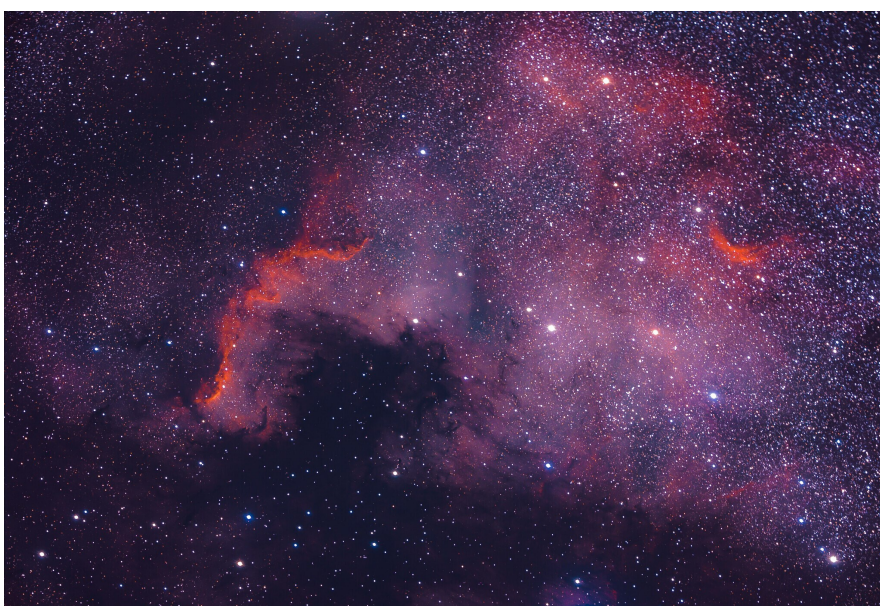




THE LOS ANGELES ASTRONOMICAL SOCIETY

THE BULLETIN

AUGUST, 2021
VOLUME 95, ISSUE 08



Rafael Gonzalez shared his image of the Eagle Nebulae, taken at Lockwood last month using his 8 Inch Celestron.

See more of his images on Pages 5-8.

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All members are encouraged to contribute articles of interest for publication in The Bulletin. Please send your articles and images to:

communications@laas.org

Upcoming Virtual Club Events

- Board Meeting; Aug. 4, 2021
- General Meeting; Aug. 9, 2021
- Dark Sky Night— Aug. 7, 2021



Update Your Contact Information

Please send any contact info changes to the club secretary at

secretary@laas.org.



Perseids Meteor Shower
August 11-13, 2021

60 Inch Nights Schedule

Mt. Wilson Observatory!



Session Schedule—2021

Saturday August 14th

Saturday September 4th

Saturday October 9th

Saturday November 6th

The dates above are all scheduled on Saturday Nights and are all half-night events.

General Information:

Price per session, per person - \$60.00

There will be 20 people, per session.

-

How to Make a Reservation?

Please contact Darrell Dooley **BEFORE** you pay for your reservation.

Darrell is our Mt. Wilson Coordinator and the ONLY contact available.

Darrell's Email Address:

Mtwilsoncoordinator@laas.org

Darrell will answer all of your questions and concerns.

Reserve your spot by paying by credit cards or PayPal using the following link:

<https://fs30.formsite.com/LAAS/MtWilson/index.html>



Learn more about the 60 Inch Night by visiting Mt. Wilson Observatory's website:

<https://www.mtwilson.edu/60-telescope/>

Star Weather

By Ray Blumhorst

Both our Sun and Earth have weather subject to the laws of physics, but the specifics of each one's dynamic weather process is vastly different.

