

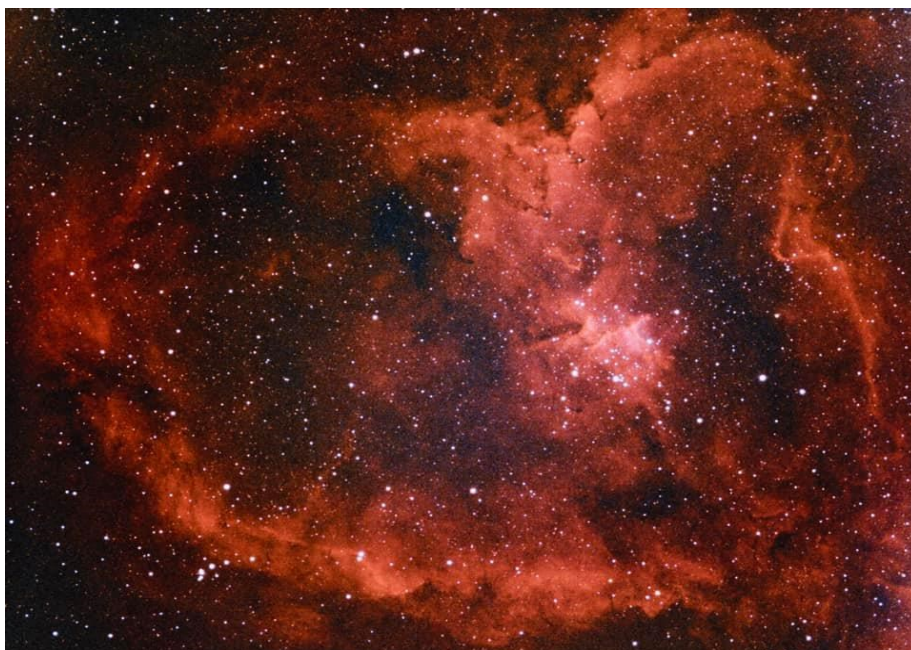


# THE LOS ANGELES ASTRONOMICAL SOCIETY

## THE BULLETIN

FEBRUARY, 2020

VOLUME 94, ISSUE 02



Heart Nebula imaged last night from backyard!

ZWO asi 1600 mm

80 mm stellervue

Narrowband imaging.

80 mins of H-alpha

10 mins of O3

5 mins of S2

Processed In Pixinsight

Photo Credit: Nasir Jeevanjee - Jan. 18, 2020

### Public Star Party

February 1, 2020 - 2 PM to 9:45 PM

### **OUTREACH VOLUNTEERS NEEDED!**

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.

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### **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.

# The Finest Planetary Nebula in the Sky

## By Ray Blumhorst

That's how SkySafariPro5 describes the Dumbbell Nebula. Located in the Constellation Velpecula (Little Fox), and with a visual magnitude of +7.09, the Dumbbell Nebula can be seen with binoculars in summer and fall months. It lies just inside the well know summer triangle marked by Vega, Deneb, and Altair.

Charles Messier discovered this object in 1764. It was the very first planetary nebula to be found, but it wasn't until 20 years later that William Herschel originated the term "planetary nebula" to describe it and stars of similar mass in that stage of stellar evolution. Herschel, who discovered the planet Uranus in 1781, saw an obvious resemblance between bluish-green Uranus and the many bluish-green planetary nebulae, and the misnomer "planetary" has remained to this day.



The white dwarf star at the center of the Dumbbell Nebula is the largest white dwarf known to exist and is estimated to be 60 percent the mass of our Sun. Our Sun is also destined to become a white dwarf at some point late in its stellar evolution. Some astrophysicists predict it will also have a planetary nebula surrounding its white dwarf, but others think our Sun may not be massive enough to form a planetary nebula.

Estimates on the age and distance of the Dumbbell Nebula vary considerably. Its age is believed to be between 3,000 and 14,000 years. Its distance is estimated to be between 490 and 3,500 light years.

The greenish colored gas that has been ejected from the star is doubly-ionized oxygen. NASA says this about the reddish tinges at the edge of the Dumbbell Nebula, "...hydrogen gas, mixed with traces of heavier elements."

Although planetary nebula can vary greatly in appearance, most people agree they are all spectacularly beautiful, and with a diamond like white dwarf at the their center, who could argue with that?

# What's Up At Garvey?

By Dave Nakamoto

On Wednesday night, Jan. 8, 2020, Garvey Ranch Observatory opened after a two week hiatus due to inconvenient holidays scheduled on a Wed last year.

