

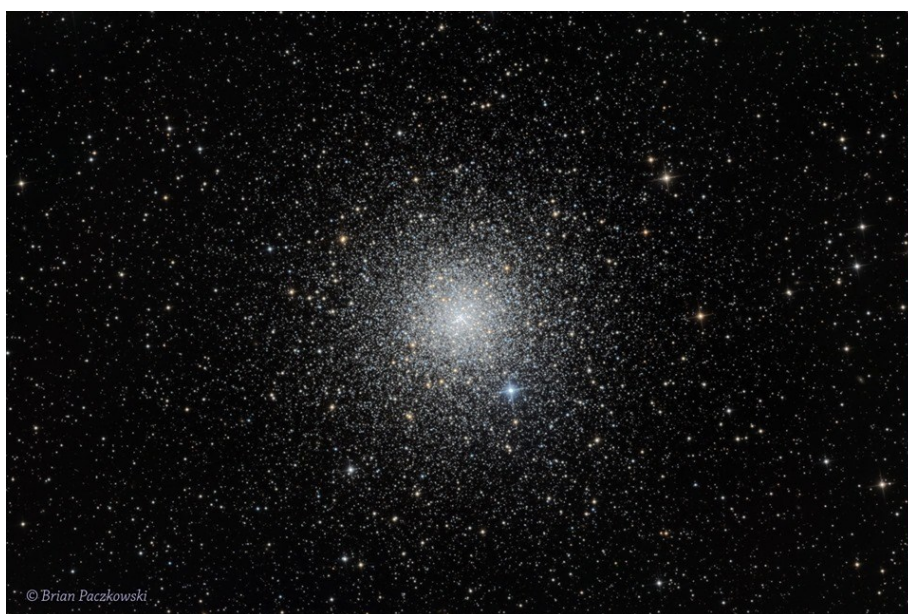


# THE LOS ANGELES ASTRONOMICAL SOCIETY

NOVEMBER, 2019

VOLUME 93, ISSUE 11

# THE BULLETIN



The beautiful Globular Cluster NGC 6752 in the constellation Pavo located about 13,000 light-years from the Sun. Another image acquired using a 17" CDK telescope I'm renting located in Chile. (Check out martinpughastrophotography.space for more information). This is an LRGB composite made from 6 hours of data. Processed in PixInsight. (Planewave 17" CDK, Paramount ME mount, SBIG STXL11002 camera)

Photo credit: Brian Paczkowski

LAAS Members are needed to help bring astronomy outreach to the schools in Los Angeles county. Please contact Heven at [outreach@laas.org](mailto:outreach@laas.org) and volunteer today. Please check the monthly calendar to find an event near you.

Join the Los Angeles Astronomical Society - To find our membership application and further information, please visit our website at [LAAS.org](http://LAAS.org).

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## Public Star Party

Nov. 2, 2019 - 2 PM to 9:45 PM

## New Contact Info?

If you have recently moved, changed your email address or phone number, please contact our club secretary at [secretary@laas.org](mailto:secretary@laas.org).

## Membership Renewal Notices

Keep your eyes open for email from the club secretary so you don't miss your renewal notice. Once your membership expires, you may need to reapply.

Science Night—Sunday, Oct. 27, 2019

**You're Invited To**  
**SCIENCE NIGHT**

**A Safe Place for Space**

**Sunday**  
**October 27th**  
**3PM - 9PM**

**KIDS' COSTUME PARADE**  
**FACE PAINTING - HEALTHY TREATS**  
**LEGO STATION - TESLA COIL**  
**ROCKET LAUNCHING - SPOOKY MUSIC**  
**THE PLANETARY SOCIETY**  
**COLUMBIA MEMORIAL SPACE CENTER**  
**ASTRONOMY AND SCIENCE.**

**A special needs friendly event!**

**GARVEY RANCH**  
**OBSERVATORY**

**781 S. ORANGE AVE**  
**MONTEREY PARK, 91755**

**Free for the Public!**  
**For More Info Call**  
**(213) 673 7355**

**Hosted by The Los Angeles Astronomical Society**

For further info, contact Geo Somoza at [Geovanni\\_somoza@hotmail.com](mailto:Geovanni_somoza@hotmail.com)



