



# THE LOS ANGELES ASTRONOMICAL SOCIETY

# THE BULLETIN

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Here is my comet Atlas that I imaged two weeks ago just when it broke up! I reprocessed it using flats to remove dust motes. In fact in my whole astrophotography career this was the first time that I used flats and I would say it worked pretty good! I guess I would be doing it more often now.

Photo credit: Nasir Jeevanjee



### 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.

### Outreach Event Advisory

Until further notice, all outreach program events are cancelled. Please visit Page 2 for further information.

# A Letter From The LAAS President



.As we are all hunkering down in our homes waiting for the all clear from the health officials, life continues on. Yes the grass is still growing outside, the weeds are taking over and there are lots of flowers in the high desert. But as far as astronomy goes the last 6 weeks or so have been clouded out in most cases. The only real LAAS events that will be cancelled so far is the April General meeting and the public star party at Griffith Observatory. Star parties and outreach events, yes cancelled because of the Corona virus out there, would probably have been clouded out anyway. The sun has crossed the equator on its northward trek and alas, Spring is here, warm temperatures are on the way and usually this season, the weather is generally decent. Most of us are anxious to get our telescopes under dark skies. Unfortunately, most of our favorite places to go, parks and campgrounds, are closed and we are not sure when they will be open again. That does not mean we can not enjoy the skies.

LAAS has private sites that may be used. We have our site at Lockwood Valley near Frazier Park. Dark sky weekends are reserved for Star Members only, and during this crisis, the facility is open to Star Members only. I have asked John O'Bryan, Lockwood Committee chairman, to come up with some guidelines for general LAAS members to use the facility as guests of Star Members.

LAAS also has the Ford Observatory near Wrightwood. The Observatory has limited use during the winter months. The Mountain High Ski area usually has skiing at night which ruins the sky for astronomy. This ski area closed early this season because of the Corona Virus, but the Ford Observatory has been almost inaccessible because of the recent storms in Southern California dropping heavy snow in the area. Some of the Ford Committee members will try to clear the access road over the weekend of April 25-26 and check the facility out.

Many of our members had the Memorial Day weekend set aside for Riverside Telescope Maker's Conference (RTMC for short) in Big Bear, but unfortunately RTMC is no more and this year Memorial Day weekend happens to be a new moon. Not sure what campgrounds and parks in dark sky area that may be open by then, LAAS will try to open our own facilities to members during the Memorial Day weekend.

Hopefully the facilities that LAAS uses for many of our events for outreach, and public star parties will open soon as we approach the summer months. I checked Sky Safari and in July, Saturn is at opposition 1 week after the Jupiter opposition. That should generate much enthusiasm at August and September star parties at Griffith Park and Mt. Wilson. And we never know when a comet may just zip across the sky like Hyakutake did in 1996.

Jim Thompson has informed me that Garvey Ranch will be closed until at least May 15 and he will be meeting with Mt. Wilson officials to assess the events scheduled for Mt. Wilson. We should have updates for the LAAS June bulletin.

In the mean time, those of you that have a house with backyard, take your scope outside and see what is in the sky. You may not have the darkest skies, but try splitting some bright double stars, viewing open star clusters or just gaze at the moon for awhile. Dave Nakamoto seems to do some nice images from the city. And I expect a report and images from those that have that new EVscope.

Remember if you are sick, STAY HOME and keep a safe distance when you are around other people.

Curtis Byrom

LAAS President

# What I Was Able To Accomplish For (Nearly) Free

## By Kevin Gilchrist

Late last year I received an email from Astronomy Magazine that they were partnering with Telescope.live, who were offering 25 free credits for new users to try out their service. Once I looked over what they were offering, I jumped into it, choosing the Rosette Nebula. On the particular telescope I chose, 1.5 credits equals 1 minute, but credits are also applied to overhead items such as acquiring the target, filter changes, focusing, etc. Darks, flats, and bias frames are from their weekly updated library. The targeting, filters, and capture times are worked out by the user. I chose the option for the service to schedule the date and time, and my files showed the capture dates as 25-26 December 2019. I used 20 credits for 3 minutes of image. Nail-biting ensued! A half-hour would have been better. After receiving an email notification of completion, one can download files individually or as

ZIP archived, and they are calibrated to the darks, flats, and bias frames, but not in any way registered, stacked, or cropped. DSS and GIMP are freeware, and StarTools is a very affordable program that has a lot of parameters to play with. This was an excellent experience, as last year was fraught with bad seeing, clouds, and an incident with a road hazard that made a trip to Lockwood Valley in my car inadvisable.

