



# THE LOS ANGELES ASTRONOMICAL SOCIETY

# THE BULLETIN

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Please email any images or articles for upcoming editions of the Bulletin to:

[communications@laas.org](mailto:communications@laas.org)

The deadline is the 18th of every month.

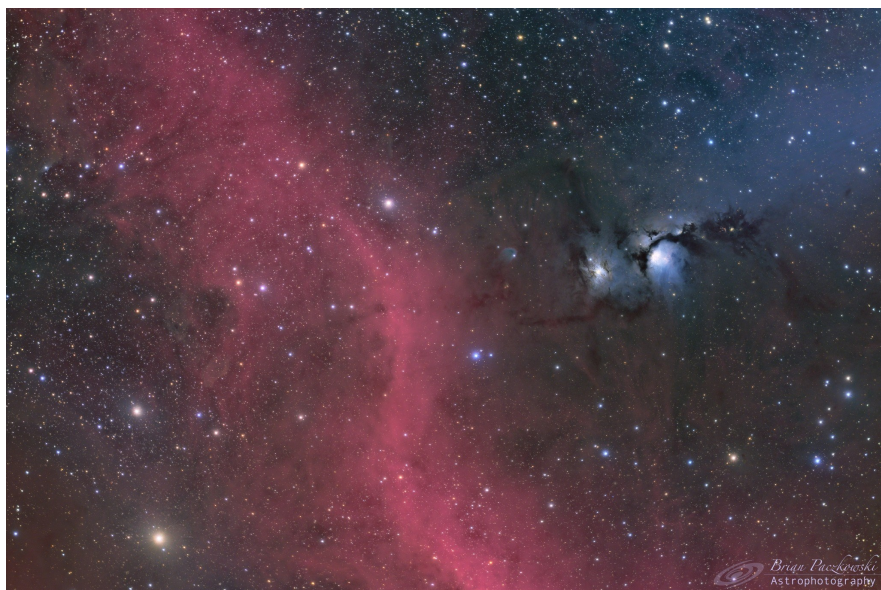


## Update Your Contact Information

Please send any contact info changes to the club secretary at

[secretary@laas.org](mailto:secretary@laas.org).

**Garvey Nights** -The Garvey Ranch Observatory is open to the public every Wednesday night from 7 PM to 10 PM, weather permitting. Masks are required inside the facilities.



.Happy Winter Solstice! The beautiful blue reflection nebula (Messier-78) and the red emission nebula, Barnard's Loop, are located in the winter constellation of Orion. This color composite image is made from about 35 hours of data.

Photo credit: [Brian Paczkowski](#)