# The Messenger Crosses the Sun: Mercury Transit 2019

## By David Prosper

Did you know that there are two other objects in our skies that have phases like the Moon? They're the inner planets, found between Earth and the Sun: Mercury and Venus. You can see their phases if you observe them through a telescope. Like our Moon, you can't see the planets in their "new" phase, unless they are lined up perfectly between us Earthlings and the Sun. In the case of the Moon, this alignment results in a solar eclipse; in the case of Mercury and Venus, this results in a transit, where the small disc of the planet travels across the face of the Sun. Skywatchers are in for a treat this month, as Mercury transits the Sun the morning of November 11!

You may have seen the transit of Venus in 2012; you may have even watched it through eclipse glasses! However, this time you'll need a solar telescope to see anything, since eclipse glasses will only reveal the Sun's blank face. Why is that? Mercury is the smallest planet in our solar system, and closer to the Sun (and further away from Earth) during its transit than Venus was in its 2012 transit. This makes Mercury's disc too small to see without the extra power of a telescope. Make absolutely certain that you view the transit via a telescope equipped with a safe solar filter or projection setup. Do NOT combine binoculars with your eclipse glasses; this will instantly burn a hole through the glasses – and your eyes! While most people don't have solar telescopes handy, many astronomy clubs do! Look for clubs hosting Mercury transit observing events near you at [bit.ly/findnsn](http://bit.ly/findnsn) (USA) or at [bit.ly/awbtransit](http://bit.ly/awbtransit) (worldwide).

What a fun opportunity to see another planet during the day! This transit is expected to last over five hours. Folks on the East Coast will be able to watch the entire transit, weather permitting, from approximately 7:35 am EST until around approximately 1:04 pm EST. Folks located in the middle of North America to the west coast will see the transit already in progress at sunrise. The transit takes hours, so if your weather is cloudy, don't despair; there will be plenty of time for skies to clear! You can find timing details and charts via eclipse guru Fred Espenak's website: [bit.ly/mercurytransit2019](http://bit.ly/mercurytransit2019)

Mercury's orbit is small and swift, and so its position in our skies quickly changes; that's why it was named after the fleet-footed messenger god of Roman mythology. In fact, if you have a clear view of the eastern horizon, you'll be able to catch Mercury again this month! Look for it before dawn during the last week of November, just above the eastern horizon and below red Mars. Wake up early the morning of November 24th to see Mars, the Moon, and Mercury form a loose triangle right before sunrise.

Discover more about Mercury and the rest of our solar system at [nasa.gov](http://nasa.gov).

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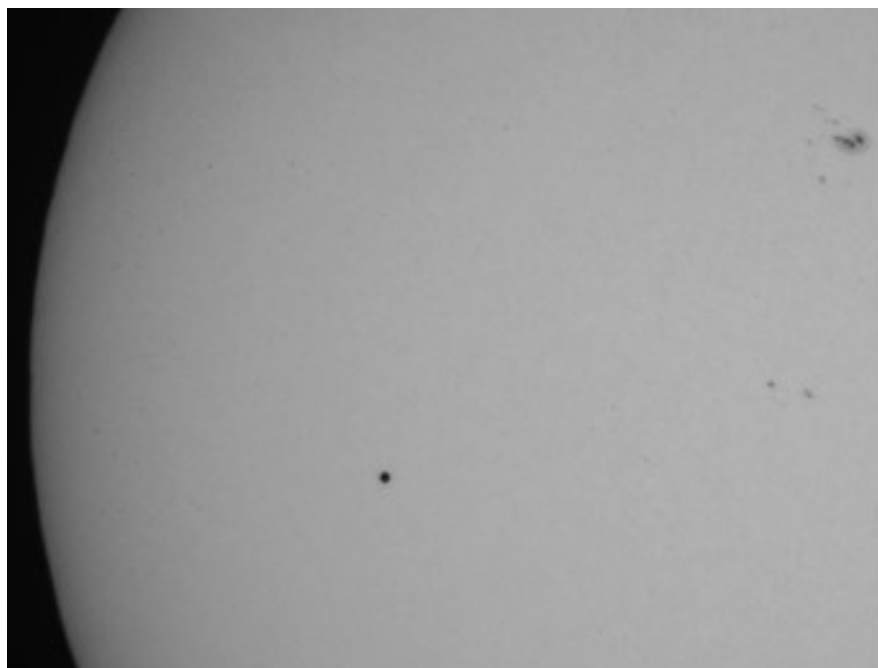


