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CNY Outdoors

Stargazing in Upstate NY: What to see in the night skies June 30 to July 7

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By Damian Allis, Contributing Writer

This summertime weekly summary for planetary, satellite, constellation, and other observing opportunities covers the end of June and first week of July.

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 below for all 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	June 30	1/2 Hour After Sunset	email, website
Adirondack Public Observatory	Tupper Lake	Public Observing	July 7	1/2 Hour After Sunset	email, website
Adirondack Public Observatory	Tupper Lake	Public Observing	July 14	1/2 Hour After Sunset	email, website
Adirondack Public Observatory	Tupper Lake	Public Observing	July 21	1/2 Hour After Sunset	email, website
Adirondack Public Observatory	Tupper Lake	Public Observing	July 28	1/2 Hour After Sunset	email, website
Albany Area Amateur Astronomers & Dudley Observatory	Schenectady	Senior Science Day	July 3	3:00 - 4:00 PM	email, website
Albany Area Amateur Astronomers & Dudley Observatory	Schenectady	Night Sky Adventure	July 18	7:00 - 10:00 PM	email, website
Albany Area Amateur Astronomers & Dudley Observatory	Schenectady	AAAA Meeting	July 20	7:30 - 9:00 PM	email, website
Albany Area Amateur Astronomers & Dudley Observatory	Schenectady	Octagon Barn Star Party	July 28	8:00 - 10:00 PM	email, website
Astronomy Section, Rochester Academy of Science	Rochester	Observing At The Strasenburgh	July 1	8:30 - 10:30 PM	Jim S., 585-703-9876

Astronomy Section, Rochester Academy of Science	Rochester	ASRAS Member Meeting	July 7	7:30 - 9:00 PM	email, website
Astronomy Section, Rochester Academy of Science	Rochester	Public Star Party @ Northampton Park	July 10	9:30 - 11:00 PM	email, website
Astronomy Section, Rochester Academy of Science	Rochester	RocheSTAR Fest 2017	July 28 - 29	daytime & nighttime	email, website
Baltimore Woods	Marcellus	Bob Piekiel & Summer Skies	July 21/22	8:00 - 11:00 PM	email, website
Clark Reservation State Park	Jamesville	Bob Piekiel & Summer Skies	July 28/29	8:00 - 11:00 PM	315-492-1590 website
Green Lakes State Park	Fayetteville	Bob Piekiel - Choosing A Telescope	July 7	7:00 - 9:00 PM	315-637-6111 website
Green Lakes State Park	Fayetteville	Bob Piekiel & Summer Skies	July 14/15	7:30 - 10:30 PM	315-637-6111 website
Kopernik Observatory & Science Center	Vestal	KAS Monthly Meeting	July 5	7:00 - 9:00 PM	email, website
Kopernik Observatory & Science Center	Vestal	Friday Night Lecture & Observing	June 30	8:00 PM	email, website
Kopernik Observatory & Science Center	Vestal	Friday Night Lecture & Observing	July 7	8:00 PM	email, website
Kopernik Observatory & Science Center	Vestal	Friday Night Lecture & Observing	July 14	8:00 PM	email, website
Kopernik Observatory & Science Center	Vestal	Friday Night Lecture & Observing	July 21	8:00 PM	email, website
Kopernik Observatory & Science Center	Vestal	Friday Night Lecture & Observing	July 28	8:00 PM	email, website
Mohawk Valley Astronomical Society	Waterville	Public Stargazing @ Waterville Library	July 15	9:15 - 11:59 PM	email, website
Mohawk Valley Astronomical Society	Waterville	Solar and Star Gazing	July 20	5:00 - 10:00 PM	email, website
Mohawk Valley Astronomical Society	Waterville	Public Stargazing @ Prospect Library & Quarry	July 22	7:45 - 11:59 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.

There are three prominent flyovers this week, but you'll have to be an early riser to see them. The times across the state are all very close - simply go out and orient yourself a few minutes before the scheduled flyover and look for what first appears as a distant plane.

ISS Flyovers

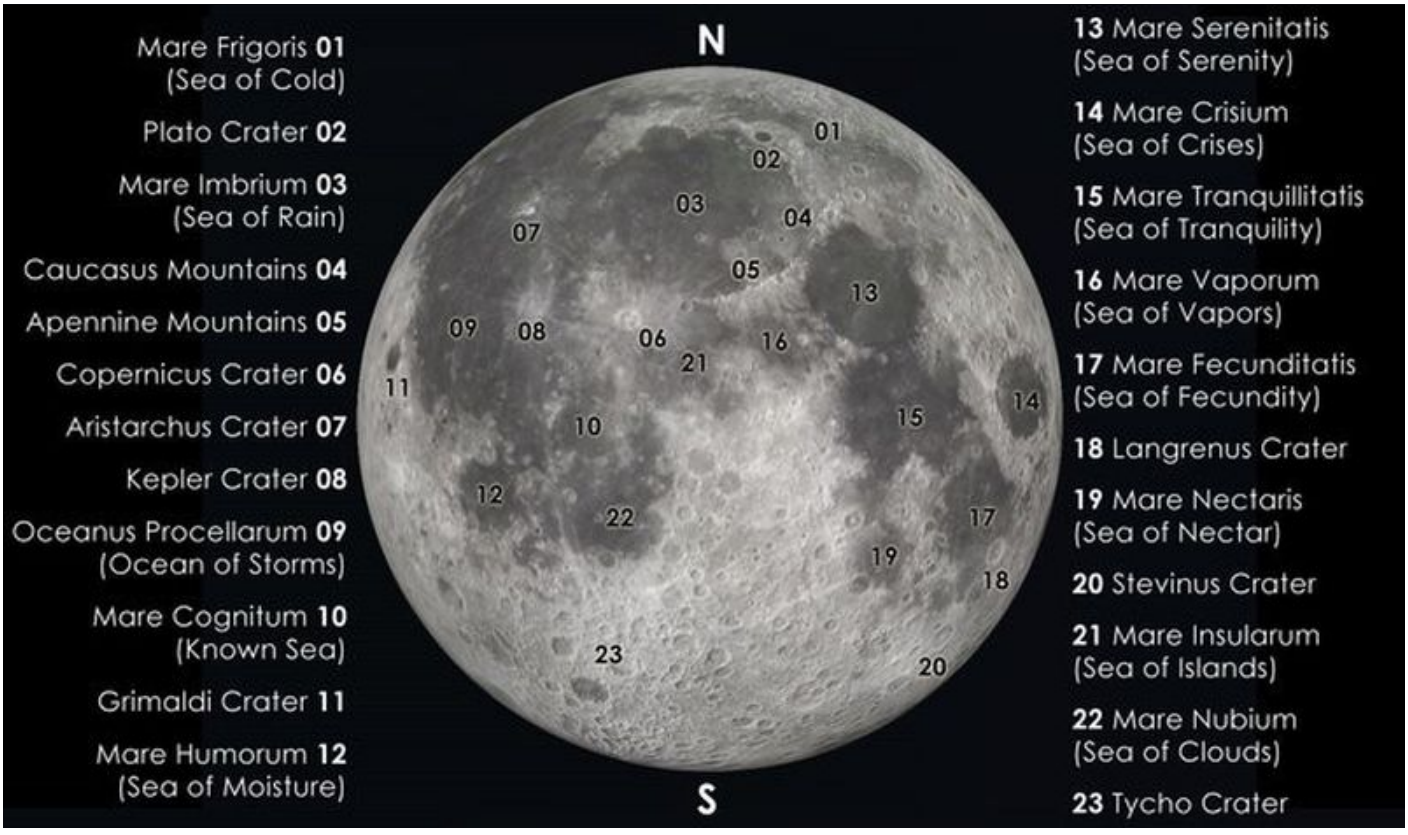
Date	Brightness	Approx. Start	Start Direction	Approx. End	End Direction
Jul-17	moderately	4:52 AM	S/SW	4:58 AM	E/NE
Jul-17	somewhat	4:01 AM	S/SE	4:05 AM	E
Jul-17	very	4:44 AM	SW	4:50 AM	E/NE

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

Lunar Phases

First Quarter:	Full:	Third Quarter:	New:
Jun. 30, 8:51 PM	Jul. 9, 12:06 AM	Jul. 16, 3:25 PM	Jul. 23, 5:45 AM

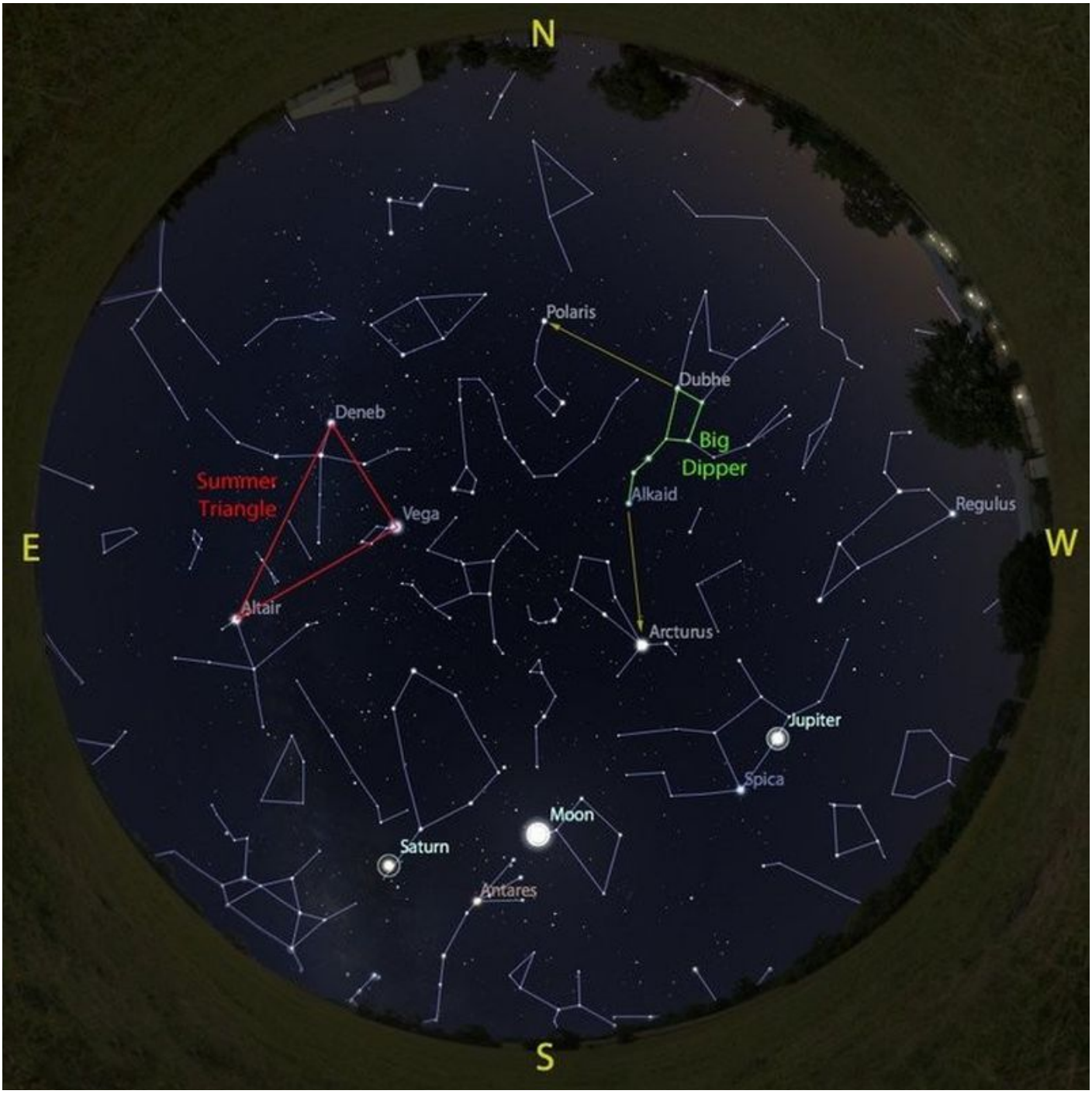
The Moon's increasing brightness as Full Moon approaches washes out fainter stars, random meteors, and other celestial objects - this is bad for most observing, but excellent for new observers, as only the brightest stars (those that mark the major constellations) and planets remain visible for your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

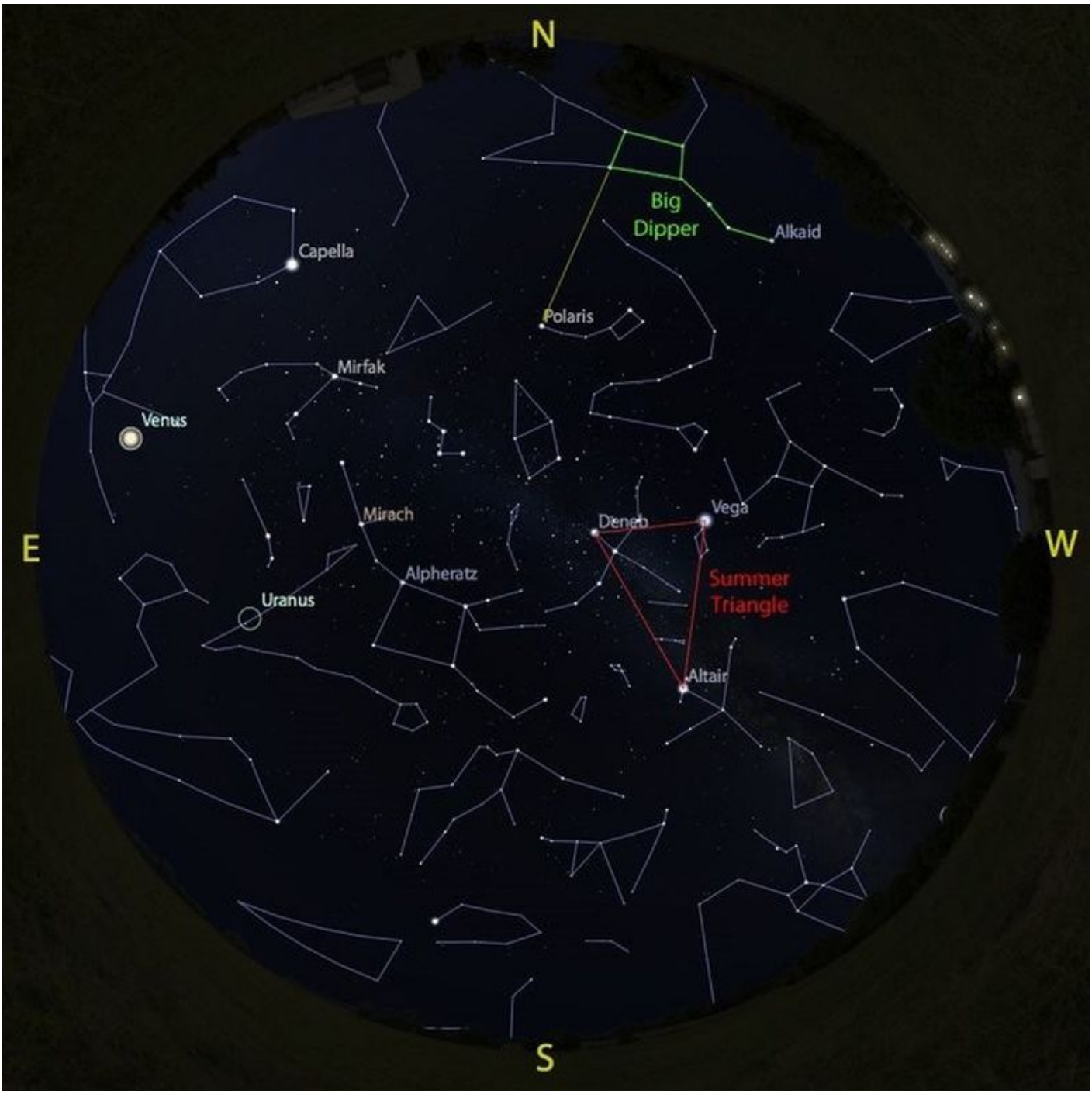
Items and events listed below assume you're outside and observing most anywhere in New York state. The longer you're outside and away from indoor or bright lights, the better your dark adaption will be. If you have to use your smartphone, find a red light app or piece of red acetate, else set your brightness as low as possible.



The sky at 10 p.m. from June 30 to July 7, 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 both high in the evening sky this month on opposite sides of the zenith, the point directly above 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

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 as dusk approaches, rising soon after the bright orange star Antares in Scorpius.



The sky at 4 a.m. from June 30 to July 7, 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. Saturn will have moved far to the southwest as the Earth rotates, which also brings the Big Dipper close to the northern horizon. The dim, distant planet Uranus is in Gemini and can be seen with low-power binoculars, appearing as a faint, blue-green star.

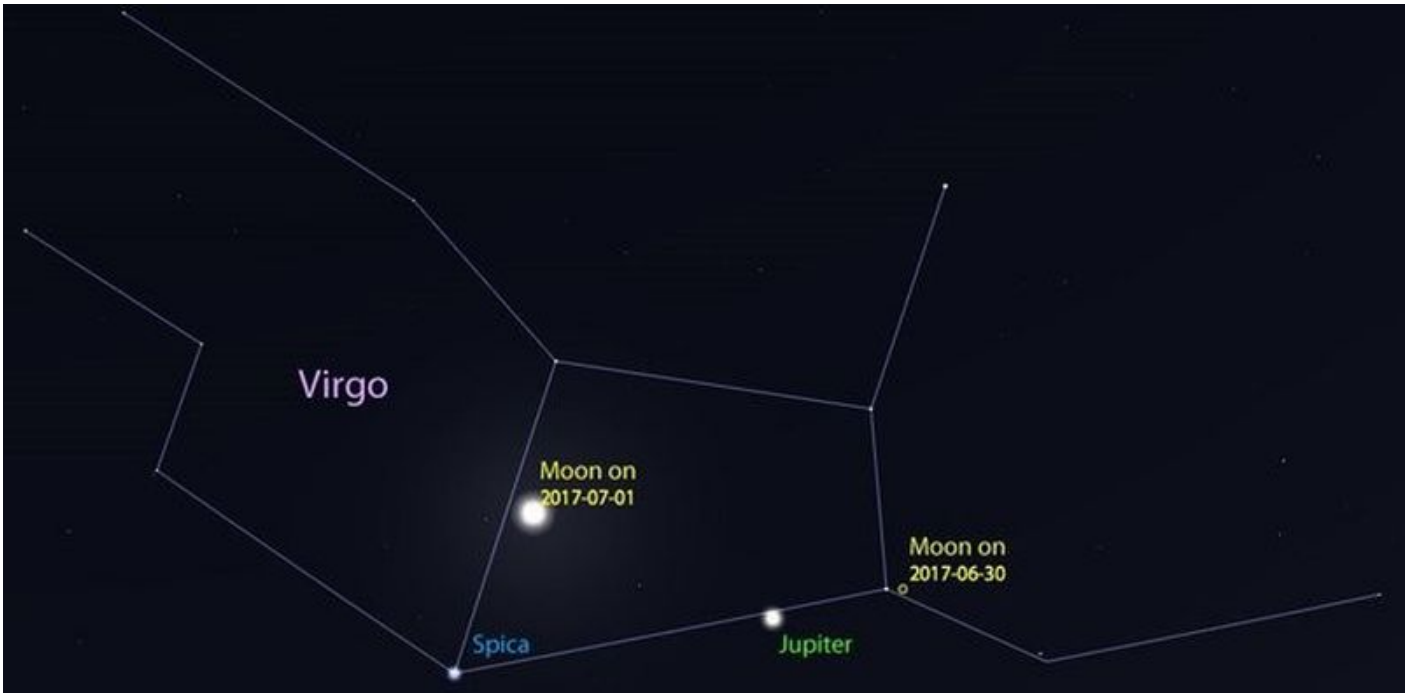
Planetary Viewing

Mercury: Mercury is hidden within the bright light of the the morning sun. Mercury will be visible again when it returns to sunset skies in July before becoming a morning target again in August.

Venus: Venus remains unmistakable in the early morning and even into sunrise if you know where to look. The planet does continue to slip away from us in its orbit, but we see more of its illuminated surface in the process. The result is an only slight dimming of the planet over the entire month as it goes from 40% to 60% illumination.

Mars: Mars sets very close to dusk right now, making it a difficult target without binoculars and a very clear horizon. 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 see this summer (or second-brightest if the moon is out). Jupiter has a close approach with the Moon in Virgo on June 30th and July 1st, and is otherwise the most prominent object in the evening sky this month. 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.

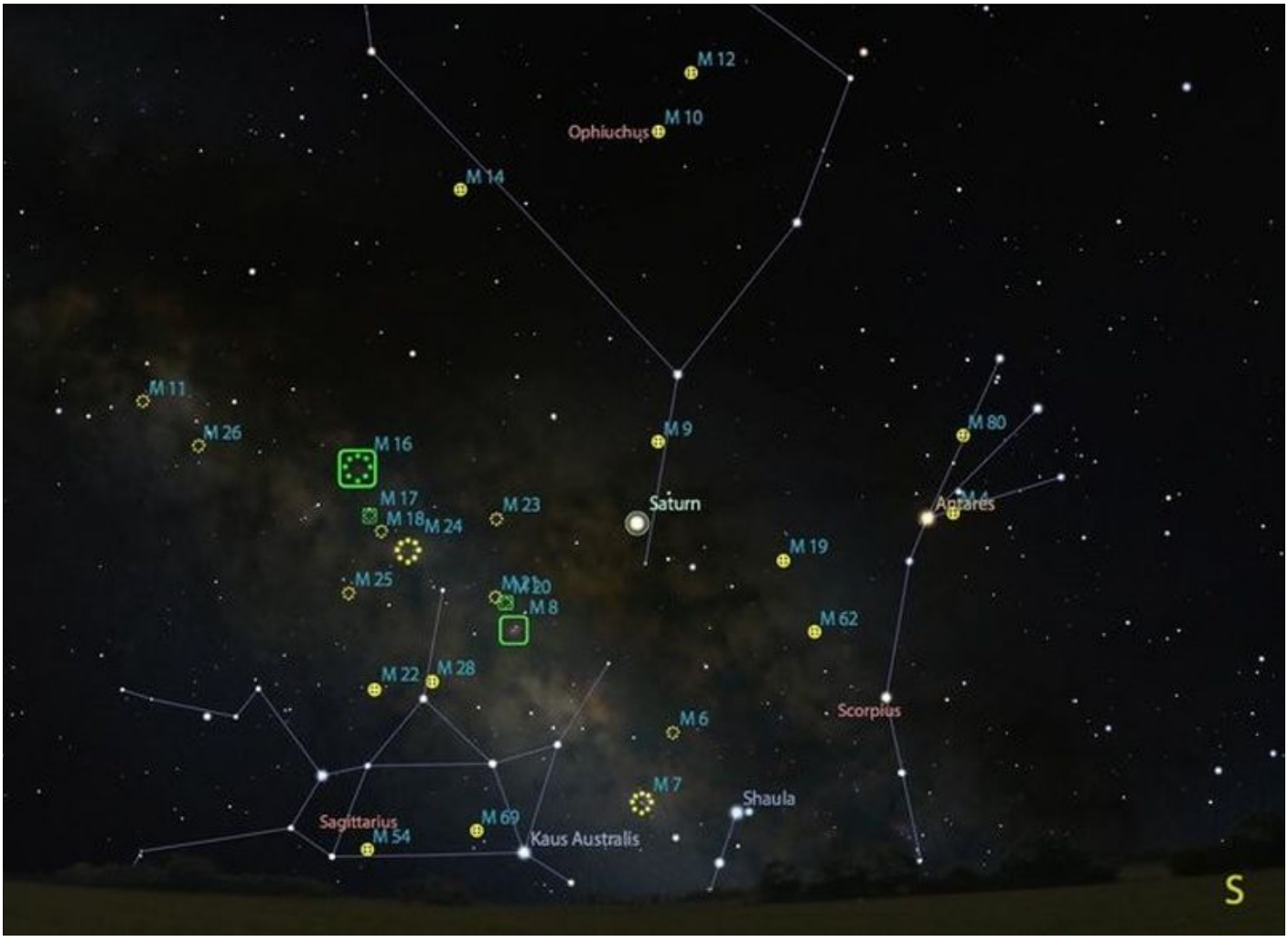


Jupiter and the Moon on June 30 and July 1 in Virgo, with bright Spica close by.

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. While markedly closer to us, Saturn is not the brightest object in this part of the sky. Your eyes may be drawn to the orange star Antares in Scorpius first - simply look to the

eyes may be drawn to the orange star Antares in Scorpius first - simply look to the east for another bright pinpoint.

The very busy map of the Saturn position this month contains a treasure trove of Messier ("M") Objects observable with good binoculars, steady arms or a tripod, and a bit of patience. As we look south and in the vicinity of Saturn, we're staring into the dense heart of the Milky Way Galaxy itself during the summer. The wealth of objects in this part of the sky is not coincidence! Even a cursory scan of this part of the sky will reveal wispy features and small clusters of stars. A good star chart and some guide stars will help you determine just which object you're looking at.



Saturn, Antares, and the great assortment of Messier Objects towards the Milky Way center.

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

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