The Los Angeles Astronomical Society

February, 2023
Volume 97, Issue 2

THE BULLETIN

.Jan. 18, 2023

My first attempt at comet C/2022 E3 (ZTF) taken last night from my observatory in New Mexico. This is a RGB composite made from 1 hour of data. The comet should continue to brighten as it makes its closest approach to the Earth on February 2.

Photo credit: Brian Paczkowski

Upcoming Club Events

Board Meeting, Feb. 8

General Meeting, Feb. 13

Dark Sky Night: Feb. 18

Public Star Party: Feb. 25

In This Issue

Update Your Contact Information

Please send any contact info changes to the club secretary at

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.

Outreach Team Volunteers

"We are dedicated to advancing the knowledge of astronomy, optics, telescope making, and the wonders of our universe."

One of the ways the LAAS advances the knowledge of astronomy and the wonders of our universe is to visit local schools in our area with telescopes. The telescope operators are current members of the club. Many schools invite us to their campus to provide views of the objects in the night sky for not only the children but for the staff and parents, too. Some schools invite us on scheduled "Science Nights" while other schools plan a special evening of astronomy education on their campus. Other activities may be planned by the school during the event while our members are stationed in one specific location with telescopes to share with students and other school guests. These special members are part of our Outreach Team.

Our Outreach Coordinator is Heven Renteria. He and the others on his team have been attending outreach events on campuses throughout Los Angeles county and beyond.. Many of them travel great distances (and after a full day of work) to share astronomy with children and the public. The LAAS is also invited to attend special community events or events at state or city parks, libraries, and other venues. Recently, the club could not accept additional requests for outreach events because the team's schedule was full.

The LAAS needs more members to join the outreach team. Some of these events may be local to you. Outreach members are greatly appreciated by the school administrators and students at every event.

You don't need to be an expert using a telescope as the members of the team will help you set up and find objects in the sky to share with the students. You can attend an outreach event without a telescope and help the team with their telescopes or help with the long lines of children who are excited to look through a telescope for the first time.

These events are fun and rewarding in many ways. The enthusiasm shared by the children is infectious, in the best way possible. If you enjoy attending Public Star parties at the Griffith Observatory, you will enjoy a school outreach event.

The Outreach Team really needs your support and participation.

Please contact Heven at outreach@laas.org to learn more.

Thank you for volunteering!

Andee Sherwood
Communications

John O'Bryan shows a student the Sun at Overland Elementary, 2021.

Photo credit: Van Webster

Spot the King of Planets: Observe Jupiter

By Dave Prosper

Jupiter is our solar system's undisputed king of the planets! Jupiter is bright and easy to spot from our vantage point on Earth, helped by its massive size and banded, reflective cloud tops. Jupiter even possesses moons the size of planets: Ganymede, its largest, is bigger than the planet Mercury. What's more, you can easily observe Jupiter and its moons with a modest instrument, just like Galileo did over 400 years ago.

