



# THE LOS ANGELES ASTRONOMICAL SOCIETY

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# THE BULLETIN

## In This Issue

60 and 100 Inch Night Schedule .....	Page 2
Night Lights - NSN Article .....	Pages 3-4
Monthly Sky Report .....	Page 5
Almanac .....	Page 6
Calendar of Events .....	Page 7
Meet the New Members .....	Page 8
The LAAS Outreach & Club Swag .....	Page 9
Amazon Smiles & Astro Magazines .....	Page 10
Club Contacts & Social Media Link .....	Page 11

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

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



A stack from SER video. 200 frames stacked using AutoStakker, then a double application of a high-freq sharpening filter, then unsharp masking, then cropping to reduce the black night around the moon.

April 13, 2022 - Garvey Ranch Observatory

Photo Credit: Dave Nakamoto

## Update Your Contact Information

Please send any contact info changes to the club secretary at

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

## Upcoming Club Events

Board Meeting: May 4th.

General Meeting: May 9th.

**Family Night: May 21st.**

Dark Sky Night: May 28th.

## Garvey Nights

The [Garvey Ranch Observatory](#) is open to the public on **Wednesday nights only** from 7 PM to 10 PM, weather permitting.

Masks are required inside the facilities.

# 60 and 100 Nights Schedule for 2022

## Mt. Wilson Observatory



### Session Schedule - 2022

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

April 30

May 28

June 18

July 23

Aug. 27

**Sept. 24 -This is the only 100 Inch session.**

Oct. 22

Nov. 19

### The Cost per person, per session:

60 Inch Night - \$65.00

100 Inch Night - \$145.00

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](mailto: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 these incredible events by visiting Mt. Wilson Observatory's website:

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

<https://www.mtwilson.edu/100-telescope-observing/>

# Night Lights: Aurora, Noctilucent Clouds, and the Zodiacal Light

By Dave Prosper

Have you spotted any “night lights”? These phenomena brighten dark skies with celestial light ranging from mild to dazzling: the subtle light pyramid of the zodiacal light, the eerie twilight glow of noctilucent clouds, and most famous of all, the wildly unpredictable and mesmerizing aurora.

Aurora, often referred to as the northern lights (*aurora borealis*) or southern lights (*aurora australis*), can indeed be a wonderful sight, but the beautiful photos and videos shared online are often misleading. For most observers not near polar latitudes, auroral displays are relatively rare and faint, and without much structure, more gray than colorful, and show up much better in photos. However, geomagnetic storms can create auroras that dance and shift rapidly across the skies with several distinct colors and appear to observers much further away from the poles - on very rare occasions even down to the mid-latitudes of North America! Geomagnetic storms are caused when a magnetic storm on our Sun creates a massive explosion that flings a mass of particles away from its surface, known as a Coronal Mass Ejection (CME). If Earth is in the path of this CME, its particles interact with our planet’s magnetic field and result in auroral displays high up in our ionosphere. As we enter our Sun’s active period of its 11-year solar cycle, CMEs become more common and increase the chance for dazzling displays! If you have seen any aurora, you can report your sighting to the Aurorasaurus citizen science program at [aurorasaurus.org](http://aurorasaurus.org)

Have you ever seen wispy clouds glowing an eclectic blue after sunset, possibly towards your west or northwest? That wasn’t your imagination; those luminescent clouds are noctilucent clouds (also called Polar Mesospheric Clouds (PMC)). They are thought to form when water vapor condenses around ‘seeds’ of dust from vaporized meteorites - along with other sources that include rocket launches and volcanic eruptions - around 50 miles high in the mesosphere. Their glow is caused by the Sun, whose light still shines at that altitude after sunset from the perspective of ground-based observers. Noctilucent clouds are increasing both in frequency and in how far south they are observed, a development that may be related to climate change. Keeping in mind that observers closer in latitude to the poles have a better chance of spotting them, your best opportunity to spot noctilucent clouds occurs from about half an hour to two hours after sunset during the summer months. NASA’s AIM mission studies these clouds from its orbit high above the North Pole: [go.nasa.gov/3uV3Yj1](http://go.nasa.gov/3uV3Yj1)

You may have seen the zodiacal light without even realizing it; there is a reason it’s nicknamed the “false dawn”! Viewers under dark skies have their best chance of spotting this pyramid of ghostly light a couple of hours after sunset around the spring equinox, or a couple of hours before dawn around the autumnal equinox. Unlike our previous two examples of night lights, observers closer to the equator are best positioned to view the zodiacal light! Long known to be reflected sunlight from interplanetary dust orbiting in the plane of our solar system, these fine particles were thought to originate from comets and asteroids. However, scientists from NASA’s Juno mission recently published a fascinating study indicating a possible alternative origin: dust from Mars! Read more about their serendipitous discovery at: [go.nasa.gov/3Onf3kN](http://go.nasa.gov/3Onf3kN)

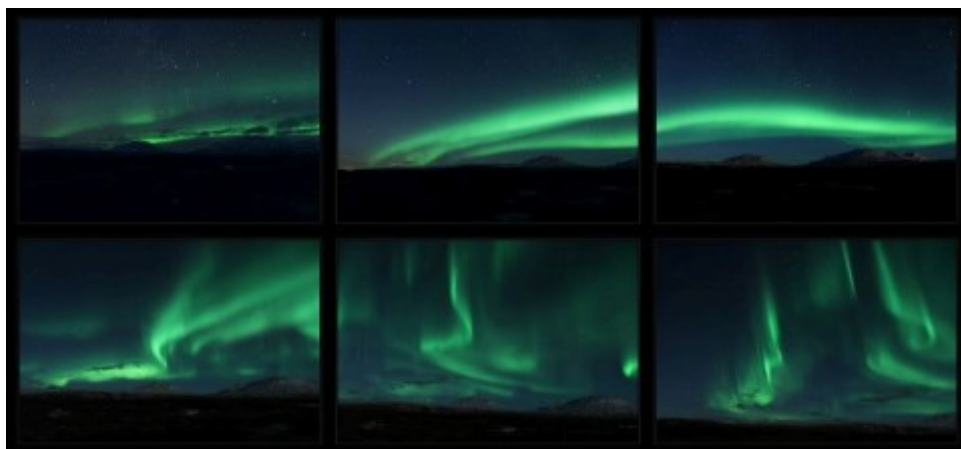
*Comet NEOWISE flies high above a batch of noctilucent clouds in this photo from Wikimedia contributor Brwynog. License and source CC BY-SA 4.0 <https://>*





*The zodiacal light extends into the Pleiades, as seen in the evening of March 1, 2021 above Skull Valley, Utah. The Pleiades star cluster (M45) is visible near the top.*

*Credit and source:: NASA/Bill Dunford .<https://www.flickr.com/photos/gsfcr/51030289967>*



*A sampling of some of the various patterns created by aurora, as seen from Iceland in 2014.*

*The top row photos were barely visible to the unaided eye and were exposed for 20-30 seconds; in contrast, the bottom row photos were exposed for just 4 seconds- and were clearly visible to the photographer, Wikimedia contributor Shnuffel2022. License and source: CC BY-SA 4.0 [https://commons.wikimedia.org/wiki/File:Aurora\\_shapes.jpg](https://commons.wikimedia.org/wiki/File:Aurora_shapes.jpg)*



This article is distributed by NASA Night Sky Network.

The Night Sky Network 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

On May 1<sup>st</sup>, at 9:00 p.m., PDT, on the meridian, the line across the sky from north to south, the constellation of Leo the Lion's "head" is on this line. By May 31<sup>st</sup>, 9:00 p.m., PDT, the hind quarters of Leo are on the meridian.

At the beginning of May, the sun sets at 7:37 p.m., PDT, and rises at 6:03 a.m., PDT. On the 31<sup>st</sup> the sun sets at 7:59 p.m., PDT, and rises at 5:43 a.m., PDT. As we approach the summer equinox on June 21 the nights continue to decrease in duration.

The moon is at first quarter on the 8<sup>th</sup>, full on the 15<sup>th</sup>, last quarter on the 22<sup>nd</sup>, and new on the 30<sup>th</sup>.

Mercury sets at 9:19 p.m., PDT on the 1<sup>st</sup>, and the sun sets at 7:37 p.m., PDT, so Mercury sets one hour and 42 minutes after the sun. By the 15<sup>th</sup>, Mercury will be too close to the sun and is unobservable. By the 31<sup>st</sup>, Mercury rises in the morning sky at 5:08 a.m., PDT, and the sun rises at 5:43 a.m., PDT, only 35 minutes later, so for May Mercury is only visible at the beginning of the month. It is a disk 31% illuminated and only 8.4 arcseconds wide.

All other planets are in the morning sky.

On the 1<sup>st</sup> Venus rises at 4:13 a.m., PDT, and the sun rises at 6:04 a.m., PDT. The disk of Venus is 68% illuminated, and 17 arcseconds wide. By the 31<sup>st</sup>, Venus rises at 4:56 a.m., PDT, and its disk is 78% illuminated and 14 arcseconds wide. The disk of Venus decreases in size and increases in the portion that is illuminated as it moves to the far side of the sun. The disk can be seen in binoculars or a small telescope. Venus starts May a degree east of Jupiter and moves further east each day.

Mars rises at 3:32 a.m., PDT, on the 1<sup>st</sup>. On the 31<sup>st</sup>, Mars rises at 2:33 a.m. PDT. It rises earlier each day. The disk of Mars is only 5.7 arcsecond wide and very small, so nothing will be seen in binoculars or a small telescope. On the 17<sup>th</sup>, Mars is about half a degree south of Neptune. On the 28<sup>th</sup> and 29<sup>th</sup> Mars is about half a degree south of Jupiter.

On the 1<sup>st</sup>, Jupiter rises in the morning sky at 4:11 a.m., PDT. On the 31<sup>st</sup>, Jupiter rises at 2:28 a.m., PDT. Features on the disk, as well as the four Galilean moons are visible in a small telescope.

Saturn rise at 2:39 a.m., PDT, on the 1<sup>st</sup>, and at 12:44 a.m., PDT, on the 31<sup>st</sup>. Features on the disk, the rings, and the large moon Titan are visible in a small telescope.

Uranus starts May too close to the sun to be observed. On the 31<sup>st</sup>, the planet rises at 4:23 a.m., PDT. Because of this, for most of May, Uranus is not observable. On the 15<sup>th</sup>, Uranus is at Right Ascension 2<sup>h</sup>, 54<sup>m</sup>, 29<sup>s</sup> and a Declination of +16° 16' 29". Uranus is only 3.4 arcseconds wide, so a large telescope and magnifications of 150x are needed to see its disk.

Neptune rises at 4:02 a.m., PDT, on the 1<sup>st</sup>, and at 2:06 a.m., PDT, on the 31<sup>st</sup>. Neptune is at Right Ascension 23<sup>h</sup> 42<sup>m</sup> 6<sup>s</sup> and a Declination of -3° 3' 52" on the 15<sup>th</sup>. It is both faint, magnitude +8, and small at 3.2 arcseconds wide, so a large telescope and a magnification of at least 150x are needed to see its disk.

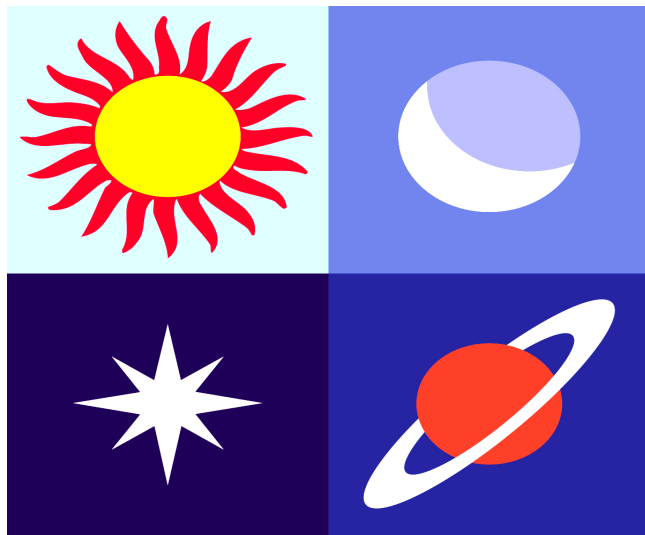
A total lunar eclipse is visible from Los Angeles on the evening of the 15<sup>th</sup>. The moon enters the outer lighter portion of earth's shadow, the penumbra, at 6:21 p.m., PDT. It enters the inner darker portion of earth's shadow, the umbra, at 7:28 p.m., PDT. By 10:55 p.m., PDT, the moon leaves the umbra. The eclipse ends at 11:51 p.m., PDT, when the moon leaves earth's shadow. The eclipse is visible to the unaided eye, although binoculars will show more of the disk.

The eta Aquariid meteor shower will be active from April 15<sup>th</sup> to May 27<sup>th</sup>. The Eta Aquariids are a strong shower when viewed from the southern tropics, but from Los Angeles they produce medium rates of ten to 30 meteors per hour just before dawn. The meteors are swift with a high percentage of persistent trains, but few fireballs. The parent comet is the famous Halley's comet. Halley produces two showers annually. The peak occurs on the night of May 4 to the morning of the 5<sup>th</sup>. The moon will be a 15% illuminated crescent in the evening

*David Nakamoto has been observing the heavens through various scopes since he was in the 5<sup>th</sup> grade. You can contact Dave by email at:*

*[dinakamoto@hotmail.com](mailto:dinakamoto@hotmail.com).*





## Almanac

**May 6, 7 - Eta Aquarids Meteor Shower.** The Eta Aquarids is an above average shower, capable of producing up to 60 meteors per hour at its peak. Most of the activity is seen in the Southern Hemisphere. In the Northern Hemisphere, the rate can reach about 30 meteors per hour. It is produced by dust particles left behind by comet Halley, which has been observed since ancient times. The shower runs annually from April 19 to May 28. It peaks this year on the night of May 6 and the morning of the May 7. 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 Aquarius, but can appear anywhere in the sky.



Want to know what objects will be in tonight's sky in Los Angeles?

<https://www.timeanddate.com/astronomy/night/usa/los-angeles>

**May 16 - 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 04:15 UTC. This full moon was known by early Native American tribes as the Flower Moon because this was the time of year when spring flowers appeared in abundance. This moon has also been known as the Corn Planting Moon and the Milk Moon.

**May 16 - Total Lunar Eclipse.** A total lunar eclipse occurs when the Moon passes completely through the Earth's dark shadow, or umbra. During this type of eclipse, the Moon will gradually get darker and then take on a rusty or blood red color. The eclipse will be visible throughout all of North America, Greenland, the Atlantic Ocean, and parts of western Europe and western Africa. ([NASA Map and Eclipse Information](#))

**May 30 - 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 11:32 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.

Source:

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



*A composite of seven images shows the full Moon at perigee, or supermoon, during a total lunar eclipse on Sunday, Sept. 27, 2015, in Denver. Credit: NASA/Bill Ingalls*

Learn more about lunar eclipses here:

<https://tinyurl.com/qw2oyaf>

# May 2022

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

# Meet The New Members

## Welcome to the LAAS!



David Attias

Teagan Walker

Blaine Baggett

Brian Hannah

Bill and Elli MacMullin

Justin Hawkins

Jesse Chappelle

Jose Cruz

Dorothy Blakeley and Family

Srinivas Gaddam and Family

Randy Canfield

Zachary Attaran

## 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.

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

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.

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)



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](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.

## 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.



## Club Contact Information

President: Darrell Dooley

mtwilsoncoordinator@laas.org

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hurst.alecia@gmail.com

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Secretary: Spencer Soohoo

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Outreach Coordinator: Heven Renteria

outreach@laas.org

Club Communications: Andee Sherwood

communications@laas.org

Mt. Wilson Coordinator: Darrell Dooley

mtwilsoncoordinator@laas.org

Bulletin Editor: Andee Sherwood

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



Follow us on social media by clicking on one of the icons below:

