



THE LOS ANGELES ASTRONOMICAL SOCIETY

THE BULLETIN

MARCH, 2020
VOLUME 94, ISSUE 03



Mars played hide and seek with the Moon early this morning! This image was taken about 15 minutes after Mars popped out from behind the Moon.

Photo Credit: Nasir Jeevanjee

February 18, 2020

Public Star Party

March 28, 2020 - 2 PM to 9:45 PM

Lockwood Committee Meeting

March 4, 2020 7PM –8PM

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 and volunteer today. Please check the monthly calendar to find an event near you.

In This Issue

Betelgeuse and the Crab Nebula.....	Pages 2-3
What's Up At Garvey?	Page 4
The Rosette Nebula	Page 5
ISS Overhead.....	Page 6
Southern Hemisphere Nebula	Pages 7-8
From The LAAS Archive	Pages 9-10
Meet the New Members	Page 11
Monthly Star Report	Pages 12-13
Almanac	Page 14
Calendar of Events	Page 15
The LAAS Outreach & Club Swag.....	Page 16
Amazon Smiles & Astro Magazines.....	Page 17
Club Contacts & Social Media Links.....	Page 18
Mailer	Page 19

New Contact Info?

If you have recently moved, changed your email address or phone number, please contact our club secretary at 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.

Betelgeuse and the Crab Nebula: Stellar Death and Rebirth

By David Prosper

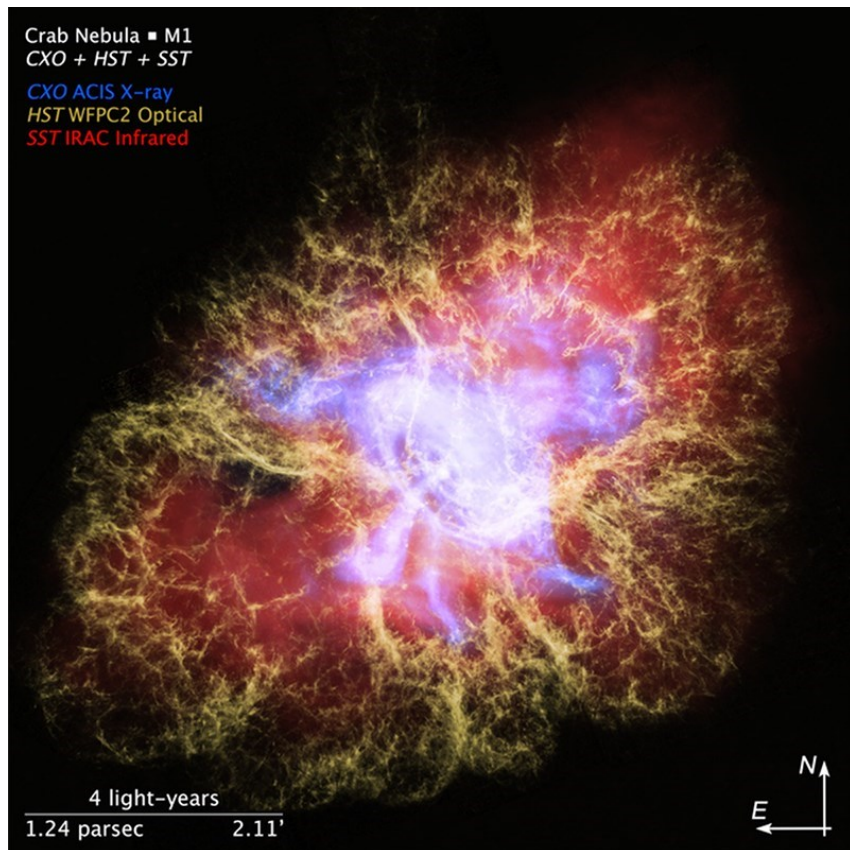
What happens when a star dies? Stargazers are paying close attention to the red giant star Betelgeuse since it recently dimmed in brightness, causing speculation that it may soon end in a brilliant supernova. While it likely won't explode quite yet, we can preview its fate by observing the nearby Crab Nebula.