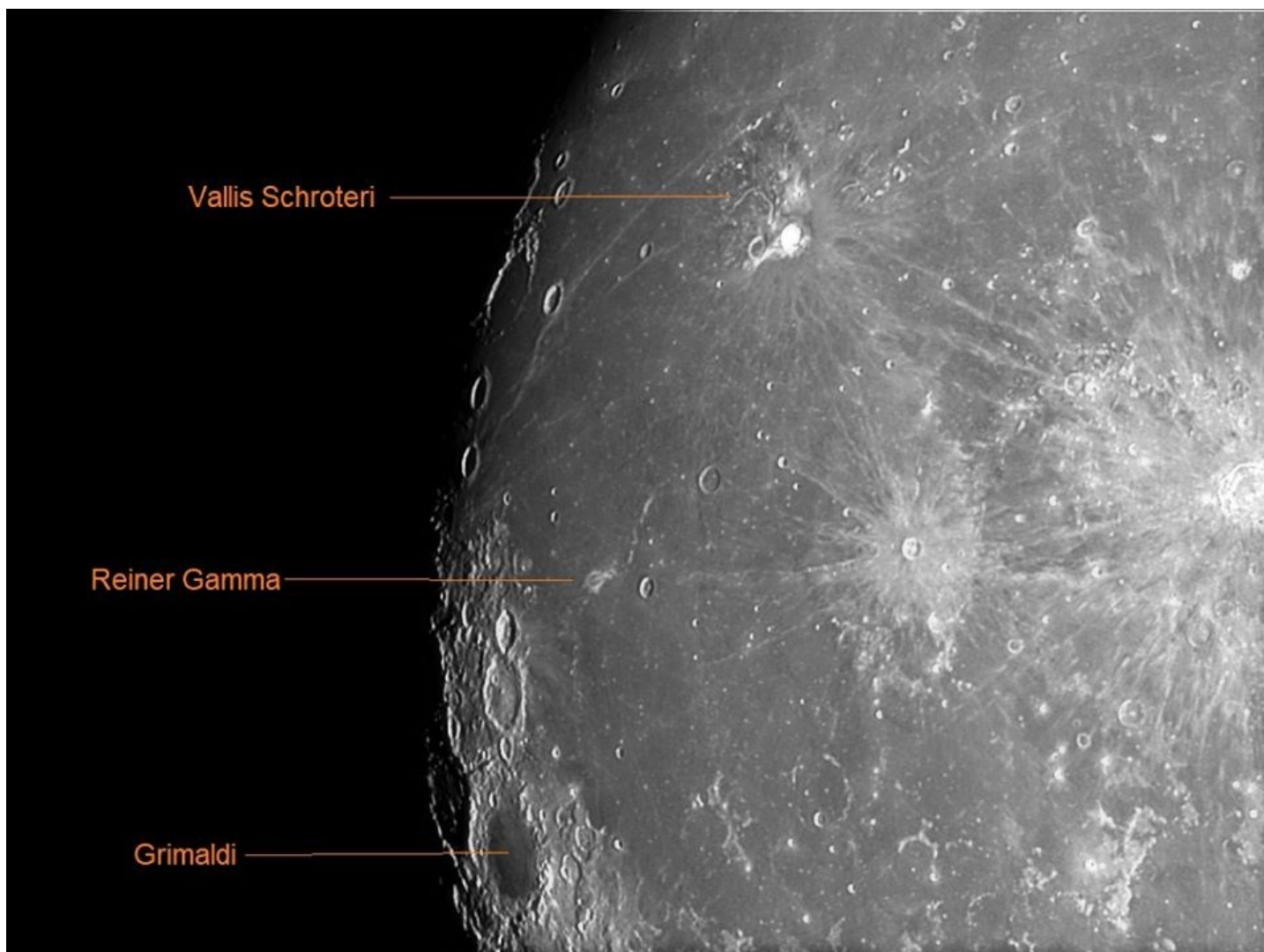
After the clouds parted enough to see the moon, we got one good video of it, which I processed into this image. Vallis Schroteri is a channel carved by lava at some time in the moon's distant past, but then, most things on the moon are from the distant past. The white circular feature near it is the crater Aristarchus.

Reiner Gamma is a local dusting of lighter material over the dark vast lava fields of Oceanus Procellarum. The pattern might have been caused by a local magnetic field.