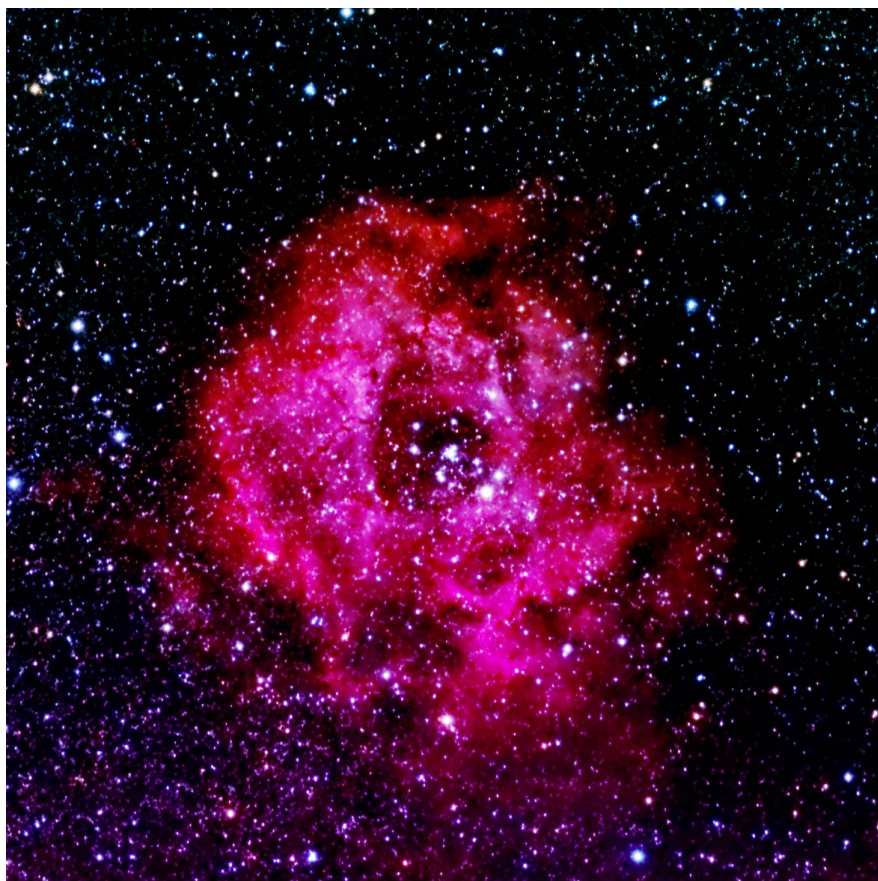


Image info: Rosette Nebula (NGC 2237, Caldwell 49)  
and Open Cluster NGC

2244 (Caldwell 50)

Telescope: Takahashi FSQ-106EDX4 f/3.6 (w/ 0.73x  
focal reducer)

Camera: FLI PL16083 Array: 4096 x 4096 Resolu-  
tion: 4.74 arcsec/px

Filters: Astrodon LRGB 2GEN

Capture (lights) times: 3x 15 sec per L, R, G, and B  
filters for 180 seconds total

Site: IC Astronomy

Location: Oria, Almería, Spain

Accessed through [app.telescope.live](https://app.telescope.live)

Stacking software: DeepSkyStacker (DSS) 4.2.3

Image processing: StarTools 1.3 and GIMP 2.10.18

# Star Hops - To N67

By Dave Nakamoto

.In this series of articles, I will describe some of my star hops to various objects, so you may try them yourself, and hopefully start your own "road trip" among the stars.

Star hopping is the method of going from one identifiable star pattern to another to reach an object. It's similar to a road trip where you go from town to town until you get to your destination. The beauty of the method is that, along the way, you might see other objects, some that may not be commonly known. This has happened to me a lot since I started routinely using the Garvey Ranch park observatory in November of 2018, and is one big reason I still do this method, even with computerized mounts. This is touring the heavens, and often I run into something special and unexpected. I often find these serendipitous discoveries are more interesting than the more commonly known objects I reach at the end of the star hop.