## Upcoming Club Events

Dark Sky Night: Jan. 21

**Public Star Party: Jan. 28**



## **.Election Results for 2023**

### **President**

Darrell Dooley

### **Vice President**

Alecia Hurst

### **Treasurer**

John O'Bryan

### **Secretary**

Spencer SooHoo

### **Board of Directors**

Curtis Byrom

Ed Dempsey

Zoly Dobrovics

Ralph Gonzalez

Joe Phipps

Greg Thompson

Tim Thompson

David Yakerson

### **Alternate:**

Chris Valdiva

# Spot the Messenger: Observe Mercury

By David Prosper

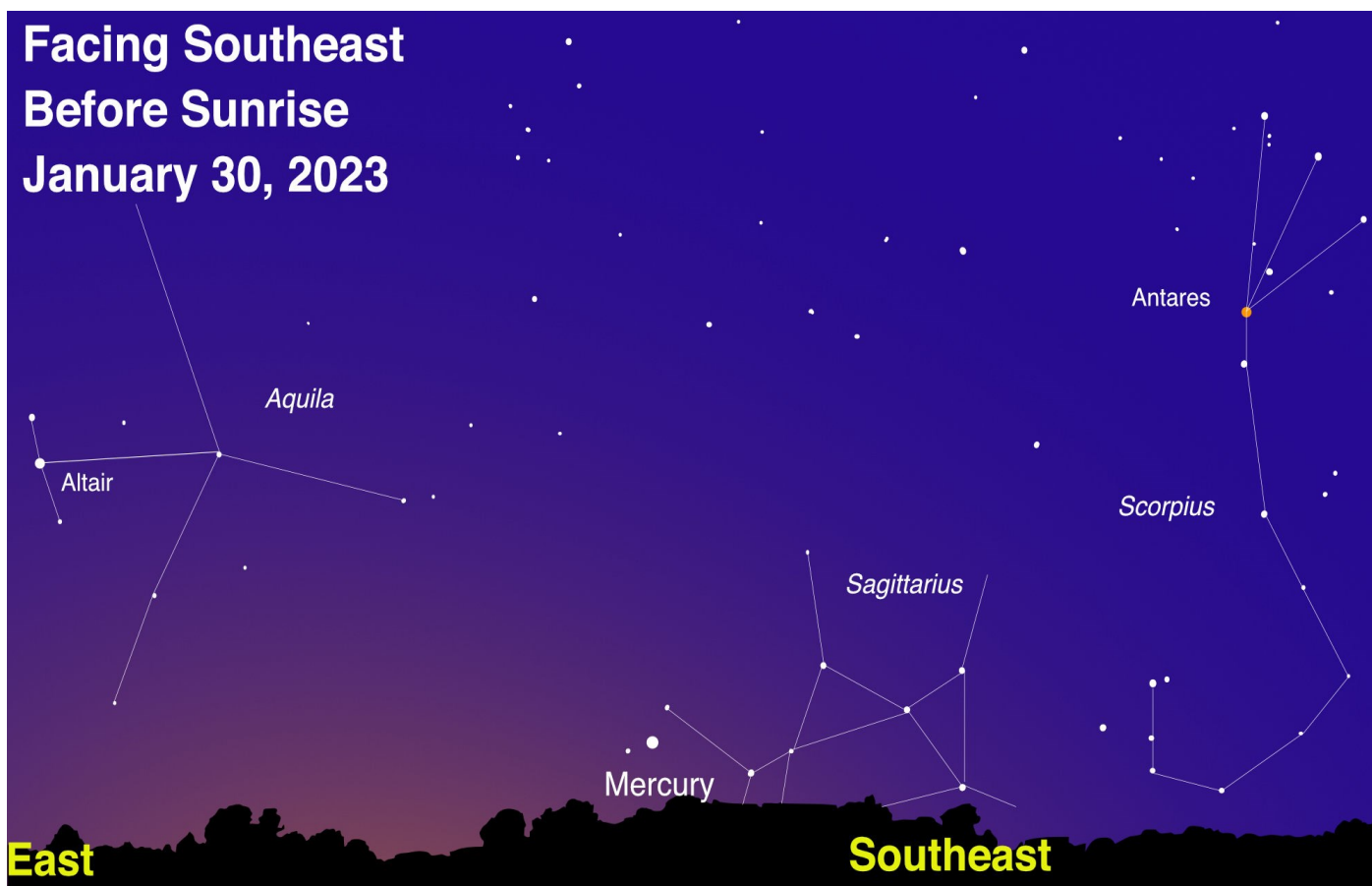
Most planets are easy to spot in the night sky, but have you spotted Mercury? Nicknamed *the Messenger* for its speed across the sky, Mercury is also the closest planet to the Sun. Its swift movements close to our Sun accorded it special importance to ancient observers, while also making detailed study difficult. However, recent missions to Mercury have resulted in amazing discoveries, with more to come.

Mercury can be one of the brightest planets in the sky – but also easy to miss! Why is that? Since it orbits so close to the Sun, observing Mercury is trickier than the rest of the “bright planets” in our solar system: Venus, Mars, Jupiter, and Saturn. Mercury always appears near our Sun from our Earth-bound point of view, making it easy to miss in the glare of the Sun or behind small obstructions along the horizon. That’s why prime Mercury viewing happens either right before sunrise or right after sunset; when the Sun is blocked by the horizon, Mercury’s shine can then briefly pierce the glow of twilight. Mercury often appears similar to a “tiny Moon” in a telescope since, like fellow inner planet Venus, it shows distinct phases when viewed from Earth! Mercury’s small size means a telescope is needed to observe its phases since they can’t be discerned with your unaided eye. Safety warning: If you want to observe Mercury with your telescope during daytime or before sunrise, **be extremely careful**: you don’t want the Sun to accidentally enter your telescope’s field of view. As you may already well understand, this is extremely dangerous and can not only destroy your equipment, but permanently blind you as well! That risk is why NASA does not allow space telescopes like Hubble or the JWST to view Mercury or other objects close to the Sun, since even the tiniest error could destroy billions of dollars of irreplaceable equipment.