The crater Grimaldi is similar in size to Copernicus, seen on the right edge of the image, but it was likely formed before the Procellarum basin was flooded, since it too is lava flooded, but Copernicus was excavated after this flooding, as it sits right in Procellarum and is not flooded.

To the left of Grimaldi is the similar sized crater Riccoili. The dark spike pointing to it from its right appears to be Rime Helevius, the dark feature being a shadow cast by one of its walls.

Clear and Steady Nights !



# Solar System, Galaxy, Universe: What's the Difference?

Many people are not clear about the difference between our Solar System, our Milky Way Galaxy, and the Universe.

Let's look at the basics.

Our **Solar System** consists of our star, the Sun, and its orbiting planets (including Earth), along with numerous moons, asteroids, comet material, rocks, and dust. Our Sun is just one star among the hundreds of billions of stars in our Milky Way Galaxy. If we shrink the Sun down to smaller than a grain of sand, we can imagine our Solar System to be small enough to fit onto the palm of your hand. Pluto would orbit about an inch from the middle of your palm.



On that scale with our Solar System in your hand, the **Milky Way Galaxy**, with its 200 – 400 billion stars, would span North America ([see the illustration on the right](#)). Galaxies come in many sizes. The Milky Way is big, but some galaxies, like our Andromeda Galaxy neighbor, are much larger.

The **universe** is all of the galaxies – billions of them! NASA's telescopes allow us to study galaxies beyond our own in exquisite detail, and to explore the most distant reaches of the observable universe. The Hubble Space Telescope made one of the deepest images of the universe, called the [Hubble Extreme Deep Field](#) (image at the top of this article). Soon the [James Webb Space Telescope](#) will be exploring galaxies forming at the very beginning of the universe.

You are one of the billions of people on our Earth. Our Earth orbits the Sun in our Solar System. Our Sun is one star among the billions in the Milky Way Galaxy. Our Milky Way Galaxy is one among the billions of galaxies in our Universe. You are unique in the Universe!



**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!

From the LAAS Archive  
By Lew Chilton, Club Historian



**John A. Gayton (1893-1968), pictured above in a 1920 passport photo, was the Los Angeles Astronomical Society's first president from its inception in November 1926, when it was known as the Amateur Telescope Makers' Society, until the end of 1929. A New York native, he relocated to Los Angeles in 1919 for employment following discharge from the army but was back in New York by 1930. (Image source: Ancestry.com)**

**LAAS ARCHIVE**

# Meet The New Members

## Welcome to the LAAS!



Amy Cavigli

Daniel and Hannah Duncan

Jarred Donkersley

Mitch Epeneter and Scott  
Kelly

Ashley Walters

Bruce Fortune and Family

Gregg Whittmann

Stephen Katz

Jeremias Agosto and Family

If you would like to join the LAAS, please visit our website at [LAAS.org](http://LAAS.org) and click on Membership to learn more. You may fill out a membership form online. All applications are reviewed by the Board of Directors for approval.

## 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](http://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).



# Monthly Star Report

## By Dave Nakamoto

Nights are still long as the Sun sets around 5:30pm. Venus is low in the southwest, the only easily visible planet left in the evening skies. It is extraordinarily bright, but this is nothing compared to what it will show in a few more months. Through a telescope, Venus appears as a slight gibbous phase, just like the Moon does, but it is a lot smaller than the Moon, so magnifications of over a hundred are needed to see it. Alas, this is the only thing you'll see on Venus, because it is completely shrouded in clouds, so it presents a blank white disk. Still, seeing our closest planetary neighbor is worth a look.

Mercury puts in an evening appearance around the middle of the month, although it is a lot lower in the west than Venus is, setting around 6:50pm after the Sun on the 14<sup>th</sup>. It'll be about ten degrees above the horizon, about the width of your hand held horizontally. Mercury is also at half phase, like Venus, but not for long. You only have a week before and after the 14<sup>th</sup> to see it before it becomes too low in the sky, and even then you may need a pair of binoculars to spot it. To see its disk you'll need a telescope with 100x magnification.

Of the bright stars, on the 15<sup>th</sup> around 6pm you'll see Capella high overhead, orangish Betelgeuse towards the south, and white Rigel further to the south. Sirius, the brightest star in the sky, is the sparkling one in the southeast. It often throws colors around, reds and greens mostly, as the earth's turbulent atmosphere breaks up its light. Being the brightest star in the sky, Sirius is affected by this more than most. Along the horizon to Sirius' left is Procyon, also white in color. Above Procyon are the bright star of the constellation Gemini, Castor being the fainter one, and Pollux alongside it.