To ensure success, your scope and finder need to be in proper focus and collimation. If you're using an equatorial mount, you need to make sure it is accurately polar aligned. I've found a polar alignment scope built into the mount works very well. Any flaws in your telescope's setup will make the process tedious. I should know, having encountered many troubles due to this. I strongly believe a finder is necessary in an urban environment, because it allows you to spot stars much fainter than you can see with the unaided eye, increasing your chances of success. It also helps at a dark site.

The equipment at Garvey Ranch park observatory consists of an 8-inch f/12 refractor, usually equipped with a 50mm eyepiece for a 1-degree field of view (FOV). For imaging, a 4.7-inch f/8 refractor is piggybacked on the 8-inch and fitted with a ZWO camera for a 83 arc-minute or 1.4 degree FOV. I've found the equipment's Telrad a God send when doing the initial alignment on a bright star, but the 8x50 finder is needed in order to see stars fainter than 2<sup>nd</sup> mag in order to use star hopping techniques.

M44, the Beehive open cluster, is probably the most famous deep sky object in the constellation of Cancer the Crab. Open clusters are groupings of stars held together by gravity. It's thought all stars formed in such a group. They come in a variety of shapes and appearances. They're usually relatively easy objects to find and observe, even from urban locations. M44 is LARGE, well over a degree in width. In fact, the only way to see the entire cluster with most scopes is to use magnifications less than 30x, so when I show guests M44, I direct them to use Garvey Ranch's 8x50mm finder.

But there's a smaller but equally nice open cluster, also in the Messier catalog, and just south of M44. M67 would be a frequently visited object if it didn't have such a splashy neighbor.

To star hop, you need to know how large the star patterns look in your finder, and your main scope with a low power eyepiece. I use the Star Atlas 200.0 printed charts. They don't ruin the night vision for you or those around you with a bright screen, they're much larger than any smart phone, and you can see them using a dim red light. The Dec scale on charts like the Star Atlas is marked off in degrees. I just measure off 5° with my thumb and index finger and move it across the star chart. Another way is to cut a template from stiff cardboard. You might also use those plastic circle templates from an office supply store. You also need to know how the view through the finder is rotated. To do this, move the scope north; new stars appear from the north. Same for south, east, and west. But if the FOV is a mirror image, then you'll just have to flip the view in your mind.

I profess I like using equatorial mounts because I know I'm only moving in RA or Dec, and therefore I only have to move the scope one axis at a time. This means I only move east or west, or north or south. This matches the coordinates used by astronomers to plot all objects in the sky. Right Ascension is east or west. Declination is north or south. With Dobs and other alt-azimuth mounts you always have to move both axes, elevation and azimuth, to go east, west, north, or south in the sky. That makes it harder, but it can be done if you're careful. My first telescope was on a German equatorial mount, so I've grown accustomed to its movements.

*Continued on next page*





This image was taken on Feb 26<sup>th</sup> 2020 at 9:14pm through the Garvey Ranch 4.7-inch f/8 telescope with a ZWO camera. 26 images were stacked using SharpCap's Livestack, each one with a 10 seconds exposure time. North is up and east is left. The red spindle-shaped thing in the lower left corner is an artifact caused by stray light entering the front of the refractor from local lights. The cluster appears much redder than other open clusters, and if that is the right color, then we're looking at a very old cluster, in which the only stars left are the lower-mass ones, spectral types ranging from yellowish G-types to reddish M-types. In fact, estimates of its age range from 3.2 to 5 BILLION years, so it's possibly older than our Solar System, 4.5 billion years. Its distance may be as great as 2,900 light-years.

