



THE LOS ANGELES ASTRONOMICAL SOCIETY

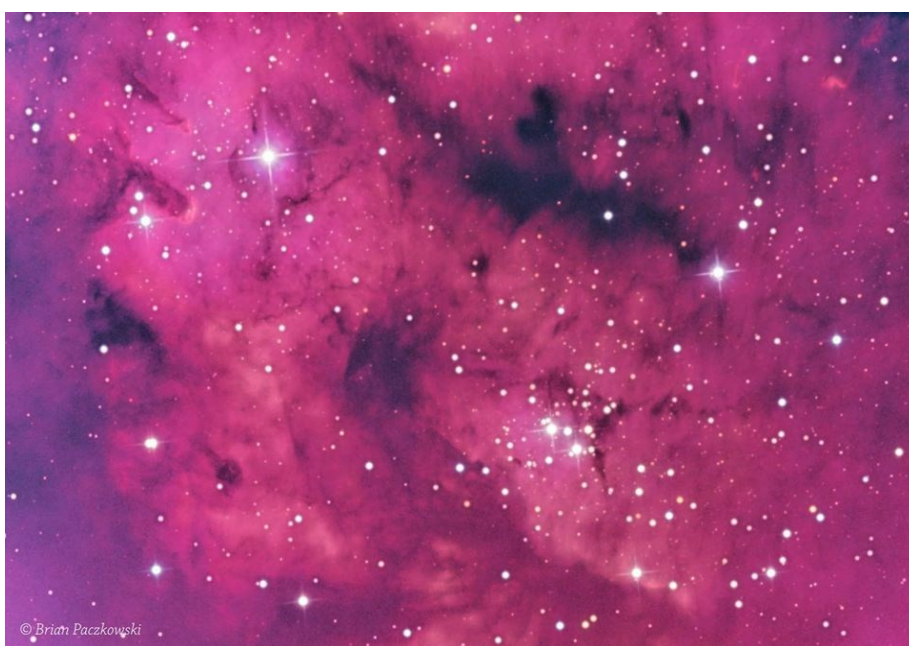
THE BULLETIN

DECEMBER, 2019

VOLUME 93, ISSUE 12

In This Issue

Annual Banquet Information.....	Pages 2-3
Ho! Ho! Holiday Party.....	Page 4
Science Night Report and Photos.....	Pages 5-6
Set Up Meade 12 Inch Telescopes.....	Page 7
The Oakie-Tex Star Party.....	Pages 8-10
From the LAAS Archive	Page 11
Meet the New Members.....	Page 12
October Star Report	Pages 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



© Brian Paczkowski

NGC 7822, a small piece of this very large and young star forming complex in the constellation of **Cepheus**. This is a composite image made from Red, Green, Blue, Hydrogen Alpha, Oxygen III, and Sulfur II filter data. The composite includes 10 hours of RGB data collected at Lockwood over the past couple of months and 44 hours of narrowband filter data was collected from my Bortle 7-8 light polluted backyard. Pre-processed in Nebulosity and processed in PixInsight. (AGOptical 10"iDK, 10Micron GM2000 HPS II mount, ZWO ASI 1600mm-cool at -25C)

Photo credit: Brian Paczkowski

Public Star Party

Dec. 7, 2019 - 2 PM to 9:45 PM

There is no general meeting in January in lieu of the banquet.

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.

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.

LAAS Banquet and Award Ceremony

General Information



Date: Sunday, January 12, 2020

Time: 5 PM to 11 PM

Location: The Quiet Cannon Restaurant - Website: <http://www.quietcannon.com/>

Address: 901 Via San Clemente, Montebello, CA. 90640

Our Annual Banquet and Awards Ceremony is the club's most elegant event of the year. Please join us at the Quiet Cannon Restaurant for an incredible buffet dinner, cocktails, and an amazing presentation from our guest speaker. Awards will be presented to our outstanding club volunteers and we'll have great raffle prizes to win by the end of the night

The prices are as follows::

Adults: \$50.00 per person - Pay at the door adults: \$55.00 per person.

Children 12 and under: \$25.00 - Pay at the door children: \$30.00 per child.