Earth is a small, rocky planet with enormous oceans of liquid H₂O and abundant clouds over land and sea. Copious amounts of rain fall on most regions of our planet, although not everywhere. The Sun, comprised mostly of hydrogen, exhibits vastly different weather dynamics due primarily to its mass, its gravity, and its temperature and pressure. Of all the mass in our solar system 99.85 percent is in the Sun and its mass is in a uniform and eloquent balance of forces known as hydrostatic equilibrium and thermal equilibrium. *"Without the outward pressure from the compressed gas, gravity would collapse the external layers of the Sun onto the core," says Jamey L. Jenkins.*¹

At a temperature of 27 million degrees Fahrenheit and a pressure of 3.84 trillion psi, our Sun's core is actively performing nuclear fusion. It's the heart of the Sun and it's seminal to all its dynamic processes. It creates the charged particles in solar plasma and the convection flows that (along with the Sun's rotation) create the Sun's spectacular electromagnetic weather.

Plasma in our Sun's core is beyond the abilities of visual observation, but closer to the Sun's surface a sea of activity can be seen in the solar atmosphere if proper solar equipment is employed. The photosphere is approximately 1,000 times brighter than the chromosphere and 1 million times brighter than the corona so observing, or imaging, those areas can be formidable. Still, many mysteries in the Sun's photosphere and chromosphere can be documented with a proper solar telescope, solar filters and effort. Only the Sun's corona requires exotic solar observing/imaging equipment beyond the accessibility of most amateur solar astronomers.

The most spectacular sites the Sun displays are often attributed to sunspots, solar flares, and eruptive prominences, but equally intriguing are the Sun's quiescent (quiet) prominences and they are plentiful. Like eruptive prominences, quiescent prominences are visible in H-alpha light on the limb of the Sun. *"Other than the solar flare, a prominence is the most stunning event to be seen on the Sun," says Jamey L. Jenkins.*²

A prom can originate in the chromosphere, or the corona. In his study of a large number of proms, Father Secchi, a Catholic Priest, recognized two classes of proms through the wide slit of his spectroscope, quiescent (quiet), and eruptive (active/moving).

Eruptive prominences (proms) are spectacular, but often last only a few hours, whereas quiescent proms can last for days. Many quiescent proms start out from activity in the Sun's active regions, where sunspots are present, but can also occur in the Sun's higher polar latitudes. Quiescent proms are slow to change shape, hence acquiring the label "quiet." If they are quiet, one might wonder what's intriguing about them? The intrigue lies in the incredible physics going on in their amazing displays.

The quiescent prom often originates in the corona with matter descending towards the chromosphere. Eruptive proms often originate in the chromosphere with matter ejecting or ascending to the corona.



In this March 16, 2021, H-alpha image of a "hedgerow prom," plasma from the Sun's corona is clearly raining down onto the chromosphere (middle right of prom to right of prom). At the left end of the prom, plasma follows magnetic field lines that appear to anchor the prom to the chromosphere. However, rather than plasma raining down from the corona at the left end, plasma may instead be erupting from the chromosphere. *"When it comes to a prominence, almost anything is possible," says Jamey L. Jenkins.*³

Coronal rain is a solar occurrence where plasma that has made its way to the Sun's outer most atmosphere (the corona), falls back down onto the chromosphere. **About ninety percent of prominences are descending from the corona, raining plasma from the corona down to the chromosphere.** As stated above, the lines and loops of magnetic fields define the shape and appearance the plasma takes in the prom. *"Because plasma clings to magnetic field lines, and magnetism supports prominences, a prom will outline the shape of its host field,"* says Jamey L. Jenkins⁴.



On March 30, 2021, his eruptive prominence extends roughly 79,000 miles (10 times Earth's diameter) above the chromosphere, ejecting plasma into the coronosphere from where it rains back down on the chromosphere.