Despite being a small and seemingly barren world, Mercury is full of interesting features. It’s one of the four rocky (or terrestrial) planets in our solar system, along with Earth, Venus, and Mars. Mercury is the smallest planet in our solar system and also possesses the most eccentric, or non-circular, orbit of any planet as well: during a Mercurian year of 88 Earth days, the planet orbits between 29 million and 43 million miles from our Sun – a 14-million-mile difference! Surprisingly, Mercury is **not** the hottest planet in our solar system, despite being closest to the Sun; that honor goes to Venus, courtesy its thick greenhouse shroud of carbon dioxide. Since Mercury lacks a substantial atmosphere and the insulating properties a layer of thick air brings to a planet, its temperature swings wildly between a daytime temperature of 800 degrees Fahrenheit (427 degrees Celsius) and -290 degrees Fahrenheit (-179 degrees Celsius) at night. Similar to our Moon, evidence of water ice is present at Mercury’s poles, possibly hiding in the frigid permanent shadows cast inside a few craters. Evidence for ice on Mercury was first detected by radar observations from Earth, and followup observations from NASA’s MESSENGER mission added additional strong evidence for its presence. Mercury sports a comet-like tail made primarily of sodium which has been photographed by skilled astrophotographers. The tail results from neutral atoms in its thin atmosphere being pushed away from Mercury by pressure from the nearby Sun’s radiation.

NASA’s Mariner 10 was Mercury’s first robotic explorer, flying by three times between 1974-1975. Decades later, NASA’s MESSENGER first visited Mercury in 2008, flying by three times before settling into an orbit in 2011. MESSENGER thoroughly studied and mapped the planet before smashing into Mercury at mission’s end in 2015. Since .

MESSENGER, Mercury was briefly visited by BepiColombo, a joint ESA/JAXA probe, which first flew by in 2021 and is expected to enter orbit in 2025 - after completing six flybys. Need more Mercury in your life? Check out NASA's discoveries and science about Mercury at [solarsystem.nasa.gov/mercury/](https://solarsystem.nasa.gov/mercury/), and visit the rest of the universe at [nasa.gov](https://nasa.gov).

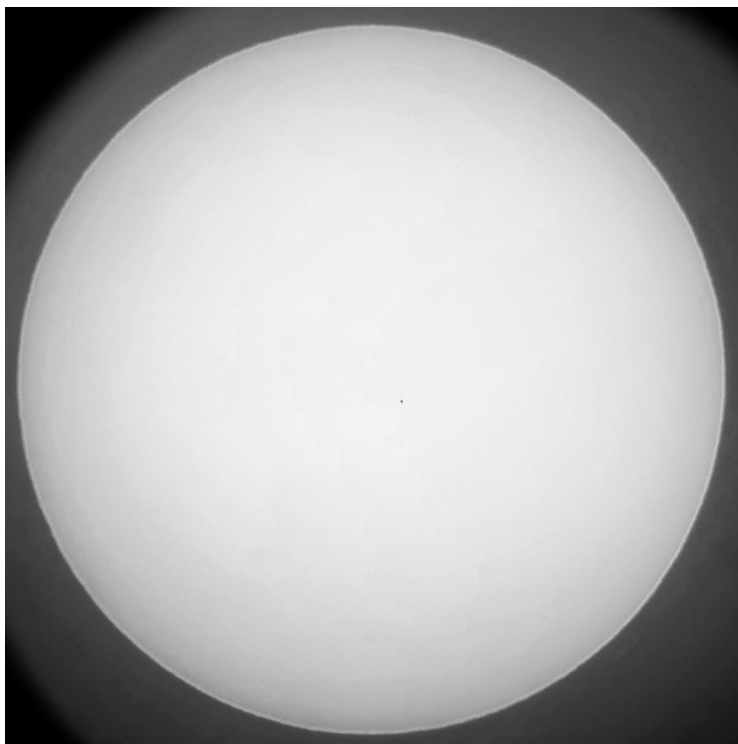
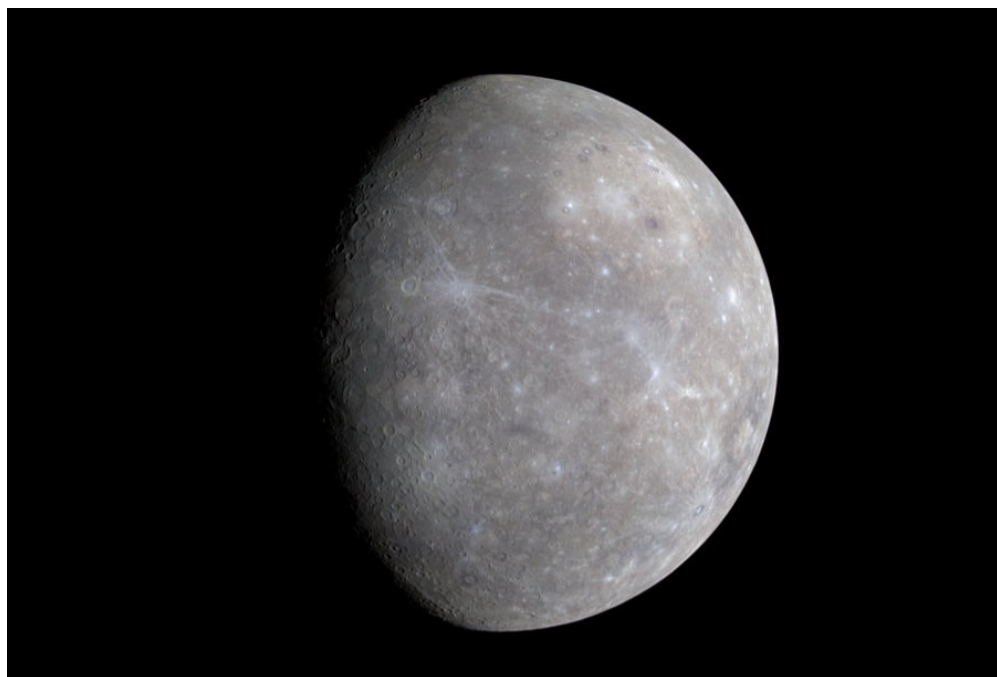


*Mercury reaches maximum western elongation on the morning of January 30, which means that your best chance to spot it is right before sunrise that day! Look for Mercury towards the southeast and find the clearest horizon you can. Observers located in more southern latitudes of the Northern Hemisphere have an advantage when observing Mercury as it will be a bit higher in the sky from their location, but it's worth a try no matter where you live. Binoculars will help pick out Mercury's elusive light from the pre-dawn glow of the Sun. Image created with assistance from Stellarium*

Continued on next page

Mercury is hot, small, and heavily cratered across its gray surface, as seen in this image from NASA MESSENGER. Mercury is the most heavily cratered planet in our solar system, since it lacks either a substantial atmosphere or geologic activity to erode surface features like craters - similar in certain aspects to the surface of our own Moon.

Credit: NASA/Johns Hopkins University Applied Physics Laboratory/ Carnegie Source: <https://solarsystem.nasa.gov/resources/439/mercurys-subtle-colors/>



*On rare occasion, Earthbound observers can observe Mercury, like Venus, transiting the Sun. Mercury frequently travels between Earth and the Sun, but only rarely does the geometry of all three bodies line up to allow observers from Earth to view Mercury's tiny shadow as it crosses our star's massive disc. You can see one such event in this photo taken by Laurie Ansorge of the Westminster Astronomical Society on November 11, 2019. If you missed it, set a reminder for Mercury's next transit: November 13, 2032..*



**This article is distributed by NASA's Night Sky Network (NSN).** The NSN program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit [nightsky.jpl.nasa.gov](https://nightsky.jpl.nasa.gov) to find local clubs, events, and more!

# Monthly Sky Report

## By Dave Nakamoto

.In January the planets line up as follows:

The moon is full on the 6<sup>th</sup>, at last quarter on the 14<sup>th</sup>, new on the 21<sup>st</sup>, and at first quarter on the 28<sup>th</sup>.

**Mercury** begins January in the evening sky. On the 1<sup>st</sup>, the sun sets at 4:55 p.m., PST, and Mercury sets at 5:51 p.m., PST, less than an hour later. Mercury's disk is 13-percent illuminated and 9.3 arcseconds wide. A few days later, Mercury is too close to the sun to be observed safely. On the 14<sup>th</sup>, Mercury rises at 5:51 a.m., PST, and the sun rises at 6:59 a.m., PST. On the 31<sup>st</sup>, Mercury rises at 5:22 a.m., PST, and the sun rises at 6:51 a.m., PST. Mercury's disk is 66-percent illuminated and 6.5 arcseconds wide. Do not observe any planet when it comes close to the sun, for the danger to the eyes is great.

**Venus** sets at 6:12 p.m., PST on the 1<sup>st</sup>. The disk of Venus is nearly full. The disk is 96-percent illuminated and ten arcseconds wide. Venus continues to set later in the evening. On the 31<sup>st</sup>, the sun sets at 5:22 p.m., PST, and Venus sets at 7:17 p.m., PST. On that date, Venus is 91-percent illuminated and 11 arcseconds wide.

**Mars** is in Taurus the Bull and observable nearly all night long. The planet sets at 4:52 a.m., PST, on the 1<sup>st</sup>. It presents a disk that is 97-percent illuminated and 14 arcseconds wide. On the 31<sup>st</sup>, Mars sets at 3:00 a.m., PST, and its disk is 92-percent illuminated and 11 arcseconds wide. A telescope with a magnification of at least 150x is required to see anything on its disk.

**Jupiter** is in Pisces the Fishes. On the 1<sup>st</sup>, Jupiter sets at 11:15 p.m., PST, and presents a fully illuminated disk that is 39 arcseconds wide. On the 31<sup>st</sup>, Jupiter sets at 9:39 p.m., PST. The planet's disk is 36 arcseconds wide. A telescope capable of magnification 50x will show the Red Spot, and the four bright Galilean moons can be seen moving back and forth, across and behind Jupiter.

**Saturn** is in Capricornus the Sea Goat. It will soon end its appearance in the evening sky. On the 1<sup>st</sup>, Saturn sets at 8:09 p.m., PST. On the 31<sup>st</sup>, Saturn sets at 6:27 p.m., PST, one hour and five minutes after sunset. The disk of Saturn is 15 arcseconds wide. The rings and Saturn's largest moon Titan may be seen with a telescope capable of magnification 50x.

**Uranus** is in the constellation Aries the Ram. It is very faint at magnitude +5.7. On the 1<sup>st</sup>, Uranus sets at 2:49 a.m., PST. On the 31<sup>st</sup>, the planet sets at 12:50 a.m., PST. On the 15<sup>th</sup>, Uranus is at Right Ascension 2<sup>h</sup> 50<sup>m</sup> 26<sup>s</sup> with a declination of +15° 59' 25". The disk of Uranus is only 3.6 arcseconds wide, and so a telescope with a magnification of 150x is needed.

**Neptune** is even fainter than Uranus at magnitude +7.9. It is in the constellation Aquarius the Water Bearer and is visible during the early evening. On the 1<sup>st</sup>, Neptune sets at 10:35 p.m., PST. On the 31<sup>st</sup>, the planet sets at 8:40 p.m., PST. On the 15<sup>th</sup>, Neptune is at Right Ascension 23<sup>h</sup> 36<sup>m</sup> 41<sup>s</sup> with a declination of -3° 48' 19". The disk of Neptune is only 2.3 arcseconds wide, and so a telescope with a magnification of 150x is needed to show the disk.

**SPECIAL EVENTS** in January include the following:

**Lunar-X** is a feature on the moon caused by the raised limbs of a few craters. It is visible for a few hours beginning at 4:37 p.m., PST, on the 28<sup>th</sup>. It is located along the lunar terminator, the line between the lighted portion of the moon and the dark portion. Binoculars with a magnification of 10x or more will show the feature just within the dark portion to the east of, and south of the center of, the terminator.

**The Quadrantid meteor shower** will peak on the night of the 3<sup>rd</sup> and through to the morning of the 4<sup>th</sup>. The moon will be 92-percent full and will interfere with observation. The peak usually only lasts six hours and may produce 100 meteors per hour, but the full moon will significantly reduce the number of meteors that can be seen. These meteors usually lack persistent trains but can produce bright fireballs. They appear to radiate from the constellation Boötes the Herdsman. Unusually, the shower is not named after the constellation from which the meteors appear to come but from an obsolete constellation, Quadrans Muralis the Mural Quadrant, that once occupied this part of the sky. Also unusually, the meteors appear to originate from a dead comet or asteroid designated 2003 EH.

**An occultation of Mars by the Moon** will occur on January 30. The moon will pass in front of Mars as viewed from Los Angeles. The moon begins passing in front of Mars at 8:36 p.m., PST. Mars emerges from behind the moon at 9:30 p.m., PST. Mars will appear on the limb of the moon for only 30 seconds. A telescope with a magnification of 50x or more will be needed to see the small disk of Mars on the limb of the moon.

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Learn more about [Lunar X](#), thanks to NASA Science

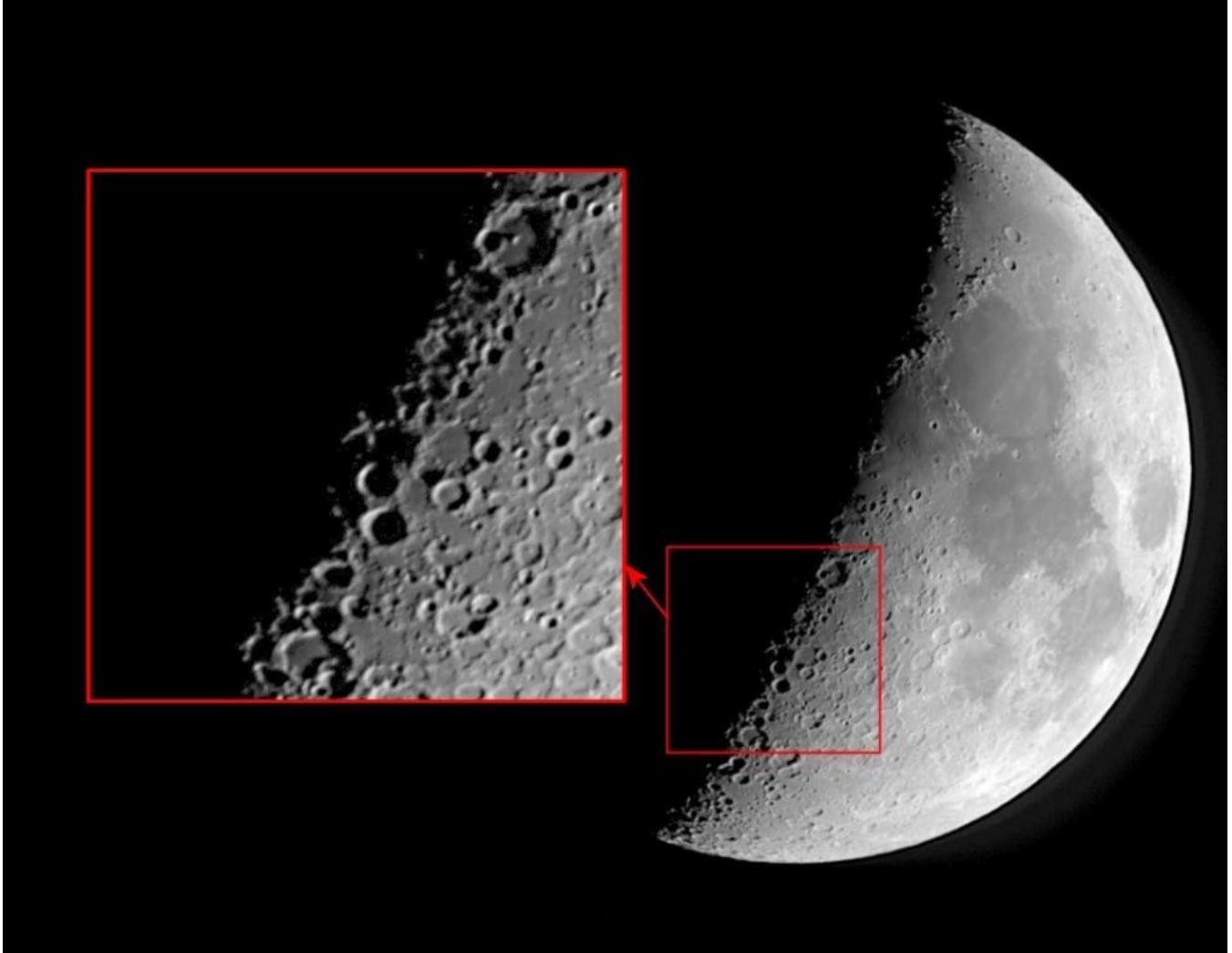
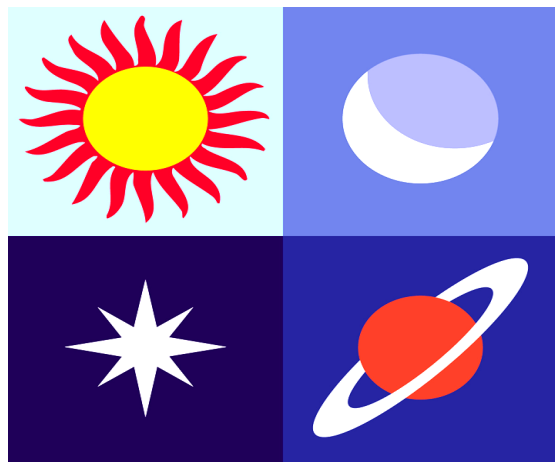


Image Credit & **Copyright:** [Alessandro Marchini](#) (Astronomical Observatory, [DSFTA](#) - Univ. of Siena),  
[Liceo "Alessandro Volta"](#) Student Astronomers



## Almanac

**January 3, 4 - Quadrantids Meteor Shower.** The Quadrantids is an above average shower, with up to 40 meteors per hour at its peak. It is thought to be produced by dust grains left behind by an extinct comet known as 2003 EH1, which was discovered in 2003. The shower runs annually from January 1-5. It peaks this year on the night of the 3rd and morning of the 4th. This year the nearly full moon will block out most of the fainter meteors. But if you are patient you may still be able to catch a few good ones. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Bootes, but can appear anywhere in the sky.

**January 6 - Full Moon.** The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 23:09 UTC. This full moon was known by early Native American tribes as the Wolf Moon because this was the time of year when hungry wolf packs howled outside their camps. This moon has also been known as the Old Moon and the Moon After Yule.

**January 21 - New Moon.** The Moon will be located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 20:55 UTC. This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no moonlight to interfere.

**January 30 - Mercury at Greatest Western Elongation.** The planet Mercury reaches greatest western elongation of 25 degrees from the Sun. This is the best time to view Mercury since it will be at its highest point above the horizon in the morning sky. Look for the planet low in the eastern sky just before sunrise.

**February 5 - Full Moon.** The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 18:30 UTC. This full moon was known by early Native American tribes as the Snow Moon because the heaviest snows usually fell during this time of the year. Since hunting is difficult, this moon has also been known by some tribes as the Hunger Moon.

### Source:

<http://www.seasky.org/astronomy/astronomy->



Curious about the objects in tonight's sky? Click on the link below to learn more.

