

Celestial Observer

www.aosny.org

OFFICIAL NEWSLETTER

January 2021

The Amateur Observers' Society of New York

The Amateur Observers' Society

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The **Celestial Observer** is the 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.



SIERRA CLUB
FOUNDED 1892



This Month's Issue

- President's Message
- Club News
- City of Stars on Facebook
- Member's Photos

Next Meeting (online): Sunday January 10th, 1:30PM
Contact AOSsecretary@aosny.org for a meeting invitation

The President's Message

By Sue Rose

Happy New Year everyone.

Please note that we are moving the meeting from the first Sunday to the second due to January 3 being part of New Year's week-end. Hope to "see" everyone on January 10.

I hope everyone had a pleasant holiday season. Let's hope this new year brings all good things and that we are on our way back to normal. We look forward to the time when we can actually meet each other in person and give someone a hug instead of a fist bump, share an eyepiece and observe the sky with other members and the public. Yes, let's hope for a safe, healthy and prosperous new year for everyone.

Thanks very much to our own **Joe R** who regaled us with thoughts of meteors, planets violating the social distancing regulations in our skies, and other celestial adventures to come. It's always a pleasure to have Joe around to give us a glimpse into the upcoming weather patterns affecting our ability to observe.

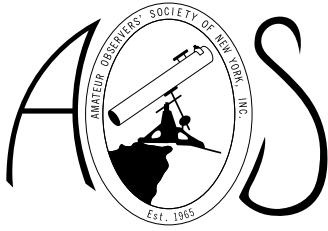
We greatly appreciate the opportunity to visit with **Jeff Norwood** at Camera Concepts in Stony Brook. This was a first as we got to see all the cool things that he has to offer. Remember that AOS members get a discount and Jeff is an honorary AOS member.

He stands behind everything he sells and checks it out before it leaves the store and he's local so no shipping fees, unless you want them.

Jason C continues to line up great

presenters for our upcoming meetings as well. Thanks Jason. 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. For January 10, he's lined up former Mid-Hudson Astronomical Club President and Solar System Ambassador **Dr. Willie K. Yee** 2nd - presenting our 2nd in a series of Cultural Astronomy Talks - Astronomical Skies of Asia. On





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January 24, former Astronomical League President and now Vice President, currently 19,000 Members - **Charles E. Allen** ("Chuck") - Discussing the programs of the Astronomical League and What's In Store for 2021.

Some of the 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. **Wishing everyone a safe and healthy New Year.**

*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 again at some point. Till then,



AOS 2021 Calendars

They are on order and should be in the mail soon. The pictures are fantastic. Thank you everyone who agreed to let us publish them. The size of the box has become constricted so we're not able to add everything we wanted. See the list of dates elsewhere so you can add these important AOS and celestial events to your own calendars. They'll be included over the next few months due to the size. Be advised that some dates are wishful thinking at this point, but we are hoping. We did order a few extras so if you didn't get your order in already, contact Treasurer **Harvey M** ASAP. The cost is \$18 and will be mailed.

Observing

The winter solstice is behind us, so the Sun is slowly beginning the journey higher in our sky, shortening the available night viewing time. Take advantage while you can.

In the midst of this crazy world, our intrepid Director of the Susan Rose Observatory on the grounds of Custer Institute in Southold, **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 equipment to project images captured by the C14 within our dome onto a monitor outside. Thank you all. Sagamore Hill is waiting for us to be able to bring the night sky views back to their visitors as is the Jones Beach Nature Center. We are hoping that at some point in the not-too-distant future we will be back there with all our equipment. In the meantime, we are working on getting our club use permit back. Until we are sure that virus transmission won't occur via eyepiece use, we'll need to continue with digital equipment.

Try the monthly www.GlobeatNight.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. Until we get our club permit, we suggest that you purchase a Stargazing permit from the NYS Parks Dept. The permit is good from January 1-December 31 each year and is for the vehicle, regardless of the number of occupants.

