



THE LOS ANGELES ASTRONOMICAL SOCIETY

THE BULLETIN

MAY, 2017

VOLUME 91, ISSUE 5



Photo Above: Single image of Comet 41P/Tuttle-Giacobini-Kresak from Lockwood this weekend...2 minute exposure ISO 6400--unguided.



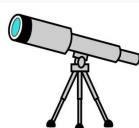
Don't miss the annual Riverside Telescope Makers Conference in Big Bear, CA

May 25 - May 29, 2017

This year's theme: The Day the Sun Disappears

Visit the event page for more information:

<http://rtmcastronomyexpo.org/>



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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 beauties and wonders of our universe.



Shot of M81 from this weekend--stack of 14 120 second exposures @ ISO 800 -- uguided. (Lockwood, April 1, 2017)

Photo Credit: Spencer SooHoo.

MT. WILSON NIGHTS ARE BACK!

Make Your Reservations Soon!

60 Inch Nights:

~~Friday 4/21 (Half)~~

Saturday 5/20 (Full night)

Saturday 6/24 Imaging Session- 4 Spots Open!

Friday 7/21 (Half)

Saturday 9/16 (Half)

Saturday 10/28 (Half) (Moon night!)

Saturday 11/11 (Half)

100 inch nights:

Friday 6/23 (Half)

Email Darrell before using the
PayPal link to guarantee space
available.

Contact Darrell Dooley at Mtwilsoncoordinator@laas.org
for further information



BIG THANKS to NASA's Night Sky Network for sending the LAAS their new Solar Kit to help us with our outreach efforts in our Community! The Solar Kit is loaded with free eclipse viewing glasses, JPL handouts and posters, pinhole projector postcards, the "Yardstick Eclipse" props and more!

If you are interested in using any of the material from the box, please contact Heven Renteria or John O'Bryan, as the box will be turned over to our Outreach team and our Treasurer.

Below, you'll find links for more information about the kit and how to use the material received.



Packed full of eclipse goodies for the LAAS!
Photo credit : Vivian White/NSN

On Monday, August 21, 2017, the Moon will pass in front of the Sun, casting its shadow across all of North America. This will be the first total solar eclipse visible in the contiguous United States in 38 years. You won't want to miss it.

The Night Sky Network and Astronomical Society of the Pacific are creating and curating information for amateur astronomers and other informal educators. Below you'll find a presentation designed to prepare communities off the path of totality. There are also postcards that can be edited to include your organization's information and sent to a printer.

[Download Presentation: "An Eclipse to Remember"](#) (PPTX, 20.71 MB)

[Download Eclipse Postcard to customize and print](#) (PDF, 1.56 MB)

[NASA's official Eclipse site - science, safety, and events](#)

[Yardstick Eclipse Activity to model eclipses](#)

[Handouts for the eclipse - eye safety and observing from AAS](#)

[Planning to drive to the path? This will help.](#)

[Prepare to view a Solar Eclipse with the Exploratorium](#)

[Free Eclipse Observing Guide](#)

Source: https://nightsky.jpl.nasa.gov/download-view.cfm?Doc_ID=588

(Log in to your NSN account to view the link above.)



Spring Has Sprung – Observing Has Begun

by: Ray Blumhorst

After about two weeks of days without sunspots, the sun erupted in a flurry of activity around the beginning of April, impressing solar observers and challenging astro-imagers. The activity seemed to herald the end of a long rainy winter and the beginning of springtime.

After a Southern California winter with lots of welcome rainy days, it's also welcome to see the sunshine return, accompanied by warmer weather, and hopefully better viewing days and nights. It's a time of year when old telescopes are being dusted off and new telescopes and eyepieces are seeing their first light. It's a time when memories are being tested and learning curves are beginning.



The orange flower in this amateur astronomer's backyard seems to be mimicking the Sun on which it's so dependent, and which the amateur astronomer is trying so hard to image.

The flower closes up at night when the Sun goes down, then it opens up to the Sun during the day - even having a Sun like resemblance in its color and the way its petals imitate sunrays. It's amazing how such a gigantic and powerful object that's so far away can delicately give life through photosynthesis to such a tiny, fragile life form here on Earth. This is our universe and world, both great and small.

1947–1971: The L.A.A.S. Griffith Years of Telescope Making

by Lewis Chilton, the LAAS History Detective

A core activity of the Los Angeles Astronomical Society has always been telescope making. In fact, that was its *raison d'être* in 5³ 6⁰ when it was founded as the Amateur Telescope Makers' Society. By 1939, after a few name changes, it finally became the Los Angeles Astronomical Society, but telescope making remained an important activity.