This article is distributed by [NASA Night Sky Network](http://nightsky.jpl.nasa.org). The Night Sky Network program supports astronomy clubs across the USA dedicated to astronomy outreach. Visit [nightsky.jpl.nasa.org](http://nightsky.jpl.nasa.org) to find local clubs, events, and more!



Photo of the May 9, 2016 transit of Mercury. Mercury is the small dot on the center right. Note how tiny it is, even compared to the small sunspot on the center left. Credit: Dave Huntz

This photo from the same 2016 transit event shows Mercury a bit larger, as it should; it was taken at a higher magnification through a large 16 inch telescope! Credit: J. A. Blackwell

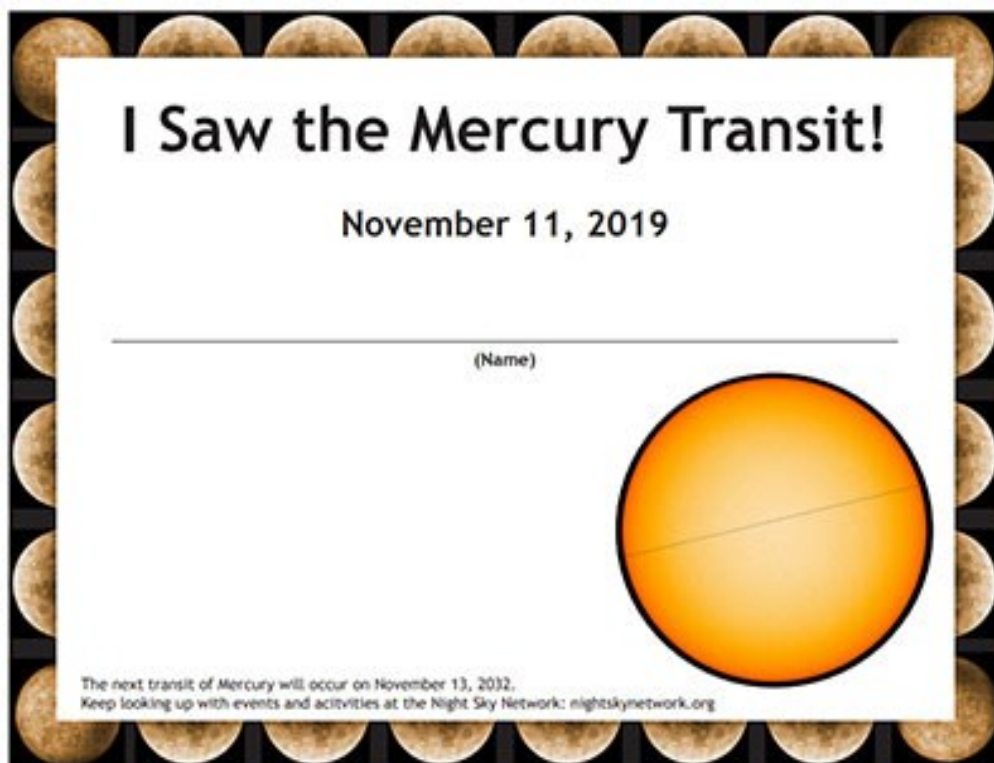


# Mercury Transit Observing Tips & Certificate:

## November 11, 2019

Los AngelesTime:

4:35 AM to 10:04 AM PST



*Preview of certificate; download the full-resolution copy [here](#)*

On the morning of **November 11, 2019** the planet Mercury will pass between the Earth and Sun, and all three bodies are aligned so that Mercury's tiny disc will appear to travel across, or **transit**, the Sun. The next transit of mercury won't be seen again until 2032, so be sure to catch it if you have clear skies.

