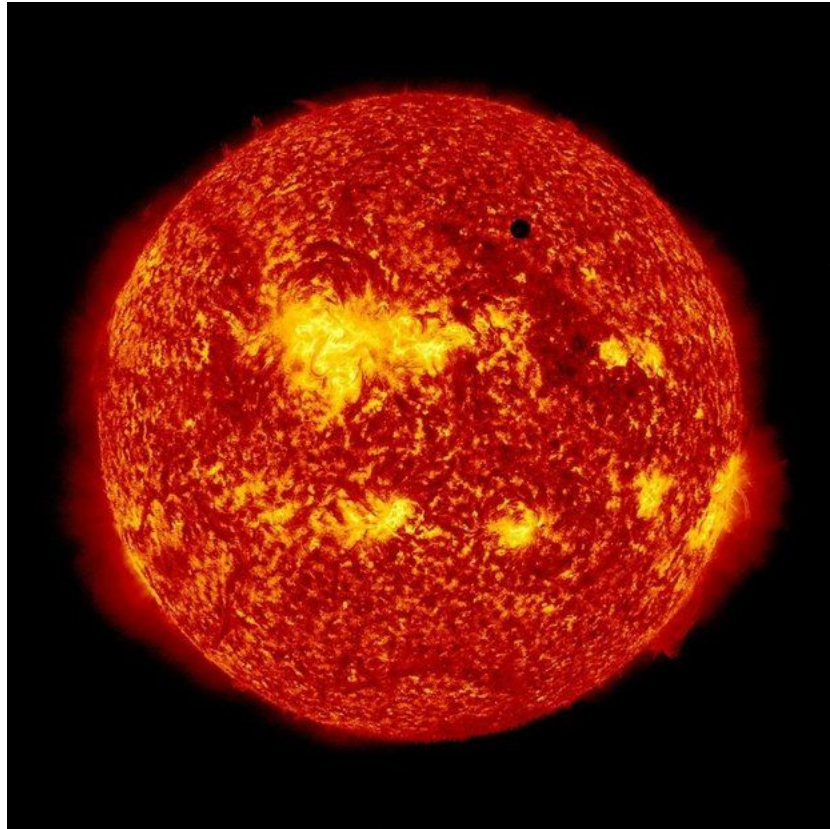


CENTRAL NY OUTDOORS

Upstate NY stargazing in May: A meteor shower and preparations for the

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Updated on May 1, 2017 at 7:06 AM
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The transit of Venus across the Sun on June 5/6, 2012.
By NASA/SDO, AIA.

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By **Special to nyup.com**, feedback@nyup.com

By **Damian Allis, Contributing Writer**

Every once in a while, New York and most of the rest of the U.S. is treated to some significant daytime astronomical event. As you might imagine, this only occurs when some object attempts to compete with the Sun for attention - and when something big gets between the Sun and ourselves.

Within the past decade, we've had the good fortune of being able to see Venus (in 2012) and Mercury (in 2016) across the face of the Sun using solar-safe astronomy equipment. The [2012 Venus transit](#) held in downtown Syracuse drew several hundred people to Armory Square.

On Aug. 21, the continental U.S. is going to be witness to a total solar eclipse - an event that hasn't happened in the U.S. since 1918. While New York will not experience complete coverage of the Sun, northern-most New Yorkers will experience total coverage, while southern-most New Yorkers will just barely approach 80 percent. It is a fair bet that every active amateur astronomer in New York will be hosting an observing session with solar-safe equipment on the 21st or will be hosting a lecture or presentation the days leading up to the eclipse.

If you haven't yet done so, mark Aug. 21 in your calendar and plan to call in sick that afternoon. We will address the science of observing and why such eclipses don't happen more regularly as the event approaches. For those already excited, for more information, check out eclipse.gsfc.nasa.gov/eclipse.html, greatamericaneclipse.com, or eclipse2017.org.

May lectures and observing opportunities

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 May. As we always are, there are always factors when observing, please check the provided contact information and/or email the groups about an announced session, as some groups will also schedule weather-alternate dates. Also use the contact info for each group to check on any applicable event or parking fees.