When this picture was taken in about 1929, the LAAS was known as the Amateur Telescope Makers' Society. Seen here is its telescope-making workshop, located in the basement of Central Junior High School, 451 North Hill Street in downtown Los Angeles.

(This and all other images appearing in this article are from the LAAS digital archive.)



Although the making of telescopes has been a constant over the years, its venues have not. From a junior high school basement in downtown L.A. (1928 to 1930), LAAS president Archie Newton's backyard workshop-meeting place (1931 to 1947), Griffith Observatory's basement (1947 to 1971), followed by a few temporary locations around L.A., and, finally, Garvey Ranch Observatory in Monterey Park for the last 30 years (1987 to present), it would seem that its long standing desire for a permanent workshop, club house and observatory has finally been realized.

In 1947, the LAAS was about to lose its meeting place and workshop because its host, Archie Newton, was soon to retire and relocate. After notifying the LAAS that it would have to find new digs, the Griffith Observatory's director, Dr. Dinsmore Alter, invited the organization to make Griffith its permanent home. Meetings would be held in the planetarium theater on the second Tuesday of each month when the observatory was closed to the public, and space would be allocated in a corner of the basement for telescope making activities. Dr. Alter even provided a large display case in the Halls of Science. Although the LAAS had a few prior meetings at Griffith, it became a permanent meeting place on Tuesday, October 14, 1947 when William H. Christie of Mount Wilson Observatory spoke about the atomic bomb test at Bikini Atoll. The basement shops followed in December.

In the October 1950 *Scientific American* magazine, in the "The Amateur Astronomer" column edited by Albert G. Ingalls, LAAS executive secretary Harry Freeman described the new basement shops at Griffith.

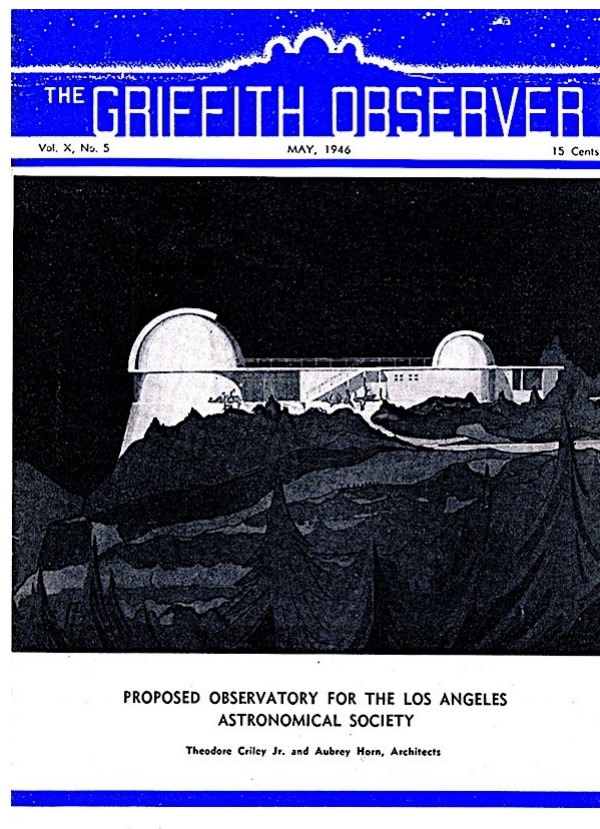
"We have about 750 square feet of shop area in the Griffith Observatory, divided into a large general shop, a small polishing room, a small office and a hall for testing. Telescope-making activities are carried out in the main room, which contains a quick-change, nine-inch swing, 54-inch bed lathe and its accessories; two drill presses, of which one is a high-speed precision type; a power-driven vertical spindle carrying a horizontal steel lapping wheel for surface-grinding glass to rough plane surfaces; a power-driven, two spindle grinding and polishing machine, with pans for submerged polishing, capable of working 12-inch mirrors; three pedestals for hand grinding; a heavy workbench with bench grinder; a sink, a two-burner gas plate, a compressed air outlet for spray painting, a mercury vapor lamp and flats for testing, storage cabinets, and hand tools.

“In the polishing room is another polishing machine, a sink with hot and cold water, and a gas plate for melting pitch. No activities not connected with polishing are permitted in this room. Entry is forbidden to anyone coming from the grinding shop, and entry by others is discouraged.

