the auspices of our intrepid **Director Bill C** who uses digital equipment to provide magnified views of heavenly bodies as seen through or C14 SCT. He can always use extra help.

In less than 3 years, there will be an annular solar eclipse over the south and midwest. In a little less than 4 years, the US will once again be treated to a total solar eclipse, this time stretching from Mexico, up though the center of the country into Canada, over Buffalo, etc. It's time to start making plans. Who want to help with this? Contact Sue.

Observing Projects for Month <http://www.theskyscrapers.org/november>

Globe at Night <https://www.globeatnight.org/>

The Night Sky This Month -<https://cosmicpursuits.com/night-sky-this-month/>

EarthSky <https://earthsky.org/>

AOS Holiday Party-Since the virus does not appear to be receding as quickly as hoped, and restaurants can only seat limited numbers, it appears that we must forego this yearly event in the name of safety, unless the world changes very quickly in the next 2 months.

Dues Increase-These are difficult times and the board has chosen to raise dues for the first time in about 20 years from \$15 to \$25 per year for an individual and \$30 for a family, effective Jan 1, 2021. If you wish to prepay your dues, you may do so at the lesser rate as long as it is made before Jan 1. Multiple years are also available. Either use the Paypal link from the lower part of our website or with a check made out to AOSNY and send to **Treas Harvey M**, 105 Betty Rd, East Meadow, NY 11554. Please remember that this includes membership in the Astronomical League also. They send you the quarterly Reflector magazine.

Amazon Smile Donation to AOS

Thanks to everyone who make their purchases through Amazon Smile. It costs nothing extra for you and AOS gets a small donation from every purchase. If you have questions, please contact our **Treasurer, Harvey M.**

City of Stars on Facebook!-Linda P

Many of you may have heard of my *City of Stars* tours, mostly walking excursions sponsored by the AOS, to visit astronomy-related sites in Manhattan. These tours were inspired by an article written by Dr. Neil deGrasse Tyson in the January 2002 issue of *Natural History* magazine. **Tom L** and I have created a Facebook page, **City of Stars - New York City**, in which we have expanded Tyson's original list to 42 sites, mostly in Manhattan but also in surrounding areas, with brief descriptions, photos, maps, and links for further information. I hope you will visit **City of Stars - New York City!** www.Facebook.com/CityofStarsNYC. If you see any other potential sites on your travels around NYC and surrounding areas, please contact Linda. She'll be adding a website soon.

Notes from Our Observatories

Observatory at Jones Beach State Park Nature Center (Observatory West)

Our facility here has been closed for some time due to planned construction. The entire plan has changed. The new building where the Nature Center was to relocate at Field 2 is not suitable. The old building was not demolished and is being used for virus testing staffers. What will happen when that ends is not known. We are in the process of determining if it can be used in the evening. Stand by for updates.

AOS Observatory East (Susan F. Rose Observatory)-Dir. Bill C, Operator Alan C Open to the public every clear Saturday night on the grounds of Custer Institute in Southold. Additional help is welcome; private observing can be made afterward. Contact Bill for equipment training. Observing is strictly digital on a monitor outside the observatory until further notice.

Sagamore Hill-We've been asked to remove all of our equipment by Oct 31. After the gift shop burned down, we were told this would likely happen in 5 years because they would recreate a gift shop on the first floor of the barn. With the virus caused shut down, they accelerated those plans. Thanks to the many members who pitched in to move all the equipment from Sagamore Hill and the Freeport storage unit to Southold. Thank you all for your time and hard work.

Stargazing in the NYS Parks-Stargazing permits are still available for purchase but expire Dec 31. 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, socially distanced of course. No eyepiece sharing. **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. This may be your only place to observe for the foreseeable future. Restrooms are not open during the winter so be prepared.

Attachments available on AOS hotline only:

For Sale

1. **Avi W**-The online price will be \$600, but \$575 if sold locally. If interested, please contact me privately using my personal e-mail: basscentric@yahoo.com.

For sale by original owner - A GSO Ritchey-Chretien (RC) 6" Imaging Kit. Being sold as a package and will not part it out. Parts include (with my original cost):

GSO Ritchey-Chretien 6" OTA - \$399, ADM Vixen Dovetail - \$70, Astrophysics CCDT67 Telecompressor - \$165 (you will need to add your own m42 spacers), Hotech SCA Laser Collimator - \$145, Bob's Knobs for GSO 6" Ritchey-Chretien Secondary - \$27 (not installed). All are in excellent operating and cosmetic condition. All optical surfaces are clean (save for the occasional dust speck) and have never been cleaned or touched. I will ship the OTA in the original double-boxed, Styrofoam-ed shipping box.

2. **Linda P**-I am selling my Skywatcher 120 ED refractor. It includes the hard case, 2" star diagonal with 1 1/4" adapter, dovetail on tube, and tripod with altaz mount. Attached photos. Hardly used, asking \$800. For inquiries, contact me off-line at lprince2@verizon.net.

AOS Member Photos





Kalamazoo Astronomical Society

Looking Up Since 1936

Greetings from the Kalamazoo Astronomical Society!

These have been difficult times for everyone, including astronomical organizations such as ours. However, there has been one silver lining. As noted recently [in an article](#) on *Sky & Telescope's* website, telescope sales have been *booming* during the pandemic. Indeed, the KAS itself has experienced a surge in membership. And it comes at a time when we can't hold in-person activities! One day, soon I hope, the pandemic will end and things will gradually return to normal. When that time *finally* comes, the trick for us will be to maintain those new members. To that end, the KAS is offering three special online activities and I'd like to extend an invitation to your members to attend:

Online Viewing Sessions

[These unique sessions](#) will be on Zoom and feature the [KAS Remote Telescope](#), a 20-inch PlaneWave CDK and Takahashi FSQ-106 on a Paramount MEII mount. It is located under the dark desert skies of Arizona Sky Village. While attendees enjoy fresh images from the two telescopes, we'll provide background information and interesting scientific tidbits on each target. We also hope to enjoy some comradery with other amateur astronomers – basically turn it into an online star party! Some of you previously received an invitation, but since then we've decided to allow Zoom reservations through our website. You can also register using the links below:

[November 7](#) | [December 5](#) | [January 9](#) | [February 6](#)

If weather conditions necessitate a cancellation, there will be a second "cloud date" scheduled the following Saturday. These will be posted on our website, but we encourage people to join our [OVS email list](#) for notifications of postponements, cancellations, and reminders. We also plan to live-stream the sessions on our [YouTube channel](#) in case we reach our Zoom limit.

Introduction to Amateur Astronomy

This five-part lecture series covers all the basics of getting started in amateur astronomy. For the first time ever, it's being offered online and meets every two weeks starting **January 23**. Those interested are encouraged to visit the series' [webpage and register today](#). Many of you no doubt already offer similar introductory programs, but if not, then your members are welcome to attend ours. There's nothing better to retain members and encourage new ones.

Introduction to Astronomy Course

For those looking for something more challenging than an introduction to amateur astronomy, I offer this 12-week course on the basics of the science of astronomy. It begins on **January 12** and meets twice a week. This is a class of personal enrichment being offered by an amateur astronomer, for amateur astronomers. As with any course there will be assignments to complete and exams to be taken, but no grades or credits will be given. This is a great way for people to be challenged and better themselves while self-quarantining this winter during the pandemic. There is a fee, but it's only a fraction of the cost of taking a similar course at a community college. [Check out the course syllabus](#) to learn more and [contact me](#) to register.

Thank you for taking the time to read this invitation. We hope you do us the courtesy of passing it along to your membership. If you have any unique online events coming up as well, please let me know and I'd be happy to notify the KAS membership. At times like this we need to band together! Clear skies and stay healthy.

— Richard S. Bell, KAS President

Hamptons Observatory-formally Montauk Observatory www.HamptonsObservatory.org

Thurs, Dec 3, 7pm ***The Great Conjunction & Other Celestial Events: A Virtual Lecture presented by William Francis Taylor, NASA/JPL Solar System Ambassador***

Northeast Astronomical Forum-NEAF

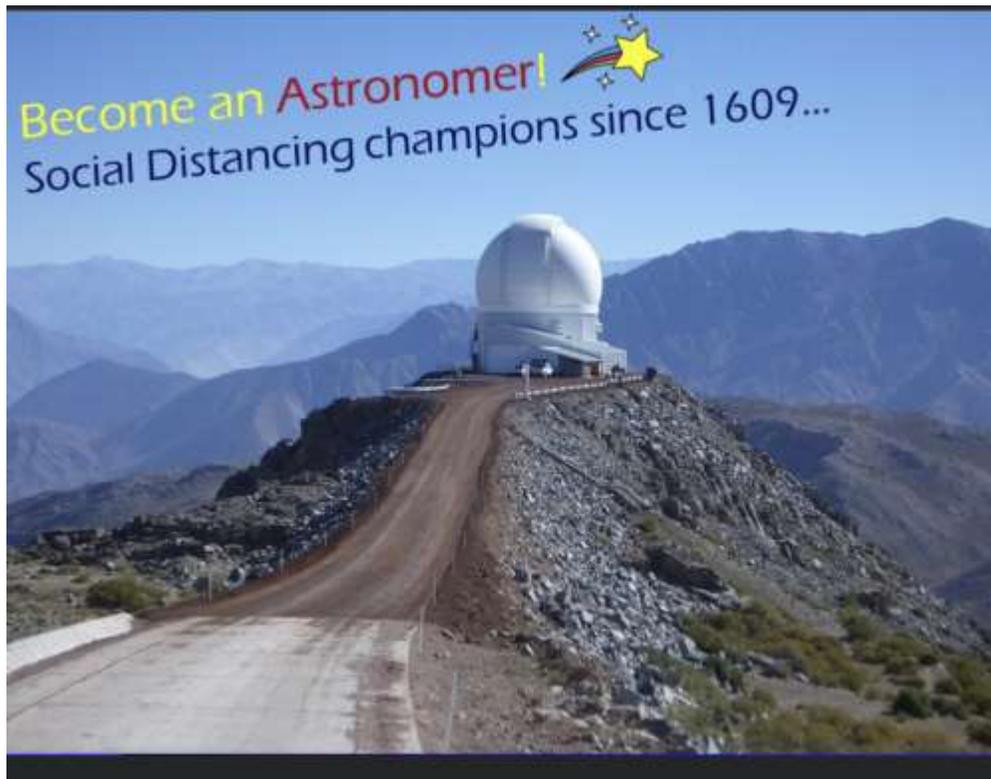
The Rockland Astronomy Club, RAC, and NEAF, are hard at work making plans and preparations for NEAF 2021, to be held on April 10th & 11th at Rockland Community College, RCC, and NEAIC, to be held on April 8th & 9th at the Crowne Plaza Hotel. NEAF 2021 is planned to be a most extraordinary event with over 100 vendors, incredible speakers, workshops, and amazing surprises. We guarantee that it will be the most incredible NEAF yet! NOTE: All 2020 purchases and registrations will automatically be credited to the 2021 NEAF and NEAIC.

Simon Foundation Free Lectures-Info thanks to Barry Gloger <https://www.simonsfoundation.org/Advancing the frontiers of research in mathematics and the basic sciences>. High-level scientific webinar geared toward those at the graduate level and beyond. Wed, Nov 4, 5-6:15 PM, Sarah T. Stewart-TRACES OF CATASTROPHE: HOW VIOLENT COLLISIONS SHAPED OUR HABITABLE PLANET Free registration at <https://www.eventbrite.com/e/traces-of-catastrophe-how-violent-collisions-shaped-our-habitable-planet-registration-125529473033>