Dave Nakamoto

# The Great Globular Cluster in Hercules (M13)

By Brian Paczkowski



The Great Globular Cluster in Hercules (M13). Also visible are 2 galaxies, NGC 6207 on the bottom left, the small galaxy IC4617 halfway between NGC 6207 and M13, and the beautiful variable red giant star V11. After months of terrible weather, I was finally able to spend a couple of nights this week imaging at the Lockwood. This is my first image using my new full frame ATIK 16200 CCD camera and Chroma LRGB filters. This is a Luminance+RGB composite image made from a total of 5 hours of data. Processed in PixInsight. (AGOptical 10"iDK, 10Micron GM2000 HPS II mount, ATIK 16200 at -35C)

From The LAAS Archives  
Shared By Lew Chilton, Club Historian



Former LAAS member Douglas K. Duncan, Ph.D., at the coude focus of the Mt. Wilson Observatory's Hooker 100-inch telescope, March 31, 1982. He was a Carnegie Fellow assisting Geoff Marcy on early exoplanet detection strategies. (Image courtesy of the Observatories of the Carnegie Institution for Science Collection at the Huntington Library, San Marino, California.)

**LAAS ARCHIVE**





Joseph O. Hickox (1896-1970) viewing a solar image in the 150-foot tower at Mount Wilson Observatory. According to the calendar on the door, it is April, 1949. He suffered a heart attack while addressing the Los Angeles Astronomical Society during its monthly meeting at Griffith Observatory on April 13, 1970. He passed away the following day.

(Image courtesy of the Observatories of the Carnegie Institution for Science Collection at the Huntington Library, San Marino, California.)

**LAAS ARCHIVE**

# Become A Citizen Scientist With NASA

By David Prosper

Ever want to mix in some science with your stargazing, but not sure where to start? NASA hosts a galaxy of citizen science programs that you can join! You'll find programs perfect for dedicated astronomers and novices alike, from reporting aurora, creating amazing images from real NASA data, searching for asteroids, and scouring data from NASA missions from the comfort of your home. If you can't get to your favorite stargazing spot, then NASA's suite of citizen science programs may be just the thing for you.

Jupiter shines brightly in the morning sky this spring. If you'd rather catch up on sleep, or if your local weather isn't cooperating, all you need is a space telescope - preferably one in orbit around Jupiter! Download raw images straight from the Juno mission, and even process and submit your favorites, on the [JunoCam](http://JunoCam) website! You may have seen some incredible images from Juno in the news, but did you know that these images were created by enthusiasts like yourself? Go to their website and download some sample images to start your image processing journey. Who knows where it will take you? Get started at [bit.ly/nasajunocam](http://bit.ly/nasajunocam)

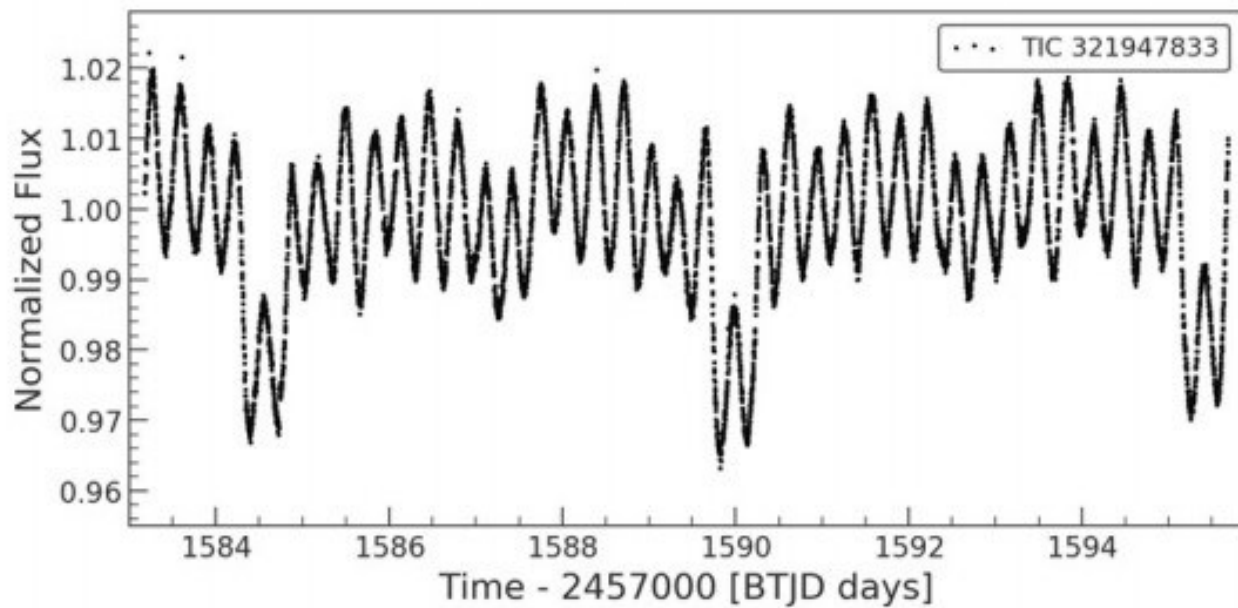
Interested in hunting for asteroids? Want to collaborate with a team to find them?? The [International Astronomical Search Collaboration program](http://InternationalAstronomicalSearchCollaborationProgram) matches potential asteroid hunters together into teams throughout the year to help each other dig into astronomical data in order to spot dim objects moving in between photos. If your team discovers a potential asteroid that is later confirmed, you may even get a chance to name it! Join or build a team and search for asteroids at [iasc.cosmosearch.org](http://iasc.cosmosearch.org)