“In a hall is the Foucault equipment, which is big enough for mirrors 18-inches in diameter with a 20-foot radius of curvature. The easel that supports the mirror being tested slides on a heavy metal track in a curtained tunnel. The design provides for direct reading of the radius of curvature of the mirror from the knife-edge at the observer’s seat... Our Foucault test device has proved most satisfactory and is absolutely free from vibration.

“Nearly all our members have telescopes or are making them. We sell telescope mirror-making kits, abrasives and polishing materials to members at a modest increase over costs. Since our Society is a nonprofit organization and pays no salaries, the profits from such sales are used in the purchase and upkeep of shop equipment, to defray the costs of awards and prizes and to add to our building fund, which ultimately will enable us to build our own quarters and observatory. Mr. Ingalls is correct in saying that most of the amateur groups built up their facilities by patience and hard work.”

A proposed observatory, clubhouse and workshop of the Los Angeles Astronomical Society, as depicted on the cover of the May 1946 *Griffith Observer* magazine. The 1946 dream was partially realized a year and a half later with a permanent meeting place at Griffith Observatory. But its own dark-sky observing site would have to wait another 23 years, and a clubhouse-workshop-observatory another 17 years after that.



Ingalls noted that Freeman’s last statement was made because it has sometimes been wrongly supposed that amateur telescope-making organizations that have been furnished free quarters by planetariums are also supported by them. Ingalls ends his commentary about the LAAS on an historical note: Los Angeles was the first community to organize a telescope-making group (1926), after the pioneering Telescope Makers of Springfield, Vt. (1923). [And they are still both alive and well! –L.C.]



Harry L. Freeman (1888-1953) was a longtime amateur astronomer and maker of telescopes and accessories. He built his first telescope, a 7½-inch reflector, in his native Detroit, Michigan in 1931, followed by many more. He settled permanently in Los Angeles in 1936, joined the LAAS in 1939, served as its president in 1947, served for three additional years as secretary-treasurer and was very active in LAAS telescope-making activities. At the time of his death, he was a board member of the Western Amateur Astronomers and a director of the Astronomical Society of the Pacific.

How many LAAS members and visitors descended those steps into the bowels of Griffith Observatory from 1947 to 1971? For 24 years, hundreds – perhaps even more – learned the arcane art of mirror making from members Tom Cave, Harry Freeman, Frank Grow, Joe Miller, Charlie Chinzi, Bill Kunkel, Fred Aldridge, Dave Balogh and Lew Chilton, among others.

On a personal note, it was in 1958 that I first descended those stairs as a visitor, only eight years after Freeman's *Scientific American* article. Joe Miller was the shop director. I don't remember the shops quite the way Freeman described them. There was no small office and some of the polishing and grinding machines had been moved about or completely removed. In the larger mirror grinding room, a small Southbend flat-belt metal lathe, a small drill press, and bench grinder were mounted on a very sturdy workbench. (The workbench and drill press still survive at the Garvey Ranch Observatory workshop.)

It wasn't until 1960 that I descended those stairs again to begin pushing glass in earnest under the guidance of Fred Aldridge and Bill Kunkel. Many of those mirror makers went on to distinguished careers in astronomy, education and the professions. And a number of them even founded telescope manufacturing firms like Cave Optical Co. (Tom Cave), The Optical Craftsmen (Dick Nelson), Celestron-Pacific (Tom Johnson) and Stellarvue (Vic Maris). Can you think of any others? It was a sad day when those shops closed.



LEFT: A new crop of mirror makers in the basement of Griffith Observatory in 1954. Longtime member Russ Schnitzer is 4th from right, and shop director Frank Grow is the older gentleman in far corner.



RIGHT: Polishing room in the basement of Griffith Observatory, c. 1961. From right, Pat Jacoby, Sheldon Hall and longtime member, Ron Thomas. Identity of the two glass pushers on

Outreach Report - April 8, 2017



I took pics at the Altadena Outreach. The Girl Scouts were having a Hogwarts event and star party. We looked at the following: Moon, Jupiter and it's moons, Orion Nebula, Betelgeuse, Beehive Open Cluster, Double star Mizar and Alcor in the Big Dipper. Really fun event with girls in Hogwarts cosplay. Complete with wands.

