CENTRAL NY OUTDOORS

Stargazing in Upstate NY: Where to find solar eclipse parties

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star 1.jpg

A NY-centric view of the path of the next great American eclipse on April 8, 2024. *(Image from Fred Espenak, NASA GSFC)*

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This summertime weekly summary for planetary, satellite, constellation, and other observing opportunities covers the second full week of August. As of this publishing, there are 10 days left until what has been branded as the "Great American Eclipse." While you are encouraged to take some time on Aug. 21 to go outside with your solar-safe glasses and view the partial eclipse we New Yorkers will see from our latitude, local amateur astronomers are already awaiting the official "real deal" that will make its way across upstate New York on April 8, 2024.

The Sun-Earth-Moon geometry results in a partial or total solar eclipse somewhere on the Earth roughly twice a year, although there are some special years when as many as five solar eclipses can occur - the last special year being 1935 and the next one way out in 2206. If the Aug. 21 eclipse whets your appetite, there are many eclipses you can chase coming up, with three partial eclipses spread about the globe in 2018 alone. For upstate New Yorkers, however, totality will eventually come to many of us just by walking out our front doors. Those in Rochester will need only drive a few minutes west to be directly underneath the middle of the next continental-U.S. total eclipse path, while those in Buffalo will be right under the middle of the path.

If you cannot make it south to the total eclipse in 2017, just skip the second dessert, add a few more minutes to your daily jog, and keep in good enough shape to wait out the return of the next equally "Great American Eclipse" in 2024.

Reminder: In last week's article, we discussed solar safety and the presence of unsafe solar glasses in the market. If you bought or were given a pair, please read the NASA News press release on how to know your glasses are safe to use. In a nutshell: **If you doubt - throw them out.**

Many local libraries have already obtained solar-safe glasses for the eclipse, and I encourage you to check with your local branch to see if and when they'll be made available.

Below is a list of scheduled lecture and observing opportunities around Upstate New York for the eclipse - this list will be reproduced in the following articles and will hopefully be added to as other locations announce events. If you know of an event not listed, please send an email with details. As always around here, we can only hope for clear skies!

Solar Eclipse Calendar

Organizer	Location	Event	Date	Time	Contact Info
Albany Area Amateur Astronomers & Dudley Observatory	Schenectady	Solar Eclipse	Aug. 21	1:22 - 3:56 PM	email, website
Cazenovia Public Library	Cazenovia	Solar Eclipse Lecture	Aug. 16	7:00 - 8:30 PM	315-655-9322 website
Kopernik Observatory & Science Center	Vestal	Solar Eclipse	Aug. 21	11:30 AM - 4:00 PM	email, website
Liverpool Public Library	Liverpool	Solar Eclipse Party	Aug. 21	1:00 - 4:00 PM	315-457-0310 website
Marcellus Free Library	Marcellus	Solar Eclipse Party	Aug. 21	1:00 - 4:00 PM	315-673-3221 website
Mohawk Valley Astronomical Society	Waterville	Solar Eclipse	Aug. 21	12:00 - 4:00 PM	email, website
Onondaga County Libraries	NOPL North Syracuse	Solar Eclipse Lecture	Aug. 14	6:30 - 8:00 PM	315-458-6184 website
Onondaga County Libraries	Jamesville	Lecture & Solar Eclipse @ DeWitt & Jamesville Library	Aug. 21	12:00 - 4:00 PM	315-446-3578 website
Onondaga County Libraries	Syracuse	Solar Eclipse Party @ Hazard Branch	Aug. 21	12:00 - 4:00 PM	315-435-5326 website
Onondaga County Libraries	Syracuse	Solar Eclipse Party @ Paine Branch	Aug. 21	2:00 - 3:00 PM	315-435-5442 website
Onondaga County Libraries	Syracuse	Solar Eclipse Party @ White Branch	Aug. 21	2:00 - 3:00 PM	315-435-3519 website
Skaneateles Library	Skaneateles	Solar Eclipse Lecture	Aug. 12	1:00 - 2:00 PM	email website

Lectures And Observing Opportunities In Upstate/Central New York

New York has a number of astronomers, astronomy clubs, and observatories that host public sessions throughout the year. Announced sessions from several respondent NY astronomy organizations are provided from the third week to the end of August so you can plan accordingly. As wind and cloud cover are always factors when observing, please check the provided contact

information and/or email the groups a day-or-so before an announced session, as some groups will also schedule weather-alternate dates. Also use the contact info for directions and to check on any applicable event or parking fees.

Astronomy Events Calendar

Organizer	Location	Event	Date	Time	Contact Info
Adirondack Public Observatory	Tupper Lake	Public Observing	Aug. 18	1/2 Hour After Sunset	email, website
Adirondack Public Observatory	Tupper Lake	Public Observing	Aug. 21	1/2 Hour After Sunset	email, website
Albany Area Amateur Astronomers & Dudley Observatory	Schenectady	Night Sky Adventure	Aug. 15	8:00 - 9:30 PM	email, website
Albany Area Amateur Astronomers & Dudley Observatory	Schenectady	AAAA Meeting	Aug. 17	7:30 - 9:00 PM	email, website
Albany Area Amateur Astronomers & Dudley Observatory	Schenectady	Octagon Barn Star Party	Aug. 18	8:00 - 10:00 PM	email, website
Astronomy Section, Rochester Academy of Science	Rochester	Observing At The Strasenburgh	Aug. 12	8:30 - 10:30 PM	Jim S., 585-703-9876
Baltimore Woods	Marcellus	Bob Piekiel & Perseid Meteor Shower	Aug. 12/13	8:30 - 11:00 PM	email, website
Baltimore Woods	Marcellus	Bob Piekiel & Solar Observing	Aug. 26/27	1:00 - 3:00 PM	email, website
Green Lakes State Park	Fayetteville	Bob Piekiel & Summer Skies	Aug. 18/19	8:00 - 10:00 PM	315-637-6111 website
Kopernik Observatory & Science Center	Vestal	Friday Night Lecture & Observing	Aug. 11	8:00 PM	email, website
Kopernik Observatory & Science Center	Vestal	Perseid Meteor Shower	Aug. 12	8:00 PM - 12:30 AM	email, website
Kopernik Observatory & Science Center	Vestal	Friday Night Lecture & Observing	Aug. 18	8:00 PM	email, website
Kopernik Observatory & Science Center	Vestal	Friday Night Lecture & Observing	Aug. 25	8:00 PM	email, website
Mohawk Valley Astronomical Society	Waterville	Public Stargazing @ Waterville Library	Aug. 26/27	8:30 - 11:30 PM	email, website

ISS And Other Bright Satellites

Satellite flyovers are commonplace, with several bright passes easily visible per hour in the nighttime sky, yet a thrill to new observers of all ages. Few flyovers compare in brightness or interest to the International Space Station. The flyovers of the football field-sized craft with its massive solar panel arrays can be predicted to within several seconds and take several minutes to complete.

This will be a long few weeks for ISS watchers, with a pass on the evening of the 11th, one on the 13th, then no flyovers until August 31st. If you follow the August 11th flyover far enough, you'll see the ISS pass very close to Saturn, will within the field of view of 10x50 binoculars. On the 13th, the ISS will fly exceptionally close to Jupiter and past the bright Spica in the constellation Virgo. Properly equipped members of the amateur radio community can even add audio to their visual experiences by listening to transmissions from the ISS - see ariss.org or issfanclub.com for details.

ISS Flyovers

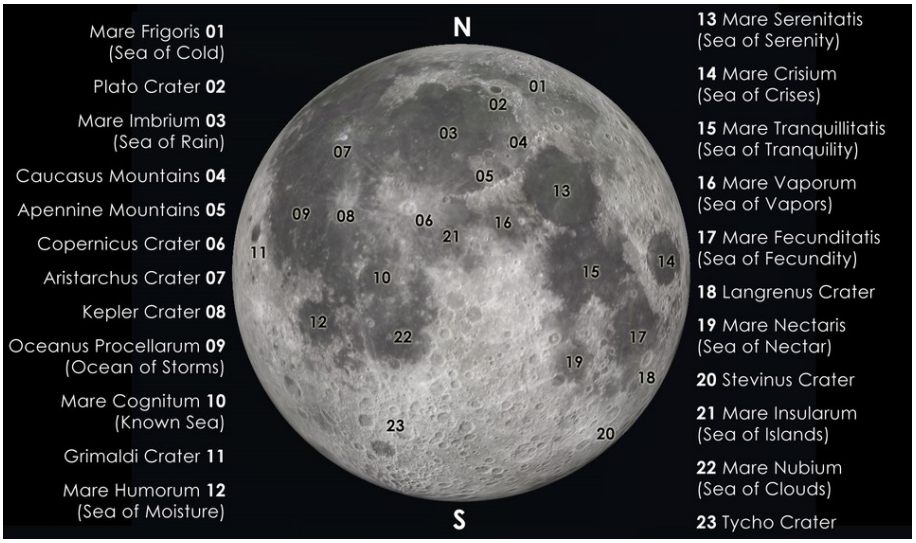
Date	Brightness	Approx. Start	Start Direct.	Approx. End	End Direct.
11-Aug	very	9:30 PM	W/NW	9:34 PM	S
13-Aug	moderately	9:23 PM	W/SW	9:25 PM	S/SW

Predictions courtesy of heavens-above.com. For updated nightly predictions, visit spotthestation.nasa.gov.

Lunar Phases

Third Quarter:	New:	First Quarter:	Full:
Aug. 14, 9:14 PM	Aug. 21, 2:30 PM	Aug. 29, 4:12 AM	Sept. 6, 3:02 AM

The Moon's increasing brightness as Full Moon approaches washes out fainter stars, random meteors, and other celestial objects - this is bad for most observing, but excellent for new observers, as only the brightest stars (those that mark the major constellations) and planets remain visible for your easy identification. If you've never tried it, the Moon is a wonderful binocular object. The labeled image identifies features easily found with low-power binoculars.

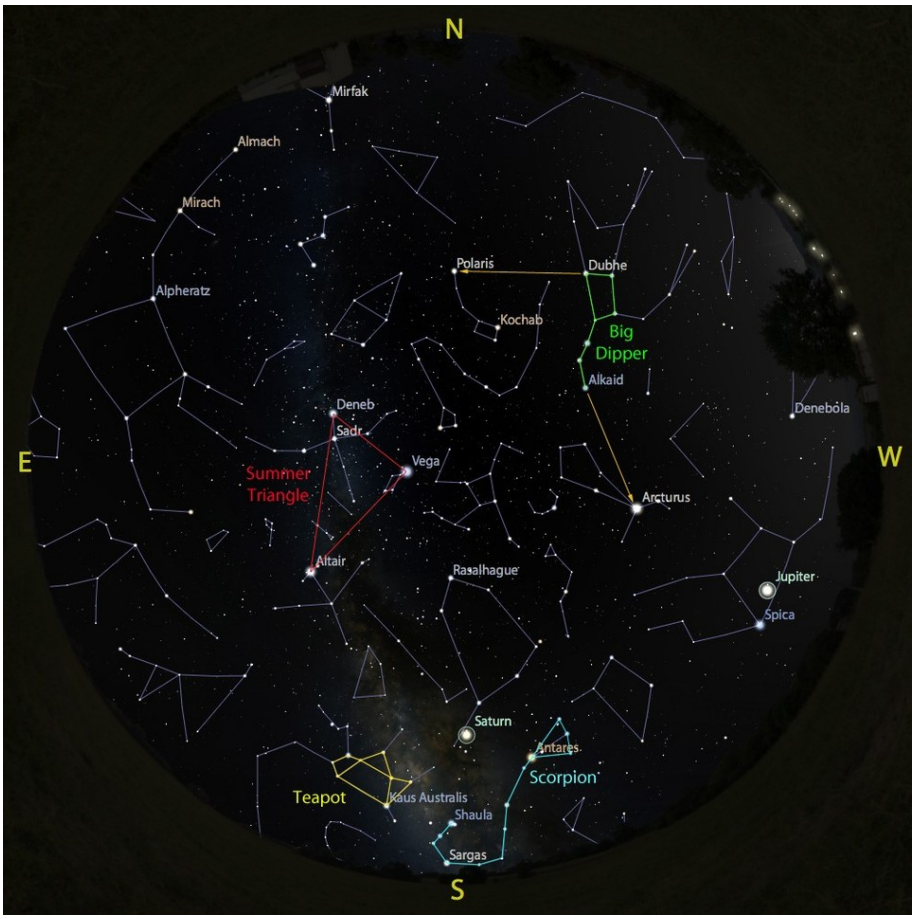


Lunar features prominent in low-power binoculars.

Observing Guides

Items and events listed below assume you're outside and observing most anywhere in New York state. The longer you're outside and away from indoor or bright lights, the

better your dark adaption will be. If you have to use your smartphone, find a red light app or piece of red acetate, else set your brightness as low as possible.

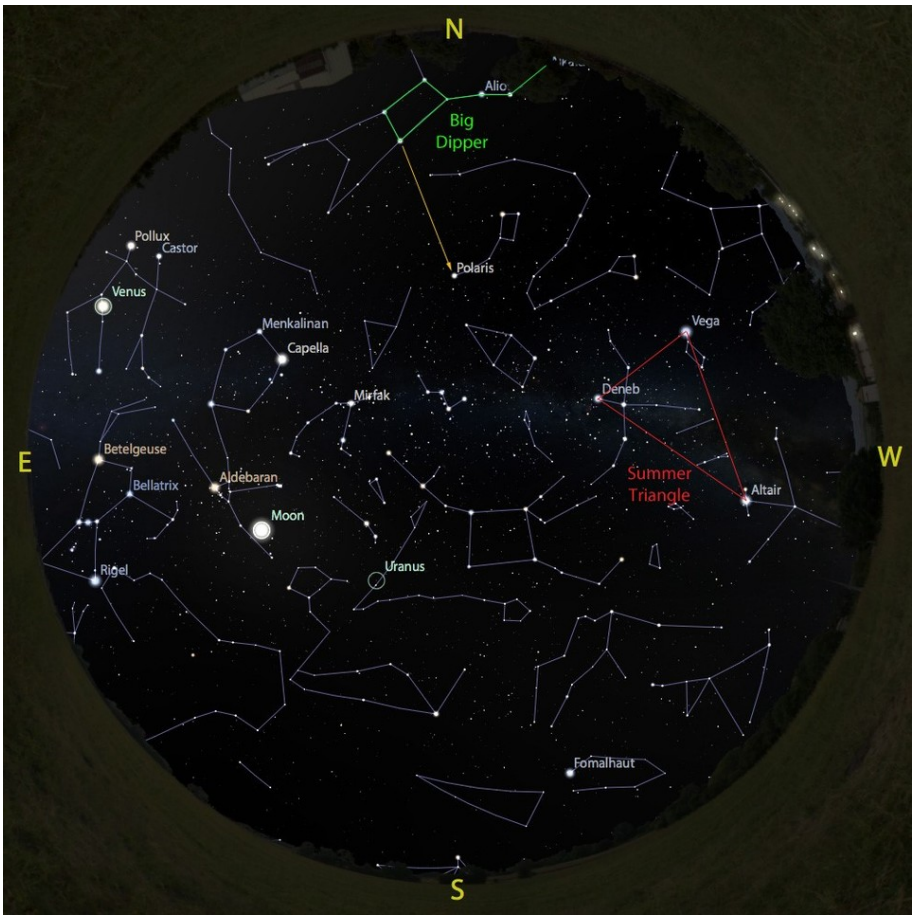


The sky at 9 p.m. from Aug. 11 to 18, accurate all week except for the changing Moon position.

Evening Skies: The two most prominent shapes in the sky are the Big Dipper and the Summer Triangle, with the Sagittarius Teapot highlighted in several previous articles. Whether or not you can see the Teapot, another

very distinctive shape is as high as it will get in the southern sky right now just to the west. The body of Scorpius, easily identified by the bright red-orange star Antares and now residing below Saturn in the nighttime sky, hooks down and back up around the southern tree line at our latitude in a shape that nearly every civilization has recorded as being a celestial scorpion. Like the Teapot, the Scorpion tail is between us and the galactic center - a scan with binoculars will reveal a number of objects that do not come into focus like their surrounding stars.

The Big Dipper is a bright and easy guide for finding Polaris, the north star. From its handle, you can "arc" down to Arcturus. Jupiter, which stands out soon after sunset, is close to the bright star Spica in Virgo and to the southwest of bright Arcturus in Bootes. Saturn is also visible soon after dusk, rising soon after the bright orange star Antares in Scorpius.



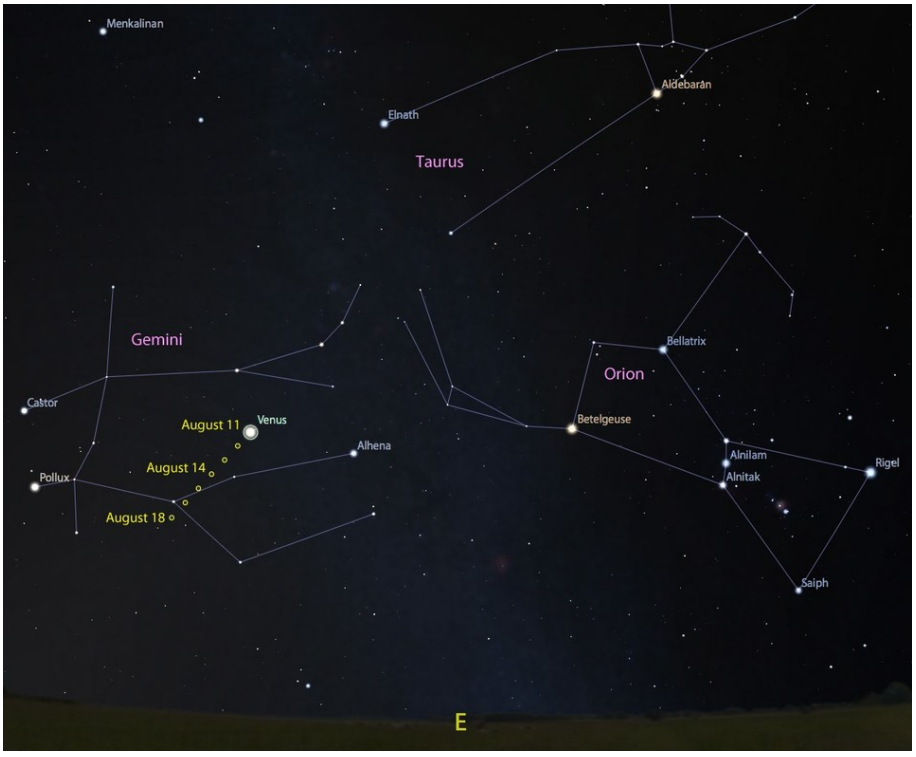
The sky at 4 a.m. from Aug. 11 to 18, accurate all week except for the changing Moon position.

Morning Skies: Venus is unmistakable in the early morning sky, second only to the Moon in brightness before sunrise. The Moon is approaching Venus this week, coming into closest approach on the 19th. As dawn approaches, Venus and the bright stars Betelgeuse, Aldebaran, and Capella may be the last few celestial objects you see.

Planetary Viewing

Mercury: Mercury is very low on the horizon and awash in scattered sunlight soon after sunset, making it an unsafe observing target for the next few weeks. For the patient, Mercury becomes a good early morning target with Mars in late August/early September.

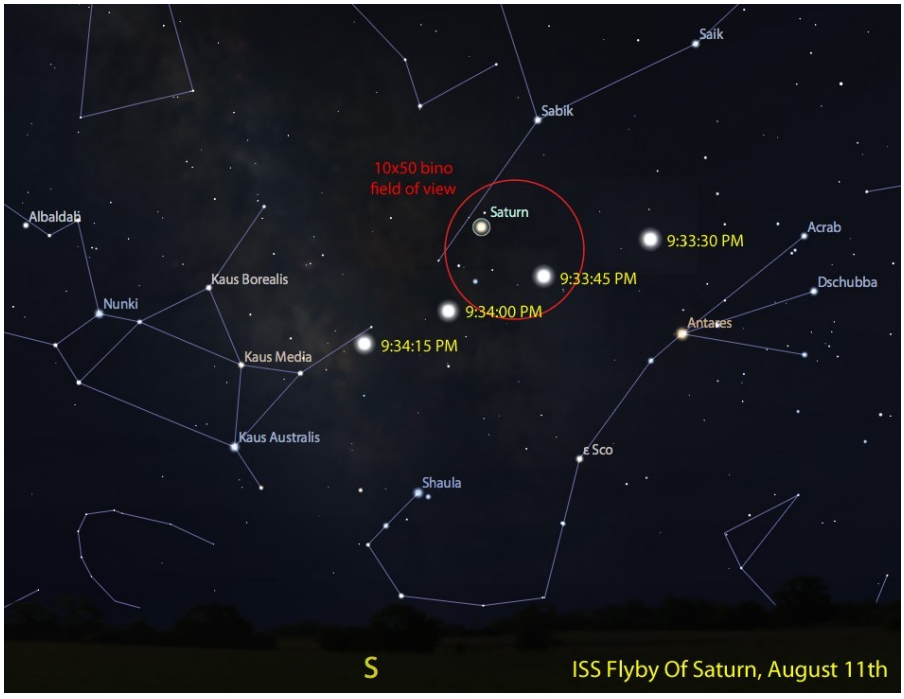
Venus: Venus remains unmistakable in the early morning and even into sunrise, rising just before 3:30 a.m. all week. With good, steady binoculars, you should be able to see that Venus is currently more than half-lit - and you can follow the changing phases of Venus as it and the Earth make our way around the Sun. Venus flies quickly through Gemini this week, having spent last week with Castor and this week with Castor's twin Pollux before striking the heart of Cancer the Crab at month's end.



Venus this week as it passes through the twins Castor and Pollux in Gemini.

Mars: Mars will not return to our pre-midnight skies until this time next year, but will become a morning target in late August/early September.

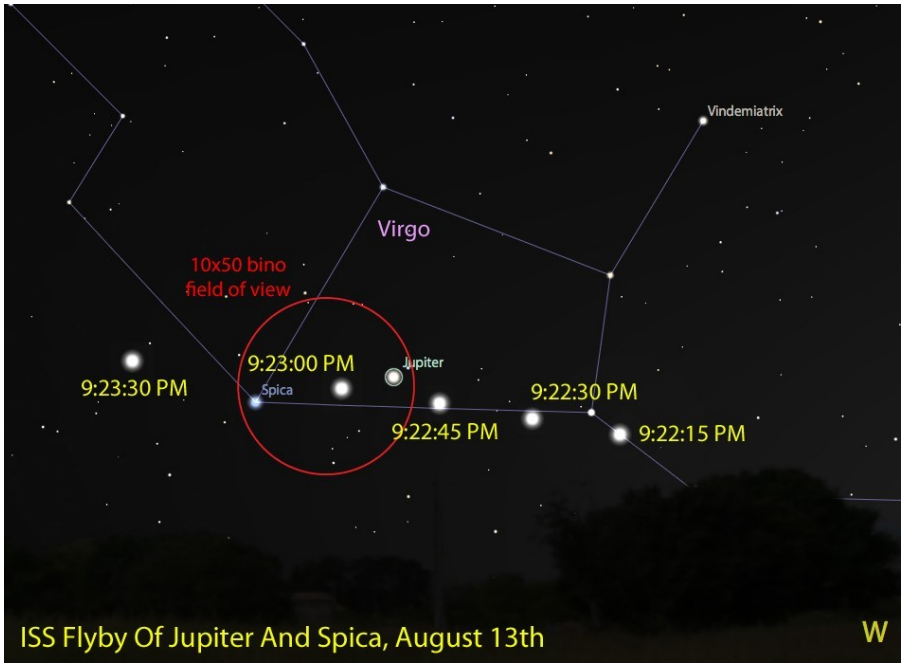
Jupiter: If you look southwest soon after sunset, Jupiter will be the brightest object you can see. Jupiter is setting earlier every night but is gaining back some of its observing time now that we're past the summer solstice. Low power binoculars are excellent for spying the four bright Galilean moons - Io, Europa, Ganymede, and Callisto - and several online guides will even map their orbits for you. Jupiter is to the west of the bright star Spica in Virgo, roughly a full fist-width if you measure with your arm fully-extended. On August 13th, the ISS makes a very close Jupiter pass, then continues to graze the other bright object, the star Spica, in that part of the sky.



Saturn and the ISS on Aug. 11. If staring at Saturn with low-power binoculars, you will also see up-to 5 additional satellites zoom

through your field of view several minutes before.

Saturn: Still on the western edge of the brightest part of the Milky Way, Saturn is going to spend the next 17 months making its way to the eastern edge above the teapot of Sagittarius, all the while giving us an excellent observing target until next autumn. If skies are agreeable on August 11th, observers will even be treated to a very close flyby of the ISS just before 9:34 p.m.



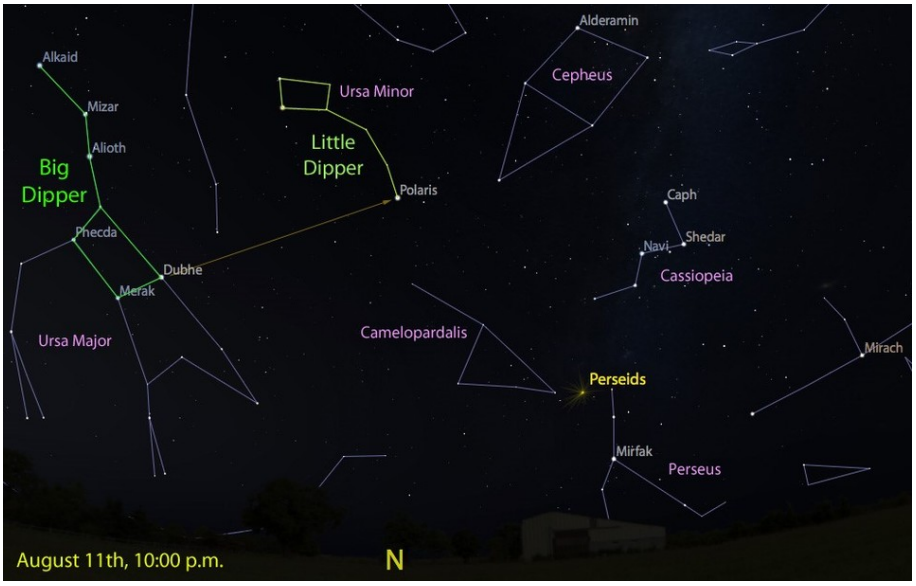
Saturn and the ISS on August 11th. If staring at Saturn with low-power binoculars, you will also see up-to 5 additional satellites zoom through your field of view several minutes before.

As a refresher from the June 30th to July 7th article, those looking in the direction of Saturn with binoculars are treated to a host of Messier ("M") Objects - all residing between ourselves and the center of the Milky Way galaxy above the spout of the Sagittarius teapot. A good star chart and some guide stars will help you determine just which object you're looking at.

The Perseid Meteor Shower, Peaking Aug. 12

The Perseids are arguably the best, and best-timed, meteor shower of the year, with long-night observing sessions made all the easier by reasonable temperatures and not having school the next day. If you saw an image announcing "the greatest meteor shower in human history" on social media these past few weeks, you may end up being quite disappointed in the quality of the show this year - and hopefully a little more skeptical on August 13th of the veracity of the claims made on shared, unattributed images. The quality of the Persieds this year will be greatly diminished by the presence of the Moon before 11 p.m. on the 11th and its presence during the peak on the morning of the 12th, which will wash out much of the splendor of any meteor trails you might see. That said, the Persieds are a very widely-spread shower, with activity from the end of July to the end of August. If you're out and observing under a clear, dark sky right now, you may see a few bright Perseid streaks regardless.

The name of each meteor shower is based on the constellation from which the shooting stars appear to radiate - a position in the sky we call the radiant. In the case of the Perseids, the meteor shower radiant appears to be just off the head of Perseus, which rises from the northeast just after 9 p.m. this month. The meteor shower itself is provided to us by Comet 109P/Swift-Tuttle, which last made its dramatic pass in 1992 and which will return again to replenish the debris field in 2126.



The radiant of the Persieds and some prominent shapes in the sky at 10:00 p.m.

Dr. Damian Allis is the director of CNY Observers and a NASA Solar System Ambassador.