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Weather

Night sky-gazing in Upstate NY: What to look for in July

Updated: Mar. 22, 2019, 1:27 a.m. | Published: Jul. 07, 2016, 3:24 p.m.



By [Special to syracuse.com](#)

Searching the heavens for new worlds to conquer

The Milky Way is visible in this 2013 photo shot in California.

(Don Bartletti | Los Angeles Times)

By Damian Allis

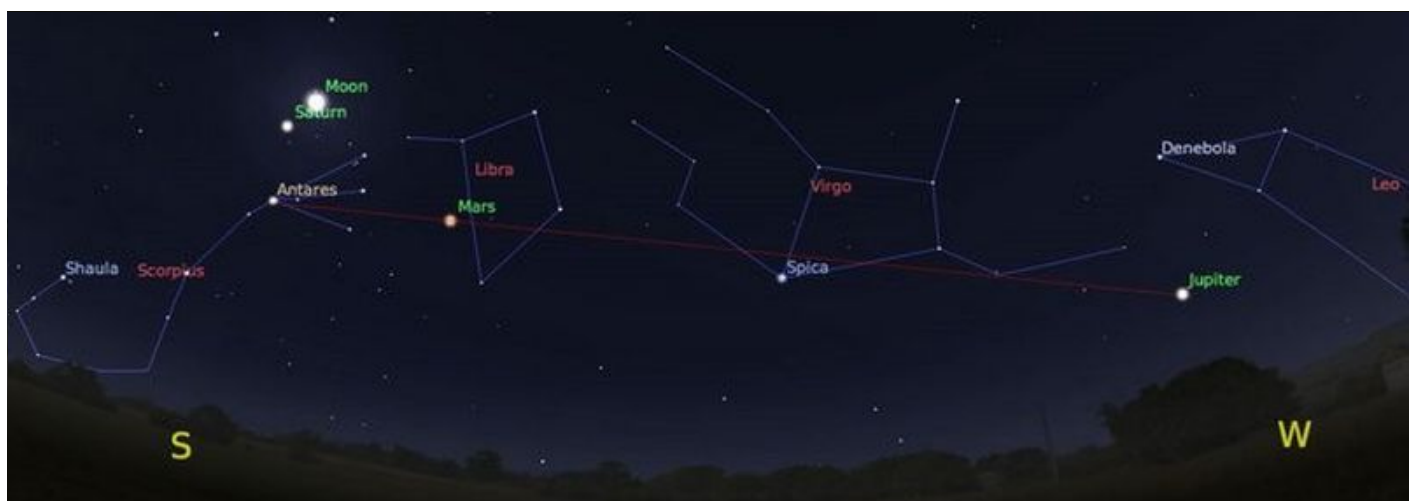
Syracuse, N.Y. --

Upstate New York has had a rare recent run of excellent clear nights. Those taking the extra hour past sunset to take in some of the nighttime sky have not been disappointed, with the three bright planets Jupiter, Mars, and Saturn making ideal targets for good binoculars and small telescopes. With the summer solstice just past us, amateur astronomers are now adding up the extra minute-or-so of dark sky each evening.

July is also the month when the band of our Milky Way galaxy returns in all of its cloud band-like glory to suburban and darker skies during reasonable observing hours (that is, before midnight for most of us).

Items and events listed below assume you're outside and observing between 9 p.m. and midnight throughout July 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.

Your First Steps Outside:



The view looking southwest at 10 p.m. on July 15.

If you walk outside after 9 p.m., you'll not be able to miss Jupiter beaming bright to the west/southwest (which is bright enough to be visible from indoors through a south-facing window). Through the first-half of July you'll be able to find the bright star Regulus in Leo the Lion to Jupiter's right, then Leo's tail star Denebola above Jupiter. Working left from Jupiter, the next bright object is the star Spica in Virgo, followed by the very bright and red-orange Mars now sitting in Libra the Scales. To the left of Mars, you next land on Antares, a red-orange supergiant that is the heart of Scorpius. Finally, directly above Antares lies the planet Saturn.

Mars, Jupiter, and Saturn are three of the five "superior planets" in our solar system, which means they are on the outside of Earth's orbit with respect to the.

ISS And Other Bright Fly-Overs:

Satellite fly-bys are commonplace, with several bright passes per hour, yet a thrill to new observers of all ages. Few scheduled fly-overs compare in brightness or interest to the International Space Station. The fly-overs of the football-sized craft with its massive solar panel arrays can be predicted to within several seconds, with these fly-overs taking several minutes to complete. The Top-10 brightest July fly-overs for Upstate NY (in terms of pre-midnight timing and peak brightness) are listed below. Due to the station's orbit, we won't see pre-midnight fly-overs until later this month. Simply go out a few minutes before the start time, orient yourself, and look for what will first seem like a distant plane.

Date	Approximate Start Time	Start Direction	Approximate End Time	End Direction
<u>Tue, 26</u>	21:30	S/SW	21:36	E/NE
<u>Tue, 26</u>	23:06	W	23:12	NE
<u>Wed, 27</u>	23:50	W/NW	23:56	NE
<u>Thu, 28</u>	22:57	W	23:03	NE
<u>Fri, 29</u>	22:04	W	22:10	NE
<u>Fri, 29</u>	23:41	NW	23:46	NE
<u>Sat, 30</u>	21:10	W/SW	21:17	NE
<u>Sat, 30</u>	22:48	W/NW	22:53	NE
<u>Sun, 31</u>	21:55	W/NW	22:00	NE
<u>Sun, 31</u>	23:32	NW	23:36	N/NE

moon.

New: July 5

First quarter: July 12

Full : July 19

Third quarter: July 26

The moon's increasing brightness as full moon approaches washes out fainter stars and 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.

Planets:

Jupiter: The king of the planets lies to the west/southwest, biting at the hind feet of the constellation Leo the Lion. It is the brightest object in the nighttime sky after the Moon right now and appears early after sunset. It's also the object of NASA's Juno, which began its its Jupiter survey on July 4th.

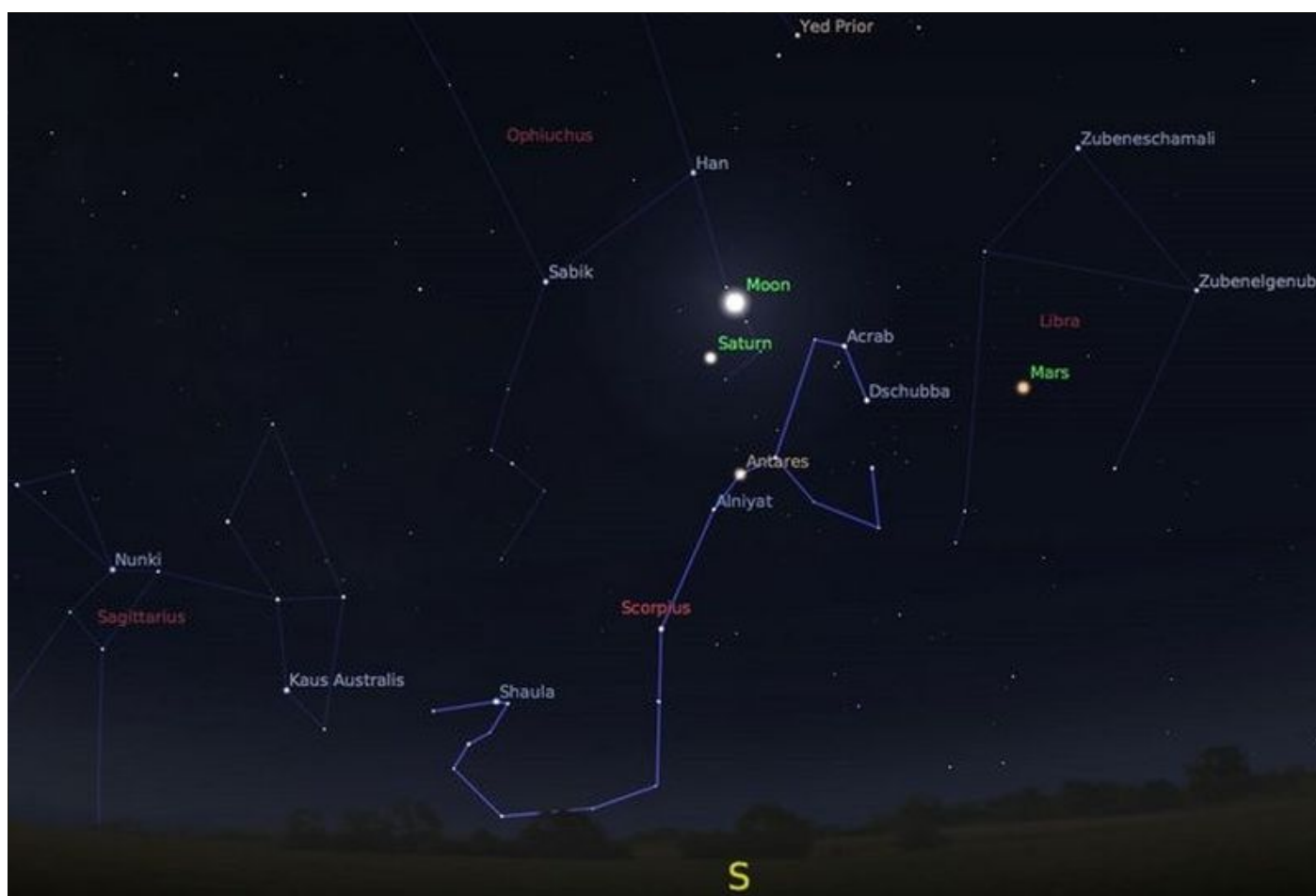
Through good binoculars, Jupiter is a bright disc circled by its four Galilean Moons (Io, Europa, Ganymede, and Callisto). You can continue the tradition begun by Galileo himself by observing these moons and, over the course of an hour or more, see their positions change even at low magnification.

Mars: We made our closest approach to the bright red-orange Mars in late May and it continues to be prominent in the southeast/south sky, balanced between the scales of the constellation Libra. Jupiter and Saturn, being much farther away, seem to move very little against the backdrop of stars. Mars, on the other hand, will reduce its distance to the bright star Antares by half from July 1st to 31st. On Aug. 23/24, Mars will delight observers and astrophotographers as it passes between Antares and Saturn.

Saturn: Off to the east of Mars lies Saturn. While currently in the constellation Ophiuchus, you might more easily find it by looking for a bright pair of stars - one of them will be the red-orange star Antares in the constellation Scorpius and Saturn will be the other bright "star" above it. These two will be a pair for as long as we can see them this year. In good binoculars, Saturn and its rings appear as a small oval. With big binoculars or a small telescope, you should be able to distinguish between the planet and its rings, and maybe even see the dark Cassini Division within the rings.

Learn A Constellation: Saturn And Antares Take The Sting Out Of Finding Scorpius

If you're brand new to observing, your quickest route to picking out the constellations is to start bright - working your way from the most easily seen stars down to the dimmer ones, playing celestial connect-the-dots until the mythological characters reveal themselves. Saturn and Scorpius' heart star, Antares, provide a bright pair to your south that will help mark the constellation out. The Rey's Diagram for Scorpius is shown below, with shortened claws pointing west and its curved tail dipping south before curling back up again to the east. If you can make this shape out, consider yourself yet another in a long line of observers who, starting with (at least) the Babylonians, have seen this scorpion in the sky for (at least) 5,000 years.



The constellation Scorpius

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