Elizabeth Wong/LAAS



Outreach Report - Farragut Elementary

Farragut Elementary School (Culver City)

Date: Thursday, April 13, 2017

Report by Van Webster/LAAS

The intrepid Los Angeles Astronomical Society's Outreach Team ventured to the Westside for an evening of stargazing at Farragut Elementary School in Culver City. Arriving to the campus a little before 6:00 PM several members had set up solar telescopes and were ready for the students to observe our nearest star.

Unbeknownst to the astronomers, the school scheduled the event from 7:30 to 8:30 so we stood around and watched the clouds dissipate, while cold, gusty winds made jackets a necessity. The school organizers did provide a pizza and mixed green salad dinner so we chowed down while waiting for dark.



Sirius was the first target of the night. Those with computerized telescopes were able to get Mars fairly early. A large school building blocked the view to the east. Some maneuvering with the telescope placement brought Jupiter with the four Galilean moons into view. Later targets included M42 and M45.



While this event was held at an elementary school, the participants were mostly from the older grades. The students were both engaged in the process and knowledgeable about the night sky. The parents were also eager participants and queried the astronomers in lively conversations about all things stellar. More than a few parents had misconceptions about the solar system that were clarified by the end of the evening.

At 8:30 the crowd of about 75 had headed for home and the LAAS team packed up our gear and headed out after another successful outreach event.

Eclipse Resources and Links



Image Credit: [Oregon State University - Solar eclipse, CC BY-SA 2.0.](#)



LAAS 2017 Total Solar Eclipse Tour: *Info Fest and Meeting*

Monday, June 12, 2017

- 7:00 PM !!!! (NOT a typo! Please be there on time!)
- Griffith Observatory - Leonard Nimoy Event Horizon Theater, lower level
- *LAAS ID Required - Show LAAS Membership Card or name badge.*
- *Parking free in the main Observatory lot if you are on time and show LAAS ID.*

This is your big chance to get everything you need from the Eclipse Committee! Meet and network with other participants, pick up and buy extra t-shirts, get overloaded with information, and much more! (Bring your note-taking implements!) Mark your calendar [today!](#)

LAAS members who are not signed up for the Tour are also welcome to attend, though understand that the focus of information and activities will be for Tour participants. Everyone must show LAAS Identification for entry. *No guests or visitors allowed for this event.*

Meet
Our
New
Members



Omar Altawaty

The Riggs Family

Ian Murphy

Bob and Jamie Brownstone

Brian Brown

Mary Arocena and Justin Patterson

Jose Aguilar

Edgar Gonzalez

Mana Al Sarrar



Remember to renew your membership once you receive notice from the Club Secretary. Use this link to learn how to renew your membership: <https://fs30.formsite.com/LAAS/MemberRenewal/index.html>

SUBSCRIBE

Astronomy Magazine Subscriptions

Sky and Telescope renewals should be sent directly to Sky Publishing.

To start a subscription at club rates, send a check payable to "Sky & Telescope" in the amount of \$32.95 for a one year subscription to:

Los Angeles Astronomical Society

C/O Griffith Observatory

2800 East Observatory. Road

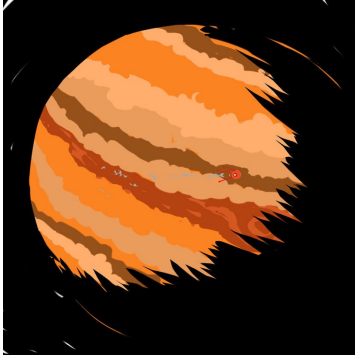
Los Angeles, 90027

ATTN: Treasurer

Be sure to include the exact name and mailing address for your subscription. Then, thereafter, send the renewal bills directly to Sky Publishing. **For a club rate subscription to Astronomy**, send a check payable to Kalmbach Publishing Co. in the amount of \$34 for one year or \$60 for two years to the above address. Be sure to include the exact name and mailing address for your subscription. That magazine also requires later subscription renewals to be handled through the LAAS Treasurer.

A Guide To the Night Sky for May 2017

By Tre Gibbs



Jupiter, The Roman King of the Gods, is back and putting on a brilliant show for observers here on planet Earth. So much to say about this amazing world, it's hard to know where to begin...

Jupiter is a giant ball of gas. When you see Jupiter's surface in pictures or through a telescope, you are looking at the tops of clouds. In fact, the famous Great Red Spot is a huge, 350 year old storm, roughly the size of Earth.