Want to help discover planets around other star systems? NASA's TESS mission is orbiting the Earth right now and scanning the sky for planets around other stars. It's accumulating a giant horde of data, and NASA scientists need your help to sift through it all to find other worlds! You can join Planet Hunters TESS at: [planethunters.org](http://planethunters.org) |

Intrigued by these opportunities? These are just a few of the many ways to participate in NASA citizen science, including observing your local environment with the GLOBE program, reporting aurora with Aurorasaurus, measuring snowpack levels, training software for Mars missions – even counting penguins! Discover more opportunities at [science.nasa.gov/citizenscience](http://science.nasa.gov/citizenscience) and join the NASA citizen science Facebook group at [facebook.com/groups/Sciencing/](http://facebook.com/groups/Sciencing/) And of course, visit [nasa.gov](http://nasa.gov) to find the latest discoveries from all the research teams at NASA!



GREAT SOUTHERN JUPITER: Incredible image of Jupiter, submitted to the JunoCam site by Kevin M. Gill. Full Credits : NASA/JPL-Caltech/SwRI/MSSS/Kevin M. Gill



Light curve of a binary star system containing a pulsating (variable) star, as spotted on Planet Hunters TESS by user mhuten and featured by project scientist Nora Eisner as a “Light Curve of the Week.” Credit: Planet Hunters TESS/ NASA/mhuten/Nora Eisner

You can find a printer-ready version of this article on our Night Sky Notes [resource page](#) every month, free to share with your club newsletter, website, or even local paper!

### Additional Skywatching Resources

Plan your skywatching with help from our [planner page](#), featuring daily stargazing tips courtesy [EarthSky](#) monthly [sky maps](#), and [videos](#) from NASA/JPL. You can even find out how to spot the [International Space Station](#). Both [Astronomy](#) and [Sky and Telescope](#) magazines offer regular stargazing updates to readers in print and online. Find [clubs](#) and astronomy [events](#) near you, and may you have [clear](#)



[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.

# Monthly Star Report

## By Dave Nakamoto

Venus is the only bright planet visible in the skies, but not for long. It's visible in the west as the Sun sets. Sharp eyed observers who know where to look can spot it during late afternoon ! As may progresses it gets closer to the horizon, finally disappearing from our evening skies, passing between us and the Sun, and then appearing in our morning skies for the rest of this year.

Through a telescope, Venus begins the month as a medium sized crescent, getting thinner and thinner until in the third week of May it'll be very thin indeed. It gets wider and wider as it gets closer to the earth. You'll need magnifications of about 50x to see these phases.

As far as the bright stars are concerned, reddish Betelgeuse and cold white Rigel in Orion are very low in the west and will pretty much be gone by the end of May. White Regulus in Leo the Lion will be in the southern part of the sky, transitioning to the west towards the end of May. Orange Arcturus is nearly overhead. Late at night, Orange Antares in Scorpius rises very low in the southeast. The Big Dipper, which is not a constellation but part of Ursa Major or the Great Bear, glides high up nearly overhead. If you face north to see it, it will be upside down.

The moon starts the month as a first quarter phase and ends it the same way. This happens because the lunar cycle is close to a 30 day period, hence the word "month" which is derived from the same root as "moon".

The moon always presents a fascinating and ever-changing panorama of shifting shadows and differences in greys across its surface, especially along the terminator, the line between lunar daylight and night.

Here is the lunar cycle for this month.

First Quarter – 1<sup>st</sup>

Full Moon – 7<sup>th</sup>

Last Quarter – 14<sup>th</sup>

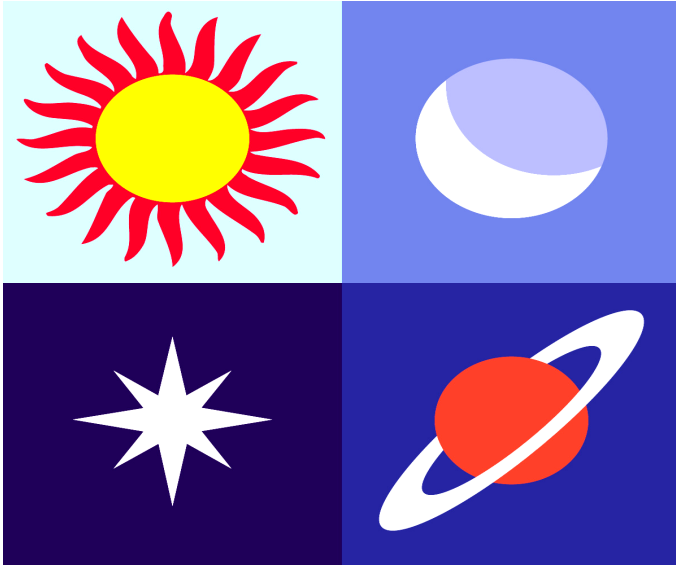
New Moon – 23<sup>rd</sup>

First Quarter – 30<sup>th</sup>



*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*

# Almanac



**May 4, 5 - 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 known and observed since ancient times. The shower runs annually from April 19 to May 28. It peaks this year on the night of 4th and morning of the 5th. The nearly full moon will be a problem this year, blocking out all but the brightest meteors. But if you are patient, you should 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 Aquarius, but can appear anywhere in the sky.

**May 7 - Full Moon, Supermoon.** 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 10:45 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. This is also the last of four supermoons for 2020. The Moon will be near its closest approach to the Earth and may look slightly larger and brighter than usual.

**May 22 - 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 17:39 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.

• **May 23 - Comet Atlas.** Newly discovered comet Atlas will make its closest approach to Earth at a distance of 72 million miles (116 million kilometers). In the months following this close approach, the comet is expected to brighten. All though comets are extremely difficult to forecast, some astronomers believe that comet Atlas could brighten to a magnitude of between +1 and -5. This could potentially make it the second brightest object in the night sky besides the moon.

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

## Need Help With A New Telescope?

Due to the Covid Virus, the Garvey Ranch Park Observatory will be closed until further notice.

If you need assistance over the phone, call 213-673-2755. We'll try to find someone who can help you.

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



# Meet The New Members

## Welcome to the LAAS!



Mani Grandhi

Becky Nash

Marc Taratao

## 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.—**Note: All meetings will be held over the phone or virtually until the observatory reopens in mid-April or May.**

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 Spencer at [laassecretary@laas.org](mailto:laassecretary@laas.org) for further information

## 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).



# May 2020

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



## 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:

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





## 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.

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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: Curtis Byrom

[Cbyrom484@yahoo.com](mailto:Cbyrom484@yahoo.com)

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hurst.alecia@gmail.com

Treasurer: John O'Bryan, Jr.

treasurer@laas.org

Secretary: Spencer Soohoo

secretary@laas.org

Outreach Coordinator: Heven Renteria

outreach@laas.org

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jcrochford@gmail.com

Club Communications: Andee Sherwood

communications@laas.org

Mt. Wilson Coordinator: Darrell Dooley

mtwilsoncoordinator@laas.org

Bulletin Editor: Andee Sherwood

communications@laas.org

## 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.



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on one of the images below



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twitter



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

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

**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)

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

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STAMP  
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**To:**