Please note: Due to COVID-19 restrictions, you cannot purchase a permit in person.

To order online, please visit the [Long Island Region page of the Parks Department here](#).

According to the site, there will be a link activated on January 1 for *digital application and payment via credit card*.

If you are uncomfortable utilizing online services and credit card, you may follow the directions for dropping off your info in the designated Drop Box locations for processing and mailing. In speaking with the representative of Long Island Parks Permits, they assure the process will be a quick turnaround.

Just be sure you have some stargazing equipment, like a star map. The permit allows you to go any time you want which is a great advantage. We are working on getting our permit back to utilize the former Nature Center area and the new Nature Center further to the west at Jones Beach. That will only be good for specific dates that we have requested. Hopefully, we will be able to start our public programs in the not-too-distant future. Stay tuned for updates.

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, 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.

Our observatory in Southold at the Custer Institute is open on

clear Saturday nights under the auspices of our 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 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.

2021 Observer's Handbook from the RASC

To obtain this excellent annual publication you can 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 the [league's online store](#) for the US edition. S&H is additional.

City of Stars Tour

Many of you may have heard of my City of Stars tours, the "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 **Linda P** have created a [Facebook page](#), City of Stars - New York City, in which they have expanded Tyson's original list to 42 sites. They are mostly in Manhattan but are also in surrounding areas, with brief descriptions, photos, maps, and links for further information. We hope you will visit [City of Stars - New York City!](#) . If you see any

other potential sites on your travels around NYC and surrounding areas, please contact Linda. She'll also be adding a website soon.

AOS Receives Amazon Smile Donation for Q3

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.** We received over \$50 for the 2020 3rd quarter. Thank you.

NEAF 2021: Northeast Astronomy Forum

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.

Online Exhibition on Early American Astronomy

There is currently an exhibition at the John Carter Brown Library in Boston, called "Constellations: Re-imagining Celestial Histories in the Early Americas." There is a routine version at the JCB website, but the interactive immersive experience is really better for exploring the interconnections between the books and topics. The focus is on the Spanish and Portuguese colonies, although there are some New England texts by the Mathers, Winthrop, Clap,

and others. The exhibition is fantastic.

Astronomical League Special Observing Award

The Astronomical League is excited to announce that they will be offering a Special Observing Award to commemorate the Great Conjunction of Jupiter and Saturn on December 21, 2020. Check out [their site](#) for complete information and requirements. The deadline for submission is February 21, 2021)

NASA & Astronomical League Special Observing Challenge

The Astronomical League has been working with NASA to bring you Observing Challenges. These are opportunities to participate in events associated with space missions to objects within the Solar System. These challenges have certificates signed by the Astronomical League President and Associate Director for Science, Heliphysics Science Division (HSD), Goddard Space Flight Center. New opportunities will be added as new milestones for various missions occur. Follow the instructions at [the observing challenge web page](#).

Free Online Course on The Sun at The Open University

The Sun dominates our lives by defining our day, but how much do you know and understand about it? [This free course](#) will help you to explore the workings of what, from Earth, appears to be the brightest star in our universe by looking at its structure and the main processes taking place within it. You will also examine the phenomenon of sun spots.

DID YOU KNOW?

Neptune has only completed one orbit around the Sun since its discovery. In fact, it takes 165 years and did so in 2011!

Upcoming Online Presentations

Stony Brook University First Friday of the Month Astronomy Presentation. [Sign up here](#).

Explore Scientific's "Explore Alliance Live" is a daily live video simulcast featuring engineers and technical representatives from Explore Scientific, including the show's host Scott Roberts, the company's Founder and President. To learn more about their programs you can [visit their YouTube channel and playlists](#).