The moon always presents a fascinating and ever changing panorama of shifting shadows and differences in greys across its surface, especially along the line between lunar daylight and night, known as the terminator long before a certain Austrian made that word famous. The Lunar Cycle for February is listed below.

First Quarter – 1<sup>st</sup>

Full Moon – 8<sup>th</sup>

Last Quarter – 15<sup>th</sup>

New Moon – 23<sup>rd</sup>

Continued on next page

The Orion Nebula is still the deep sky object most beginners see first, due to their receiving telescopes and binoculars as Christmas presents. It is roughly between Betelgeuse and Rigel, south of the three stars forming Orion's belt, and south of there along a line of three much fainter stars forming the sheath of his sword. Even binoculars will show it as more than a star, and larger telescopes will show more, but don't expect to see it as it is in the photographs. Photos of any object in the night sky are not what the eye sees. Planets are not as garishly colored, show as much detail, or appear as sharp. Deep sky objects like the Orion Nebula are never as bright or as have high contrast. But what the eye can do is pick out subtle details, like patterns in a cloud.

For those without telescopes, the Los Angeles Astronomical Society (LAAS) operates the Garvey Ranch park observatory, located just off the park's east parking lot. It's open to the public every Wednesday night from 7:00 PM to 9:45 PM except for certain holidays. The observatory has an 8-inch wide 9-foot long refracting telescope to look through, weather permitting, along with a 4-inch scope used to image objects. People often set up their own telescopes out on the lawn beside the observatory. There's a telescope making workshop on the ground floor, with instruction provided on how to make your own. Volunteers from the 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!

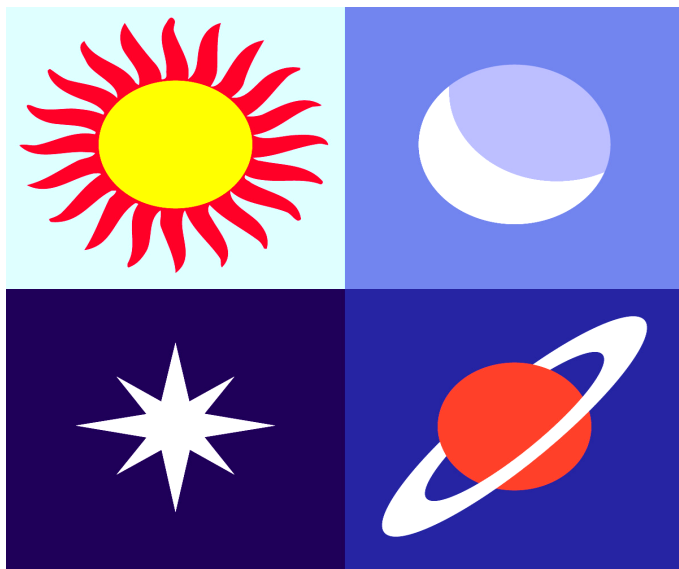


*David Nakamoto has been observing the heavens through various scopes since he was in the 5<sup>th</sup> grade. He can be reached at*

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



# Almanac



**February 9 - 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 07:34 UTC. This full moon was known by early Native American tribes as the Full Snow Moon because the heaviest snows usually fell during this time of the year. Since hunting is difficult, this moon has also been known by some tribes as the Full Hunger Moon, since the harsh weather made hunting difficult. This is also the first of four supermoons for 2020. The Moon will be at its closest approach to the Earth and may look slightly larger and brighter than usual.

**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](#)**

**February 10 - Mercury at Greatest Eastern Elongation.** The planet Mercury reaches greatest eastern elongation of 18.2 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 evening sky. Look for the planet low in the western sky just after sunset.

**February 23 - 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 15:33 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-2019.html>

All LAAS members are invited to write articles about any astronomical events for our monthly newsletter. All articles of interest will become historical documents as each Bulletin is archived by our Club Historian, Lewis Chilton.

Please share any articles by sending them to

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

The deadline for all articles is the 18th of every month and you are welcome to send them in before that date.

Our club newsletter cannot exist without your contributions and appreciated by your fellow members.



# February 2020

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1 Public Star Party
2	3	4	5 Garvey Nights Board Meeting	6	7	8
9	10 General Meeting	11	12 Garvey Nights	13 Outreach: Pasadena	14 Valentine's Day 	15
16	17	18	19 Garvey Nights	20	21	22 Dark Sky Night
23	24	25	26 Garvey Nights	27	28 Outreach/ Highland Park	29 Public Star Party

## 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 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

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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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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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