Friends and family members are always welcome to attend. Please pay for your guests and write their names on your checks or in the "comment" section of the PayPal link. Use this link to submit your reservations now:

<https://fs30.formsite.com/LAAS/form12/index.html>

You may also mail a check for you and your guests to:

LAAS c/o Griffith Observatory

2800 E. Observatory Rd

Los Angeles, CA 90027

Attn: Treasurer/Banquet

What to wear? We want you to be comfortable! The appropriate attire is "business-casual."

Cocktails and wine may be purchased throughout the evening. The dinner is buffet-style and begins at 6 PM.

Below is the full menu:

Salads: Chinese Ginger Chicken Salad Mixed Field Greens Waldorf Salad Fresh Seasonal Fruit

Entrees: Roasted Chicken with Garlic, Lemon & Thyme Beef Stroganoff Salmon Florentine, with Spinach, Tomatoes and Garlic Vegetable Lasagna Vegetables: Fresh Seasonal Vegetables

Accompaniments: Rice Pilaf Roasted New Potatoes

Desserts: A Variety of Cakes Rolls, Bread, Coffee and Tea

If you would like to donate items for the raffle, please contact Spencer at secretary@laas.org. Some of your astro-images would make fabulous prizes so please consider donating a framed image. Also, we should have a table available for any additional astronomy information, pamphlets or handouts to share with the membership. If you have anything you would like to share and give to the club members, please bring them along and give them to Andee at the reception table.

It is very important for you to make your reservations soon as we need a head-count to ensure we have enough food, tables and chairs for all guests. Having the need to set up additional tables delays the banquet activities for all. It would be greatly appreciated if you paid ahead of time instead of paying at the door.

See you at the banquet!

The Annual Holiday Party and Potluck

The More The Merrier!



Holiday Party and Potluck

Wednesday,
December 11, 2019
6 pm to 10 pm

Garvey Ranch Park
Observatory

781 S. Orange Ave
Monterey Park, CA

Celebrate the season with fellow club members, family and friends as we gather together to enjoy festive fare and good tidings as the holiday season approaches. Come as you are! You're all invited to attend! The more the merrier!!!

This year's annual holiday party and potluck will take place on Wednesday, Dec. 11th at the Garvey Ranch Observatory from 6 PM to 10 PM.

Bring along your favorite holiday dishes and desserts to share. You're welcome to bring along and set up your telescope on the lawn to share with the membership and public. If you need help with a new telescope and gear, this is a great time to get some help from our knowledgeable members.

Happy Chanukah! Merry Christmas!

LAAS Science Night 2019

By Geovanni Somoza

Science Night at Garvey Ranch Park Observatory was a blast! Some estimated 300 children attended the event, many dressed in costumes as their favorite superhero. The event started at 3pm on Sunday October 27, 2019 at our Garvey Ranch Park Observatory facility located in the city of Monterey Park and lasted until 9pm in the evening.



As guests approached the Observatory, they spotted a looming 12-foot inflatable blow-up pumpkin monster resting against the telescope dome to welcome everyone. Once guests reached the main gate, our friends from the 501st Legion, a non-profit Star Wars costume organization, had a platoon

of Star Wars Storm Troopers that greeted and interrogated our visitors. The Storm Troopers were searching for a rebellion rebel princess and while there were many princesses in attendance, they didn't find the one they searched for. One of the storm troopers commented when spotting a Disney costumed princess "wrong franchise, move along..."

Once inside the classroom area, our visitors had several display tables to explore. Each table featured knowledgeable individuals in their field of study and all presenters had candy, cookies, ice cream or fruit to hand out to all trick-or-treaters. ISS-Above inventor Liam Kennedy was also 3D printing goodies to hand out like small space stations, little rockets and alien heads. Liam also showed live views of Space from the International Space Station on a large TV monitor.

The Planetary Society had a display table showing their newly launched LightSail2 Spacecraft and handed out stickers, magazines, and bookmarks. They also featured a Space Pin Button making-activity where children combed through old magazines in search of space images to cut out and press into wearable lapel pins.



The Columbia Memorial Space Center had an activity where children could design, color and make paper rockets. NASA's Deep Space Network was on hand to talk about how they communicate with all the spacecraft NASA has in orbit around our Solar System and handed out several space stickers. The Long Beach Poly Robotics High School team brought their competition robot and talked about how they built and participated in this year's robotic competitions. They even let some of the children operate their robot.

Continued on next page

The Long Beach Poly Robotics High School team brought their competition robot and talked about how they built and participated in this year's robotic competitions. They even let some of the children operate their robot.