Astronomy Events Calendar

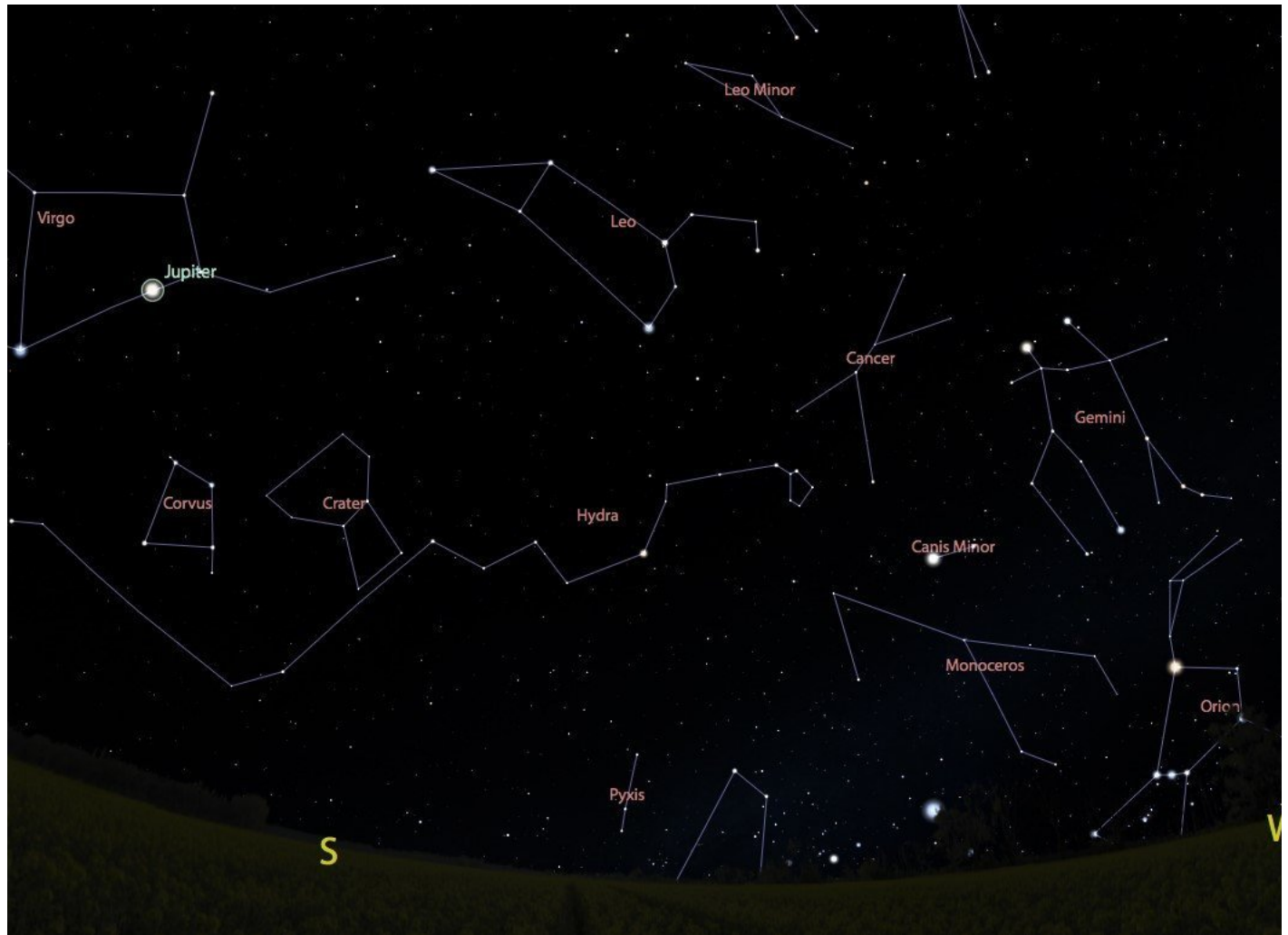
Organizer	Location	Event	Date	Time
Adirondack Public Observatory	Tupper Lake	Public Star Gazing	May 5	8:30 PM
Adirondack Public Observatory	Tupper Lake	Public Star Gazing	May 19	8:30 PM
Albany Area Amateur Astronomers & Dudley Observatory	Schenectady	Senior Science Day	May 1	3:00 - 4:00 PM
Albany Area Amateur Astronomers & Dudley Observatory	Schenectady	Night Sky Adventure	May 16	8:00 - 9:30 PM
Albany Area Amateur Astronomers & Dudley Observatory	Schenectady	AAAA Meetings	May 18	7:30 - 9:00 PM
Albany Area Amateur Astronomers & Dudley Observatory	Schenectady	Octagon Barn Star Party & Lecture	May 19	8:00 - 10:00 PM
Astronomy Section, Rochester Academy of Science	Rochester	ASRAS Meeting & Lecture	May 5	7:30 - 9:30 PM
Astronomy Section, Rochester Academy of Science	Rochester	Observing At The Strassenburgh	May 6	8:30 PM
Astronomy Section, Rochester Academy of Science	Rochester	Observing At The Strassenburgh	May 13	8:30 PM
Astronomy Section, Rochester Academy of Science	Rochester	Observing At The Strassenburgh	May 20	8:30 PM
Astronomy Section, Rochester Academy of Science	Rochester	Observing At The Strassenburgh	May 27	8:30 PM
Baltimore Woods	Marcellus	Spring Constellations	May 19	8:30 - 10:30 PM
Kopernik Observatory & Science Center	Vestal	KAS Monthly Meeting	May 3	7:00 - 9:00 PM
Kopernik Observatory & Science Center	Vestal	Friday Night Lecture & Observing	May 5	7:00 - 10:00 PM
Kopernik Observatory & Science Center	Vestal	Friday Night Lecture & Observing	May 12	8:00 - 10:00 PM
Kopernik Observatory & Science Center	Vestal	Friday Night Lecture & Observing	May 19	8:00 - 10:00 PM
Kopernik Observatory & Science Center	Vestal	Friday Night Lecture & Observing	May 26	8:00 - 10:00 PM
Mohawk Valley Astronomical Society	Waterville	Public Stargazing @ New Hartford Sherrill Brook Park	May 20	9:00 PM - 12:00 A

Lunar Phases

New: Apr. 26, 8:16 AM	First Quarter: May 2, 10:46 PM	Full: May 10, 5:42 PM	Third Quarter: May 18, 8:32 PM	New: May 25,
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The Moon's increasing brightness as Full Moon approaches washes out fainter stars, random meteors, and other - this is bad for most observing, but excellent for new observers, as only the brightest stars (those that mark the constellations) and planets remain visible for your easy identification. If you've never tried it, the Moon is a wonderful object.