[Time & Date - Los Angeles, CA.](#)



Tonight's Sky Video for January—NASA



# January 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4 Garvey Night	5	6	7
8	9	10	11 Garvey Night	12	13	14
15	16	17	18 Garvey Night	19 Outreach S. Pasadena	20	21 Dark Sky Night
22	23	24	25 Garvey Night	26	27 Outreach Los Angeles	28  Public Star Party
29	30	31				

Happy  
New Year

# Meet The New Members

## Welcome to the LAAS!



Virgil Adumitroaie	John Manniger	Chriss Berk
Nicholas Bert	Steven Rhodes	Michael Wolf
Andy Bussell	Melody Rose	
Robin Fey	Mitchell Schwartz	
Ilya Haykinson	Calin Spariosu	
Junhee Kweon	Jocelyn Wilson	

## LAAS Board Meetings

.Due to the pandemic, all Board Meetings are now held online, live on Zoom. Please check the information posted in the IO Group Forum for any current news related to these meetings. If you wish to attend a board meeting, please send a request to [secretary@laas.org](mailto:secretary@laas.org) for a link to Zoom.

## Volunteer Opportunities

Every LAAS member is a volunteer at some point. Some members volunteer to share telescopes with the public, while others tackle administrative duties, help out at our community and public events, or join a club committee. Taking photos at our events and writing articles about events for our club newsletter are great ways to volunteer and become more involved in the LAAS as a member.

Volunteers are always welcome to write articles for our monthly newsletter or share images captured of the night sky. Members are also welcome to come up with new ideas and future activities for the membership which can be shared in Board meetings. If you are artistic and enjoy creating posters or flyers, or printable astro-educational handouts for further star parties, please let us know.

## Time To Renew Your Membership?

Please remember to renew your membership once you receive notice from the Club Secretary in your email inbox. The secretary will send you a link to a form created just for you for your renewal.

Please send any new contact information to the club secretary at [secretary@LAAS.org](mailto:secretary@LAAS.org).



## LAAS Outreach Program

The mission of LAAS is to promote interest in and advance the knowledge of astronomy, optics, telescope making and related subjects. In furtherance of its mission, LAAS conducts public star parties and other outreach events that are intended to enhance the public's understanding of astronomy and its enjoyment and appreciation of the beauty and wonders of our universe.



We provide outreach events at local schools, Griffith Observatory, Mt. Wilson Observatory, various state and county parks, and community events.

Join our Outreach team of volunteers today.

Contact Heven Renteria, our Outreach Coordinator at [Outreach@LAAS.org](mailto:Outreach@LAAS.org) for more information.



Want to include astronomy outreach at your school's science night or open house? Follow the link below to access the request form:

[Outreach Request Form](#)

## LAAS Club Merchandise

**LAAS T-SHIRTS, HOODIES, MUGS, AND MORE!**

To find new merchandise from our store, please use the following link: [Shop Here](#)

Please note all prices listed are subject to change and include all shipping and handling costs. All items will be shipped directly to the address you provide on your order form.



LAAS Hoodie



## Amazon Smiles

The LAAS is now listed on Amazon Smiles. When you purchase any goods on Amazon.com, Amazon will donate a small percentage of the funds they receive from you, back to the LAAS. Here's some information to help bring in funds for our club projects:

What is AmazonSmile?

AmazonSmile is a simple and automatic way for you to support your favorite charitable organization every time you shop, at no cost to you, with the added bonus that Amazon will donate a portion of the purchase price to your favorite charitable organization., such as the LAAS!

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John O'Bryan, Jr.

## Astronomy Magazine Discounts

Discounts for astronomy magazines can be found on the internet. Look for the best deals possible. Send a copy of your LAAS membership card with your check or payment to receive a club member discount.

**Astronomy**  
magazine

As a member of the Night Sky Network, you may use the above link to renew your Astronomy Magazine subscription (or enter a new subscription) at the club discount rate. If this is a renewal, Astronomy Magazine will match your entered name and address and extend your subscription. For inquiries, please contact Astronomy Magazine customer service & sales at 1-800-533-6644.

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## Club Contact Information

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Secretary: Spencer Soohoo

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Mt. Wilson Coordinator: Darrell Dooley

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[communications@laas.org](mailto:communications@laas.org)



Find astronomy outreach activities by visiting NASA's Night Sky Network:

<https://nightsky.jpl.nasa.gov/about.cfm>

## Club Contacts

### Club Phone Numbers

LAAS Message Phone:

213- 673-7355 (Checked daily)

Griffith Observatory:

213-473-0800

Sky Report:

213-473-0880



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