Our own David Pinsky had a meteorite exhibit and a tesla coil that demonstrated how the device could transmit power wirelessly as he lit a nearby lightbulb. Estevan Mykhail Guzman, a Space Artist, showed up with a huge canvas where the children could draw their rendition of a planet on a traced out Solar System. Jared Head launched a powerful rocket, and later in the evening, Jared set his hand on fire as he demonstrated the Leidenfrost effect in which he used a layer of water

to insulate his hand from hot, liquid fueled soap bubbles.



We also had a face painting station where children had planets, rockets and unicorns painted on, and some children used the opportunity to improve their outfits by highlighting their eyes or painting things like lightning bolts or flames.

Outside the smell of food attracted more visitors as Joe Phipps began grilling hotdogs and handing out soda, chips and water.

Overall the event was a huge success, many guest were visiting our observatory for the first time and learned that they can visit every Wednesday and build their own telescope or just come and talk science with our members or view through our telescopes.

Geovanni Somoza - LAAS President Emeritus



Left: A wizard magically appeared who looked just like club President, Tim Thompson!



Above Right: Joe Phipps volunteering his time to grill hot dogs for all members and guests.

Set Up Meade 12 Inch Telescopes Without Help

By Tom Wallace

Webpage: tomstechnotes.com/setuptele

This system lets one person set up the Meade LX200 or LX600 12 inch telescope without help, and can be easily modified for other similar telescopes. The Meade 12" telescopes weigh 72 and 90 pounds, and are too heavy for many people to set up without help.



While the LX600 can be separated into 2 parts to reduce the weight, it takes 30 minutes to disassemble/ reassemble it (8 bolts, 2 serial cables), and it is difficult to lift the tube assembly up onto the fork assembly. With this system, you can transport and set up either telescope quickly, while lifting at most 35 pounds.

For other astronomy-related videos that describe previous systems for setting up telescopes, and other topics, see section "Astronomy", on youtube channel: [youtube.com/user/tomstda](https://www.youtube.com/user/tomstda).

The Okie-Tex Star Party, 2019

By Jack Eastman

As May draws to a close, I, again, feel the pull to head out West to Big Bear and the annual Riverside Telescope Makers Conference (RTMC) at Camp Oakes. But, alas, this was not to be as, apparently, the camp had a better offer for Memorial day, the traditional time for the RTMC. So, RTMC was shifted to September 19--22. This will conflict with the annual Okie-Tex Starparty. And, so it was. Joe Gafford and I had our arms twisted and my beard pulled to get to Okie on Thursday, September 19, two days before the official opening, to help with the camp setup, marking "roads" laying out power lines, getting all the furniture in place in the meeting hall and such.

So it was, once again I survived the wilds of the Oklahoma Panhandle wilderness, Jody's cooking and had a great week-plus of Astronomy, Gastronomy and, fortunately, no really adverse Meteorology, just enough cloud intrusion to allow some guilt-free sack time (When one is under such fantastic skies, one wants to make the most of 'em!) and with "new eyes" things were even more spectacular!

After a good rest in Boise City, it was out to the camp. Weather was good, but late Thursday we had an encore performance of last year--- rain! Fortunately this passed and we went to work getting everything in order. Things went very well for the next week, plus.

One advantage of being in the "Slave Labor Crew" is a good choice of the spot to set up and camp. This time I had five 'scopes, the ridiculously tiny 0.04-meter Newtonian, and equally minute 50-mm equatorial refractor, by Micronta, the ancestor of Radio Shack. A 25X100 binocular, The 6-inch Mak-Newt (David Levy) richest Field and the "monster" 6-inch F/15 Clark refractor. I was able to get things set up and aligned, but waited to set up the refractor. A good thing, as I said, rain late Thursday night. After that the weather was very cooperative, a couple of windy nights followed by several calm and very clear ones. As I mentioned, just enough cloud intrusion on a couple to allow some guilt free sack time! There were a couple of very short splashes of rain, both lasting maybe a minute or so. just enough to suggest going out and bagging the 'scopes. Oh well, they're already wet. If I cover 'em they'll still be wet, and so will I. By the time that thought went by, The rain stopped and all was well.

The first Saturday night was an Open House, local folks were invited out, and there was a plethora of small kids, I think a large cub scout troop. Unfortunately the wind blew rather strongly and looking at Jupiter and Saturn with the refractor was a fool's errand. It also shook the smaller 'scopes to the extent that looking was rather severely compromised. Fortunately, two nights later, the wind went away, and we had superb conditions!

Flies? Aah, yes, the ubiquitous Okie-Tex flies were there again in fair profusion, though not as bad as some years, but still rather pesky especially at meal time. Last year, there were essentially no flies at all! Apparently they don't like to fly under water, recalling last year's soaking!

I was truly amazed at how clear, contrasty and detailed the Milky Way was, and that I couldn't count all the stars in the Great Square of Pegasus -I kept losing count!. This could imply I was seeing down to 7th magnitude?! Yea, verily, last March's cataract removal made a terrific difference! I have to say, views through the telescopes were equally improved. Only downside, if it's really a downside, is I can see way out in the violet (estimate 372-nm) so the secondary spectrum of the achromatic refractor is now quite easily seen as a deep violet aura around bright objects!

I was able to jury-rig a red-dot finder onto the 25X100 binoculars, and this made faint, fuzzy hunting like shooting fish in a barrel! I was able to track down some 43 M-objects and several other ones, the Helix (very faint and large) NGC-6144 was rather easy. This one flummoxed a couple of kids back in the '1950s, into thinking it was a comet**. And, with probably more averted imagination than anything else, I was even able to detect parts of the California Nebula (NGC-1499). Very, very faint! Sky Quality Measurements (SQM) ranged from 21.88, away from the Milky Way, which will add some 0.15 to 0.2 magnitude to the sky measurement. The brightest was the final Saturday, obviously brighter to the eye with the SQM giving 21.56. I think it was Wednesday, 9/25, I had just made the SQM reading, when I pulled my head out of the car after stowing the meter, the Milky Way was really washed out, and within a minute or two--- totally overcast! Clouds seemed to condense in place in just a couple of minutes!

Continued on next page

Not all that bad! Some now welcomed the guilt free sack time! This was one of the nights with the 90-second rain squall. Nighttime temperatures were mid 50s for the most part, Sunday, 9/22 did go down to 39. All in all, a very pleasant bunch of nights! Days were for the most part upper 80s, maybe tickling 90 on a couple.

Our own John Anderson was, again, there with his Solar Laboratory. This time he had replaced his superb homemade spectroscope with a Lhires-III from Shelyak Instruments. Wow! Looking in the eyepiece was a yellowish background with two heavy lines, looked like power poles about half the field of view apart. This is the Sodium Doublet, (589.0 and 589.6-nm)! the nickel line in between was obvious as were several weaker ones. Those got stronger the lower the Sun got, indicating they were produced in our atmosphere. Out of curiosity I shifted the grating to bring in the violet end of the spectrum, and, voila' the H and K lines (Ionized Calcium, 393.4 and 396.8-nm) were loud and clear as well as a complex band, including the L line of iron at 382.4-nm. I'm sure I could have seen farther into the violet, but ran out of travel on the grating. Yea, verily, getting rid of those yellowed old cataracts helped a bunch. Bring on the K-line (Ca-II) Solar telescope! Unfortunately, no one had such an instrument set up. I'm sure this spectroscope would be up to the task of measuring magnetic field strengths and polarities in sunspots with little or no trouble at all.

This event wasn't all observational astronomy (and gastronomy, (Thanx Jody!)) there was a two day seminar "Pixinsight Advanced Imaging Seminar" held at the Senior Center in Kenton on Monday and Tuesday. The more or less formal presentations began on Wednesday with Mike Lockwood (Lockwood Custom Optics) recounting his trip to Australia, telling of his observations of the Southern sky. This was followed by Jim Hopkins touting the reason we come to Western OK to view the sky, followed in turn by Craig Smith discussing techniques for making Time Lapse Imagery After yet another scrumptious dinner, at the hands of Jody Reising and her hard working kitchen crew, Dr. Steven Gullberg, Associate Professor and Director of Archaeoastronomy and Astronomy in Culture at the College of Professional and Continuing Studies, Norman OK presented a discussion of the Astronomy of the Incas. "Effects of Light and Shadow." It is clear that these so called ancients did, indeed, know the sky and its motions and seasons very well, probably better than most people today.