Evening and nighttime guide



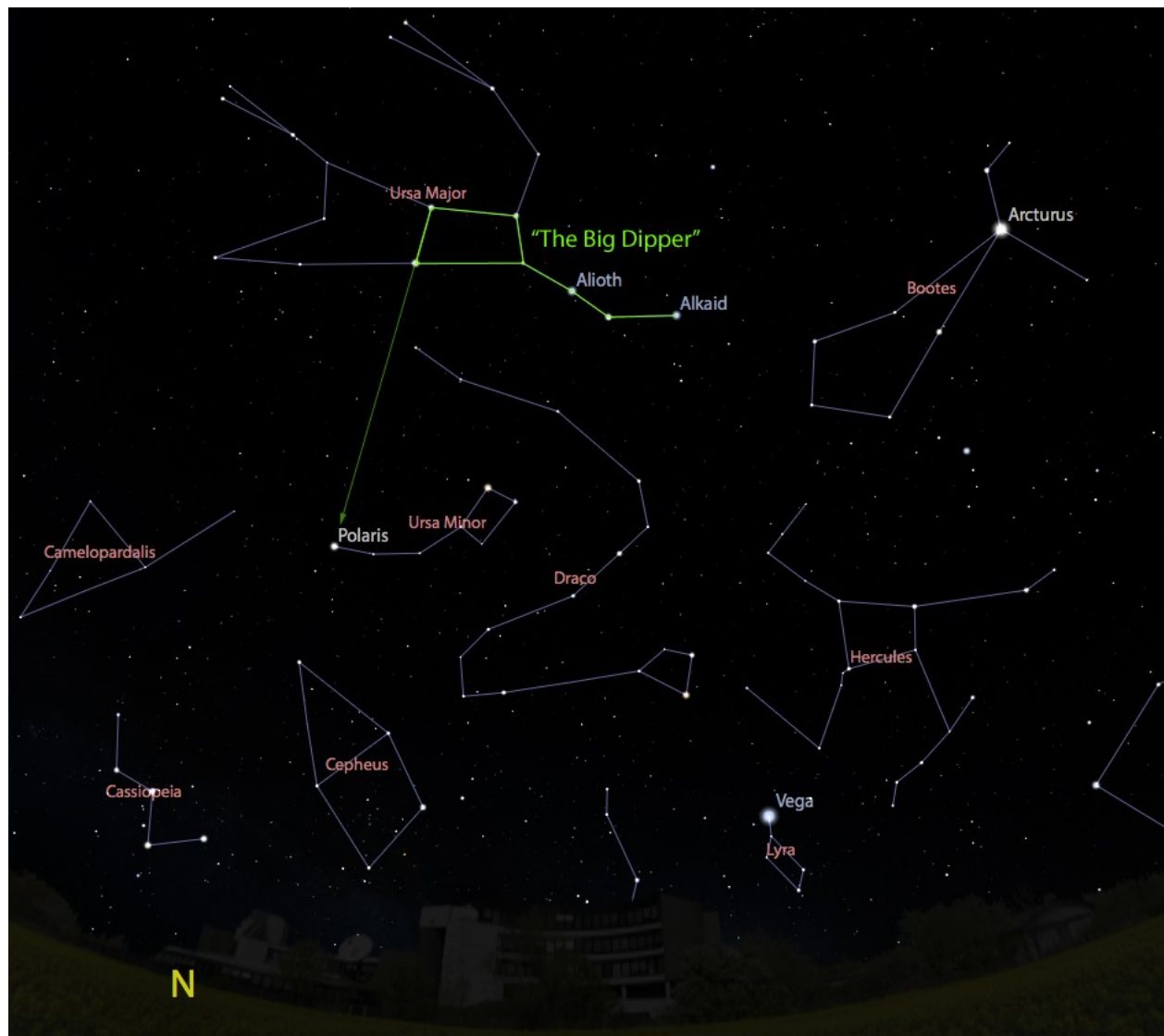
The view looking southwest at 9 p.m. on May 15 (except for the changing Moon position, this mid-month accurate for all of May). (Image made with Stellarium)

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

Southern Sights: May is the last month to catch an easy glimpse of Orion and Taurus, but the bright stars in help to fill in your observing time. The thin, wispy band of the Milky Way in this part of the sky runs thickest through Gemini and all of Monoceros. As you look further east, you're looking off the plane of our galaxy into the deep space.

ADVERTISING

This means you see fewer Messier Objects inside the galaxy, but Virgo specifically is a prime location for hunt that would otherwise be covered over by even the thinnest band of the Milky Way.



The view looking northeast at 9:00 p.m. on May 15. (Image made with Stellarium)

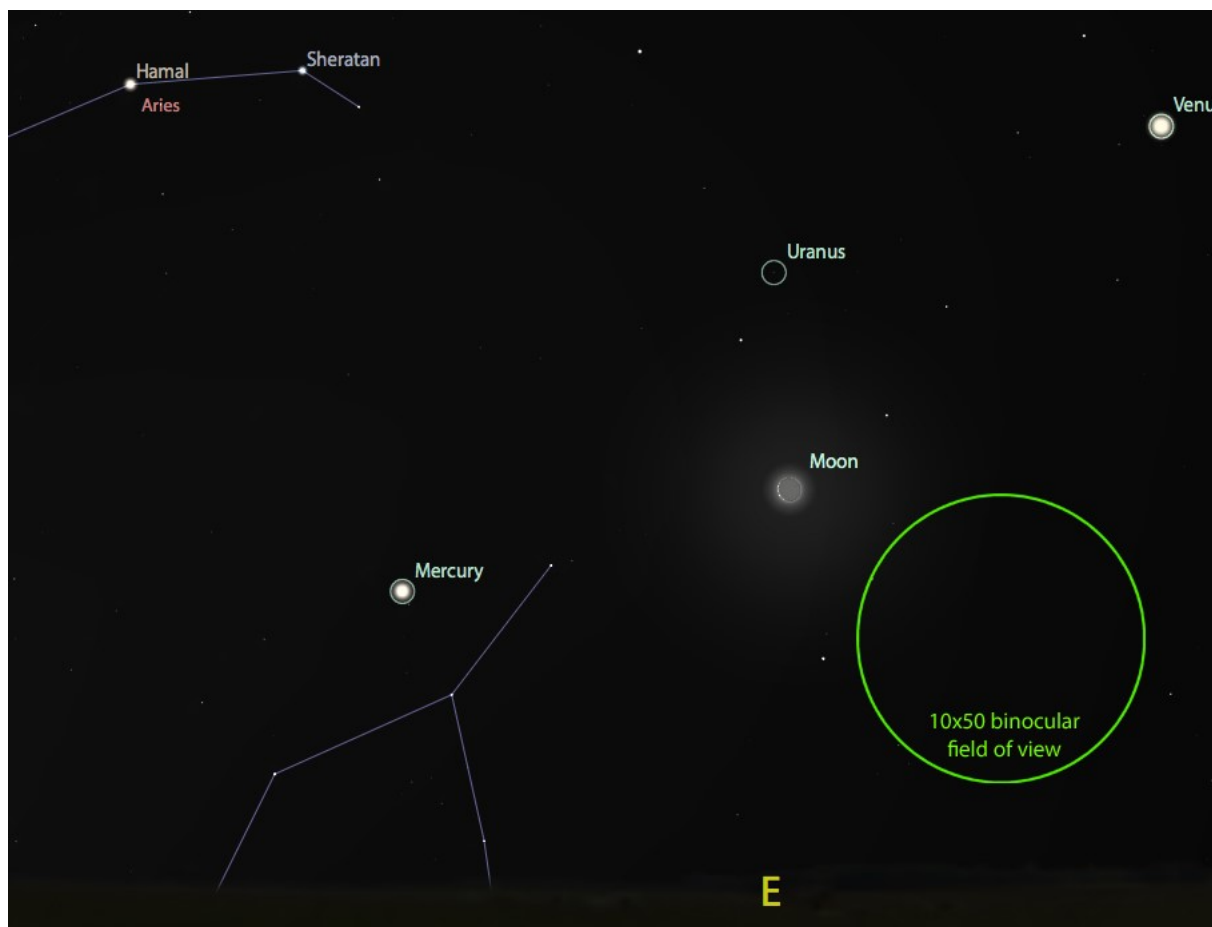
Northern Sights: The Big Dipper lies high in the sky during pre-midnight observing hours this month.