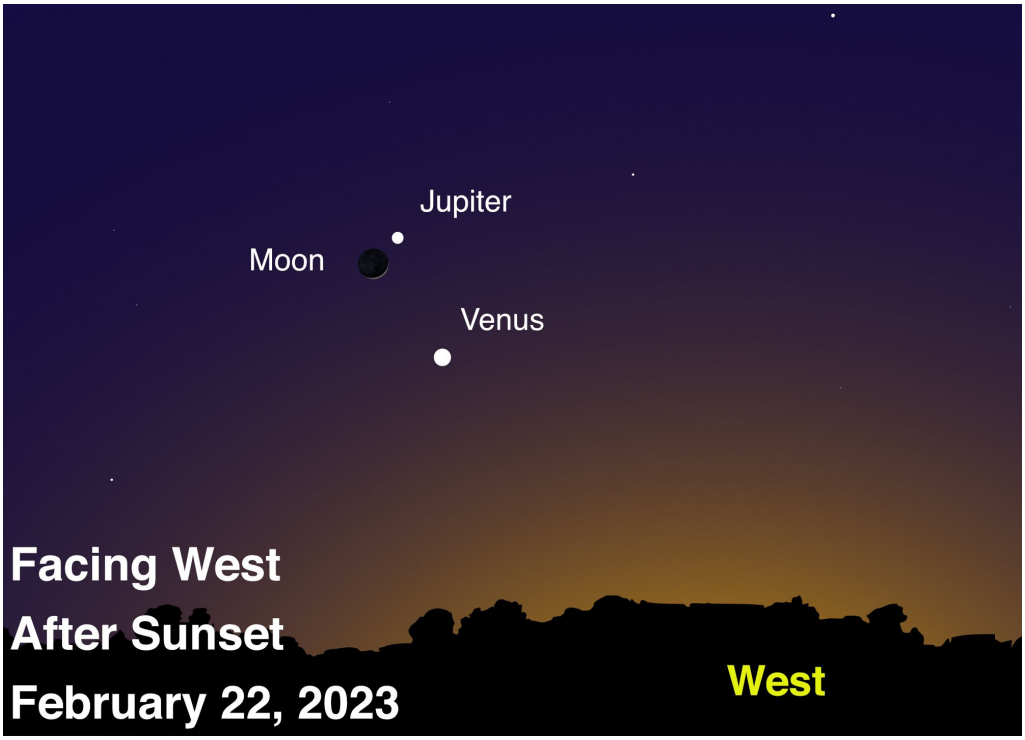
Jupiter's position as our solar system's largest planet is truly earned; you could fit 11 Earths along Jupiter's diameter, and in case you were looking to fill up Jupiter with some Earth-size marbles, you would need over 1300 Earths to fill it up – and that would still not be quite enough! However, despite its awesome size, Jupiter's true rule over the outer solar system comes from its enormous mass. If you took all of the planets in our solar system and put them together they would still only be half as massive as Jupiter all by itself. Jupiter's mighty mass has shaped the orbits of countless comets and asteroids. Its gravity can fling these tiny objects towards our inner solar system and also draw them into itself, as famously observed in 1994 when Comet Shoemaker-Levy 9, drawn towards Jupiter in previous orbits, smashed into the gas giant's atmosphere. Its multiple fragments slammed into Jupiter's cloud tops with such violence that the fireballs and dark impact spots were not only seen by NASA's orbiting Galileo probe, but also observers back on Earth!

Jupiter is easy to observe at night with our unaided eyes, as well-documented by the ancient astronomers who carefully recorded its slow movements from night to night. It can be one of the brightest objects in our nighttime skies, bested only by the Moon, Venus, and occasionally Mars, when the red planet is at opposition. That's impressive for a planet that, at its closest to Earth, is still over 365 million miles *(587 million km)* away. It's even more impressive that the giant world remains very bright to Earthbound observers at its furthest distance: 600 million miles *(968 million km)*! While the King of Planets has a coterie of around 75 known moons, only the four large moons that Galileo originally observed in 1610 – Io, Europa, Ganymede, and Calisto – can be easily observed by Earth-based observers with very modest equipment. These are called, appropriately enough, the *Galilean moons.* Most telescopes will show the moons as faint star-like objects neatly lined up close to bright Jupiter. Most binoculars will show at least one or two moons orbiting the planet. Small telescopes will show all four of the Galilean moons if they are all visible, but sometimes they can pass behind or in front of Jupiter, or even each other. Telescopes will also show details like Jupiter's cloud bands and, if powerful enough, large storms like its famous Great Red Spot, and the shadows of the Galilean moons passing between the Sun and Jupiter. Sketching the positions of Jupiter's moons during the course of an evening - and night to night – can be a rewarding project! You can download an activity guide from the Astronomical Society of the Pacific at bit.ly/drawjupitermoons

NASA's Juno mission currently orbits Jupiter, one of just nine spacecraft to have visited this awesome world. Juno entered Jupiter's orbit in 2016 to begin its initial mission to study this giant world's mysterious interior. The years have proven Juno's mission a success, with data from the probe revolutionizing our understanding of this gassy world's guts. Juno's mission has since been extended to include the study of its large moons, and since 2021 the plucky probe, increasingly battered by Jupiter's powerful radiation belts, has made close flybys of the icy moons Ganymede and Europa, along with volcanic Io. In 2024 NASA will launch the Europa Clipper mission to study this world and its potential to host life inside its deep subsurface oceans in much more detail. Find the latest discoveries from Juno and NASA's missions at nasa.gov.

This stunning image of Jupiter's cloud tops was taken by NASA's Juno mission and processed by Kevin M. Gill. You too can create amazing images like this, all with publicly available data from Juno. Go to missionjuno.swri.edu/junocam to begin your image procession journey – and get creative!

Full Image Credit: NASA/JPL-Caltech/SwRI/MSSS; Processing: Kevin M. Gill, license: CC BY 2.0) https://creativecommons.org/licenses/by/2.0/ Source: https://apod.nasa.gov/apod/ap201123.html



Look for Jupiter as it forms one of the points of a celestial triangle, along with Venus and a very thin crescent Moon, the evening of February 22, 2023. This trio consists of the brightest objects in the sky – until the Sun rises! Binoculars may help you spot Jupiter's moons as small bright star-like objects on either side of the planet. A small telescope will show them easily, along with Jupiter's famed cloud bands. How many can you count? Keep watching Jupiter and Venus as the two planets will continue to get closer together each night until they form a close conjunction the night of March 1. Image created with assistance from Stellarium.

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 to find local clubs, events, and more!

Sunspots - January 20, 2023

By Ray Blumhorst

There was an abundant display of sunspots in both solar hemispheres yesterday, indicating the solar maximum butterfly diagram has spread its wings. :-) Ray

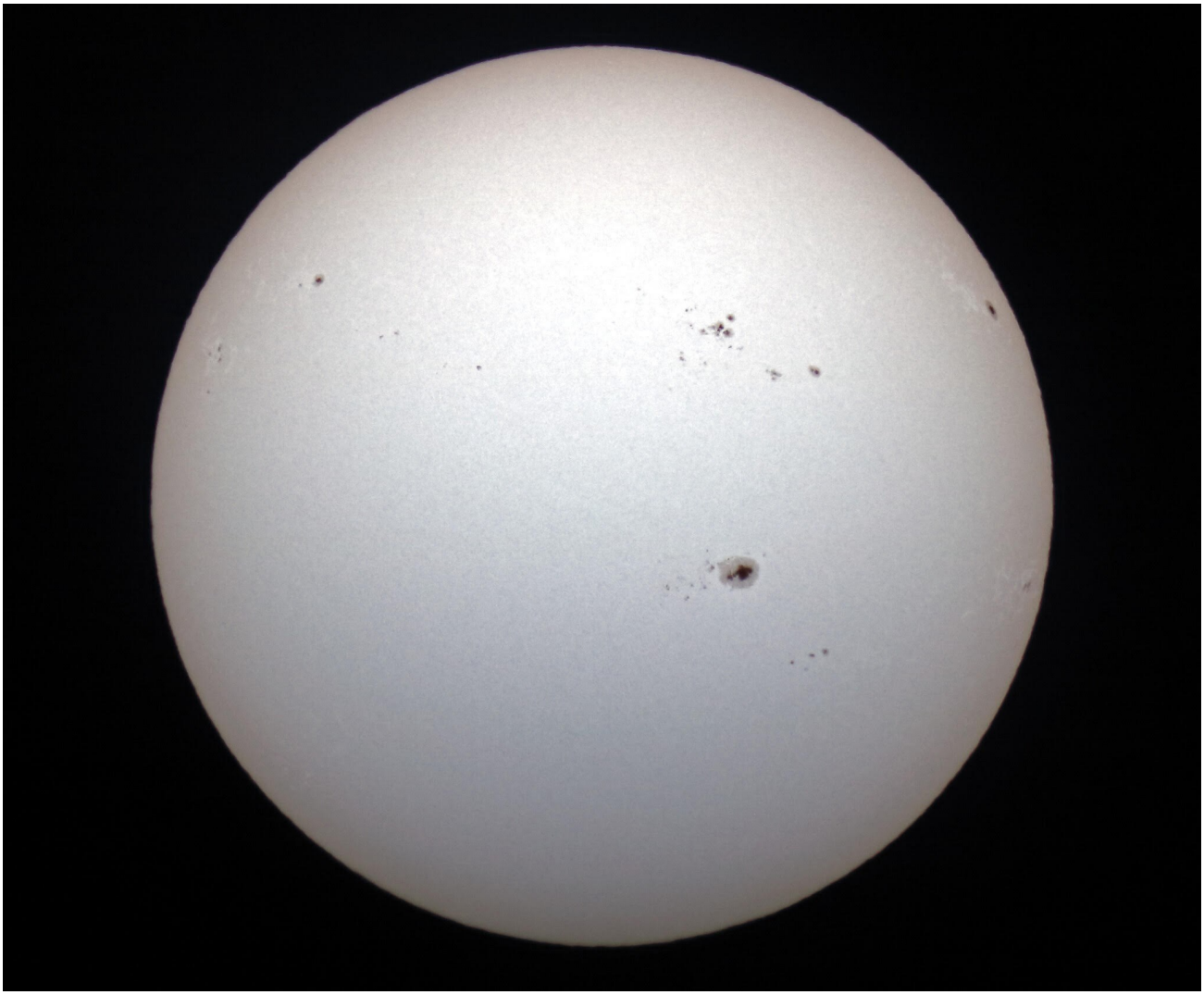
Solar Filter: White Light

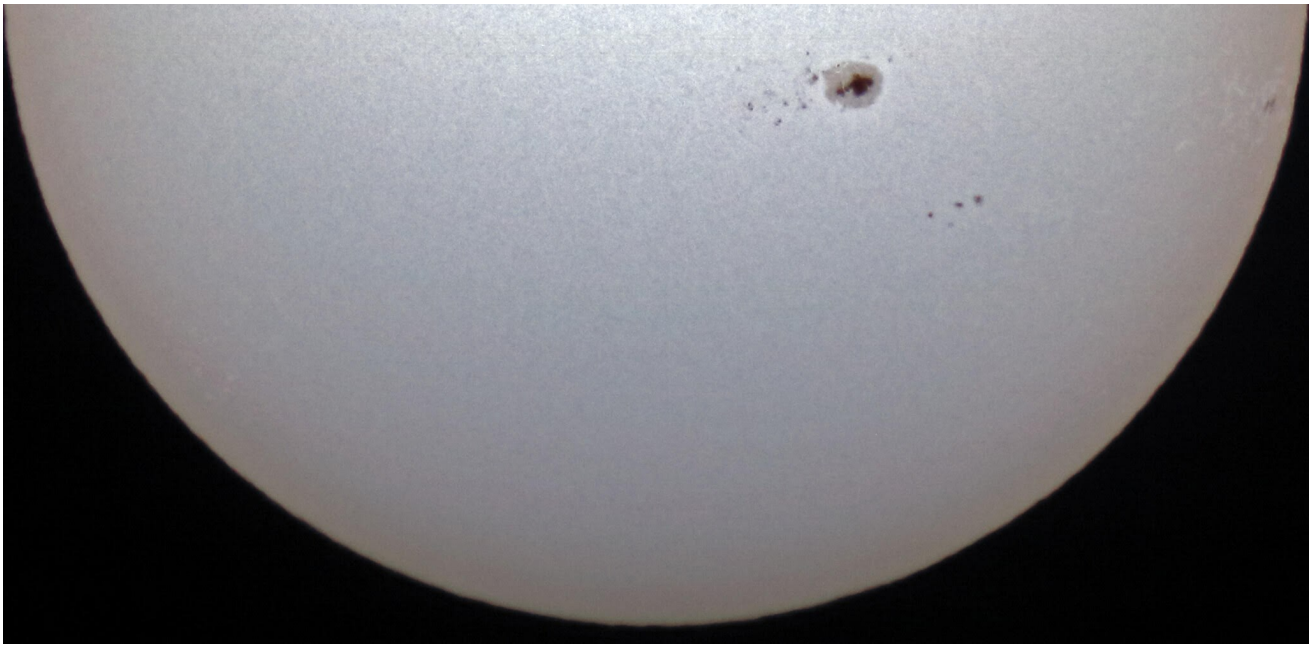
Camera: Canon T6i, ISO 100, Shutter Speed 1/4000

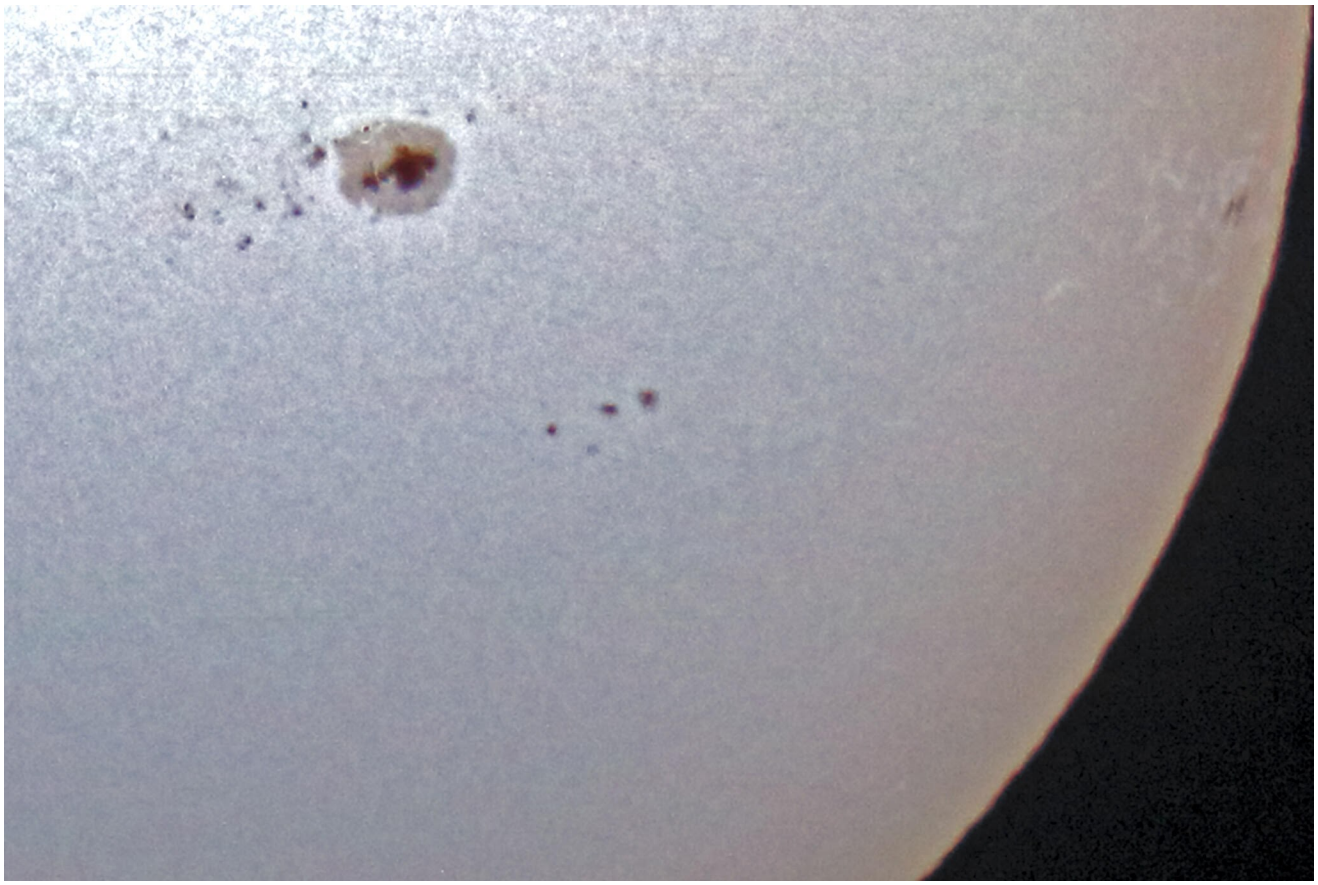
Telescope: Explore Scientific 140mm f/6.7 APO Triplet Carbon Fiber Refractor

Mount: Celestron CGEMII

Photo credit: Ray Blumhorst







Pleiades

By Alex Weinstein

I am currently doing a bit of a road trip around Baja CA, MX and was at a perfect Airbnb with a class 3 sky. Knowing that there was no moon for a few nights, I brought my portable setup (D5600, Rokinon 135 and Skyguider Pro) and set up outside. The below is the cropped in result of 3.5 hours of data with 30 second subs (pretty sure I drained all the satellite internet since I had massive file transfers to my processing server). These are dark, flat and dark flat calibrated.

I've never shot the Pleiades before because there is too much light pollution and filters don't work. This is an incredible result with so little integration time. Lots of walking noise had to be dealt with, but it wasn't too bad with Topaz AI. I'm working on the Orion region which is phenomenal (unfortunately there was a star link train going through the entire frame for a few hours so it's going to take some work). I don't like the 5600 due to the noise and color model profile, but if you shoot at f2.5 I think it makes it mostly okay.
Photo credit: Alex Weinstein

Orion’s Belt

By Alex Weinstein

This is Orion’s Belt from Loreto, MX. This shot using the same set-up as the Pleiades I shared a few days ago (Nikon D5600, SkyGuider Pro, Rokinon 135 lens at f2.5), but using 2x the integration time (750x30 seconds). I did stacking and a gradient reduction in APP, light processing in PI (Blurxterminator for sharpening, Starnet for star removal), noise reduction in Topaz and final finishing in Lightroom mobile. This may be my favorite image yet and is the culmination of 5 years of my AP journey using every tool I know to get the best out of my data. Truly amazed what a dark, clear sky can do and really cannot stop looking at it.

Photo credit: Alex Weinstein

Monthly Sky Report

By Dave Nakamoto

The nights get shorter as we move away from the Winter Solstice. The moon is full on the 5th, last quarter on the 13th, new on the 19th, and at first quarter on the 27th.

Mercury is in the morning sky during February. On the 1st it rises at 5:23 a.m., PST while the sun rises at 6:50 a.m., PST. On the 28th, Mercury rises less than half an hour before the sun does, so it is unobservable. In any case, you'll need a telescope with a magnification of 150x to see the planet's diminutive disk. **DO NOT** observe any planet when it comes close to the sun, for the danger to the eyes is great.

Venus is in the evening sky, low in the southwest. On the 1st the sun sets at 5:23 p.m., PST, while Venus sets at 7:19 p.m., PST. On the 28th, Venus sets at 8:12 p.m., PST. You'll need a small telescope to see its disk, which is a wide gibbous phase. Again, **DO NOT** observe any planet when it comes close to the sun, for the danger to the eyes is great.
Venus has two encounters with other planets this month. On the 14th, Venus approaches within 30 arcminutes of Neptune.
Venus approaches to within a degree of Jupiter from the 28th to March 2.

Mars is in Taurus the Bull, high in the eastern sky. On the 1st, it sets at 2:57 a.m., PST, and on the 28th it sets at 1:50 a.m., PST. Mars continues to recede away from earth and diminish in size for the rest of this year. This month it will be about eight arcseconds wide. Along with Jupiter and Saturn, the three outer planets are available for observation during the evening hours.

Jupiter is visible for most of the evening in the southwest. It sets at 9:36 p.m., PST, on the 1st, and at 8:17 p.m., PST, on the 28th. Jupiter's disk is 35 arcseconds wide. The Red Spot is visible with a magnification of 50x. The four bright Galilean moons move back and forth, roughly in a line centered on Jupiter.

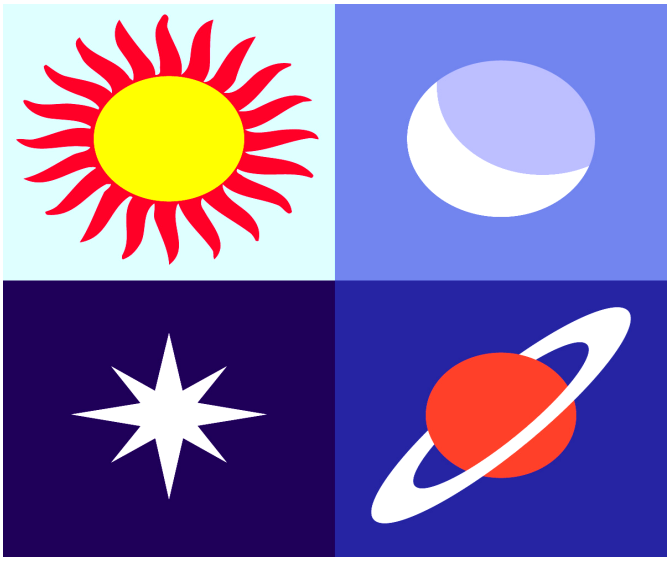
Saturn starts the month setting soon after the sun does. On the 1st Saturn sets at 6:24 p.m., PST, an hour after the sun sets. It will be low in the southwest. After February it will be six months before Saturn returns to the evening sky. The rings and Saturn's largest moon Titan may be seen with a small telescope with a magnification of 50x.

Uranus is in Aries the Ram. It sets at 12:46 a.m., PST, on the 1st, and at 10:59 p.m., PST, on the 28th. On the 15th, Uranus is located at Right Ascension $2^h\ 51^m\ 15^s$ and declination +16° 3' 47". The disk of Uranus is 3.5 arcseconds in width, and a magnification of 150x is needed to even see it as a disk.

Neptune is in Aquarius the Water Bearer and is observable only in early evening. On the 1st, Neptune sets at 8:36 p.m., PST. On the 28th, it sets at 6:55 p.m., PST, about an hour after the sun sets. On the 15th, Neptune is at Right Ascension $23^h\ 40^m\ 1^m$ and declination -3° 26' 14". Neptune's disk is 2.2 arcseconds in width; a magnification of 150x is needed to even see it as a disk.

Garvey Ranch park observatory is open every Wednesday night from 7:30 p.m. to 10:00 p.m. The telescope is open for public viewing if the sky is clear. It is manned by volunteers from the Los Angeles Astronomical Society. Admission and viewing through the telescope are free.

Almanac



February 5 - **Full Moon.** The Moon will be located on the opposite side of the Earth as the Sun and its face will be 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.

February 20 - **New Moon.** The Moon will located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 07:08 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.

March 7 - **Full Moon.** The Moon will be located on the opposite side of the Earth as the Sun and its face will be will be fully illuminated. This phase occurs at 12:42 UTC. This full moon was known by early Native American tribes as the Worm Moon because this was the time of year when the ground would begin to soften and the earthworms would reappear. This moon has also been known as the Crow Moon, the Crust Moon, the Sap Moon, and the Lenten Moon.

Source:
http://www.seasky.org/astronomy/astronomy-

Additional Resource Links:

Earthsky.org

NASA: The Solar System and Beyond

Space Weather News

Global Astronomy News

The World At Night

Griffith Observatory

The LAAS general meeting was held on Jan. 9, 2023 online. Click on the image above to view the recorded meeting on Youtube.com.

February 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 Garvey Night	2	3	4
5	6	7	8 Garvey Night Board Mtg.	9	10	11
12	13 General Meeting	14	15 Garvey Night	16	17	18 Dark Sky Night
19	20	21	22 Garvey Night	23 Outreach Maywood	24 Outreach Huntington PK	25 Public Star Party
26	27	28				

Meet The New Members

Emily Chase and Family
Robert Davies and Family
Bill Donachl and Family
Robben Fenderson and Family
Ian Held and Family
Victor King
Jeffrey Kropinak
Timothy Loranger and Family
Howard Marcus
Lina Ngo and Family
Michael Pollard and Family
Lillian Raesler
Jack Rutherford
Shadi Shahlapou
Kristen Shaw and Family
Eugene Shvarts
Dillon Teirney

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 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.

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 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

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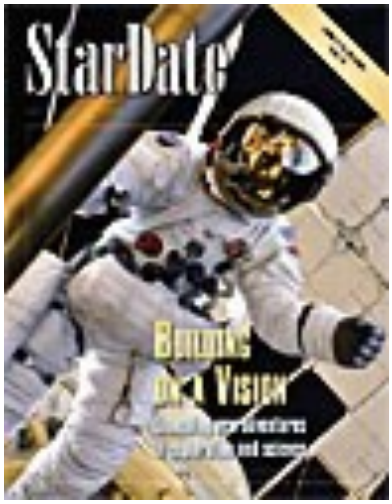
John O'Bryan, Jr.

Treasurer

Astronomy Magazines

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.

Click here to subscribe to Sky and Telescope Magazine.



Subscribe or renew to the McDonald Observatory's StarDate Magazine and receive a special discount. Follow this link to subsribe and press "Add to Cart" under the type of subscription option: http://stardate.org/store/subscribe

On the Checkout form, enter "network" in the Coupon Code box.

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.

Use **this link** to begin the subscription process.

ASTRONOMICAL SOCIETY OF THE PACIFIC

Join the Astronomical Society of the Pacific and help support the cause of advancing science literacy through engagement in astronomy. Member benefits include a subscription to ***Mercury* Magazine**, published quarterly.

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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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