Observing Projects and Useful Websites

[Skyscrapers Observing Projects for January](#)

[The Night Sky This Month](#)

[Astronomy Magazine Sky This Week](#)

[Sky & Telescope Magazine](#)

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

[Globe at Night](#)

[EarthSky](#)

[NASA JPL: What's Up Each Month](#)

Southern Skies Scope Services

Amateur astrophotographer Martin Pugh operates two observatories on his rural property in New South Wales, Australia. He offers the following services:

- Telescope hosting with a complimentary pier and onsite 24x7 technical support (Pugh).
- Telescope rental. Complete, high end imaging platforms ready to go
- Southern hemisphere data subscription services to a 17" Planewave CDK.
- For more information contact Martin Pugh at mpastro2001@yahoo.co.uk



A SLIP OF COMET

I am like a slip of comet,
Scarce worth discovery, in
some corner seen
Bridging the slender
difference of two stars,
Come out of space, or
suddenly engender'd
By heady elements, for
no man knows;
But when she sights the
sun she grows and sizes
And spins her skirts out,
while her central star
Shakes its cocooning
mists; and so she comes
To fields of light; millions
of travelling rays
Pierce her; she hangs
upon the flame-cased
sun,
And sucks the light as full
as Gideons's fleece:
But then her tether calls
her; she falls off,
And as she dwindles
shreds her smock of gold
Between the sisting
planets, till she comes
To single Saturn, last and
solitary;
And then she goes out
into the cavernous dark.
So I go out: my little
sweet is done:
I have drawn heat from
this contagious sun:
To not ungentle death
now forth I run.

Gerard Manley Hopkins

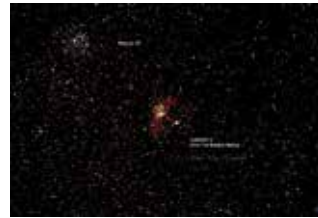


Member Astro Photos

NGC 5139
Joe M



Moon
Terry B



Caldwell 11
Joe M



Sun spots
John K



Caldwell 23
Joe M



Caldwell 50
Joe M



Gemind
Bill B





Check Your Sky's Quality with Orion!

By David Prosper

Have you ever wondered how many stars you can see at night? From a perfect dark sky location, free from any light pollution, a person with excellent vision may observe a few thousand stars in the sky at one time! Sadly, most people don't enjoy pristine dark skies. Knowing your sky's brightness will help you navigate the night sky.

The brightness of planets and stars is measured in terms of apparent magnitude, or how bright they appear from Earth. Most visible stars range in brightness from 1st to 6th magnitude, with the lower number being brighter. A star at magnitude 1 appears 100 times brighter than a star at magnitude 6. A few stars and planets shine even brighter than first magnitude, like brilliant Sirius at -1.46 magnitude, or Venus, which can shine brighter than -4 magnitude! Very bright planets and stars can still be seen from bright cities with lots of light pollution. Given perfect skies, an

observer may be able to see stars as dim as 6.5 magnitude, but such fantastic conditions are very rare; in much of the world, human-made light pollution drastically limits what people can see at night.

Your sky's limiting magnitude is, simply enough, the measure of the dimmest stars you can see when looking straight up. So, if the dimmest star you can see from your backyard is magnitude 5, then your limiting magnitude is 5. Easy, right? But why would you want to know your limiting magnitude? It can help you plan your observing! For example, if you have a bright sky and your limiting magnitude is at 3, watching a meteor shower or looking for dimmer stars and objects may be

Quality Meter, you can also use your own eyes and charts of bright constellations! The Night Sky Network offers a free printable Dark Sky Wheel, featuring the stars of Orion on one side and Scorpius on the other, here: bit.ly/darkskywheel. Each wheel contains six "wedges" showing the stars of the constellation, limited from 1-6 magnitude. Find the wedge containing the faintest stars you can see from your area; you now know your limiting magnitude! For maximum accuracy, use the wheel when the constellation is high in the sky well after sunset. Compare the difference when the Moon is at full phase, versus new. Before you start, let your eyes adjust for twenty minutes to ensure your night vision is at its

best. A red light can help preserve your night vision while comparing stars in the printout.