Betelgeuse, despite its recent dimming, is still easy to find as the red-hued shoulder star of Orion. A known variable star, Betelgeuse usually competes for the position of the brightest star in Orion with brilliant blue-white Rigel, but recently its brightness has faded to below that of nearby Aldebaran, in Taurus. Betelgeuse is a young star, estimated to be a few million years old, but due to its giant size it leads a fast and furious life. This massive star, known as a supergiant, exhausted the hydrogen fuel in its core and began to fuse helium instead, which caused the outer layers of the star to cool and swell dramatically in size. Betelgeuse is one of the only stars for which we have any kind of detailed surface observations due to its huge size – somewhere between the diameter of the orbits of Mars and Jupiter - and relatively close distance of about 642 light-years. Betelgeuse is also a “runaway star,” with its remarkable speed possibly triggered by merging with a smaller companion star. If that is the case, Betelgeuse may actually have millions of years left! So, Betelgeuse may not explode soon after all; or it might explode tomorrow! We have much more to learn about this intriguing star.

The Crab Nebula (M1) is relatively close to Betelgeuse in the sky, in the nearby constellation of Taurus. Its ghostly, spidery gas clouds result from a massive explosion; a supernova observed by astronomers in 1054! A backyard telescope allows you to see some details, but only advanced telescopes reveal the rapidly spinning neutron star found in its center: the last stellar remnant from that cataclysmic event. These gas clouds were created during the giant star's violent demise and expand ever outward to enrich the universe with heavy elements like silicon, iron, and nickel. These element-rich clouds are like a cosmic fertilizer, making rocky planets like our own Earth possible. Supernova also send out powerful shock waves that help trigger star formation. In fact, if it wasn't for a long-ago supernova, our solar system - along with all of us - wouldn't exist! You can learn much more about the Crab Nebula and its neutron star in a new video from NASA's Universe of Learning, created from observations by the Great Observatories of Hubble, Chandra, and Spitzer: bit.ly/CrabNebulaVisual

Our last three articles covered the life cycle of stars from observing two neighboring constellations: Orion and Taurus! Our stargazing took us to the “baby stars” found in the stellar nursery of the Orion Nebula, onwards to the teenage stars of the Pleiades and young adult stars of the Hyades, and ended with dying Betelgeuse and the stellar corpse of the Crab Nebula. Want to know more about the life cycle of stars? Explore stellar evolution with “The Lives of Stars” activity and handout: bit.ly/starlifeanddeath .

Continued on next page...



This image of the Crab Nebula combines X-ray observations from Chandra, optical observations from Hubble, and infrared observations from Spitzer to reveal intricate detail. Notice how the violent energy radiates out from the rapidly spinning neutron star in the center of the nebula (also known as a pulsar) and heats up the surrounding gas. More about this incredible “pulsar wind nebula” can be found at bit.ly/Crab3D Credit: NASA, ESA, F. Summers, J. Olmsted, L. Hustak, J. DePasquale and G. Bacon (STScI), N. Wolk (CfA), and R. Hurt (Caltech/IPAC)

Spot Betelgeuse and the Crab Nebula after sunset! A telescope is needed to spot the ghostly Crab



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 to find local clubs, events, and more!

What's Up At Garvey?

By Dave Nakamoto

February 13, 2020

At Garvey Ranch park observatory this Wednesday.

I probably should have known better. From December of 2018 to this month, I've tried to view four comets visually, but only one was seen, and that was NOT through the Garvey Ranch scopes, but my 7-inch Mak at, believe it or not, Griffith Observatory!

Last Wednesday, I went for PanSTARRS C/2017 T2. "C/2017 T2" means it was discovered in the year 2017, in the 20th half-month (T) of that year, so second half of October, and it was the second comet discovered in that two week period.

It was listed as 9th mag, but it wasn't. The comet is just above center, with some stars around it marked with their brightness (called magnitudes by astronomers) for comparison. It was not visible at all in the 8-inch f/12 refractor with a 50mm eyepiece.

Still, not bad for such light polluted skies - athletic field right next door with field lights, trees and lots of street and house lighting within 100 yards of the place,.

120 seconds total exposure time, 10 seconds per individual image.



The Rosette Nebula

Nasir Jeevanjee



Rosette Nebula imaged from backyard in narrowband and processed using Hubble Palette.