The transit starts at **7:34am** on the east coast of the USA, and will already be in progress at sunrise for everyone west of the Rocky Mountains. Since Mercury is too small to see with your eclipse glasses and requires a safe solar telescope, now is a good time to find a nearby astronomy club and attend an observing event:

Continued on next page...

## SAFETY WARNING



### **Do not combine solar viewing/eclipse glasses with binoculars.**

You can severely damage your eyes!

Thanks to Vince Patton for this demonstration (right) of what happens if you combine eclipse glasses and binoculars. Remember melting things in the sun with magnifying glasses? Don't let that be your eye!

Only ever view the Sun through a telescope with a certified solar filter; otherwise you risk permanent damage to your eyes. Many astronomy clubs will be holding public viewing events and have solar filters on their telescopes. This transit lasts more than 5 hours, so take time to find someone observing or project an image yourself!

If you have a small refractor telescope and would like an inexpensive way to project the transit safely, Rick Feinberg from the American Astronomical Society came up with instructions on how to create a [sun funnel](#), a safe way to project the Sun for public viewing that has been tested and enjoyed by many.

There will also be livestreams of the transit, and we'll keep this page updated as those emerge.

More information about the transit can be found at [InTheSky.org](http://InTheSky.org)

The Astronomical League is offering a [Special Award](#) for members who observe this transit, and you can download and print our [NSN observing certificate](#) for your transit viewing visitors below.

*Last update: October 8, 2019*



[Night Sky Network](#) (NSN) member clubs are dedicated to bringing the wonders of space and NASA science to folks across the USA. NSN program participation provides clubs with [tools](#) and [resources](#) to assist in their public outreach. The LAAS is a member of the network.



Click on the JPL logo for more transit info.

# From the LAAS Archive

## Lew Chilton, Club Historian

AN EARLY EXAMPLE OF SOCIAL NETWORKING. THE GRINDING ROOM OF THE LAAS OPTICAL SHOP IN THE BASEMENT OF GRIFFITH OBSERVATORY, 1953-1954.

6 GRINDING STATIONS IN A VERY COMPACT SPACE, SOMETHING TO CONSIDER FOR GARVEY RANCH OBSERVATORY!





OUR OLD FRIEND AND LONGTIME MEMBER JACK EASTMAN SENDS HIS REGARDS FROM THE OKIE-TEX STAR PARTY. THIS IS THE FIRST RTMC THAT HE HAS MISSED SINCE IT BEGAN IN 1969.



**Jack Eastman and his 1877 6-inch Clark refractor at the Okie-Tex star party on 9-28-2019. Jack has been a member of the LAAS since 1952. (Image: Henry Throop)**

**LAAS ARCHIVE**



# Mt. Wilson Nights

## 2019 Session Schedule

### Session Schedule:

#### 60 Inch Nights Only

#### The Last Session of the Season!!!

Saturday, Nov. 23

The prices for the night is \$50 .

60 Inch Nights are private events exclusive to current LAAS members, families, and their guests only.

Please click on the following link to contact Darrell Dooley, our Mt. Wilson Coordinator before submitting payment.

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

To pay using PayPal or by credit card, please use the following link:

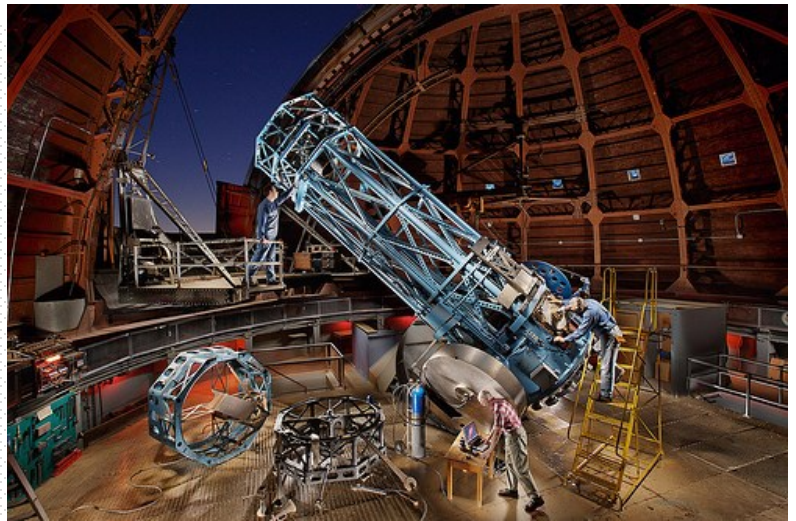
<https://fs30.formsite.com/LAAS/MtWilson/index.html>

To pay by check, please mail your check to:

LAAS c/o Griffith Observatory  
2800 E. Observatory Road  
Los Angeles, CA. 90027  
ATTN: Treasurer/Mt. Wilson

\*Please write "60 Inch" on your check. Make your check payable to: LAAS

Note: If you pay by check, your check may be held by our Treasurer for several weeks, before clearing your bank.



# Meet The New Members

## Welcome to the LAAS!



Epifanio Garcia

Amanda McAlpin

Tom and Trudy Egan

Ming Tam

Margarete Allen

Richard Seeno

Michael and Cynthia Perry

Benny Sachdev

Marquee Harris

George Melikian

Omar Acosta

Steve and Laura Akana

## LAAS Board Meetings

Our LAAS Board Meetings take place once a month at the Garvey Ranch Park Observatory. You can find the dates for these meetings on our event calendar. All members are welcome to attend all Board meetings. These meetings begin at 8 PM.

All current members may listen to recorded meetings by logging on to our website at LAAS.org and clicking on the "Members Only" tab to find the files. Contact: [webmaster@laas.org](mailto:webmaster@laas.org) for your login credentials.

## 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.

Participating at one of our outreach events is another fine and fulfilling opportunity. This is YOUR club. Don't sit back and let other members do the work and have all the fun! Speak with a club officer and find out how you can volunteer and get more involved in the LAAS as a member.

## Time To Renew Your Membership?

Please remember to renew your membership once you receive notice from the Club Secretary in your email inbox. Use this link to learn how to renew your membership:

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

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



# November Star Report

## By Dave Nakamoto

Nights are nice and long, and the temperatures haven't dropped too much yet. Jupiter is gone from our evening skies, and Saturn is quite low. We won't get good planet viewings until January or so, when Venus finally graces our evening skies, just as Jupiter and Saturn go behind the Sun on their journey to the morning skies. The constellations of Autumn dominate the sky, while those of Winter start to creep in towards the east.

The Moon begins the month as a moderately wide crescent in the evening skies, and ends the month just about the same way.

First Quarter – 4<sup>th</sup>

Full Moon – 12<sup>th</sup>

Last Quarter – 19<sup>th</sup>

New Moon – 26<sup>th</sup>

Venus is BARELY in the evening skies, setting right after the Sun does. It doesn't really become easily visible in the evening skies until January. Similarly, Jupiter is now lost to evening observers, and won't be in the morning skies until January. So in a few months we swap Venus for Jupiter. I'll write more about Venus in January.

Saturn is very low in the southwest. Binoculars and low power telescopes will show that Saturn is definitely oval in shape, not round, but you'll need magnifications around 50x or more to see the rings distinctly. Despite being just about everyone's favorite planet, Saturn is small. With the rings it appears about 45 times smaller than the Moon. But next month Saturn becomes very difficult to observe, so by December we won't have planets gracing our evening skies.

Still overhead but to the right as you face south is the Summer Triangle, composed of Deneb on the upper left, Vega to the right of it, and Altair below both. Vega and Altair are bright and should punch through the sky glow every urban observer has to deal with. Above your head is the Great Square of Pegasus. North of it is the 'W' of Cassiopeia. The faint glow to the East Northeast is the Pleiades, a large bright open cluster of stars, a very fine sight in binoculars.