Did you have fun? Contribute to science with monthly observing programs from Globe at Night's website (globeatnight.org).



The Dark Sky Wheel, showing the constellation Orion at 6 different limiting magnitudes (right), and a photo of Orion (left). What is the limiting magnitude of the photo? For most observing locations, the Orion side works best on evenings from Jan-March, and the Scorpius side from June-Aug.

a wasted effort. But if your sky is dark and the limit is 5, you should be able to see meteors and the Milky Way. Knowing this figure can help you measure light pollution in your area and determine if it's getting better or worse over time. And regardless of location, be it backyard, balcony, or dark sky park, light pollution is a concern to all stargazers!

How do you figure out the limiting magnitude in your area? While you can use smartphone apps or dedicated devices like a Sky

org), and check out the latest NASA's science on the stars you can - and can't - see, at nasa.gov.

The Dark Sky Wheel, showing the constellation Orion at 6 different limiting magnitudes (right), and a photo of Orion (left). What is the limiting magnitude of the photo? For most observing locations, the Orion side works best on evenings from Jan-March, and the Scorpius side from June-Aug.

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!

What's Up, Doc? †

January 2021

Dr. Aaron B. Clevenson, Observatory Director, Insperity Observatory

This document tells you what objects are visible this next month for many of the Astronomical League Observing Programs. If you are working on one of the more advanced Observing Programs, then I assume that you are also probably tracking where your objects are all the time. This concentrates on the more common and starter level Observing Programs.

Naked-Eye Observing Programs

Meteors – any night, any time, anywhere; the darker the sky the better. Major showers are in **BOLD**:

<u>Shower</u>	<u>Duration</u>	<u>Maximum</u>	<u>Type</u>
Quadrantids	1/1 to 1/10	1/3	Major
Zeta Aurigids	12/11 to 1/21	12/31 & 1/1	Minor
January Bootids	1/9 to 1/18	1/16 to 1/18	Minor
Alpha Centaurids	1/28 to 2/21	2/8	Minor
Delta Cancri	12/14 to 2/14	1/17	Minor
Canids	1/13 to 1/30	1/24 & 1/25	Minor
Eta Carinids	1/14 to 1/27	1/21 & 1/22	Minor
Eta Craterids	1/11 to 1/22	1/16 & 1/17	Minor
January Draconids	1/10 to 1/24	1/13 to 1/16	Minor
Rho Geminids	12/28 to 1/28	1/8 & 1/9	Minor
Alpha Hydrids	1/15 to 1/30	1/20 & 1/21	Minor
Alpha Leonids	1/13 to 2/13	1/24 to 1/31	Minor
Gamma Velids	1/1 to 1/17	1/5 to 1/8	Minor

Constellations, Northern Skies – any night, any time, anywhere, the darker the sky the better.

Last Chance: Cygnus, Lyra, Vulpecula, Sagitta, Delphinus, Equuleus, Aquarius, Piscis Austrinus.

Transit: Camelopardalis, Perseus, Aries, Taurus, Eridanus, Fornax.

New Arrivals: Lynx, Ursa Major, Leo Minor, Cancer, Canis Minor, Monoceros, Canis Major, Columba.

Binocular Observing Programs

Binocular Messier – Monthly highlights include:

Easy – 31, 34, 35, 36, 37, 38, 39, 41, 42, 44, 45, 46, 47, 48, 50, 52, 67, 103

Medium – 33, 78, 79, 81, 82

Hard – 1, 32, 97

Big Binoculars – 77, 108, 110

Deep Sky Binocular – Monthly highlights include:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 55, 56, 57, 58, 59, 60

Other Observing Programs

Messier In addition to those listed under Binocular Messier, check out: 43, 74, 76

Caldwell

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20, 22, 23, 24, 25, 28, 30, 31, 33, 39, 41, 43, 44, 46, 49, 50, 51, 54, 56, 58, 62, 64, 65, 67, 70, 73

Double Star

2, 3, 5, 6, 8, 16, 19, 21, 23, 24, 27, 28, 30, 32, 33, 34, 40, 42, 46, 47, 49, 50, 53, 55, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 85, 89, 95, 99

Solar System and Lunar Observing Programs

Solar System – These are the tasks that can be done this month:

Sun – Any clear day is a good time to get those sunspots.

Moon:

The Maria requirement can be done any time the moon is visible. Look after 1/19 and before 1/5 for the fullest views.

The Highlands requirement can be done at the same time.

The Crater Ages requirement is best done on 1/18 or 1/19.

The Scarps requirement is best done on 1/20.

Occultations occur all the time, the bright ones can be found on the internet. Objects disappear on the East side of the moon.

Venus and Pluto are not visible in the evening sky this month.

Sunset is at 1813 CT.

Mercury is in Capricornus and sets at 1916 CT by mid-month.

Mars is in Aries and sets at 0025 CT by mid-month.

Jupiter is in Capricornus and sets at 1852 by mid-month.

Saturn is in Capricornus and sets at 1840 by mid-month.

Uranus is in Aries and sets at 0038 by mid-month.

Neptune is in Aquarius and sets at 2137 by mid-month.

Pluto is in Aquarius and sets at 232 by mid-month.

Asteroids – Course Plotting and Measuring Movement requirements can be done at any time on any asteroid. See above to identify the bright ones this month.

Lunar

Key timings are indicated below: (New Moon, 1/12 at 0502 CST)

4 days, 1/16 7 days, 1/192 10 days, 1/22 14 days, 1/26

Old moon in new moons arms – before 0502 CST on 1/15, 10 % illuminated. (72 hr > New)

New moon in old moons arms – after 0502 CST on 1/9, 10 % illuminated. (72 hr < New)

Waxing Crescent – before 2102 CST on 1/21, 4 % illuminated. (40 hr > New)

Waning Crescent – after 0502 CST on 1/10, 4 % illuminated. (48 hr < New)

The Astronomical League Observing Programs (Most of the AL Observing Programs are listed here*):

Active Galactic Nuclei	Adv. Binocular Double Star	Analemma	ARP Peculiar Galaxies
Asterisms	Asteroids	Astronomy Before the Telescope	Beyond Polaris
Binocular Double Star	Binocular Messier	Binocular Variable Star	Bright Nebulae
Caldwell	Carbon Star	Comets	Constellation Hunter
Dark Nebulae	Dark Sky Advocate	Deep Sky Binocular	Double Star
Earth Orbiting Satellite	Flat Galaxy	Galaxy Groups & Clusters	Galileo
Globular Clusters	Herschel 400	Herschel II	Hydrogen-Alpha Solar
Local Galaxy Group & Neighborhood	Lunar	Lunar II	Mars
Messier	Meteors	NEO	Nova
Open Clusters	Outreach	Planetary Nebulae	Occultations
Radio Astronomy	Sketching	Sky Puppy	Planetary Transit
Southern Skies Telescope	Stellar Evolution	Solar System Observers	Southern Skies Binocular
Universe Sampler	Urban	Sunspotters	Two in the View
		Variable Star	

The Master Observer Progression

The Astronomical League Herschel Society

* - Although some clubs are not detailed in this “What’s Up Doc?” handout, you can get information on many of their objects by using the “What’s Up Tonight, Doc?” spreadsheet (version 4.1). To get your copy, talk to the Doc, Aaron Clevenson, by sending an email to aaron@clevenson.org. It is also available through the AL website.

† - “What’s Up Doc?” is used with permission from Warner Bros. Entertainment Inc.

To be added to our monthly distribution list, send an email to aaron@clevenson.org and ask to be added.