¹ Observing the Sun A Pocket Field Guide, by: Jamey L. Jenkins, Pp.6, Springer, 2013

² Observing the Sun A Pocket Field Guide, by: Jamey L. Jenkins, Pp.64, Springer, 2013

³ Observing the Sun A Pocket Field Guide, by: Jamey L. Jenkins, Pp.65, Springer, 2013

⁴ Observing the Sun A Pocket Field Guide, by: Jamey L. Jenkins, Pp.66, Springer, 2013

Images from Lockwood

By Rafael Gonzalez

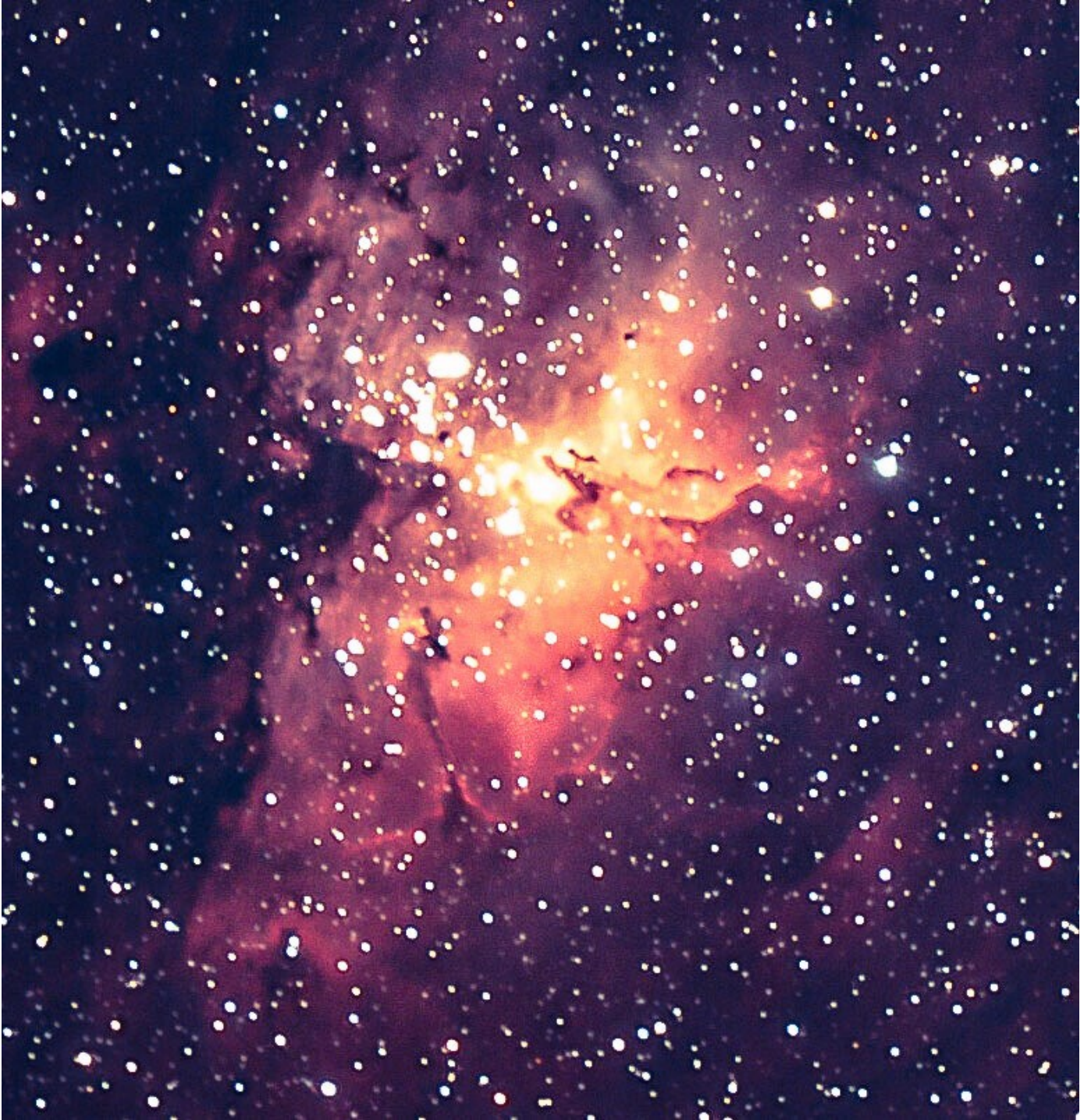
All of the following images were captured using Rafael's Celestron 8 Inch telescope and photographed on the same night during one of our Dark Sky Nights at Lockwood.

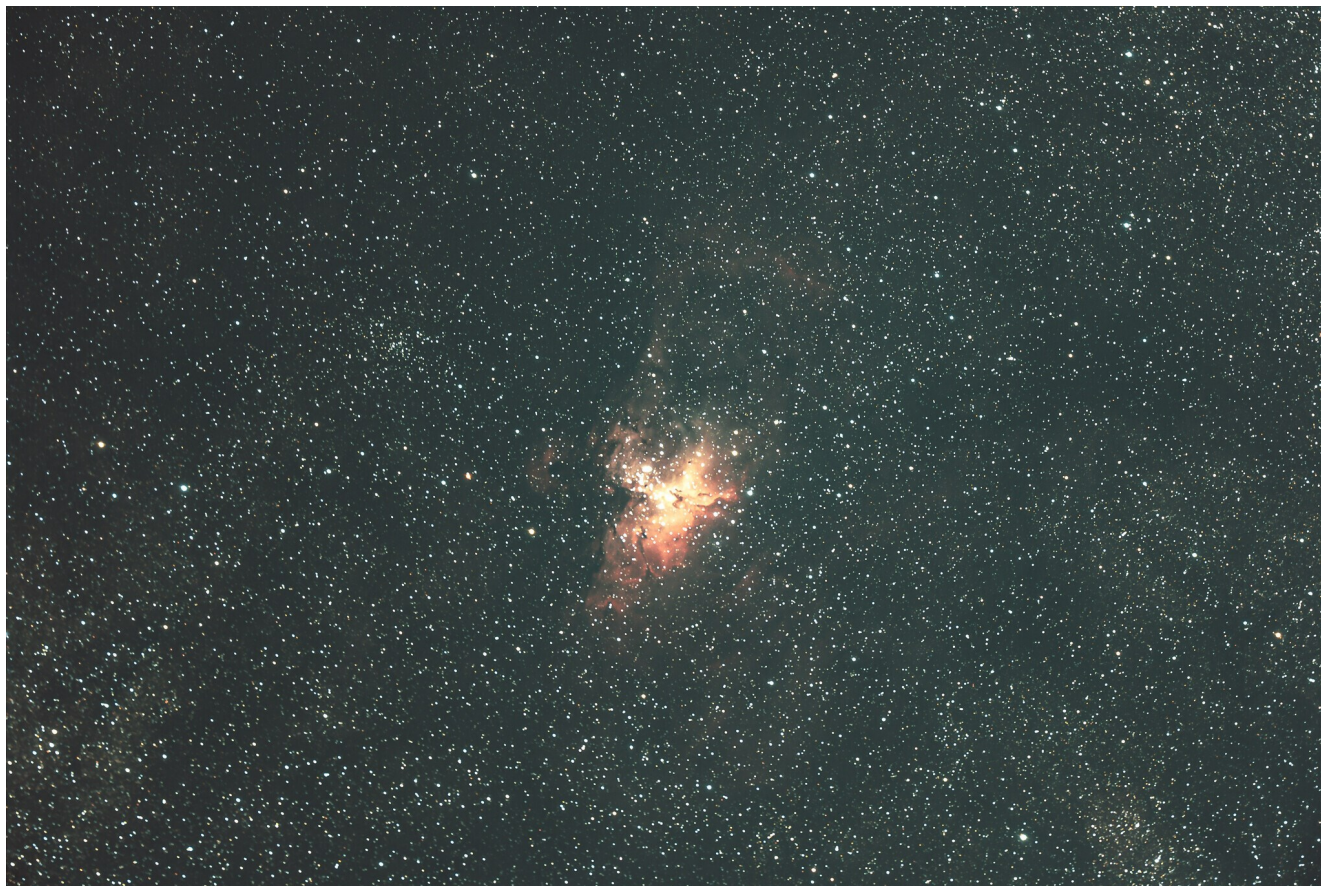


From the cover—The Eagle Nebula

Photo Credit: Rafael Gonzalez







Monthly Sky Report

By Dave Nakamoto

This is what's happening in the sky in August. I'll discuss the planets in the order they appear in the sky, starting in the early evening.