### The Leonid Meteor Shower

The Leonid meteors streak across the sky, mostly during the nights of Nov 16<sup>th</sup> through the 17<sup>th</sup>. The rates are predicted to be low, perhaps two dozen or so per hour. The waning Gibbous Moon will interfere, as its light will allow only the brightest meteors to be seen even from dark skies. And to see any meteors at all, dark skies are needed. This means a site away from all city and town lights and their glows. And to add to the difficulties of seeing the Leonids this year, they are best seen in the early morning sky, beginning at 2am or so.

The Leonid meteors hit the earth on the earth's morning side. They are known to have some of the fastest meteors of any known shower, partially because those meteors smack into earth's atmosphere as the earth travels in the opposite direction, so the chances of seeing long streaks and bright ones increase. Think of driving in one direction and getting hit by sand going in the opposite direction, both at high speed.

The Los Angeles Astronomical Society, also known as the LAAS, operates the Garvey Ranch park observatory. The observatory is located just off the east parking lot. It's open to the public every Wednesday night from 7:00 PM to 10:00 PM. An 8-inch 9-foot long refracting telescope is available to look through, weather permitting. People often set up their own telescopes out on the lawn beside the observatory. There's a telescope making workshop on the ground floor, and LAAS members are ready to provide advice and knowledge on all things astronomical. And perhaps on a few other things with a little coaxing. All of this is free of charge. So drop on by and bring your curiosity and sense of adventure!

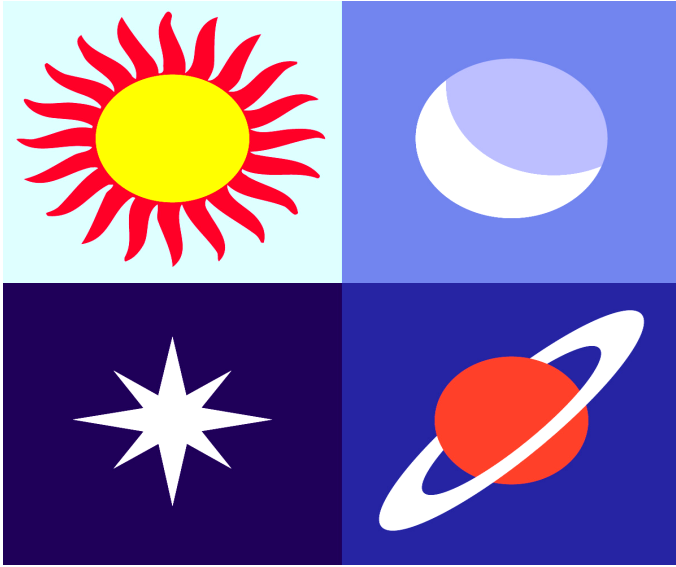


*David Nakamoto has been observing the heavens through various scopes since he was in the 5<sup>th</sup> grade. He can be reached at*

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



# Almanac



**November 5, 6 - Taurids Meteor Shower.** The Taurids is a long-running minor meteor shower producing only about 5-10 meteors per hour. It is unusual in that it consists of two separate streams. The first is produced by dust grains left behind by Asteroid 2004 TG10. The second stream is produced by debris left behind by Comet 2P Encke. The shower runs annually from September 7 to December 10. It peaks this year on the the night of November 5. The first quarter moon will set shortly after midnight leaving dark skies for viewing. Best viewing will be just after midnight from a dark location far away from city lights. Meteors will radiate from the constellation Taurus, but can appear anywhere in the sky.