Stony Brook University Open Science Nights, virtual via Zoom at 7:30PM

Astronomy Friday, Nov 6- Richard Anantua-“The Relativity of Space and Time in Popular Science.” For more information: <http://www.astro.sunysb.edu/openight/opennite.html>. Register at <https://docs.google.com/forms/d/e/1FAIpQLSfYlufW8wV9NZJQELSHec9008anWu4qdcVxVj94zE5bhV2MVQ/view-form?fbzx=1339757450909710837>

Physics Friday, Nov 13- Jan C. Bernauer and Ethan Cline “Movie Physics.” For more information: <http://www.physics.sunysb.edu/Physics/WorldsOfPhysics/2020-21/> Register at https://docs.google.com/forms/d/1GFFCBZ8mROLPTkVLmfyZCNL11AL6JSMQ7locQWWwYsq/view-form?edit_requested=true





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The International Space Station: 20 Continuously Crewed Years of Operation by David Prosper

Did you know that humans have been living in the International Space Station, uninterrupted, for 20 years? Ever since the first crew members docked with the International Space Station (ISS) in November 2000, more than 240 people have visited this outpost, representing 19 countries working together. They have been busy building, upgrading, and maintaining the space station - while simultaneously engaging in cutting-edge scientific research. The first modules that would later make up the ISS were launched into orbit in 1998: the Russian Zarya launched via a Proton-K rocket, and the US-built Unity module launched about a week and a half later by the Space Shuttle Endeavour. Subsequent missions added vital elements and modules to the Space Station before it was ready to be inhabited. And at last, on November 2, 2000, Expedition-1 brought the first three permanent crew members to the station in a Russian Soyuz capsule: NASA astronaut William M. Shepherd and Russian cosmonauts Sergei Krikalev and Yuri Gidzenk. Since then, an entire generation has been born into a world where humans continually live and work in space! The pressurized space inside this modern engineering marvel is roughly equal to the volume of a Boeing 747, and is sometimes briefly shared by up to 13 individuals, though the average number of crew members is 6. The unique microgravity environment of the ISS means that long-term studies can be performed on the space station that can't be performed anywhere on Earth in many fields including space medicine, fluid dynamics, biology, meteorology and environmental monitoring, particle physics, and astrophysics. Of course, one of the biggest and longest experiments on board is research into the effects of microgravity on the human body itself, absolutely vital knowledge for future crewed exploration into deep space.

Stargazers have also enjoyed the presence of the ISS as it graces our skies with bright passes overhead. This space station is the largest object humans have yet put into orbit at 357 feet long, almost the length of an American football field (if end zones are included). The large solar arrays – 240 feet wide - reflect quite a bit of sunlight, at times making the ISS brighter than Venus to observers on the ground! Its morning and evening passes can be a treat for stargazers and can even be observed from brightly-lit cities. People all over the world can spot the ISS, and with an orbit only 90 minutes long, sometimes you can spot the station multiple times a night. You can find the next ISS pass near you and receive alerts at sites like NASA's Spot the Station website (spotthestation.nasa.gov) and stargazing and satellite tracking apps.

Hundreds of astronauts from all over the world have crewed the International Space Station over the last two decades, and their work has inspired countless people to look up and ponder humanity's presence and future in space. You can find out more about the International Space Station and how living and working on board this amazing outpost has helped prepare us to return to the Moon - and beyond! - at nasa.gov.

The ISS photobombs the Sun in this amazing image taken during the eclipse of August 21, 2017 from Banner, Wyoming. Photo credit: NASA/Joel Kowsky More info: bit.ly/eclipseiss



A complete view of the ISS as of October 4, 2018, taken from the Soyuz capsule of the departing crew of Expedition 56 from their Soyuz capsule. This structure was built by materials launched into orbit by 37 United States



Space Shuttle missions and 5 Russian Proton and Soyuz rockets, and

assembled and maintained by 230 spacewalks, with more to come! Credit: NASA/Roscosmos

More info: bit.ly/issbasics