Jupiter has about 67 moons, four of which can be seen with a pair of binoculars - if you observe them on a clear, wind-less night and you also hold those binoculars very still. The astronomer Galileo Galilei discovered them back in 1609 (or 1610) using a modest telescope. He first assumed they were simply background stars - until he observed that they appeared to travel across the sky with Jupiter. Since then, NASA has sent spacecraft to actually study those moons and as a result, scientists have recently confirmed that at least one of those moons, Europa, has a huge subsurface ocean - and potentially, some form of life!

You think time flies here on Earth? A day on Jupiter lasts less than half of ours. The giant planet completes one full rotation on it's axis in just under 10 hours, which causes it's middle to bulge slightly. In contrast, a year on Jupiter would last the equivalent of about twelve Earth years, since that's how long it takes Jupiter to orbit the sun. Someone 54 years old on Earth would only be 4 and a half on Jupiter!

Jupiter has a ring system, although it's nothing like Saturn's magnificent ring system. Jupiter's rings are made of dark, reddish dust while Saturn's rings are made of 99% water ice, which reflects sunlight extremely well, making them brilliant and very obvious. Because Jupiter's rings are so dark, only a closeup photo will render them visible.

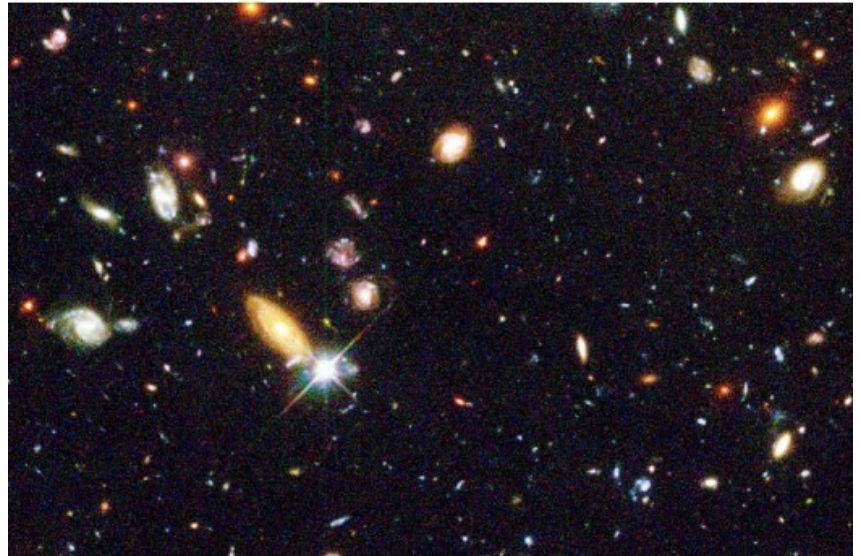
Finally, Jupiter is big. REALLY big. Jupiter is the largest planet in our Solar System - approximately eleven Earth's could fit across it's widest part. And since the larger something is the more gravity it has, Jupiter often acts as a cosmic bodyguard. As life threatening objects (such as asteroids) speed through our Solar System, Jupiter's enormous gravity gently pulls those potentially deadly objects off of their trajectory, possibly saving our planet from an impact of catastrophic proportions,

Let's not forget The Moon! On May 10th, we're treated to this month's full moon, known as the "Full Flower Moon", since May is the time of year of increasing fertility - with temperatures warm enough for safely bearing young, no more frost and lots of flowers. A few days earlier, on May 7th, mighty Jupiter will accompany the Moon across the sky. Look for both in the southeast just after sunset and watch Jupiter gradually appear above and to the right of the moon, as these two cosmic beacons wander the sky as a pair, engaged in a brief but spectacular celestial interlude.

Stay tuned next month for the Summer Solstice and the return of Saturn! Until then, KEEP LOOKING UP !

A FAMILY SCRAPBOOK OF THE UNIVERSE

Universe
Discovery Guide
For May



Hubble Deep Field: The first portrait of distant galaxies from the early universe. Hubble Space Telescope. Credit: Robert Williams and the Hubble Deep Field Team (STScI) and NASA.

Discover the universe with your family and friends!

IN THIS GUIDE:

» A SCRAPBOOK OF THE SOLAR SYSTEM, GALAXY, UNIVERSE » SKY FEATURE: HUBBLE DEEP FIELD » TRY THIS! » ACTIVITY: COSMIC SURVEY » CONNECT TO NASA SCIENCE » Acknowledgements » Appendix: May Star Map

Download the May guide using the following link:

<https://nightsky.jpl.nasa.gov/docs/05UDGHubbleDeepField.pdf>

Always use [Adobe Acrobat Reader](#) to view the Guides on a computer.

NASA'S NIGHT SKY NETWORK - FREE WEBINARS

Each month, the NSN hosts a free online webinar for all registered members of the Night Sky Network.

May 17, 2017 (Wednesday) - Save the date!

9:00 PM Eastern/ 6:00 PM Pacific

NASA's Eyes with Kevin Hussey from NASA JPL

[YouTube Playlist : All NSN Astronomy Webinars](#)

[All Past Webinars and Resources on NSN](#)

Almanac



May 6, 7 - Eta Aquarids Meteor Shower. The Eta Aquarids is an above average shower, capable of producing up to 60 meteors per hour at its peak. Most of the activity is seen in the Southern Hemisphere. In the Northern Hemisphere, the rate can reach about 30 meteors per hour. It is produced by dust particles left behind by comet Halley, which has known and observed since ancient times. The shower runs annually from April 19 to May 28. It peaks this year on the night of May 6 and the morning of the May 7. The waxing gibbous moon will block out many of the fainter meteors this year. But if you are patient, you should be able to catch quite a few of the brighter 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 10 - Full Moon. The Moon will be located on the opposite side of the Earth as the Sun and its face will be fully illuminated. This phase occurs at 21:42 UTC. This full moon was known by early Native American tribes as the Full Flower Moon because this was the time of year when spring flowers appeared in abundance. This moon has also been known as the Full Corn Planting Moon and the Milk Moon.

Join your fellow club members by becoming an Outreach Volunteer. It's a fun and very rewarding experience for all club members. For more information, contact Heven Renteria at

Outreach@laas.org

May 17 - Mercury at Greatest Western Elongation. The planet Mercury reaches greatest western elongation of 25.8 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.

May 25 - 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 19:45 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-2017.html>

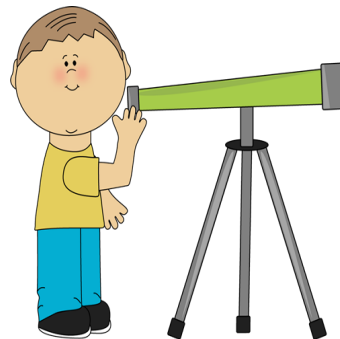
NASA Megamovie Information

Observations from the ground including high altitude observatories coupled with advanced image processing and stabilizing techniques can yield a wealth of information about the cosmos. For the 2017 eclipse a number of observing programs are being developed to explore the sun and corona through imaging and spectroscopy.

Ground-Based Operations: <https://eclipse2017.nasa.gov/ground-based-observations>

Need Help With A New Telescope?

Need help with your new telescopes or other astronomy gear? Visit the Garvey Ranch Observatory on any Wednesday night 7 PM to 10 PM for tips and assistance by your fellow LAAS members.





Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30 7:38 PM Sunset	01	02	03 7:00 PM Garvey 8:00 PM Board Meeting	04	05 6:00 PM Outreach - Temple City	06 2:00 PM Star Party
07 7:43 PM Sunset	08 7:30 PM General Meeting	09	10 7:00 PM Garvey	11	12	13
14 7:49 PM Sunset	15	16	17 7:00 PM Garvey	18	19 6:30 PM Outreach - Porter Ranch	20 9:00 AM JPL 6:00 PM 60 Inch Night
21 7:54 PM Sunset	22	23	24 7:00 PM Garvey	25 9:00 AM RTMC	26	27 5:00 PM Dark Sky Night
28 7:59 PM Sunset	29	30	31 7:00 PM Garvey	01	02 7:00 PM Outreach - East LA	03 2:00 PM Star Party

LAAS Members: Please log on to the Night Sky Network (NSN) to view all private and outreach events on the calendar.

Be advised all scheduled events may not be visible on the calendar above.

If you have not registered on the network, please follow this link and register today:

https://nightsky.jpl.nasa.gov/club-apply.cfm?Club_ID=1344&ApplicantType=Member

Club Contact Information

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213- 673-7355 - Checked daily

Griffith Observatory:

213-473-0800

Sky Report:

213-473-0880

Lockwood Site:

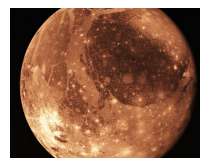
661-245-2106

Not answered, arrange time with caller.

Outgoing calls – collect or calling card



Click on one of the images below to view hyperlinks attached for information about astronomy and for fun.





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