**November 11 - Rare Transit of Mercury Across the Sun.** The planet Mercury will move directly between the Earth and the Sun. Viewers with telescopes and approved solar filters will be able to observe the dark disk of the planet Mercury moving across the face of the Sun. This is an extremely rare event that occurs only once every few years. The next transit of Mercury will not take place until 2039. This transit will be visible throughout all of South America and Central America, and parts of North America, Mexico, Europe, the Middle East, and Africa. The best place to view this event in its entirety will be the eastern United States, Central America, and South America  
[Transit Visibility Map and Information](#)

**November 12 - 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 13:36 UTC. This full moon was known by early Native American tribes as the Full Beaver Moon because this was the time of year to set the beaver traps before the swamps and rivers froze. It has also been known as the Frosty Moon and the Hunter's Moon.

**November 17, 18 - Leonids Meteor Shower.** The Leonids is an average shower, producing up to 15 meteors per hour at its peak. This shower is unique in that it has a cyclonic peak about every 33 years where hundreds of meteors per hour can be seen. That last of these occurred in 2001. The Leonids is produced by dust grains left behind by comet Tempel-Tuttle, which was discovered in 1865. The shower runs annually from November 6-30. It peaks this year on the night of the 17th and morning of the 18th. The second quarter moon will block many of the fainter meteors this year, but if you are patient you should be able to catch quite a few of the brightest ones. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Leo, but can appear anywhere in the sky.

**November 24 - Conjunction of Venus and Jupiter.** A conjunction of Venus and Jupiter will be visible on November 24. The two bright planets will be visible within 1.4 degrees of each other in the evening sky. Look for this impressive sight in the western sky just after sunset.

**November 26 - 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 15:06 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.

**November 28 - Mercury at Greatest Western Elongation.** The planet Mercury reaches greatest western elongation of 20.1 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.

**Source:** <http://www.seasky.org/astronomy/astronomy-calendar-2019.html>

**Need Help With A New Telescope?** Visit the Garvey Ranch Observatory on any Wednesday night 7 PM to 10 PM for tips and assistance from your fellow LAAS members.

**This is a free event for the public.**

**Learn more:** [The Garvey Ranch Park Observatory](#)



# November 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
<b>Science Night!!!</b>					1	2 Public Star Party
3	4	5	6 Garvey Nites Board Meeting	7 Outreach- Silverlake	8 Outreach- Malibu	9
10	11	12	13 Garvey Nites	14	15	16
17	18 General Meeting	19	20 Garvey Nites	21 Outreach- Pasadena	22	23 Dark Sky Nite 60 Inch MWO
24	25	26	27 Garvey Nites	28 Thanksgiving 	29	30

## 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 JACKETS, T-SHIRTS, AND CAPS

Share your club spirit with the public and wear your club colors to help identify you as a member of the LAAS today by ordering a new jacket, t-shirt or cap.

To order club swag, please use the following link:  
<http://laas.org/joomlasite/index.php/laas-merchandise>





## 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/>



**Disclaimer:** The Los Angeles Astronomical Society, Inc. is a public charity, as defined by Internal Revenue Code Section 501(c)(3) and all contributions to the Society are deductible for Federal and State Income tax purposes. **The Society does not endorse Amazon.com or any of its business practices**, but we are registered with Amazon Smile and will accept contributions from that program. If you are an Amazon customer and would like to have part of the proceeds from your purchase returned to the Society as a contribution, please go to <https://smile.amazon.com/> when you are shopping on Amazon and select Los Angeles Astronomical Society under the caption: "Or pick your own charitable organization." A percentage of you purchases will be donated to the Society to fund its educational and outreach programs.

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 for a NEW Sky & Telescope subscription at the club discount rate.](#)

[Click here for online renewal of your Sky & Telescope magazine subscription](#)



**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

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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

**Lockwood Site:**

661-245-2106

Not answered, arrange time with caller.

Outgoing calls – Collect or calling card only.



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



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**The Los Angeles  
Astronomical Society**  
2800 E. Observatory Road  
Los Angeles, CA 90027

Call us for more information  
and  
about our organization and  
outreach program.  
213-673-7355

Visit our web site at  
[www.LAAS.org](http://www.LAAS.org)

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The Los Angeles Astronomical Society (LAAS)  
c/o Griffith Observatory  
2800 E. Observatory Road  
Los Angeles, CA. 90027

PLACE  
STAMP  
HERE

**To:**