



THE LOS ANGELES ASTRONOMICAL SOCIETY

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John O'Bryan, Jr./Treasurer

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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.

Tom Drouet



Thomas L. Drouet (July 16, April 8, 2017) was a kind-hearted, life-long teacher, and volunteer who helped many people reach for their dreams. He loved teaching and always did so with witty humor and humble pride, whether he was: instructing as a math professor; discussing the stars and universe as an amateur astronomer; sharing his love for concert band music as a devout musician; pointing out birds as an avid nature lover; or chatting about the games of baseball, football, and basketball as a sports enthusiast.

Tom was a life-long Southern Californian. His stories of the orange groves of yesteryears and his love for his own orange and fig trees could make anyone wish for days gone by. His excitement and aggravation for the Clippers and Lakers as well as the Angels and Dodgers could make anyone a fan: he always said, "You only really have to watch the last two minutes or innings, but hey why not watch the whole game." Above all else, he completely adored UCLA football – well, anything UCLA.

Tom loved performing as a clarinetist with the Los Angeles Police Band (now COPS), Covina Band, and UCLA Alumni Band (30+ year member.) He was a committed supporter of Los Angeles Astronomical Society, Orange County Astronomers, and Griffith Observatory and often brought his telescopes for the public's use in viewing the stars above. He also participated in astronomy outreach programs at our local schools, enthusiastically sharing the wonders of our sky with the scientists of tomorrow.

We love you so very much Dad and will miss you every day. We are thankful for you and we know You are now a star shining down on the City of Angeles that you loved so very much. Thank you for everything you did for all of us and for showing us how to live life to its fullest.

Tom is survived by his sister Pauline Ide and his two daughters, Marie and Louisa Drouet. He passed away peacefully in his hometown of Whittier, California at the age of 85. Celebrations of his life will be held privately.

If you would like to send a message to Tom's daughters, here are their email addresses:

Louisa at Louisa@forwardmvt.com and Marie at mdrouet@soltar.com



The LAAS 31-inch Clyde-O-Scope

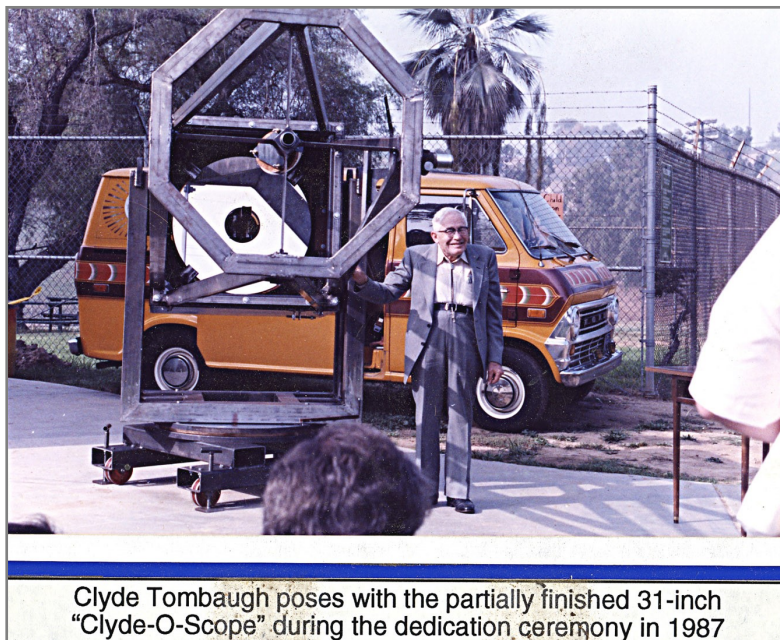
Tim Thompson

As many of you already know, the primary mirror for the LAAS 31-inch Clyde-O-Scope was destroyed in a tragic accident at Mt. Wilson Observatory. The mirror had been realuminized and was being lifted back into its box when a chain slipped on the hoist and the mirror fell about 3 feet, to the floor, and broke. Until now, the Mt. Wilson Observatory staff has had a perfect record handling large telescope mirrors. I don't think we could have chosen a place more suitable for having the work done. A post-accident review may have revealed the cause of the chain slippage. As a result, the hoist has been removed from service, and mirror handling procedures are being reviewed to see that this does not happen again.

The mirror was donated to the LAAS in 1987 by Clyde Tombaugh [1906-1997]. He discovered Pluto back in 1930, having been hired on by Lowell Observatory to conduct a photographic search for a suspected "planet X", the presence of which had been predicted by Percival Lowell [1855-1916] & William Pickering [1858-1938]. Tombaugh worked at Lowell Observatory from 1929 to 1945. In 1955 he joined the faculty at New Mexico State University, and retired in 1973. But he remained as an Emeritus Professor until he died in 1997.



Luis Ashelford took the photo above of Dr. Clyde Tombaugh and the Clyde-O-Scope. You can view the photo on Luis' website at <http://www.ashelford.net/Clyde.html>



Clyde Tombaugh poses with the partially finished 31-inch "Clyde-O-Scope" during the dedication ceremony in 1987

Our club historian Lew Chilton shares the photo above from the LAAS Archives. The van in the photo belonged to Steve Kufield. According to Lew, "in 1970, president Ron McKnight found the land, presented the opportunity to buy it to the membership, and once approved, completed the negotiation with the owner, Mr. Adamowitz, for \$5,400. Our club paid it off in installments over the next 8 or so years. Our land was named to honor Steve after he died in 1997."

New Mexico State University had two large mirrors that Tombaugh wanted to give away, both of them older and heavier, full thickness mirrors. One was the 31-inch, which was parabolized, aluminized and ready to put in a telescope. It weighed about 350 pounds. The other was a 40-inch mirror, not aluminized, and with a spherical figure. It weighs about 800 pounds. The small group from the LAAS, led by then President Tom Dorff, could not decide which mirror to accept. So Clyde offered both, and the LAAS took both.

The LAAS had taken over operation of the Garvey Ranch Observatory in 1987, and that's where the Clyde-O-Scope was built, by a team including Steve Kufeld, Tom Dorff, Mike Dostalík, Mike Ogle, and Charlie Chinzi, and others whom I just can't remember at the moment. When the Clyde-O-Scope was finished, a group hauled it up to RTMC, where it was an award winner in 1988. After a lengthy debate, the LAAS board decided to house the Clyde-O-Scope in a permanent structure at the Lockwood Valley Site (officially designated the Steve Kufeld Astronomical Site, after Steve died suddenly in 1997).



A photo of the Clyde-O-Scope at Lockwood from our website: <http://laas.org/joomlasite/index.php/facilities/87-steve-kufeld-astronomical-site>

At the time it was built, the 31-inch Clyde-O-Scope was by far the largest amateur telescope in the Southern California area, and one of the few largest in the country. While it was still quite large, by amateur standards, larger amateur telescopes have made great advances since then, especially sporting light weight mirrors. Mechanical & electronic problems had plagued the Clyde-O-Scope from the beginning, a result of the rapid pace of its construction and eagerness to use it. But most of those problems had been solved over the years. Once the re-aluminized mirror arrived back at the Steve Kufeld Astronomical Site, the Clyde-O-Scope would have been a valuable instrument for the expanding membership & interests of the LAAS. It is an unfortunate loss, to say the least.

The 40-inch mirror languished for a few years at the Garvey Ranch Observatory, too heavy and too large for us to handle. During the early 1990s (I can't remember when), during one of the Presidencies, I arranged for the mirror to be transferred to a group intent on building a large public observatory in Lockwood Valley. They called themselves the Southern California Observatory for Public Education (SCOPE). But they ran into problems and the mirror wound up in storage in the San Fernando Valley. Several years ago I teamed up with Donn Silberman, then President of the Optical Society of Southern California (OSSC), to regain control of the mirror. The mirror now remains in the hands of the OSSC, in an optical shop in Irvine.

Several attempts at putting together a telescope for the mirror have failed. I approached telescope makers at Plane Wave, to see if they would be interested in the job. While they have built mounts for 40-inch telescopes, they are all light weight mirrors, far lighter than this one, and they declined. At the moment it remains in the hands of the OSSC, too large & too heavy to attract anyone's attention as a telescope mirror.

Clyde wanted the mirror to be used, and it was for several years. Its sad demise certainly strikes home by removing our most impressive telescope, and by losing a piece of history that directly links the LAAS to the discoverer of Pluto.

Tim Thompson

<http://www.tim-thompson.com>

JPL Science Division, Retired

Los Angeles Astronomical Society:

President Emeritus & interim Vice President,

Director of Clinton B. Ford Observatory

Mt. Wilson Institute & Observatory:

Institute Trustee; Observatory Docent & Session Director

Western Amateur Astronomers: Secretary

Pasadena Chess Club: Secretary/Treasurer



Our Board of Directors has several important issues to deal with in 2017 and I'm sure you've heard about some of them on our Yahoo group recently. The opinions expressed through this group do not necessarily reflect the majority of club members but come from those who want to get their message heard. Whether you agree or disagree with comments shared, our board members are considering all the options available and are focusing their efforts as a devoted team to make the best choices for the LAAS membership.

Our new or returning members are only able to view the club with fresh eyes, as they are not aware of the recent history and changes in the club. Our membership has doubled in the last ten years and we still do it all with a handful of volunteers from all walks of life who are dedicated members and who truly believe in the club's mission statement. This club isn't just about members trekking out into the darkness to view the night sky, armed happily with telescopes and tripods. Its about educating the public, creating a fellowship of friends, and socializing with those who enjoy the same hobby.

Posting critical remarks and demands on the Yahoo Group can be viewed as counter-productive. If you wish to challenge the current board members on one topic, go to a board meeting and express yourself in person. New members reading your comments will have no idea what you are writing about and will remove their names from the group to avoid reading your posts. I would also like to remind everyone AGAIN that the Yahoo group is for all members, of all ages.

I will be happy to add those of you who recently left the group, if you would like to give it a second chance. There are many club members who will be happy to answer your questions about astronomy and telescopes and fill you in on club events and our outreach efforts. Feel free to send me a note with any questions or comments.

Thank you,

Andee Sherwood

Communications@LAAS.org

Eclipse Trip Meeting



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.*



Date: Saturday, June 17, 2017

Time: 4:00 PM - 11:59 PM

Location: Lockwood Valley

In 2011, "Family Nights " were scheduled at our Lockwood Dark Sky site best known as the Steve Kufeld Astronomical Site (SKAS).

Here is a link on our website to learn more about this special club facility:

<http://www.laas.org/joomlasite/index.php/dark-sky-observing>.

Family Nights are scheduled for all club members and families to enjoy a night of dark sky observation far from the city lights of Los Angeles. You may bring camping equipment or campers and stay for the entire evening. It's a star party and gives our members an opportunity to view celestial objects normally not visible in the sky over the city. Due to extreme weather conditions, we only offer these nights to our members during warmer months.

Gates open at 4 PM and the departure times will be discussed with the group. Please arrive early before sunset to become familiar with the grounds and set up equipment. Some of our members enjoy setting up a potluck-style meal which you may find discussed on your Yahoo group.



Friends and fellow members gathered together at Lockwood for our first Family Night on June 25, 2011.

Tom Cave and the Herron Optical Company

edited by Lew Chilton, the LAAS History Detective

The following narrative is based on Thomas R. Cave Jr.'s unfinished autobiography. It continues from the April Bulletin article, "Judge Richard Garvey, Jr.," wherein Tom began his story by describing his 1940 summer job at Ray Drew's optical shop in Los Angeles. In this month's article, Tom describes his experiences working for another optician, Jimmy Herron, who he met at an LAAS meeting in 1939.



Thomas Roland Cave, Jr. in 1947
(source: Ancestry.com)

In May 1939, our local Long Beach astronomy club dissolved because of a lack of participation. In the summer of that year when I was sixteen, I joined the Los Angeles Astronomical Society, but it was really hard to attend more than a few meetings a year. Although public transportation was good between Long Beach and the club's headquarters [at Archie Newton's home] in Los Angeles, it required one and a half to two hours to get there. I attended as many meetings as I could because they always had the best speakers of top professional quality. I soon became acquainted with many members, including the brothers Avery and Lynn Hildom. Avery was perhaps the best all around optician I have ever known. He had a share in the business of Herron Optical Company, which had been established in the mid-1920s. I met the owner, Jimmy Herron, at the meetings a few times but didn't really get to know him like I did Avery.

During the May 1941 meeting, I told Avery that I would be finishing high school within a month, and was there a chance of getting a job at Herron Optical? Avery said that they had an enormous amount of work and he would speak to Herron. I gave my phone number and within a couple of days got a call from Avery. He said that he was sure I'd get the job and to come next Saturday and ask for Mr. Ray, the business manager.

That Saturday morning I took the Pacific Electric to Los Angeles and with a transfer arrived at Herron Optical Company by the end of lunch hour. There was a very pretty blond girl about my age in the office. Her name was Marge Burke. I asked for Mr. Ray who came at once from the shops, accompanied by Avery. Mr. Ray asked me a few questions while Avery put in some kind words on my behalf.

Mr. Ray said I was to be hired at 50 cents an hour beginning Monday after my high school graduation. I was to work ten to eleven hours per day, Monday through Friday starting at 7 a.m., and six hours on

Saturday with Sundays off. He confided that they couldn't get any experienced people, even those with my limited telescope-making experience. I was given a short application to fill out.

Mr. Herron, accompanied by Mr. Ray, came into the office. Herron only talked to me for a few moments, then asked Ray what my starting wage was. When Ray told him 50 cents an hour, Herron said, no, 40 cents an hour. Even before I started, my wage was cut by ten cents!

Well, when graduation was over, I would have a full-time job as a beginning apprentice of precision optics. I would be grossing \$40 per week to start. Mr. Ray said I'd be getting a raise in a few weeks.

When I arrived home that Saturday, I told my mother and father how it went. Father said I shouldn't have taken a 10-cent per hour cut. But I wanted to start an apprenticeship in the kind of work that I really liked, and that was what counted. Father estimated my income tax and other withholdings and concluded that my take home pay would be about \$33 or \$34 per week.

My cost for bus and rail fare to Herron Optical, with a 30-day pass on both the Long Beach bus, the Pacific Electric rail to Los Angeles and the "J" trolley car to Herron Optical, would come to about \$40 per month. My net take home pay would come to about \$150 per month, if I took a sack lunch each day and spent no other money. In theory, I could save about \$110 per month.

On that first day I was up at 4 a.m., dressed, ate breakfast and was at the Third Street corner bus stop by 5 a.m. I arrived at Herron Optical at 6:40 a.m. where I met a young fellow named Harold Johnson who had worked several months at the shop. He said that since I already knew how to clean and handle optical components, I could immediately begin working with Mrs. Kreitzer who had been cleaning all the finished optical parts. She was a very nice, friendly lady in her late fifties and liked to talk as she worked. Although I had arrived at 6:40, she told me to write down that I had started at 6:30 a.m. A little after 7 a.m. another ten or twelve employees arrived, followed by Jimmy Herron at 9:30 and Avery Hildom at 10 a.m.

Mrs. Kreitzer quickly showed me how to place prisms, plane parallel filters and other optical parts into long-handled baskets. Three baskets at a time went into the degreaser to remove pitch, wax, paraffin and other contaminants. The degreaser was a very strong electrically heated solvent several inches deep. The baskets, covered with tissue, had to be immersed in the boiling solvent for 30 to 45 minutes.

The degreased optical components were then placed in large rectangular Pyrex dishes filled with Xylene for a final wash before drying and inspection. They were then placed in large wooden trays with tissue and went into another room in a caged area where Mrs. "Pickey" Seigler kept all the finished parts for shipment. She also kept track of each employee's weekly work hours.

The first thing that Herron did when he arrived at work was to run hot water in a large pan and soak his feet for some minutes, then lather his face and shave with an old-fashioned razor. He was a short, bald-headed man with a pug nose and a nasty temper. He wore old business suits to work, but would remove his coat, put on a large apron and go to work. He made the rounds of the shop that extended over three storefronts and into a fourth store that he had just taken over.

I worked cleaning optical parts with Mrs. Kreitzer for about three weeks and at various times during the day Herron would come around and ask us in a totally sober demeanor, "can't you work any faster?" Mrs. Kreitzer said that was his way of kidding or joking. He had a habit of coming up behind you and going "ahhhh," which scared me, as I was new and unfamiliar with his habits. I saw him do this to another employee who was carrying a tray of unfinished prisms. The startled employee jumped but didn't drop the tray although he did chip two prisms.

For the entire time I worked for Herron, he was always arguing with someone in the shop and with Mr. Ray and Marjorie Burke in the front office, but he left Avery Hildom and Harold Johnson alone.



Outside Herron Optical Co., 705 W. Jefferson Blvd., Los Angeles, Calif., 1937.
From left: Bill Siegler, Avery Hildom and Jimmy Herron (owner).

LAAS ARCHIVE

The long eleven-hour days passed quickly and after three weeks or so, Herron came to me while I was cleaning parts and said, "I have another job for you, grinding prisms in the rough." Harold Johnson came in after a few minutes with a couple of trays of rough blanks and showed me exactly how to grind them. He did two or three and then had me do a couple of blanks while he watched.

To achieve exact angles on these prisms, a tool and die maker's protractor was used until each angle blocked out all light. I was nearly an expert at this after a day or so and my speed pleased Harold.

After I had been doing the same prism grinding for about a week, Mr. Ray had a form for me to fill out. As I completed it, he said he had been told that I was doing very well at my work. So I took the opportunity to ask for a raise. He said he would see about it immediately. We got paid each Friday, and when I looked at my paycheck that next Friday, it showed an hourly increase of 20 cents. I went up to the small front office to thank Mr. Ray. He said he had told Avery and talked to Herron about my pay raise request and noted that Herron was normally a real tightwad.

After six weeks of rough grinding and angling prisms, a new young fellow came in early one morning. Harold Johnson told me to teach him prism rough grinding, so I spent part of the day teaching him the

knack of grinding the surfaces. He caught on quickly but had trouble using the protractor to measure the angles.

That afternoon I was shown how to do plane parallels. They were made from ¼-inch thick striae-free water white Crystallex plate glass. After both sides were fine ground and polished, each side flat to a minimum of a ¼-λ, they were cut rectangular and in large sandwiched layers of twenty-five pieces were medium fine ground to the exact dimensions with paper between each polished surface. These plane parallels were one of the most important contracts Herron Optical had obtained before the United States entered the war. The British Government used our plane parallels in machine gun sights for their Spitfires and Hurricanes. Avery told me that the British would take all they could get and we were the only optical firm making them. I worked for a few months on the British contract helping Avery polish the flats on the banks of polishers as our daily production hit about twenty-four or more. After the U.S. entered the war, Herron received a similar contract from the U.S. Government to build machine gun sights for American fighter aircraft.

All the grinding machines had been custom built by nearby Acme Machine Shop, but the large number of polishing machines had been designed and built over the years by Herron and Avery. The machines were multi-spindled with revolving pans filled with optical red rouge water with the work just at the surface. Paint sticks with rubber fingers kept the rouge and water stirred. The polishing machines ran 24/7. Over the years, the walls, floor and even the ceiling of two large rooms were entirely rouge red.

At times, Herron had difficult optical problems to solve. He was constantly studying books on optics. By the time I knew him at Herron Optical, his knowledge of optics rivaled any top optical engineer of any large company.

At the time I worked for Herron, he had many personal faults. He did not have the patience that Avery and Lynn had nor did he like to delegate responsibility beyond Mr. Ray and Marge Burke. Mr. Ray was an attorney whose father-in-law owned Esquire Magazine. He was always for the employees who were growing fast in number. For a young girl of eighteen just out of high school, Marge Burke had a thick skin but didn't countenance any abuse from Herron. Of Irish and Scandinavian descent, she could get truly angry with Herron, but she nevertheless liked the old and new employees alike and was always nice to them.

Among a few of the other employees were Louis Wilkinson, Fred Walters (both near my age) and Vincent Gorman who did all the centering and edging of lenses. He worked in a small department that I would run years later when it was large and used diamond generators.

On December 8, 1941, the day after the Japanese attacked Pearl Harbor, the employees of Herron Optical were abuzz with excitement and talk. Even Jimmy Herron and Avery Hildom were in early that morning. That very day some men in business suits were in the office talking with Herron. They wanted the shop to take on a great deal of war contracts for optical components. Avery was called into the conference. The government men insisted on war work only – no civilian motion picture work that over the years had made Herron Optical very successful. Mr. Ray argued that continuing to produce essential optics for the movie business would help American morale in the months and years to come. Herron was set against taking on too much work, but the government officials were just as adamant that he should. They began spinning him around in his oak swivel chair until he was dizzy. After several hours, Herron agreed to take on a great deal of government work if he could keep his most valuable civilian clients. An agreement was reached.

We were among many government contractors to make pentaprisms and components for aircraft gun sights. We kept the British contracts to produce color filters for military fire control instruments.

Mr. Ray said we'd need a great many more optical machines and lots more help, since we had fewer than fifteen production employees. Almost immediately we began moving diamond saws and grinding and polishing machines around, crowding workspace to make room for more machinery.

It was impossible to find people with any experience in precision optical work for the kind of wages that Herron was willing to pay. He began advertising in the *Los Angeles Times* classifieds for untrained help, and it fell upon all of us employees to train the new hires. About half of them were quitting after a few days. Many of them couldn't take Herron's offensive language and nasty habits, while others said they couldn't work fifty-five to sixty hours a week just to keep bread on the table.

Mr. Ray must have had a long talk with Herron because, within a few weeks, he came to me and said that my hourly straight-time pay would increase to 80 cents an hour and overtime to \$1.20 after 40 hours, much to my delight.

By mid-January 1942, the number of personnel at Herron Optical had increased to forty. They worked around the clock, except on Sundays when only a skeleton crew attended the shop.

Defense contracts and a great deal more optical machinery kept rolling into Herron Optical. I learned that opticians, even with only limited experience, and master tool and die makers were the two top-priority skills in the country.

By early spring 1942, I had nine months experience in precision optics at Herron Optical and was doing more challenging and exacting optical work. Then I received my draft notice. My parents' encouraged me to take a six-month deferment. When I agreed, Mr. Ray applied for it at once. This meant that I would likely get approved for it because Herron Optical was critical to the war effort.

In early September 1942, I decided against another six-month deferment and joined the Army, took my physical and was sworn in. We were told that we could delay reporting to Fort MacArthur for three weeks. I gave Herron Optical two weeks notice.

In a future article, Tom Cave returns home from the war. He'll have more to say about Jimmy Herron and the Herron Optical Company's ties to Hollywood.

~ ● ~

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

Outreach Report by Van Webster

Robert Frost Middle School (Granada Hills)

Date: Thursday, May 11, 2017

Time: 6:30pm – 9:30pm



Six members of the Los Angeles Astronomical Society's Outreach Team, aided by my son Stefan Webster, traveled to the north San Fernando Valley on the evening of May 11, to provide telescopic views and interpretive information for students at the Robert Frost Middle School in Grenada Hills. The campus is located in the foothills, north of the 118 freeway. School organizers had worried all week about the potential for clouds or even rain on this Thursday night. Luck was with us as the sky was hazy but cloud free and there was very little wind.



While waiting for the sky to darken, students had an opportunity to look at the Sun in both white light and Hydrogen alpha telescopes and binoculars.



Using his computer telescope mount, Zoly was able to get Jupiter in view fairly early in the evening. As the sky darkened, more of us could target the giant planet. The Galilean moons began to appear. The air was still, giving the students sharp images. It turned out that the students were in for a treat. Io was in front of the planet and the moon's shadow could be clearly seen on the surface of Jupiter. Throughout the evening, Io continued to move across the planet's face until by 9:00PM Io was clear of the planet and the shadow could still be seen on the planet's face.

Other targets were more challenging. The sky darkened enough to permit seeing Alcor and Mizar. I was able to get M82 to show up as a faint fuzzy patch in a light polluted sky field.

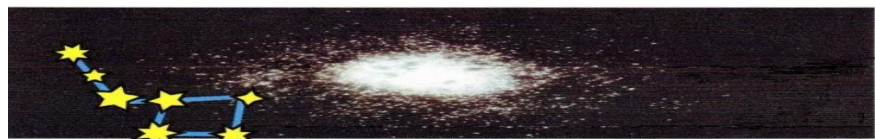


About 9:05, the Moon began to appear through the surrounding trees. By moving the telescope, the orb could be seen without the veil of intervening leaves. As we were coming to a close for the event, the moon raised high enough to provide



a pleasing view and successful cellphone photos for the participants.

In all, an estimated 125 students and families enjoyed this evening event. As we were packing up, the sky grew even darker and conditions improved for seeing. It is often typical that the best views could be had as the scopes were packed away.



Meet
Our
New
Members



Wayne and Joan Choe

Pao Feng Lin

Eric Mortensen

Alan and Diana Perkins

Alessandro Schillaci

Leon Kapersky and Family

Peter Li Wang

Nolan Lee



Please 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>

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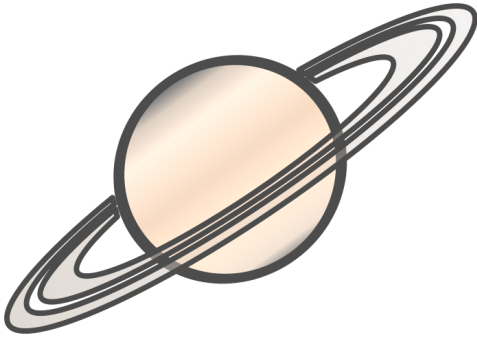
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A Guide To the Night Sky for June, 2017

By Tre Gibbs



On Tuesday, June 20th at 9:15pm Summer returns to the northern hemisphere. For a few weeks before this and a few weeks after, the sun will rise and set at their furthest northern points on the horizon. As a result of this, the sun's path across the sky will be the highest - or most furthest north - for the entire year. As you probably know, Earth is tilted. It's axis is about 24 degrees off of what would be considered straight up and down. As Earth orbits the sun, it's axis just happens to point to the same spot in space, a star about 433 light years away, "Polaris", which is Latin for "pole star", since Earth's North Pole points to it - hence it's more popular name, "The North Star".

As Earth continues it's orbit around the sun, there are times when the northern hemisphere is tilted toward the sun and times when it's tilted away from the sun. The Summer Solstice is the time when we in the northern hemisphere, or the top half of Earth, are tilted toward the sun. That's why, in summer, the sun appears high in our daytime sky as opposed to winter, when the northern hemisphere is tilted AWAY from the sun, and therefor appears much lower in our daytime sky. However, after this day, and as the sun continues it's journey around the sun, the days slowly begin to get shorter, although it's not very noticeable until sometime in mid to late July.

Saturn is back! By mid month, Saturn rises in the east-southeast just as the sun sets in the northwest. Spotting Venus, Mars and Jupiter is pretty easy since they are some of the brightest, non-twinkling objects in the sky. Saturn however is different. Due to the fact that it's so far away, Saturn looks more like one of the countless distant stars in the night sky. Only it's not - one look through a small telescope or a good pair of binoculars will reveal a hint of it's magnificent ring system. To find Saturn, wait until the night of June 9th. This month's "Full Strawberry Moon" will rise along with Saturn, but just to the left of the quintessential gas giant. The two will travel the night sky together until dawn, though the moon will be continuously inching it's way east of and away from Saturn. This becomes evident the following evening, when, on June 10th, the moon trails Saturn almost an hour later.

Look for bright Jupiter high in the south at sunset this month, but slowly moving further westward as the month progresses. Jupiter is larger than Saturn but also much closer to Earth than it's ringed neighbor, which is why it appears so bright in our evening skies.

So that's it for this month. Enjoy the return of both Summer and Saturn - and if you get a chance, Google NASA's Cassini mission, which has been exploring Saturn since it's arrival in 2004. The mission ends September 15th, 2017 as the Cassini spacecraft is running out of fuel and will do 22 consecutive dives between Saturn and it's rings, and then finally dives into the surface, becoming part of the planet itself.

Keep Looking Up!

Tre



Almanac



June 3 - Venus at Greatest Western Elongation. The planet Venus reaches greatest eastern elongation of 45.9 degrees from the Sun. This is the best time to view Venus since it will be at its highest point above the horizon in the morning sky. Look for the bright planet in the eastern sky before sunrise.

June 9 - 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 13:10 UTC. This full moon was known by early Native American tribes as the Full Strawberry Moon because it signaled the time of year to gather ripening fruit. It also coincides with the peak of the strawberry harvesting season. This moon has also been known as the Full Rose Moon and the Full Honey Moon.

June 15 - Saturn at Opposition. The ringed planet will be at its closest approach to Earth and its face will be fully illuminated by the Sun. It will be brighter than any other time of the year and will be visible all night long. This is the best time to view

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

June 21 - June Solstice. The June solstice occurs at 04:24 UTC. The North Pole of the earth will be tilted toward the Sun, which will have reached its northernmost position in the sky and will be directly over the Tropic of Cancer at 23.44 degrees north latitude. This is the first day of summer (summer solstice) in the Northern Hemisphere and the first day of winter (winter solstice) in the Southern Hemisphere.

June 24 - 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 02:31 UTC. This is the best time of the month to observe faint objects such as galaxies and star clusters because there is no

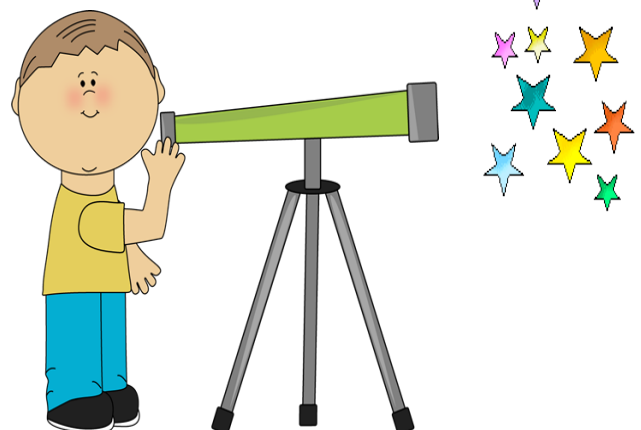
NASA Megamovie Information

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.



A FAMILY SCRAPBOOK OF THE UNIVERSE

Universe
Discovery Guide
For June



Globular Cluster M13, Hubble Space Telescope. Credit: : NASA, ESA, and the Hubble Heritage

Discover the universe with your family and friends!

IN THIS GUIDE:

ANCIENT STARS, ANCIENT STORIES » SKY FEATURE: HERCULES GLOBULAR CLUSTER » TRY THIS! » ACTIVITY: LOOK DEEP INTO THE HEART OF A GLOBULAR CLUSTER » CONNECT TO NASA SCIENCE » Acknowledgements » Appendix: June Star Map

Download the June guide using the following link:

<https://nightsky.jpl.nasa.gov/docs/06UDGHercules.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.

June 21, 2017 (Wednesday)

9:00 PM Eastern/ 6:00 PM Pacific

Exploring the Earliest Habitable Environments on Mars with **Bethany Ehlmann** from **NASA JPL**

More information coming soon.

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

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



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday				
28	29	30	31	1	Outreach - East LA (Private)	2:00 PM Star Party				
						Sunset: 8:03 PM				
4	5	6:30 PM Outreach - Inglewood	7:00 PM Garvey 8:00 PM Board Meeting	8	9	7:00 PM Outreach - Chilao VS				
						Sunset: 8:06 PM				
2:00 PM Concert Mt. Wilson	11	General Meeting - Eclipse (Private)	12	7:00 PM Garvey	14	15	16	Family Night (Private)	17	
								Sunset: 8:09 PM		
18	19	20	7:00 PM Garvey	21	Outreach - Monterey Park (Private)	22	100 Inch Night (Private)	23	Dark Sky Night (Private)	24
									60 Inch Night (Private)	
									Sunset: 8:10 PM	
25	26	27	7:00 PM Garvey	28	29	30	1			

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

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213-473-0880

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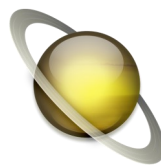
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Outgoing calls – collect or calling card



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





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