Mercury passes behind the sun at the beginning of August. By the 31st the planet sets around 8:20 p.m. Never observe Mercury when the sun is in the sky, for the danger to the eyes is great.

Venus is still in the evening sky. It sets around 9:15 p.m. in August. Venus currently displays a gibbous phase and appears small in a telescope. Never observe Venus when the sun is in the sky, for the danger to the eyes is great.

Mars continues its west to east motion through the constellations of the Zodiac. Mars is low in the west and sets around 9:30 p.m. Mars is too small to see anything in amateur telescopes, and so the time to observe Mars is practically over until the second half of 2022.

Saturn rises in the east about 6:50 p.m. in the southeast and is observable all evening long. A small scope should show the rings with enough magnification, and perhaps the largest and brightest of Saturn's moons, Titan, which will show up as a faint star close to Saturn.

Jupiter rises a little later than Saturn, around 7:40 p.m. A small telescope will show the two cloud belts of Jupiter, and its four brightest moons will show up as stars close to Jupiter and in a rough line. As they move around Jupiter, they pass in front of and behind Jupiter's disk. When they pass in front, the moons and their shadows can be seen on the Jovian disk.

Due to the fact that the lunar phase is about 29.53 days, occasionally there are two identical lunar phases in a month.

The Moon's phases are:

New Moon – 8th

First Quarter – 15th

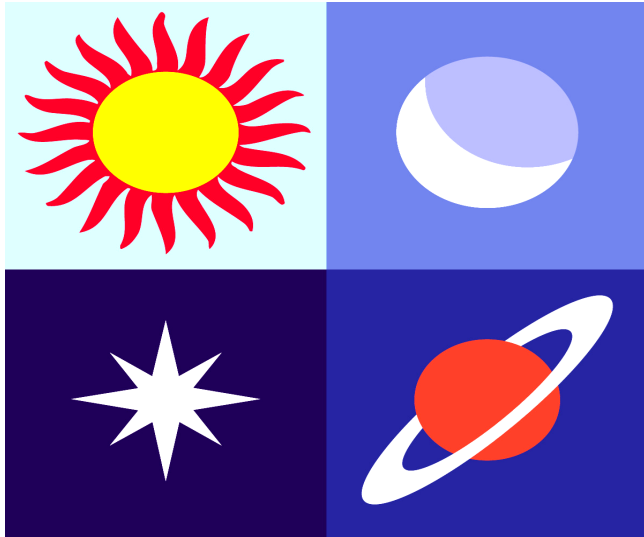
Full Moon – 22nd

Last Quarter – 30th

The first good meteor shower of the year puts on a show this month. The Perseids are so named because they appear to streak from the constellation of Perseus the Hero. This year they peak from the night of the 11th to the morning of the 12th, with perhaps 50 to 75 meteors visible from dark rural locations. Luckily the moon is only three days past new moon and so will not interfere.

David Nakamoto has been observing the heavens through various scopes since he was in the 5th grade. You can contact Dave by email at: dinakamo-





Almanac

August 2 - Saturn at Opposition. The ringed planet will be at its closest approach to Earth and its face will be fully illuminated by the Sun. It will be brighter than any other time of the year and will be visible all night long. This is the best time to view and photograph Saturn and its moons. A medium-sized or larger telescope will allow you to see Saturn's rings and a few of its brightest moons.

August 8 - 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 13:51 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.

August 12, 13 - Perseids Meteor Shower. The Perseids is one of the best meteor showers to observe, producing up to 60 meteors per hour at its peak. It is produced by comet Swift-Tuttle, which was discovered in 1862. The Perseids are famous for producing a large number of bright meteors. The shower runs annually from July 17 to August 24. It peaks this year on the night of August 12 and the morning of August 13. The waxing crescent moon will set early in the evening, leaving dark skies for what should be an excellent show. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Perseus, but can appear anywhere in the sky.