Arcturus and Hercules are easy targets by the time you're ready to observe, and bright Vega in the constellation Lyra, marking one corner of the Summer Triangle and the wealth of deep sky objects starting their densest region of the Milky Way.

Planetary Viewing

Mercury swapped places with Venus briefly at the beginning of April as the first planet to fall below the horizon. May, Mercury has followed Venus to the morning sky, giving early risers a great chance to catch multiple planets later in the month. For the first two weeks, Mercury will rise close to civil twilight and be virtually washed out but later in the month, a very bright pinpoint in binoculars may seal the deal, but be VERY careful about keeping your view from the rising sun. The damage to your eyesight from even a second of the magnified sun is instant and permanent.

True to its name, Mercury will fly through the constellations Pisces, Cetus, and Aries this month. The early morning sky will host the thin, waning crescent moon between Mercury and the exceptionally bright Venus. The distant planets Uranus and Neptune share the lunar field of view in 10x50 binoculars that morning, but likely be too difficult to see against the bright sliver of a crescent.



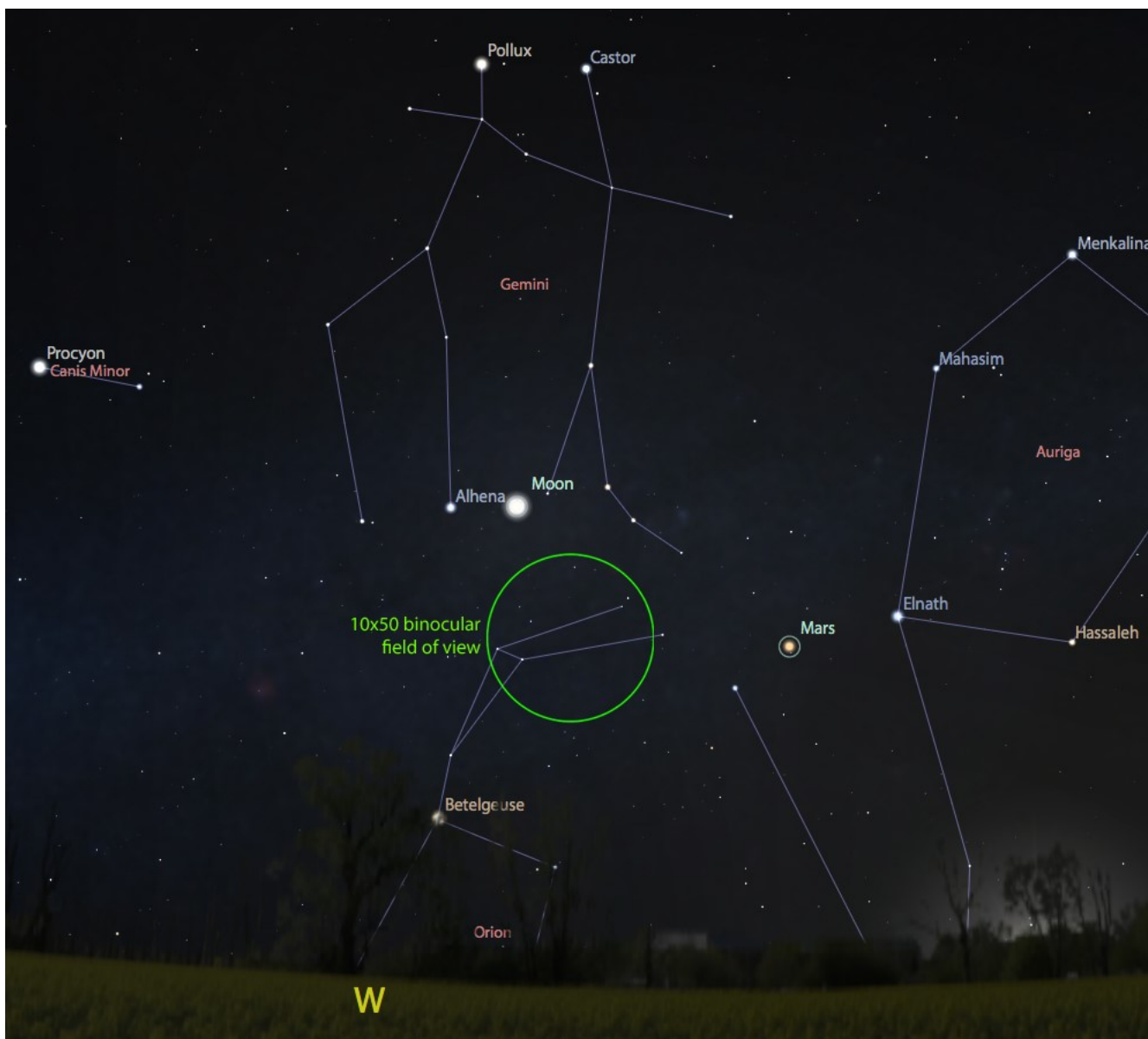
Mercury, Venus, a thin crescent Moon, and even possibly Uranus on the morning of May 23. (Image made with Stellarium)

Venus is unmissable in the morning sky right now, rising after 4:30 a.m. on May 1 and by 3:45 a.m. on the 31st. Its crescent shape is very visible even in low-power binoculars, but you may need something to steady your hands if you're viewing this crescent clearly.