The following day, Thursday, there were a couple unscheduled talks by Lana Trygubova, of Agema Optics, here in Colorado. The subjects were a description of their company and the telescopes they are making. Her second presentation was a great history, of the life and times of Dimitri Maksutov and his invention, the Maksutov (Mak) telescope. Then Dr. Gullberg returned with the "Dark Constellations of the Milky Way." Again some of the early peoples and their descriptions of "constellations" made up from the dark nebulae and rifts in the Milky Way. This was followed by Marvin Abbott with a rather complete description of the Geology of the Kenton Area. Then Travis Rector, who was to talk about the Large Synoptic Survey Telescope, but was called away on a family emergency. Tom Clark sat in for Travis and discussed some homemade telescopes. Good to know telescope making isn't totally extinct! Travis was to speak again that evening, Ed Wiley, sat in for Travis this time and brought up the subject of "Lets Do Some Science!" a discussion of the work of the American Association of Variable Star Observers (AAVSO) and the serious contributions to the science of variable stars that their members produce. This was followed by the first part of the Great Okie-Tex Giveaway, the drawing of door prizes, then, finally, out to the 'scopes!

Friday's lineup was supposed to be Ed Wiley with his AAVSO talk, but having given this the day before Dave Cotterell, of Ontario Canada, talked about a very important, but seemingly neglected part of the science, measuring Double Stars. Contrary to some belief this can be a rich field of research and not all that difficult for amateurs to pursue with modest equipment. (See the Journal of Double Star Observations, <http://www.jdso.org/>) Dave discussed the methods and emphasized that one must know the focal length of one's telescope to high precision. He mentioned that for Cassegrain and Cassegrain-like 'scopes, the focal length will vary greatly with small changes in the mirror spacing (focusing, for example)*** Dave showed a simple way to calibrate the focal length, using a coarse diffraction grating and a ~7-nm band width H-alpha filter. He emphasized one needs to make this calibration often while observing with Cassegrain-like instruments. Dave's presentation was followed by Kathy Machin, Astronomical League (AL) describing the observing awards available from the AL, this followed by Micheal Pierce on "A New Family of Very Large Terrestrial Telescopes, describing the proposed monster 30-m and even 50-m optical telescopes. He was back that evening with "My Life as an Astronomer" a look at how he ended up as an astronomer now at the University of Wyoming.

Saturday afternoon, 9/28, brought the second go at the swap meet, coincident with Eileen Grzybowski's presentation on the Education Ambassador's Program of astronomical education in Chile. Henry Throop then spoke on "Chasing Kuiper Belt objects around the world", attempting to be in the right place at the right time to observe an occultation of a given star by one of these distant bodies. Crucial to obtaining accurate positional data that allows spacecraft, in this case New Horizons, to make the successful flyby that it did at Ultima Thule. Dee Friesen then gave an overview of how stars work "The Biography of a Star". Then after dinner we had a special treat. "V" (The Gypsy Cowbelle) one of Jody's hard working kitchen crew, and Dave Cottrell, Ontario Canada, put on a bit of musical entertainment of a sort of folksy nature. A real treat, that may become a regular part of these festivities. Then Henry was back with results from New Horizons at Ultima Thule. This was followed by another door prize drawing. Sunday, 9/29 we all had to be out of the camp by morning, bringing to a close another terrific event, indeed!

This get together sort of went to the dogs! There was Cody Lawson's tiny miniature Yorky, the "barking mouse" smallest and Dr. Gullberg's monster Newfoundland, Thor, the Big Black Bear, largest. Jody's little bundle of energy, not sure what kind, but loads of fun and one of our vendors' "Foxy" looking like a red fox, also a bundle of energy. Tasa, from our own (DAS) Jim Oden was there still chasing the soccer ball. The one sour note in this symphony was Heidi, the snorer, was no longer with us. This hyper-cute Boston Terrier, with the one big brown eye and one big blue eye. She'd lay on Cameron's lap during the presentations and snore at about 4+ on the Richter Scale! She'll be missed. All this led to them putting on an informal dog show!



We were highly gratified that the symbiosis between the Oklahoma City Club and Camp Billy Joe is solid. The OK city club is going to share the expense of building a new building at the camp that will become the new vendor's and presentation area, the existing one will become the mess hall for our meals and the late night "Cosmic Cafe". No more circus tent!

They announced the dates for 2020, Sept. 11-19. RTMC, as I mentioned had been moved to this same time frame, and again for 2020. Somewhat later, however, we all got the news that due to low attendance the camp giving them grief among other things RTMC has been discontinued. This after a run of 51-years. Sad news indeed!

***For the "classical" 8-inch SCT, primary mirror F/2, secondary magnification 5X, a one millimeter spacing change from nominal will change the effective focal length by roughly 4%

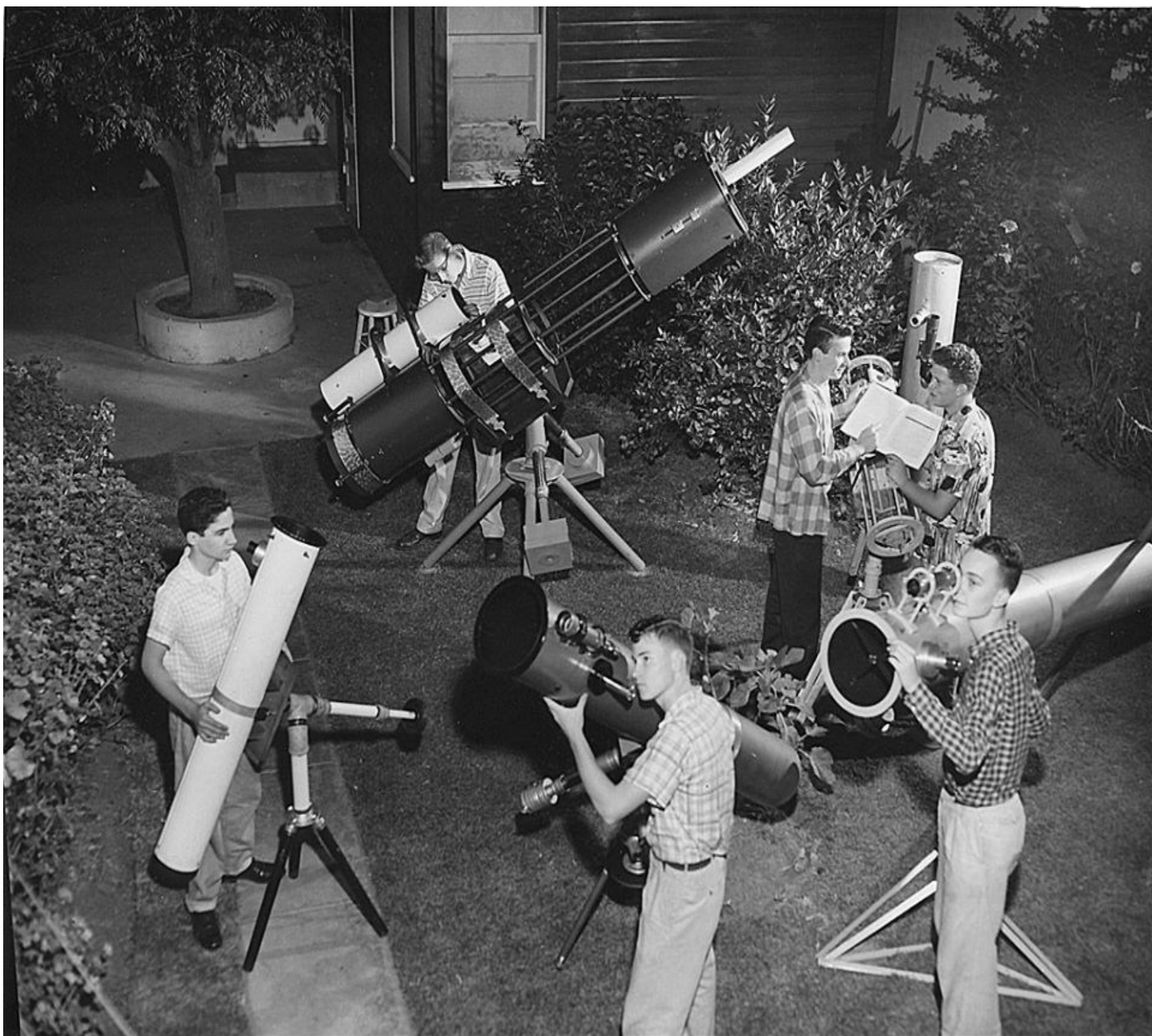


Jack Eastman

Old Furface, circa 1939, Older Alvan, circa 1877

Photo by Christopher Scott

From the LAAS Archive
Lew Chilton, Club Historian



A bunch of like-minded boys formed the San Fernando Valley Astronomical Society in 1953 after the North Hollywood Astronomy Club had faded away. The SFVAS is pictured above in 1956 and described in the March 1957 *Griffith Observer* magazine. Clockwise from top are Roger Bland, Pat Rossi, Roger Tuttle, Jack Harvey, Kent DeGross, and Steve Marks. Bland, Tuttle and Harvey were members of the LAAS, but Rossi, DeGross and Marks may not have been. The image above was taken by Jack Harvey's dad and appeared on the cover of the March 1957 *Griffith Observer*. (Used with permission.)

LAAS ARCHIVE

Meet The New Members

Welcome to the LAAS!



David Attias

Thomas Commerford

Stan Thompson

Charles Boyd

Arthur Borja

Tammy and Michael Liu

David and Christina Velarde

Elle Stern and Family

Craig Harrison

Rahul Jaiswal and Nidhi Anikumar

If you would like to join the LAAS, please visit our website at 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 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.



December Star Report

By Dave Nakamoto

Jupiter is gone for the next six months. Venus slowly approaches Saturn very low in the southwest, night after night. Venus pairs up closely with Saturn on Dec 10th and 11th, when they approach to within two degrees from one another, but they're only 20 degrees above the horizon in the southwest when this happens, so you'll need clear skies and a clear view to see them. They're about the same size in a telescope. Venus continues to slowly get higher and higher in the southwest every night, but it isn't easily visible until February. Saturn disappears from our evening skies as the month ends, and like Jupiter, will not be in the evening skies for another six months.

The constellations of Autumn still dominate the sky, while those of Winter creep in from the east. Pegasus the Winged Horse is straight above our heads around 7:00pm, while Orion the Hunter is up above the eastern horizon, orange-tinted Betelgeuse of movie fame on his right shoulder, with white-hued Rigel is his left hip. Above Orion is the 'V' of Taurus the Bull, dominated by the orange-yellow of Aldebaran.

Lunar Cycle

First Quarter – 4th

Full Moon – 12th

Last Quarter – 18th

New Moon – 26th

A Distant Neighbor

Around 7:00pm around the middle of the month, if you look straight up, and the skies are dark enough, you might see a faint splotch of light. If you use binoculars, they'll make it easier to spot. That is the Andromeda galaxy. It's far outside our own Milky Way galaxy, 2,500,000 light years away. It's also about the same size as our Milky Way, as recently measured. This was the object that Edwin Hubble, using the Mt. Wilson 100-inch telescope, determined was not part of our Milky Way galaxy due to its tremendous distance, opening up the realization among Astronomers that the universe consisted of a lot more than our galaxy.

The Geminid Meteor Shower

The last major meteor shower for the year are the Geminids, so named because they seem to all come from a point in the constellation Gemini. They reach their maximum rate on the nights of December 13th and 14th, when perhaps 120 per hour may be visible. Unfortunately, the moon reaches full phase on the 12th, and its bright light will hamper seeing the fainter meteors. Fortunately, the Geminids are known for producing bright meteors, some visible even from urban settings.

The constellation of Gemini passes directly overhead around 1:00 am or so. You can locate the Radiant, the point where all the meteors seem to come from, by tracing enough of them back.

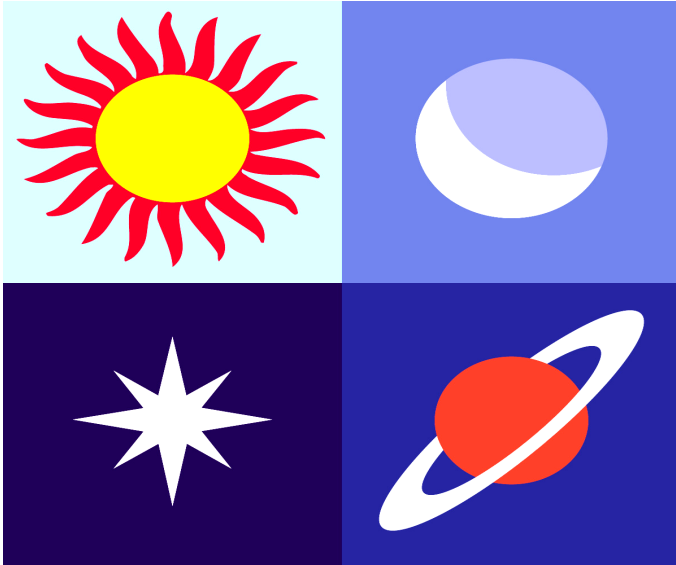
The Los Angeles Astronomical Society, also known as the LAAS, operates the Garvey Ranch park observatory. The observatory is located just off the east parking lot. It's open to the public every Wednesday night from 7:00 PM to 10:00 PM. An 8-inch wide 9-foot long refracting telescope is available to look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



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

dinakamoto@hotmail.com.

Almanac



December 12 - 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 05:14 UTC. This full moon was known by early Native American tribes as the Full Cold Moon because this is the time of year when the cold winter air settles in and the nights become long and dark. This moon has also been known as the Full Long Nights Moon and the Moon Before Yule.

December 13, 14 - Geminids Meteor Shower. The Geminids is the king of the meteor showers. It is considered by many to be the best shower in the heavens, producing up to 120 multicolored meteors per hour at its peak. It is produced by debris left behind by an asteroid known as 3200 Phaethon, which was discovered in 1982. The shower runs annually from December 7-17. It peaks this year on the night of the 13th and morning of the 14th. Unfortunately the nearly full moon will block out many of the meteors this year, but the Geminids are so bright and numerous that it could still be a good show. Best viewing will be from a dark location after midnight. Meteors will radiate from the constellation Gemini, but can appear anywhere in the sky.

December 22 - December Solstice. The December solstice occurs at 04:19 UTC. The South Pole of the earth will be tilted toward the Sun, which will have reached its southernmost position in the sky and will be directly over the Tropic of Capricorn at 23.44 degrees south latitude. This is the first day of winter (winter solstice) in the Northern Hemisphere and the first day of summer (summer solstice) in the Southern Hemisphere.

December 21, 22 - Ursids Meteor Shower. The Ursids is a minor meteor shower producing about 5-10 meteors per hour. It is produced by dust grains left behind by comet Tuttle, which was first discovered in 1790. The shower runs annually from December 17 - 25. It peaks this year on the the night of the 21st and morning of the 22nd. The waning crescent moon should not interfere too much this year. Skies should still be dark enough for what could be a good show. Best viewing will be just after midnight from a dark location far away from city lights. Meteors will radiate from the constellation Ursa Minor, but can appear anywhere in the sky.

December 26 - New Moon. The Moon will located on the same side of the Earth as the Sun and will not be visible in the night sky. This phase occurs at 05:15 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.

December 26 - Annular Solar Eclipse. An annular solar eclipse occurs when the Moon is too far away from the Earth to completely cover the Sun. This results in a ring of light around the darkened Moon. The Sun's corona is not visible during an annular eclipse. The path of of the eclipse will begin in Saudi Arabia and move east through southern India, northern Sri Lanka, parts of the Indian Ocean, and Indonesia before ending in the Pacific Ocean. A partial eclipse will be visible throughout most of Asia and northern Australia. ([NASA Map and Eclipse Information](#) [NASA Interactive Google Map](#))

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

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

This is a free event for the public.

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



December 2019

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3	4 Garvey Night Board Meeting	5 Outreach in East LA	6	7 Public Star Party
8	9 General Meet- ing and LAAS Election	10 Outreach in Watts	11 Garvey Night Holiday Party and Potluck	12 Outreach in East LA	13	14
15	16	17	18 Garvey Night	19	20	21
22 Happy Chanukah!	23			26	27	28 Dark Sky Night
29	30			31 New Year's Eve		

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

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



Join the Astronomical Society of the Pacific and help support the cause of advancing science literacy through engagement in astronomy. Member benefits include a **subscription to the online Mercury Magazine**, published quarterly, and **Astronomy Beat**, a monthly on-line column written by "insiders" from the worlds of astronomy research and outreach.

Subscribe or renew to the McDonald Observatory's StarDate Magazine and receive a special discount. Go to this page and press "Add to Cart" under the kind of subscription you want: <http://stardate.org/store/subscribe> Then, on the Checkout form, enter "network" in the Coupon Code box.



Club Contact Information

President: Timothy Thompson

timthompson3@verizon.net

Vice President: Curtis Byrom

cbyrom484@yahoo.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: