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CNY Outdoors

# Stargazing in Upstate NY: What to see in the night skies July 14 to 21

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By [Special to nyup.com](#)

star 1.jpg

The NASA Solar Dynamics Observatory captures the July 14th solar flare in ultraviolet.

**By Damian Allis, Contributing Writer**

This summertime weekly summary for planetary, satellite, constellation, and other observing opportunities covers the third week of July. If nighttime skies clear this Saturday and Sunday, deep sky observers looking north may even be treated to some local color in the form of aurora. A massive sunspot erupted on the morning of July 14th, producing a brilliant solar flare and coronal mass ejection that is headed in Earth's general direction. These CMEs are the power behind our northern and southern lights - and satellites such as

[NASA SOHO](#)

give us just enough notice about these events to let us plan for long-exposure camera shots or, at least, a drive as far north as convenient to improve our chances of seeing them. Excellent locations for up-to-the-hour information on CMEs and aurora predictions include

[spaceweather.com](#)

,

[www.swpc.noaa.gov/products/aurora-30-minute-forecast](http://www.swpc.noaa.gov/products/aurora-30-minute-forecast)

, and

[aurorasaurus.org](http://aurorasaurus.org)

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And speaking of the sun, the approaching solar eclipse on Aug. 21 remains a hot topic for observers throughout the U.S. [Marnie Eisenstadt](#) has written several articles [about the eclipse](#), including [where to get free solar glasses](#) and group-observe in CNY and [how rough a time](#) some observing the total eclipse may have it. Some additional info can be found in the [May](#) and [June](#) UNY Stargazing articles, with more on the way in upcoming articles.

**Lectures And Observing Opportunities In Upstate/Central New York**

Also, you can find a calendar of events and more information at the [Upstate Stargazing](#) website that hosts

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 below for the remainder of July 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	July 14	1/2 Hour After Sunset	<a href="#">email</a> , <a href="#">website</a>
Adirondack Public Observatory	Tupper Lake	Public Observing	July 21	1/2 Hour After Sunset	<a href="#">email</a> , <a href="#">website</a>
Adirondack Public Observatory	Tupper Lake	Public Observing	July 28	1/2 Hour After Sunset	<a href="#">email</a> , <a href="#">website</a>
Albany Area Amateur Astronomers & Dudley Observatory	Schenectady	Night Sky Adventure	July 18	7:00 - 10:00 PM	<a href="#">email</a> , <a href="#">website</a>
Albany Area Amateur Astronomers & Dudley Observatory	Schenectady	AAAA Meeting	July 20	7:30 - 9:00 PM	<a href="#">email</a> , <a href="#">website</a>
Albany Area Amateur Astronomers & Dudley Observatory	Schenectady	Octagon Barn Star Party	July 28	8:00 - 10:00 PM	<a href="#">email</a> , <a href="#">website</a>
Astronomy Section, Rochester Academy of Science	Rochester	Open House at Farash Center	July 23	12:00 - 4:00 PM	<a href="#">email</a> , <a href="#">website</a>
Astronomy Section, Rochester Academy of Science	Rochester	RocheSTAR Fest 2017	July 28 - 29	daytime & nighttime	<a href="#">email</a> , <a href="#">website</a>
Baltimore Woods	Marcellus	Bob Piekiet & Summer Skies	July 21/22	8:00 - 11:00 PM	<a href="#">email</a> , <a href="#">website</a>
Clark Reservation State Park	Jamesville	Bob Piekiet & Summer Skies	July 28/29	8:00 - 11:00 PM	315-492-1590 <a href="#">website</a>
Green Lakes State Park	Fayetteville	Bob Piekiet & Summer Skies	July 14/15	7:30 - 10:30 PM	315-637-6111 <a href="#">website</a>
Kopernik Observatory & Science Center	Vestal	Friday Night Lecture & Observing	July 14	8:00 PM	<a href="#">email</a> , <a href="#">website</a>
Kopernik Observatory & Science Center	Vestal	Friday Night Lecture & Observing	July 21	8:00 PM	<a href="#">email</a> , <a href="#">website</a>
Kopernik Observatory & Science Center	Vestal	Friday Night Lecture & Observing	July 28	8:00 PM	<a href="#">email</a> , <a href="#">website</a>
Mohawk Valley Astronomical Society	Waterville	Public Stargazing @ Waterville Library	July 15	9:15 - 11:59 PM	<a href="#">email</a> , <a href="#">website</a>
Mohawk Valley Astronomical Society	Waterville	Solar and Star Gazing	July 20	5:00 - 10:00 PM	<a href="#">email</a> , <a href="#">website</a>

Mohawk Valley Astronomical Society	Waterville	Public Stargazing @ Prospect Library & Quarry	July 22	7:45 - 11:59 PM	<a href="#">email</a> , <a href="#">website</a>
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## 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.

Late-night observers are in for a treat this week with triple-flyovers on the 16th, 18th, 19th, and 20th. With a good morning's sleep included, the 21st even offers four views - three in the early morning and a very short-duration forth before midnight. 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

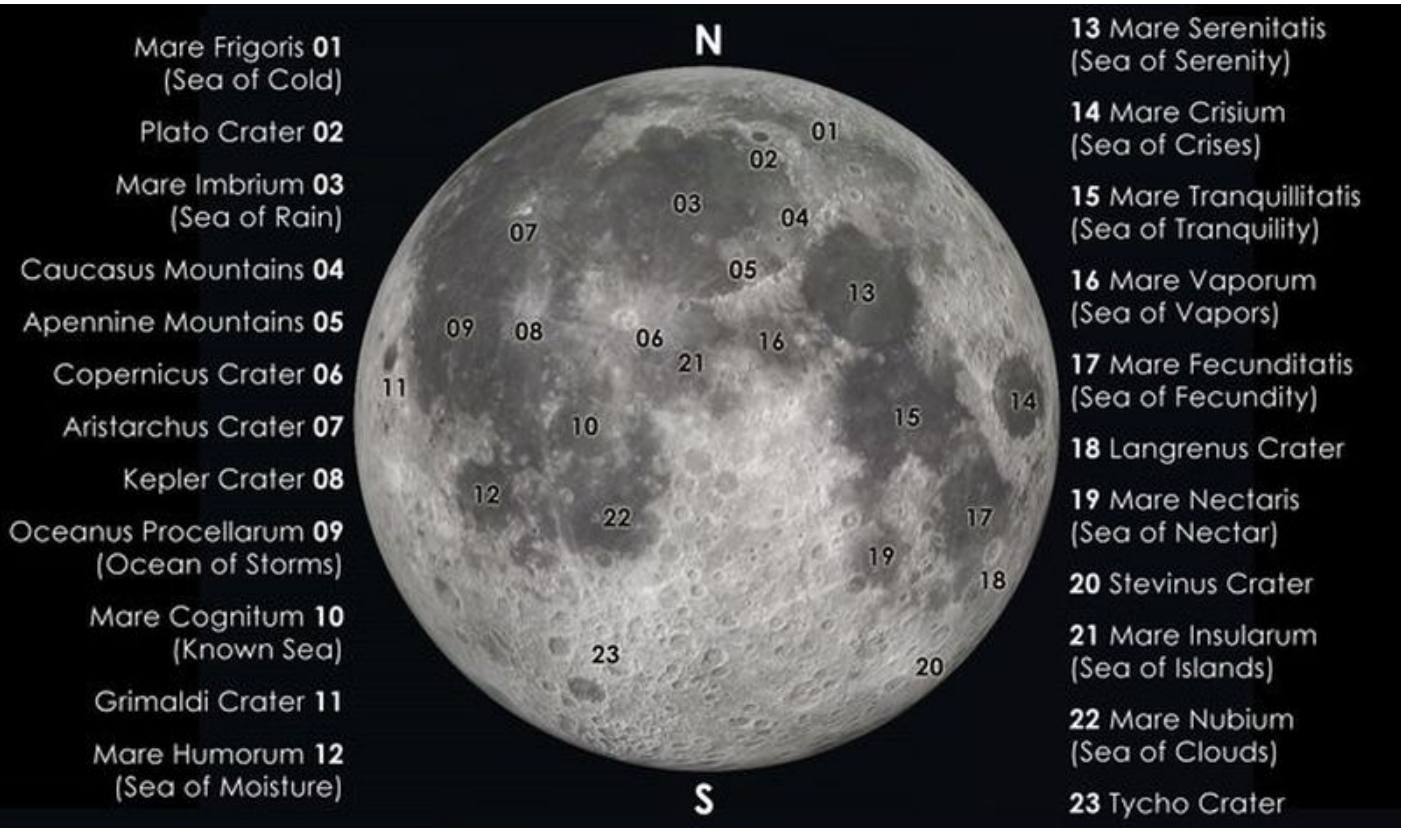
Date	Brightness	Approx. Start	Start Direct.	Approx. End	End Direct.
14-Jul	moderately	1:56 AM	E/NE	1:57 AM	E/NE
14-Jul	very	3:29 AM	W/NW	3:33 AM	NE
15-Jul	very	2:38 AM	N/NW	2:41 AM	NE
15-Jul	moderately	4:13 AM	NW	4:18 AM	NE
16-Jul	moderately	1:48 AM	NE	1:49 AM	NE
16-Jul	moderately	3:20 AM	W/NW	3:25 AM	NE
16-Jul	moderately	4:58 AM	NW	5:03 AM	E/NE
17-Jul	moderately	2:30 AM	NW	2:33 AM	NE
17-Jul	moderately	4:05 AM	NW	4:10 AM	NE
18-Jul	moderately	1:39 AM	N/NE	1:41 AM	NE
18-Jul	moderately	3:13 AM	NW	3:17 AM	NE
18-Jul	moderately	4:49 AM	NW	4:55 AM	E/NE
19-Jul	somewhat	12:48 AM	NE	12:49 AM	NE
19-Jul	moderately	2:21 AM	NW	2:25 AM	NE
19-Jul	moderately	3:57 AM	NW	4:02 AM	E/NE
20-Jul	moderately	1:30 AM	N	1:33 AM	NE
20-Jul	somewhat	3:05 AM	NW	3:09 AM	NE
20-Jul	very	4:41 AM	NW	4:47 AM	E
21-Jul	moderately	12:39 AM	N/NE	12:40 AM	NE
21-Jul	somewhat	2:12 AM	NW	2:17 AM	NE
21-Jul	moderately	3:49 AM	NW	3:55 AM	E
21-Jul	moderately	11:48 PM	NE	11:48 PM	NE

Predictions courtesy of [heavens-above.com](https://www.heavens-above.com). For updated nightly predictions, visit [spotthestation.nasa.gov](https://spotthestation.nasa.gov).

Lunar Phases

Third Quarter:	New:	First Quarter:	Full:
Jul. 16, 3:25 PM	Jul. 23, 5:45 AM	Jul. 30, 11:23 AM	Aug. 7, 2:10 PM

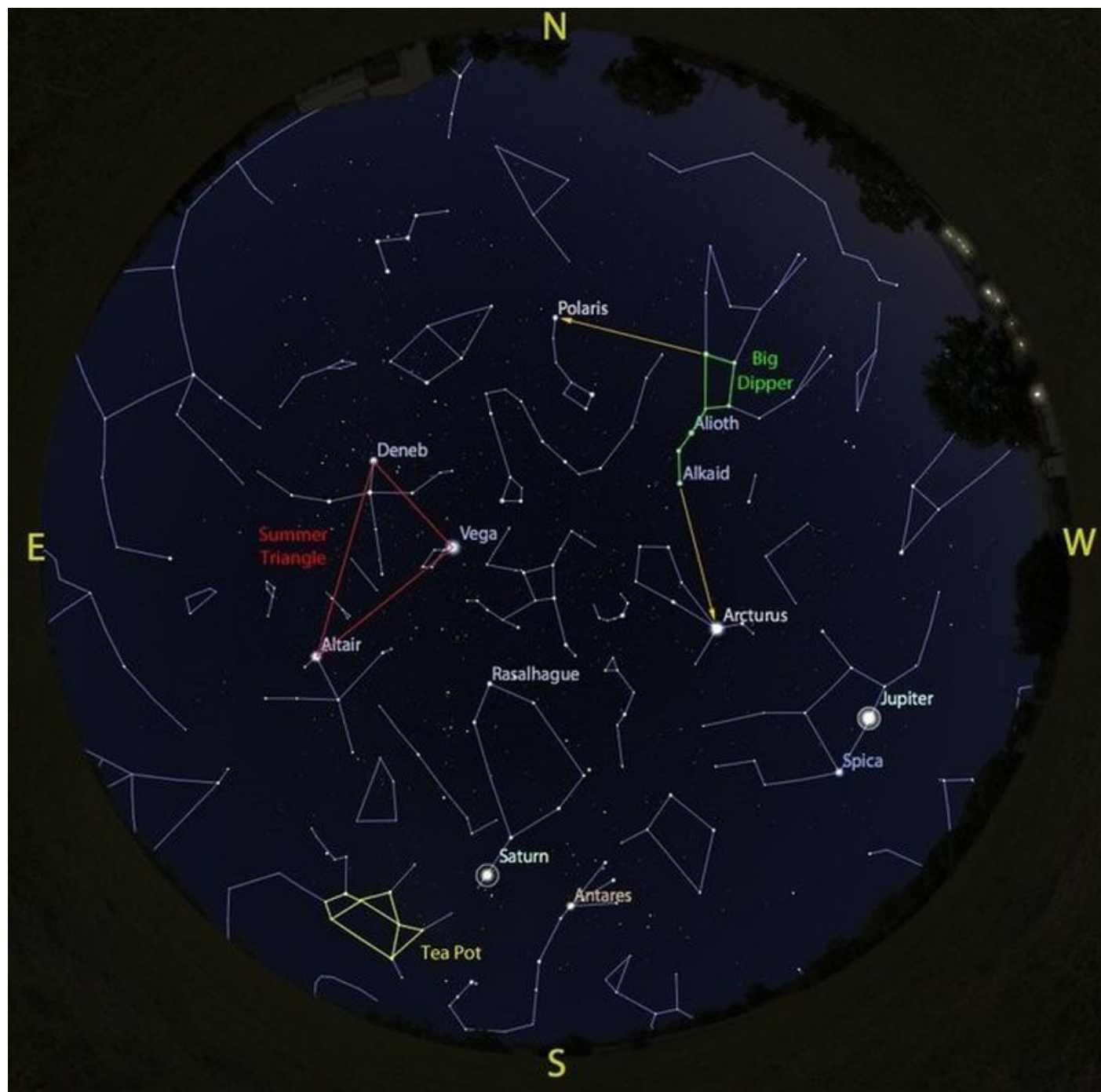
The Moon's increasing brightness as Full Moon approaches washes out fainter stars, random meteors, and other celestial objects - this is bad for most observing, but excellent for new observers, as only the brightest stars (those that mark the major constellations) and planets remain visible for your 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.



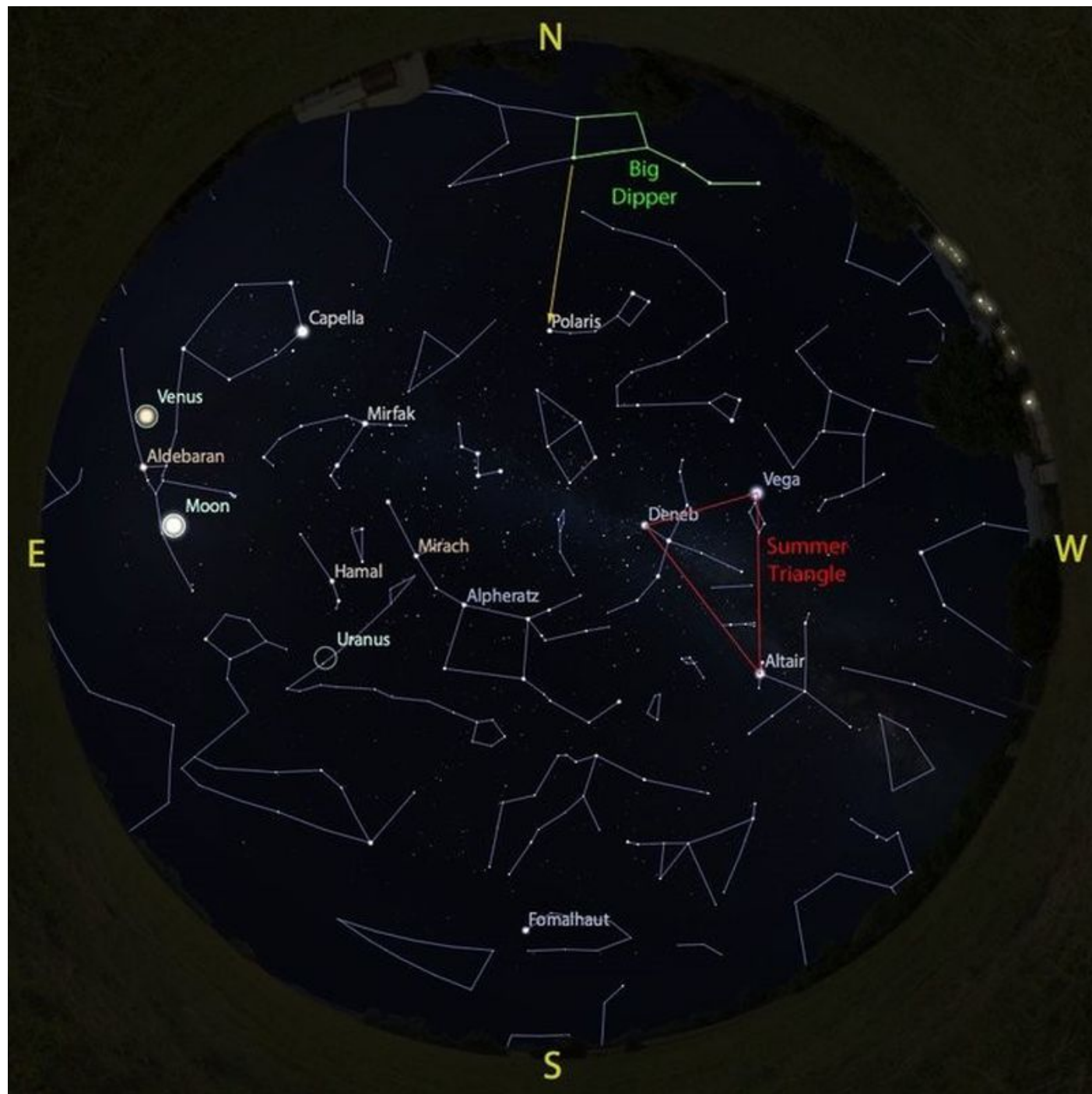
The sky at 10 p.m. from July 14 to July 21, accurate all week except for the changing Moon position.

**Evening Skies:** The two most prominent shapes in the sky, the Big Dipper and the Summer Triangle, are joined by a third shape you will hopefully come to recognize just as easily. The body of Sagittarius, close to the southern horizon from our view in New York all summer and into fall, can have its dots connected to look just like a teapot sitting flat above the tree line. Once you find Saturn and Antares, simply look around low and to the east for this prominent shape - the handle to the far east may be the first component to jump out at you.

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



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 close to the bright star Spica in Virgo and to the southwest of bright Arcturus in  
 Bootes. Saturn is also visible as dusk approaches, rising soon after the bright orange  
 star Antares in Scorpius.



The sky at 4 a.m. from July 14 to July 21, 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. Venus has passed from the head of Taurus into the space between its horns this week, with the Pleiades star cluster and Aldebaran still prominently displayed in its vicinity.

### Planetary Viewing

**Mercury:** While technically visible after sunset this week, Mercury is very low on the

**Mercury:** While technically visible after sunset this week, Mercury is very low on the horizon and awash in scattered sunlight. Observers with binoculars might consider scanning the western horizon before 9:15 p.m. to find it, but DO NOT risk doing so until after the sun has set, as even a moment of magnified sunlight will permanently damage your vision. To be on the safe side, reset your clocks for next month - Mercury becomes a good early morning target in August.

**Venus:** Venus remains unmistakable in the early morning and even into sunrise. With good, steady binoculars, you should be able to see Venus as either half-lit or as a wide crescent - and you can follow the changing phase of Venus as it and the Earth make our way around the Sun.



Venus, now past the Hyades open cluster, has a rendezvous with the Moon on July 20.

Venus has moved swiftly past the Hyades star cluster - a group of stars known more commonly as the head of Taurus the Bull. On July 19th, a line drawn between the Moon and Venus will cut the Hyades in two. On the early morning of July 20th, the the Moon and Venus will make for a pleasant close pairing.

**Mars:** Mars will not return to our pre-midnight skies until this time next year, but will become a morning target this mid-August.

**Jupiter:** If you look south soon after sunset, Jupiter will be the brightest object you'll



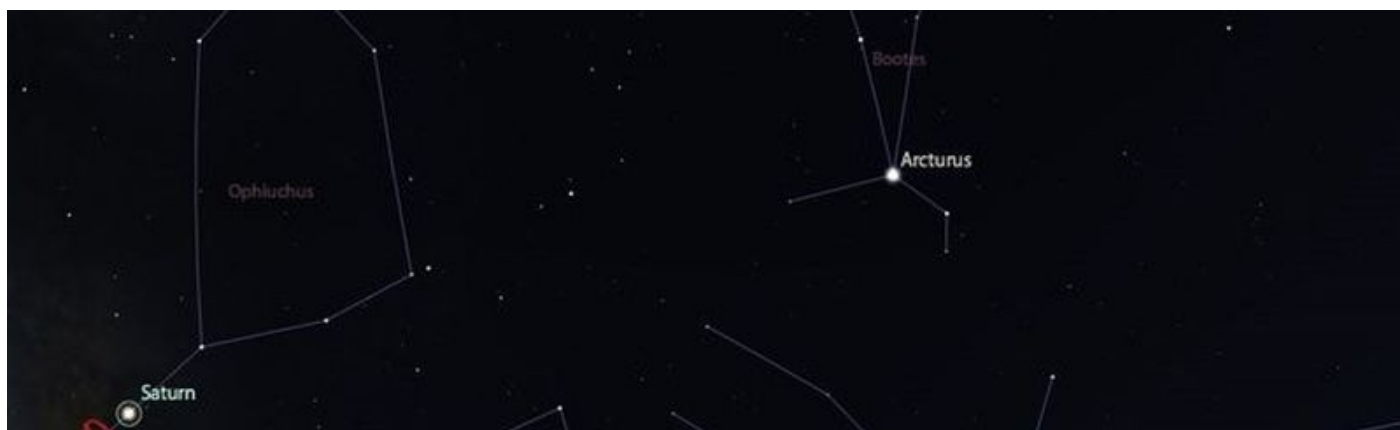
...you'll see the Great Red Spot, Jupiter's largest storm, which will be the brightest object you'll see this summer (or second-brightest if the moon is out). Low power binoculars are excellent for spying the four bright Galilean moons - Io, Europa, Ganymede, and Callisto - and [several online guides](#) will even map their orbits for you.



Jupiter's Great Red Spot, with raw data collected from the Juno Probe's Junocam.

[NASA's Juno probe](#) flyover of the Great Red Spot has been downloaded, processed, and cropped for websites the world over these past few days. Astronomers have been monitoring this gigantic storm since 1830, and it is believed that this very same storm was identified by observers as early as 1665 - making this a very large and long-lived phenomenon. For the older observers who can't quite make out the spot as easily as they used to, their eyes are not entirely to blame. The storm has been steadily reducing in size and is currently about half what it was measured to be in 1900. While its future is still a point of study and discussion in the astronomy community, it will remain large enough to hold two entire Earths inside of it for some time to come.

**Saturn:** Still on the western edge of the brightest part of the Milky Way, Saturn is going to spend the next 18 months making its way to the eastern edge, all the while giving us an excellent observing target from late Spring to mid-Autumn.





Saturn and Antares to the left of Spica and Jupiter, with hand gestures marking rough distances.

Jupiter, Spica in Virgo, Antares in Scorpius, and Saturn are perfectly placed right now for a little bit of biology. If you take your hand, make it into a fist, and fully extend your arm, your closed fist should fit almost perfectly between Spica and Jupiter right now. For the most part, that statement is as valid for a 6-year-old as it is for a 60-year-old. While the lengths of the arms are different, the hands scale in size with those arms. From the observer's eyes, the amount of space covered by the hands with the arms extended is the same. This makes the hand an excellent tool for marking distances between bright points in the night sky and an excellent way to describe to others how to find those same objects. Saturn and Antares are farther apart than Spica and Jupiter - the distance should be close to your extended arm with your thumb and pinkie slightly extended. By these same measures, the gap between Antares and Spica can just barely be covered by fully stretching your thumbs and pinkies while touching both hands.

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

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