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Insperty Observatory, 2505 S. Houston Avenue, Humble, TX: www.humbleisd.net/observatory

2021 Astro Calendar Dates-More Dates Next Month

AOS Meetings-Jan 10, Feb 7, Mar 7, April 11, May 2, June 6, Sept 12, Oct 3, Nov 7, Dec 5

ALCON-Aug 4-7 in ABQ

Astronomy Festival on the National Mall-June 19

Cross Quarter Days-Feb 2, May 1, Aug 1, Nov 1

Daylight Savings Time-starts Mar 14, ends Nov 7

Earth's Aphelion-Jan 2, **Earth's Perihelion**-July 5

Eclipses- May 26 Total Penumbra Lunar Eclipse, June 10 Partial 72% Annular Solar Eclipse, Nov 18-19 Partial Lunar Eclipse, Dec 4 Total Solar Eclipse (South Pole)

Global Astronomy Month-April each year

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

January 4-13

February 3-12

March 5-14

April 3-12

May 2-11

June 1-10

June 30-July 9

July 30-August 8

August 29-Sept 7

Sept 27-Oct 6

Oct 27-Nov 5

Nov 25-December 4

International Dark Sky Week April [4-11](#)

International Observe the Moon Night-Oct 16

International SUN-day-June 20

JBNCO Member Nights Jan. 8, 9, 15, 16, Feb. 5, 6, 12, 13, Mar. 5, 6, 12, 13, Apr. 2, 3, 9, 10, 21, May 5, 7, 8, 14, 15, 26, June 4, 5, 10am, 11, 12, Jul. 2, 3, 9, 10, 30, 31, Aug. 6, 7, 12, Sept. 3, 4, 10, 11, Oct. 1, 2, 8, 9, 16, 29, 30, Nov. 5, 6, 18, 26, 27, Dec. 3, 4

Manhattanhenge May 29, 30, July 11, 12

Messier Marathon- [Mar 13](#)

Meteor Showers

Jan 2-3 Quadrantids, Apr 21-22 Lyrids, May 5-6 Eta Aquarids, Aug 12-13 Perseids, Oct 8-9 Draconids, Oct 20-21 Orionids, Nov 17-18 Leonids, Dec 13-14 Geminids

Moon-Phase Dates

New Moon	First Quarter	Full Moon	Third Quarter
			Jan 6
Jan 13	Jan 20	Jan 28	Feb 4
Feb 11	Feb 19	Feb 27	Mar 5
Mar 13	Mar 21	Mar 28	Apr 4

Moon-Blue Aug 22

Moon-Micro May 11, Nov 19, Dec 18

Moon-Super April 26, May 26

Moon-Lunar X April 19, Mar 20, May 18, July 16, Sept 13, Nov 11

National Astronomy Weeks-May 10-16, Oct 4-10

National Astronomy Day-May 15 & Oct 9

Northeast Astronomy Forum- April 10-11

Rockland/AOS Summer Star Party-Aug 6-15

Seasons

Spring (Vernal) Equinox-Mar 20

Fall (Autumnal) Equinox-Sept 22

Summer Solstice-June 20

Winter Solstice-Dec 21

Stellafane Convention-August 5-8.

World Space Week Same Every Year Oct 4-10

Stars on Sunday at Hofstra- Feb 7, Mar 7, Apr 11, Oct 3, Nov 7, Dec 5

Astronomical Events by Date

Jan 1 View M41

Jan 9 [Conjunction of Mercury and Saturn](#)

Jan 11 [Conjunction of Jupiter and Mercury](#), [Conjunction of the Moon and Venus](#)

Jan 14 [Conjunction of the Moon and Mercury](#), View M47

Jan 21 [Conjunction of the Moon and Mars](#), [Conjunction of Mars and Uranus](#)

Jan 23 [Mercury at greatest elongation east](#)

Jan 23 [Saturn at superior conjunction](#)

Jan 28 [Jupiter at superior conjunction](#)

Jan 30 View M44

Feb 8 [Mercury at inferior conjunction](#)

Feb 10 [Conjunction of the Moon and Saturn](#)

Feb 18 [Conjunction of the Moon and Mars](#)

Feb 19 View M81