August 19 - Jupiter at Opposition. The giant planet will be at its closest approach to Earth and its face will be fully illuminated by the Sun. It will be brighter than any other time of the year and will be visible all night long. This is the best time to view and photograph Jupiter and its moons. A medium-sized telescope should be able to show you some of the details in Jupiter's cloud bands. A good pair of binoculars should allow you to see Jupiter's four largest moons, appearing as bright dots on either side of the planet.

August 22 - Full Moon, Blue 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 12:02 UTC. This full moon was known by early Native American tribes as the Sturgeon Moon because the large sturgeon fish of the Great Lakes and other major lakes were more easily caught at this time of year. This moon has also been known as the Green Corn Moon and the Grain Moon. Since this is the third of four full moons in this season, it is known as a blue moon. This rare calendar event only happens once every few years, giving rise to the term, "once in a blue moon." There are normally only three full moons in each season of the year. But since full moons occur every 29.53 days, occasionally a season will contain 4 full moons. The extra full moon of the season is known as a blue moon. Blue moons occur on average once every 2.7 years.

Source:

<http://www.seasky.org/astronomy/astronomy-calendar-2021.html>



Additional Links:

Moon Phases Chart for 2021

<https://www.mooninfo.org/moon-phases/2021.html>

Sky Report—Griffith Observatory

<http://www.griffithobservatory.org/sky/skyreport.html>

NASA News:

<https://www.nasa.gov/topics/solarsystem/index.html>

JPL News:

<https://www.jpl.nasa.gov/news/>

August 2021

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4 Board Meeting	5	6	7 Dark Sky Night
8	9 General Meeting	10	11 Ford Observatory	12	13	14 80 Inch Night at Mt. Wilson
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Meet The New Members

Welcome to the LAAS!



David Crossland

Christopher and Danielle Cambridge

David Moreno

Arun Vijayshanka

Gevork Mkrtchyan

Nelson Dal Cin

Danette Riddle

Dan Dabasol

Rich Marcus and Family

Jason Nyhan and Family

Eduardo Penna

Ian Guthrie and Jessica Thomas

Guanyang Luo

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.

HOWEVER, due to Covid-19 restrictions in our area, all outreach events have been cancelled until further notice.

Volunteers are still needed 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.

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



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

https://nightsky.jpl.nasa.gov/club-eventrequest.cfm?Club_ID=1344

LAAS Club Swag

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

To find new merchandise from our store, please use the following link: <https://www.laas.org/store>

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.



Please remember all LAAS Outreach activities are postponed due to the Covid-19 pandemic.

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!

Learn more by following this link:

<http://smile.amazon.com/>



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John O'Bryan, Jr.

Treasurer

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.

[Click here to subscribe to Sky and Telescope Magazine.](#)



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 the online Mercury Magazine**, published quarterly, and **Astronomy Beat**, a monthly on-line column written by "insiders" from the worlds of astronomy research and outreach.

Subscribe or renew to the McDonald Observatory's StarDate Magazine and receive a special discount. Go to this page and press "Add to Cart" under the kind of subscription you want:

<http://stardate.org/store/subscribe>
Then, on the Checkout form, enter "network" in the Coupon Code box.



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Secretary: Spencer Soohoo

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Outreach Coordinator: Heven Renteria

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Club Communications: Andee Sherwood

communications@laas.org

Mt. Wilson Coordinator: Darrell Dooley

mtwilsoncoordinator@laas.org

Bulletin Editor: Andee Sherwood

communications@laas.org

Club Contacts

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213- 673-7355 (Checked daily)

Griffith Observatory:

213-473-0800

Sky Report:

213-473-0880



Follow us on social media by clicking on one of the images below



Instagram



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

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

YouTube

twitter