If you don't have a camera tripod and binocular bracket handy, a common cheap trick is to flip a broom over a camera on the bristles - but vacuum them off first!

Fortunately, you've the whole month to practice - Venus will be slipping farther away all month within the Pisces constellation. The crescent will grow from a quarter to nearly one-half by month's end, giving us plenty of reflected light to monitor in May and beyond.

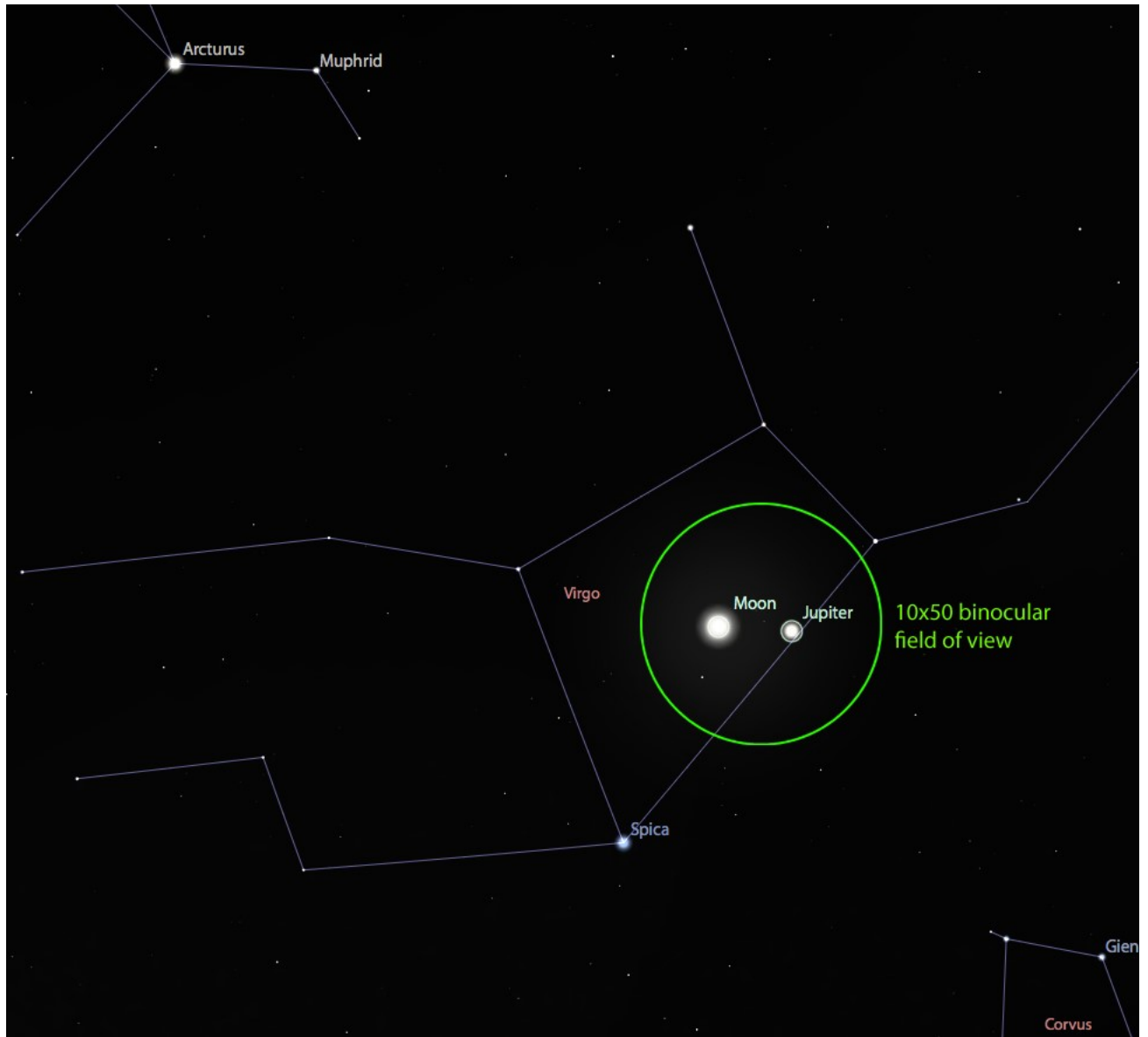
Mars remains a reasonable, but dimming, catch in the western sky after sunset and will be visible within the belt of Orion before 10:00 p.m. all month. That said, June will mark the transition from Mars to not-Mars in the evening sky. You'll be waiting until the early mornings in mid-August for another sight.



The Mars and Moon, looking west on May 27. (Image made with Stellarium)

Jupiter is in its viewing prime in May, rising near 6:00 p.m. on the 1st and by 4:30 p.m. on the 31st. Throughout the month, Jupiter will be high and visible in the pre-midnight sky, never straying too far from the star Porrima in the constellation Virgo. On May 7th, the waxing gibbous Moon will be at its closest to Jupiter, making for an excellent pairing in binoculars. Jupiter will be easy to spot - and possibly the only other object in the vicinity of the Moon that you can see.

Low power binoculars are excellent for spying the four bright Galilean moons - Io, Europa, Ganymede, and Callisto. [Online guides](#) will even map their orbits for you so you can identify their motions nightly or, for the patient observer,

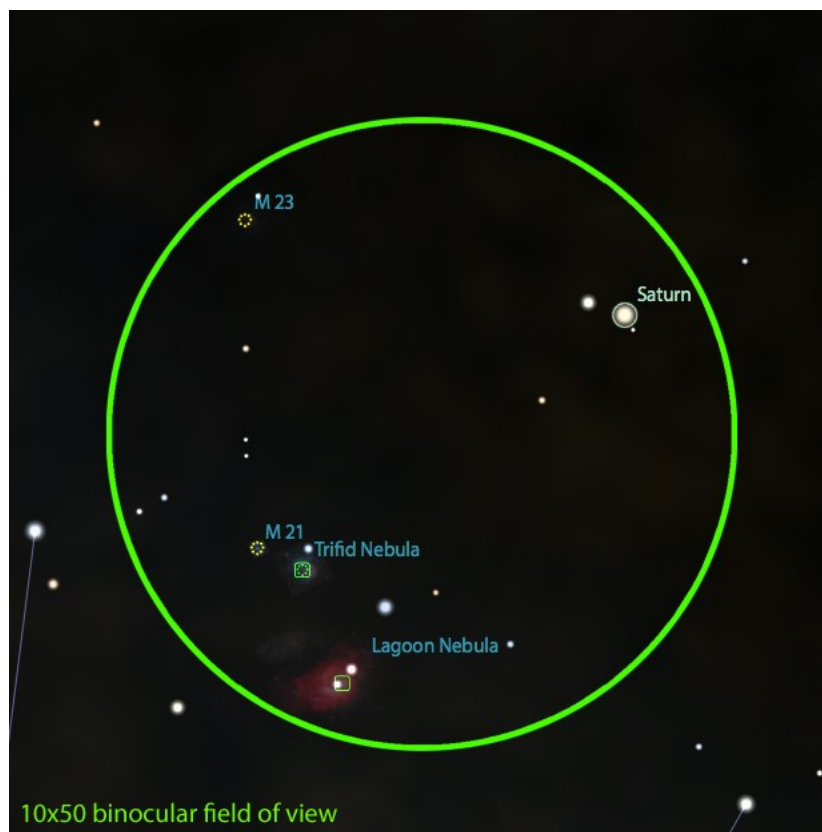


The Moon and Jupiter on May 7. (Image made with Stellarium)

Saturn Saturn has seen some excellent press in the past few weeks and you will hopefully be seeing quite a bit in a few months to come. The [Cassini Mission](#), which has done as much for scientific study as it has for desktop beginning its study of Saturn in 2004, is ending in a most spectacular way on September 15th of this year, which is scheduled to fall into Saturn itself. The reasons are two-fold. First, the probe will have exhausted its plutonium

Second, and more importantly down the road, there's always a slight chance that Cassini has been hiding microbes from Earth all this time. An uncontrolled probe might just end up crash-landing into one of Saturn's moons, such as Enceladus, in which case there's a slight chance that those hiding microbes might just set up shop and begin moon - or possibly start competing with any native microbes that astrobiologists are anxiously hoping to find on Enceladus.

Saturn returns to the pre-midnight sky on May 1st, rising earlier each night until clearing the horizon just before 3:00 a.m. on May 31st. Saturn sits right near the Sagittarius/Ophiuchus border this month, crossing into Ophiuchus territory on May 13th. On May 13th you will see the waning gibbous Moon paired with Saturn, rising just before midnight. This is an excellent sight, but not necessarily the best Saturn sight this month. If you're a true night owl, try to find Saturn after 2:00 a.m. on the mornings in May - so long as the Moon has set below the western sky, you may be able to spy Saturn, the open Messier 21 and 23, as well as the Trifid and Lagoon Nebulae - all in the field of view of 10x50 binoculars. This is a good chair, and a good long look in the binoculars will serve you best. If the 2 a.m. session isn't your thing, simply wait until May 22, when the Moon is below the horizon and Saturn et al. rise after 11 p.m.



An exceptionally busy view of Saturn in binoculars. (Image made with Stellarium)

ISS And Other Bright Flyovers

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

May is chock full of ISS, with 72 nighttime-visible flyovers predicted. The first few weeks of May offer a great number of flyovers, but only if you're willing to start your day off very early. The flyovers for the first few weeks all occur at or before the late hour of 5 a.m. The flyovers for pre-midnight observers begin after the 22nd, with three occurring on the 24th, 26th, 28th, 30th, and 31st. Simply go out a few minutes before the start time and look for what will at first seem like a distant plane.

ISS Flyovers

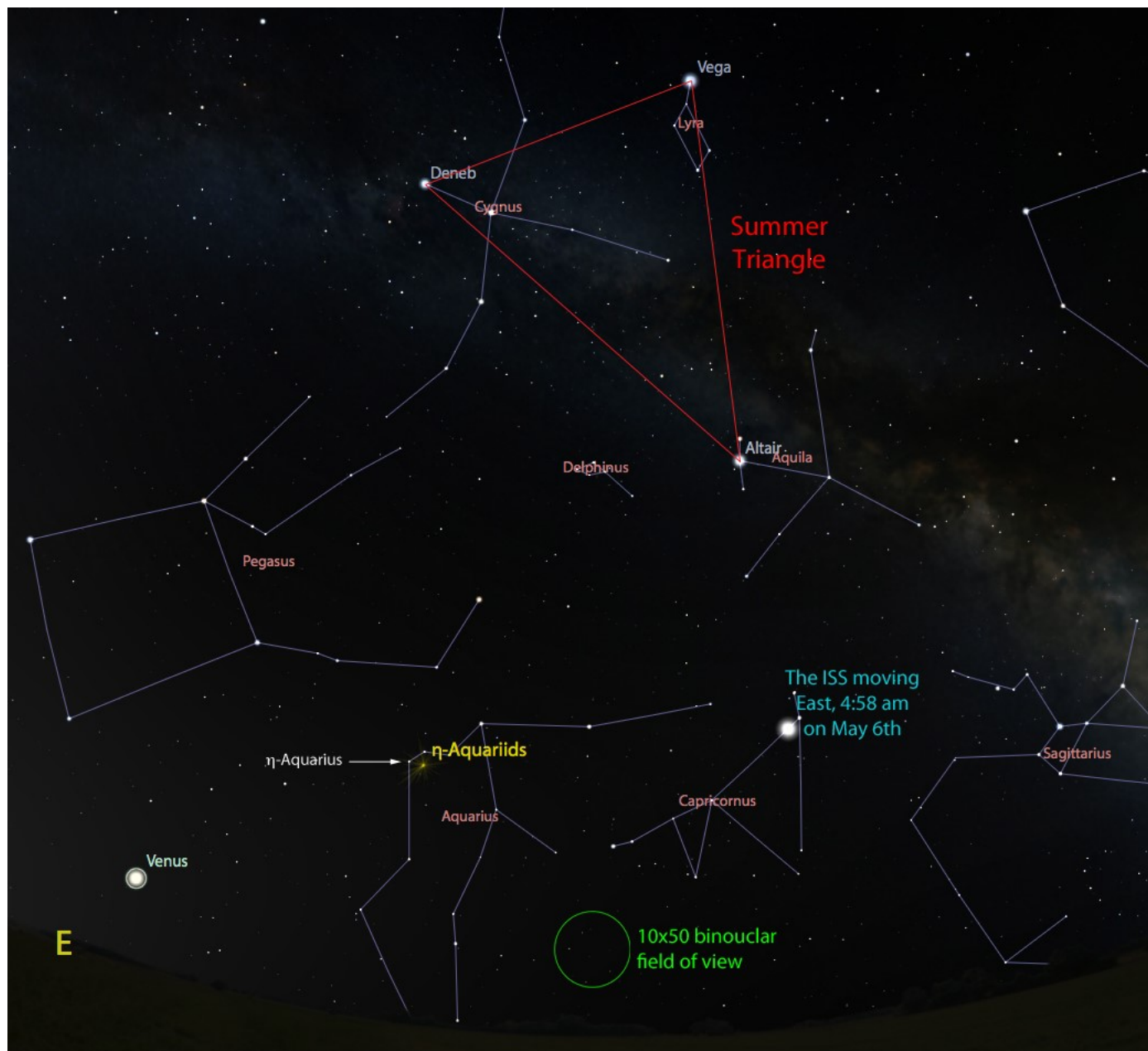
Date	Brightness	Approx. Start	Start Direction	Approx. End	End
6-May	very	4:54 AM	S/SW	5:00 AM	E/NE
8-May	extremely	4:47 AM	SW	4:52 AM	E/NE
10-May	extremely	4:39 AM	W	4:44 AM	NE
12-May	very	4:31 AM	W	4:36 AM	NE
20-May	somewhat	12:51 AM	NE	12:51 AM	NE
22-May	moderately	12:41 AM	N/NE	12:43 AM	NE
22-May	moderately	11:49 PM	N/NE	11:51 PM	NE
23-May	very	9:17 PM	S	9:21 PM	E
23-May	extremely	10:52 PM	W/SW	10:58 PM	NE
24-May	moderately	12:29 AM	W/NW	12:34 AM	NE
24-May	extremely	9:59 PM	SW	10:06 PM	E/NE
24-May	moderately	11:36 PM	W/NW	11:42 PM	NE
25-May	extremely	9:07 PM	S/SW	9:13 PM	E/NE
25-May	very	10:44 PM	W	10:50 PM	NE
26-May	moderately	12:21 AM	NW	12:26 AM	NE
26-May	extremely	9:51 PM	W/SW	9:57 PM	NE
26-May	moderately	11:29 PM	W/NW	11:34 PM	NE
27-May	moderately	10:36 PM	W/NW	10:41 PM	NE
28-May	moderately	12:13 AM	NW	12:18 AM	NE
28-May	moderately	9:43 PM	W	9:49 PM	NE
28-May	moderately	11:21 PM	NW	11:25 PM	NE

Predictions courtesy of heavens-above.com. Times later in the month are subject to shifts - for accurate daily predictions, see spotthestation.nasa.gov.

Meteor showers: Eta Aquariids April 20 to May 20, peaking May 5 and 6

Meteor showers occur when the Earth passes through the debris field of a comet or asteroid. As these objects warm in the sun in their long orbits, they leave tiny bits behind - imagine pebbles popping out the back of a large truck on an increasingly bumpy road. In the case of meteor showers, the brilliant streaks you see are due to particles usually the size of grains of sand. The Earth plows through the swarm of these tiny particles at up-to 12 miles-per-second. High in the atmosphere, these particles burn up due to friction and ionize the air around them, producing the long light trails.

predict the peak observing nights for a meteor shower because we know when and where in Earth's orbit we'll see the same part of the Solar System - this yearly periodicity in meteor activity is what let us identify and name meteor showers before we ever had evidence of what caused them.



The Eta Aquariid radiant, complete with Venus, Saturn, the newly returned Summer Triangle, and one placed 5 a.m. ISS flyover on the morning of May 6 (Image made with Stellarium)

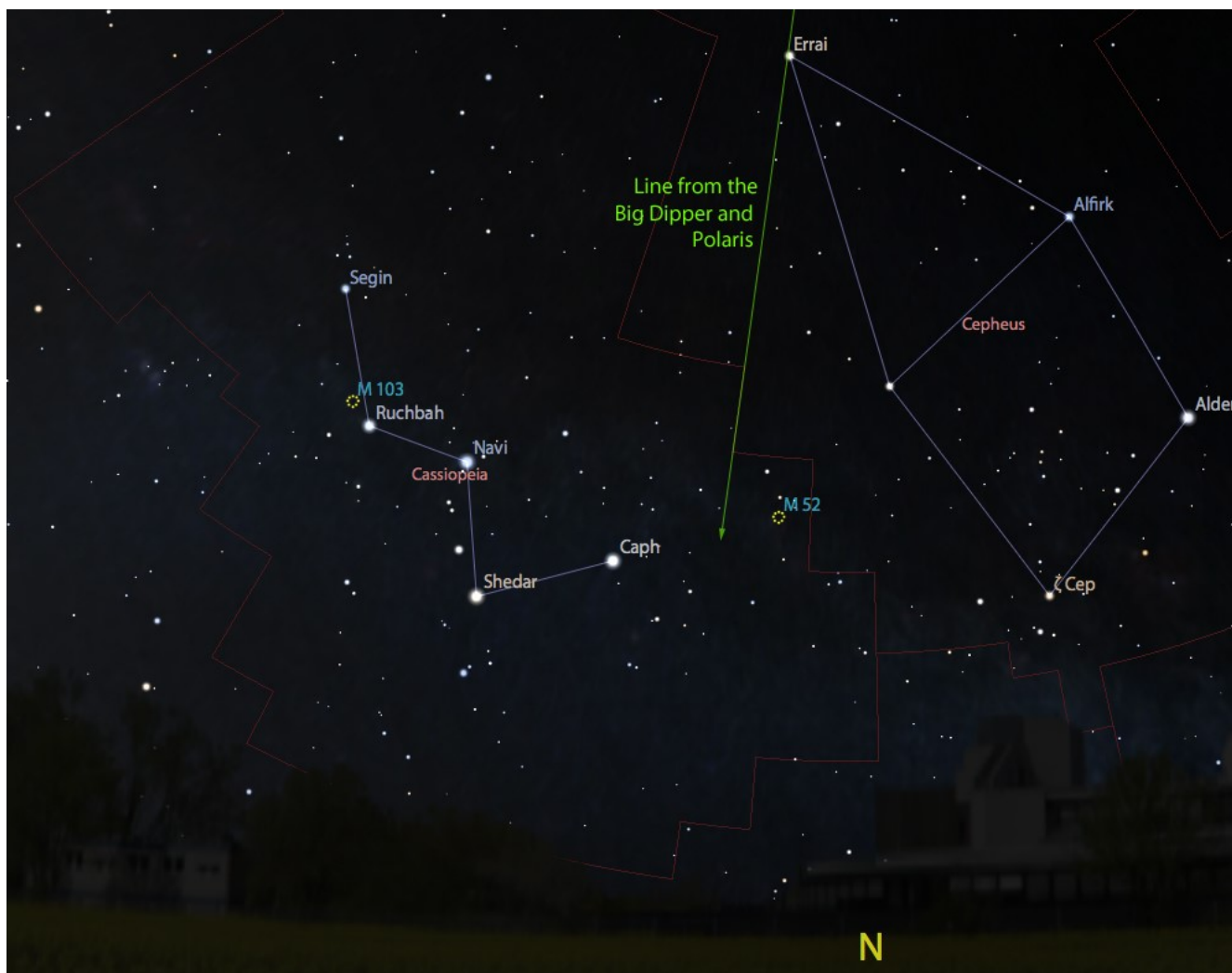
The Eta Aquariids are believed to be due to the great Halley's Comet, although there is some debate as to who produced the debris or gravitationally nudged debris into the current area. If it is all Halley's debris, then Halley's return around the sun produces two meteor showers - the second being the Orionids in October.

The name of each meteor shower is based on the constellation from which the shooting stars appear to radiate in the sky we call the *radiant*. When there are multiple meteor showers associated with the same constellation, the name goes back even more accurately, right down to one of the stars in that constellation. There are seven meteor showers associated with Aquarius, but only two produce decent meteor showers. The Eta Aquariids appear to originate from very close to the star zeta-Aquarius although zeta-Aquarius is quite close as well.

How to observe: The Eta Aquariids are a long, gradual meteor shower that stretches over about 30 days. The only predicted maximum is around May 5th and 6th, with decent viewings possible from the 3rd to the 8th. The constellation Aquarius sits quite low on the horizon in the early mornings in early May and is not particularly prominent either when you try to observe, Venus would serve as an adequate marker, else find the Summer Triangle high above the horizon. To optimize your experience, lie flat on the ground with your feet pointed to the south and your head elevated - meteors will then appear to fly right over and around you.

Those interested in seeing a full list should check out the American Meteor Society [meteor shower calendar](#).

Learn a Constellation: Cassiopeia



Cassiopeia and Cepheus in the late-evening May sky. (Image made with Stellarium)

Our northeast-facing image in the Evening and Nighttime Guide above shows the Big Dipper marked in green pointing towards Polaris in the Little Dipper. If we extend that arrow down another full length, we end up point Cassiopeia/Cepheus divide. Those with either a background in Greek mythology or ticket stubs to one of the "Clash Of The Titans" will know that these two constellations come as a pair - King Cepheus, ancient ruler of / Cassiopeia, who offended the gods by boasting of her or her daughter Andromeda's beauty.

During pre-midnight observing hours in May, Cassiopeia may remind you of something from a different movie "It's a Mad Mad Mad Mad World." Towards the end, Jonathan Winters is seen slowly turning around to identify points - a "Great Big W." Cassiopeia's motion around Polaris cleanly breaks into four groups that are easy to r to July, it's a "W" at the horizon, from August to October, a "3" in the northeast, from November to January an north, and from February to April an "E" in the northwest. Its five stars are very bright, but if the shape doesn't few times, simply use the Big Dipper, find Polaris, and continue unit a W, 3, M, or E jumps out.

The five bright stars of the "W" asterism are all observing-worthy on their own. Caph is a variable star spinning 25% wider at its equator than its poles. Schedar is a four-star system. Navi is an unpredictable variable star we can keep track of without any magnification. Ruchbah is an eclipsing binary star - which means one star goes in front of the main star as it orbits every 25 months, causing a quick, predictable drop in the brightness. Finally, Saiph is the shell of gas surrounding it, giving its spectrum a more complicated shape.

For the binocular observers, there are two Messier Objects to find - the open star clusters M52 and M103. Both are more prominent in another part of the sky, but Cassiopeia lies just in front of a thin band of the Milky Way. As a result, both binocular and telescope observers end up seeing a wealth of stars in the background as they scour for deep sky objects.

Dr. Damian Allis is the director of [CNY Observers](#) and a NASA Solar System Ambassador.

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