Ha 60 mins

O3 20 mins

S2 12 mins

Photo credit: Nasir Jeevanjee

Date: January 31, 2020

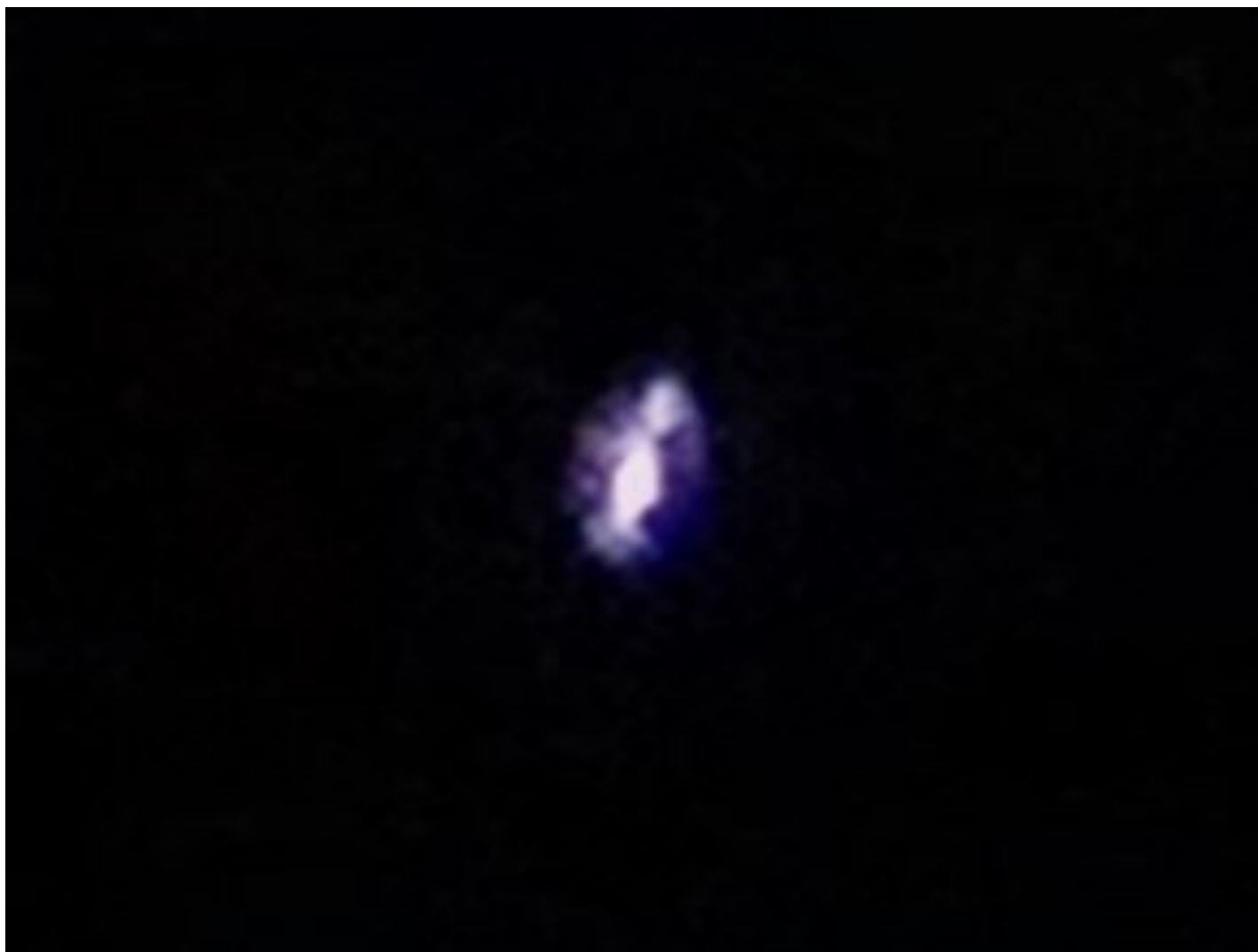
ISS Overhead

Zoly Dobrovics

The other day (Feb 8th) when we had the almost completely overhead ISS pass from the NW to SE (from NoHo), I just jumped outside and took few pictures and I thought, oh this is just that shiny spot that I can never properly focus on, so I almost threw away all the images today when I downloaded them from my camera.

However, on two pictures the spots were not so shiny and were very small, so I decided to zoom in before discarding the pictures, and I found this (zoomed in).

Photo credit: Zoly Dobrovics



Before reached overhead.

1/200sec; f/6.3 215mm; ISO3200

Southern Hemisphere Nebula

By Brian Paczkowski

A couple of spectacular nebula in the Southern Hemisphere that I've recently acquired with a telescope I'm renting in Chile.



The Keyhole in the Carina Nebula in the southern constellation of Carina. The Carina Nebula is almost 4 times of the size of the Orion Nebula! This is a beautiful complex area of bright and dark nebulosity. This nebula is located about 8,500 LYs from Earth. This is a Ha+OIII+SII+L+RGB composite made from 20 hours of data. Image acquired using a 17" CDK telescope I'm renting located in Chile. Processed in PixInsight. (Planewave 17" CDK, Paramount ME mount, SBIG STXL11002

Photo Credit: Brian Paczkowski



The beautiful region within the Large Magellanic Cloud (LMC), a satellite galaxy of the Milky Way, located about 163,000 light-year away from Earth in the southern constellation of Dorado (the Swordfish). This image contains several bright nebulae, NGC 2014 (red nebula on left), NGC 2020 (blue bubble-like emission nebula), NGC 2021, and NGC 2032 (Seagull Nebula, right center). Image acquired using a 17" CDK telescope I'm renting located in Chile. This is a Ha+OIII+RGB composite made from 27 hours of data. Processed in PixInsight. (Planewave 17" CDK, Paramount ME mount, SBIG STXL11002 camera)

Photo Credit: Brian Paczkowski

From the LAAS Archive
By Lew Chilton, Club Historian



Shelley Stody's 9.5-inch Zeiss refractor mounted atop his 1932 Ford business coupe, presumably photographed in Los Angeles in the late 1930s. (source: unknown)

LAAS ARCHIVE

The Pasadena Post

THURSDAY, AUGUST 6, 1936

13

SPORTS AND FINANCIAL
WIRE NEWS SERVICE

HUNDREDS TAKE INTIMATE PEEK AT PELTIER'S COMET



The crowd which attended The Pasadena Star-News and Post comet party at Tournament Park last night was even larger than the gathering of "first-nighters" Tuesday. The hundreds of persons who joined the star-gazers on both nights were rewarded by a clear view of the astronomical phenomenon through the half-dozen telescopes provided by amateur astronomers. In the above photo a crowd is shown grouped around one of the instruments. Expert information was given by the two hosts, Dr. Seth B. Nicholson and Dr. R. S. Richardson, both of Mt. Wilson Observatory. Among the gathering of school students, business and professional men, teachers and housewives were several distinguished members of the Mt. Wilson Observatory staff, including Mr. and Mrs. Milton Humason, and Wendell P. Hoge, retired, formerly in charge of the public nights at Mt. Wilson Observatory. Mrs. Walter S. Adams, wife of the Observatory director, brought her two sons, Edmund and John, to the comet party.

WENDELL P. HOGE, MENTIONED IN THE ACCOMPANYING CAPTION, WAS AN HONORARY MEMBER OF THE LAAS. HE WAS A GUEST SPEAKER AT OUR MEETINGS ON A NUMBER OF OCCASIONS AND WAS OUR HOST WHENEVER WE TOOK A TOUR OF MT. WILSON OBSERVATORY. AFTER HIS DEATH 1939, HIS SON EDISON R. HOGE WAS OUR HOST DURING MT. WILSON FIELD TRIPS.

LEW CHILTON

Meet The New Members

Welcome to the LAAS!



Christine Seror and John
Birnbaum

Benjamin Boles

Sophia Green

Polina Titenko

Gregory Nowell

Mark Salsman

William Fishman

Gregg Whittmann

Stephen Katz

Jeremias Agosto and Family

Rosa Hernandez

Ho Yin Tam

Gregory Hume

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 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.



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 14th. 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 14th 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 15th around 6pm you'll see Capella high overhead, orange'ish 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 – 1st

Full Moon – 8th

Last Quarter – 15th

New Moon – 23rd

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.

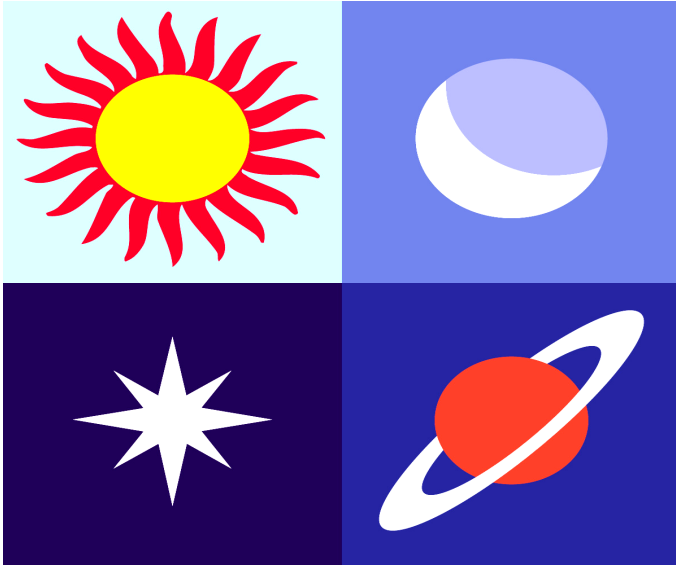
For those without telescopes, the Los Angeles Astronomical Society (LAAS) operates the Garvey Ranch park observatory, located just off the park's east parking lot. It's open to the public every Wednesday night from 7:00 PM to 9:45 PM except for certain holidays. The observatory has an 8-inch wide 9-foot 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 5th grade. He can be reached at

dinakamoto@hotmail.com.

Almanac



March 6 - 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 16:04 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.

March 20 - March Equinox. The March equinox occurs at 21:58 UTC. The Sun will shine directly on the equator and there will be nearly equal amounts of day and night throughout the world. This is also the first day of spring (vernal equinox) in the Northern Hemisphere and the first day of fall (autumnal equinox) in the Southern Hemisphere.

March 21 - 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 01:43 UTC. This full moon was known by early Native American tribes as the Full Worm Moon because this was the time of year when the ground would begin to soften and the earthworms would reappear. This moon has also been known as the Full Crow Moon, the Full

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 the members of the Los Angeles Astronomical Society.

This is a free event for the public.



March 2020

	Mon	Tue	Wed	Thu	Fri	Sat
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i> Garvey Night Lockwood Committee Board Meeting	<i>5</i>	<i>6</i>	<i>7</i>
<i>8</i>	<i>9</i> General Meeting	<i>10</i> Outreach in Commerce	<i>11</i> Garvey Night	<i>12</i>	<i>13</i>	<i>14</i>
<i>15</i>	<i>16</i>	<i>17</i>	<i>18</i> Garvey Night	<i>19</i>	<i>20</i>	<i>21</i> Dark Sky Night
<i>22</i>	<i>23</i>	<i>24</i>	<i>25</i> Garvey Night	<i>26</i>	<i>27</i> Outreach in Sierra Madre Outreach in East L.A.	<i>28</i> Public Star <i>Party</i>
<i>29</i>	<i>30</i>	<i>31</i>				

LAAS Outreach Program

The mission of LAAS is to promote interest in and advance the knowledge of astronomy, optics, telescope making and related subjects. In furtherance of its mission, LAAS conducts public star parties and other outreach events that are intended to enhance the public's understanding of astronomy and its enjoyment and appreciation of the beauty and wonders of our universe.



We provide outreach events at local schools, Griffith Observatory, Mt. Wilson Observatory, various state and county parks, and community events.

Join our Outreach team of volunteers today.

Contact Heven Renteria, our Outreach Coordinator at Outreach@LAAS.org



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

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

LAAS Club Swag

LAAS 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

President: Curtis Byrom

Cbyrom484@yahoo.com

Vice President: Alecia Hurst

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

Youth Coordinator: James Rochford

jcrochford@gmail.com

Webmaster: Steve Dashiell

webmaster@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

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



Instagram



YouTube

twitter

**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

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

PLACE
STAMP
HERE

To: