

Astronomy Club of Lompoc
Presents
The Sidereal Times



Messier 13 (see page 5)

Meeting News:

At the October meeting we discussed changing the club Logo, our picnic and nomination of club officers.

**Reminder: ACL club meeting November 8th 7:00 pm
Manzanita School Teachers Lounge.**



Lunar Calendar

New Moon 26th

Full Moon 12th

Figueroa Mt. (Old Photo)



Presidents Message

Hello, Skywatchers,

A HUGE THANK YOU to the many members who gathered at the Observatory on Saturday, October 19th for “Phase One” of installing our new Solar Power Station; also, a special shout-out to Edmund Burke, his son David, and Edmund’s friend, Tom Stevens for their part in all of this. I was very disappointed to have been called away and thus unable to participate. “Phase Two,” hopefully will find me there.

One thing I did get to do with the Club was our annual picnic at Thompson Park. No solar viewing this year was not a problem as the sixteen of us were lost in fun conversation and absolutely primo dining. The food centered around Vahan’s skills over the coals and the incredibly delicious tri-tip he grilled to perfection. I think he topped all previous years for taste and texture. The excellent sides and deserts provided by the rest of us completed the food fare perfectly.

Vince Tobin deserves special recognition for being the sole representative of ACL at the seventh annual gathering of women motorcyclists, called “Babes Ride Out,” held for the first time on the Central Coast at Santa Margarita Ranch east of Paso Robles. From their website comes this praise for Vince’s opening the heavens for them: “The beautiful Stargazers Garden on the ranch was perfect for some night sky viewing and thanks to The Vandenburg Amateur Astronomical Society [sic] we got a view of the planets from a deep space telescope. The Central Coast is a great place to just take a moment, relax and look up.” Thank you, Vince!

Looking forward to seeing ALL of you at our November meeting. Remember: we will be nominating officers (to be voted on at our December meeting) and choosing our ACL logo from among all the ones that have been submitted.

Skyward,
Tom

Events

November 2nd Star Party at the Observatory.

 Yea!

November 5th Taurids Meteor shower is a long running minor meteor shower producing only about 5 to 10 meteors per hour. It consists of 2 separate streams. The first is produced by dust grains left behind by Asteroid 2004 TG10, the second by debris left behind by Comet 2P Encke. It peaks on the night of November 5th. Meteors will radiate from the constellation of Taurus but can appear anywhere in the sky.

November 11th Rare transit of Mercury across the Sun. The planet will move directly between the Earth and Sun. Viewers with approved solar filters on their telescopes will be able to see the dark disk of the planet moving across the Sun. This is an extremely rare event, the next time this occurs will be in 2039. The transit will be visible in its entirety in the Eastern USA.

November 17th Leonids Meteor shower is an average shower producing up to 15 meteors per hour at its peak. The Leonids is produced by dust grains left behind by comet Temple –Tuttle. It peaks on the night of the 17th and the morning of the 18th. Meteors will radiate from the constellation of Leo but can appear anywhere in the sky.

November 23rd -Star Party at the Observatory

 Yea!

November 24th Conjunction of Venus and Jupiter will be visible on the 24th. The two bright planets will be visible within 1.4 degrees of each other in the evening sky. Look for this event in the Western sky just after sunset.

November 28th Mercury at greatest Western Elongation of 20.1 degrees from the Sun. It will be at its highest point above the horizon in the morning sky. Look for it low in the eastern sky just before sunrise.

November 30th Star party at the Observatory.

 Yea!

Star party's and Events

Oct 5th Star Party at the Observatory. Had a fair turn out, Tom, Vince, Bonnie, Joel and Candy, Vahan, Richard Ripley and 5 guests. Weather was good no bugs and no wind. Sky was reasonably clear but the Moon washed out some of the stars. Joel and Candy Set up the 10 inch Meade, Vince ran the Observatory and Tom set up the DS 10 inch Newtonian. Vahan assisted where needed and also displayed some photographs. The guests looked at Jupiter, Saturn the Moon and several other objects. All in all it was a good night under the stars.

 Yea!

Oct 12th Our annual BBQ was held at Thompson park again this year. The weather was ideal Sunny mild and an ever so slight breeze. Vahan BBQ'd Tri Tip and supplied garlic bread for the main course. Attending members brought Beans, cake, chip and dip, salads of all types, deviled egg and a bunch of other goodies. In attendance were Tom, Jana, Vahan and Carla, Dave, Louise Gray, Louise and Ken Spraker, Selmer, Edmund, Bonnie, Joel, Ebbe and Elsa, Craig and Annette. We all had a good time and enjoyed the camaraderie and good food. We hope to do this again next October.

Oct 19th 0900 hrs work party on site to install new solar panel and batteries. In attendance were Edmund, Joel, R. Ripley, Vahan, Danny, Tom Stevens, Vince, David Burk, Ken Spraker and Gary. Started disassembly of the old solar panel. Dug out the old mounting pole and installed the new one using quick set concrete. Lots of labor intensive work. Prepared new 12 gauge wire for installation of the new solar panel. Assembled the new panel on the ground but did not install same because concrete requires approximate 4 hours to cure and it was already late in the day. Edmund went to Home Depot for electrical supplies and brought everyone a Subway Sandwich for lunch on his return about 1:00 Pm. Thanks Edmund.

 Yes!

Oct 19th Star Party at the Observatory. Joel showed up after working all day on the solar refit detail apparently he was the only one that showed. Stayed awhile with his scope then called it a day! That's dedication for ya.

 Cool!

Oct 26th Star Party at the Observatory. Dave and Vahan on site about 6:30 Pm. Sky was slightly overcast and the Haunted Asylum Was in full swing with flood lights etc. By 7:30 no one else showed up and with the sky getting more obscured we departed.

 Oh well!

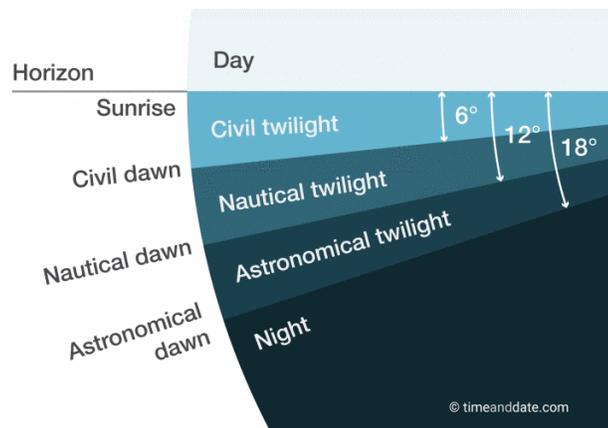
November 2019 Moon



Full 12th, New 26th, Last Quarter 19th, First Quarter 4th.

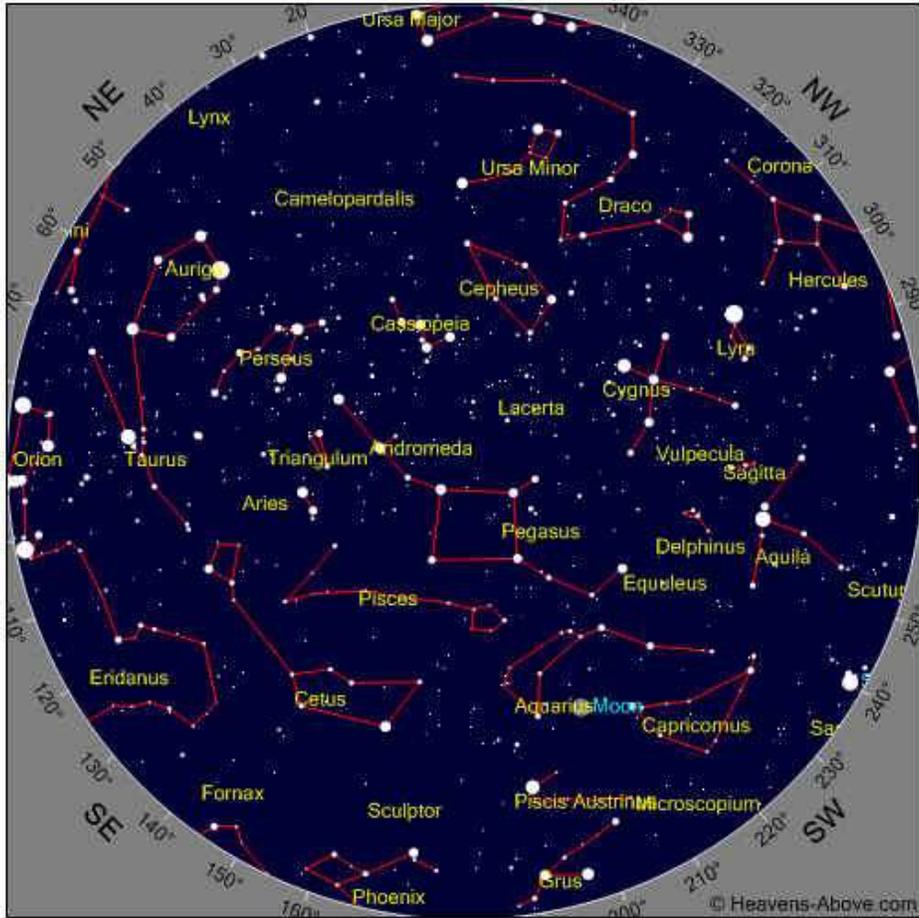
Moon Facts and folk lore

The first time you see a crescent Moon for the month, take all your spare coins out of your pocket and put them in the other pocket. This will ensure good luck for the next month.



November 2019 Sky

Some Objects of interest, M31, M1, M57, Double Cluster



Time

Year	2019	Month	11	Day	5	Hour	20	Minute	48
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Photo Courtesy of Joel Kruger (ACL's Newest Astro Photographer)



Messier 13, NGC 6205, also known as the Great Globular Cluster in the constellation of Hercules. M13 is one of the brightest and best known globular in the northern sky. It has an apparent magnitude of 5.8 and lies at a distance of 25,100 light years from Earth. It has an age estimated to be 11.65 billion years and contains about 300,000 stars. The estimated mass is half a million solar masses. M13 stretches across 20 arc minutes of sky that corresponds to a linear diameter of 145 light years. The brightest star in M13 is V 11, a red giant classified as a Cepheid variable and has a visual magnitude of 11.95. The cluster contains an unusually young B2 type star designated Barnard 29. The star does not really belong to the globular cluster but was presumably picked up by M13 on its orbit around the Milky Way. Other stars in the cluster are very old and only have about 5% of the Sun's iron content as they were formed before stars in our galaxy created metals. M13 also contains about 15 blue stragglers, old stars that appear younger and bluer than their neighbors. M13 is a class V globular cluster, one with an intermediate concentration of stars toward the center. It has a densely packed central region with up to a hundred stars populating a cube only 3 light years on a side. To illustrate, Alpha Centauri the nearest star system to Earth, is just over 4 light years away. In other words stars in the cluster's core region are about 500 times more concentrated than those in our immediate stellar neighborhood. Globular clusters orbit the Milky Way Galaxy outside the galactic disk at tens of thousands of light years away. Image capture was 30 frames of 30 second images, totaling 15 minutes of exposure time. 10 inch Meade LX200 gps, SCT fork mounted on a wedge. ZWO ASI224MC, Guide camera, ZWO ASI air Optolong L-pro filter, controlling everything, plate solving, guiding, imaging etc. Post processing Deep Sky Stacker & GIMP.

For What its Worth

Asteroids a Brief Account;

Asteroids are leftovers from the formation of our solar system 4.6 billion years ago. They are rocky worlds too small to be called planets. There are millions of asteroids ranging in size from hundreds of miles to several feet across, in total the mass of all the asteroids is less than that of Earth's moon. Asteroids can be as large as Ceres which is 583 miles across. On the other end of the scale the smallest asteroid ever studied is the 6 foot wide space rock 2015 TC25 that was observed when it made a close flyby of Earth in October 2015. As asteroids revolve around the Sun in elliptical orbits they rotate, sometimes tumbling quite erratically. More than 50 asteroids are also known to have a small companion moon, with some having two moons. Binary or double asteroids also exist in which two asteroids of roughly equal size orbit each other and triple asteroid systems are known as well. Many asteroids seemingly have been captured by a planet's gravity and become moons. Likely candidates include Mars's moons Phobos and Deimos and most of the outer moons of Jupiter, Saturn, Uranus and Neptune.

Asteroids lie within three regions of our solar system. Most asteroids lie in a vast ring between the orbits of Mars and Jupiter. This main asteroid belt holds more than 200 asteroids larger than 60 miles in diameter. Scientists estimate the asteroid belt contains between 1.1 million and 1.9 million asteroids larger than 3,200 feet in diameter and millions of smaller ones. Not everything in the main belt is an asteroid. Ceres once thought of only an asteroid is also considered a dwarf planet. In the past decade scientists have also identified a class of objects known as Main Belt Asteroids small rocky objects with tails. While some of the tails form when objects crash into an asteroid or by disintegrating asteroids other may become comets in disguise.

Near earth asteroids (NEAs) circle closer to the Earth than the Sun. Amor asteroids have close orbits that approach but that do not cross Earth's path. Apollo asteroids have Earth-crossing orbits but spend most of their time outside the planet's path. Aten asteroids also cross Earth's orbit but spend most of their time inside Earth's orbit. Atira asteroids are near-Earth asteroids whose orbits are contained within Earth's orbit. Roughly 10,000 of the known asteroids are NEAs. In addition to classification of asteroids based on their orbits most asteroids fall into 3 classes based on composition.

The C-type or carbonaceous asteroids are grayish in color and are the most common including more than 75 percent of known asteroids. They probably consist of clay and stony silicate rocks and inhabit the main belt's outer regions.

The S-type or siliceous asteroids are greenish to reddish in color and account for 17 percent of known asteroids and dominate the inner belt. They appear to be made of silicate materials and nickel-iron.

The M-type or metallic asteroids are reddish in color, make up most of the rest of the asteroids, and dwell in the middle region of the main belt. They seem to be made up of nickel-iron.

There are many other rare types based on composition as well, for instance, V type asteroids typified by Vesta have a basaltic, volcanic crust.

Ever since Earth formed about 4.5 billion years ago asteroids and comets have routinely slammed into the planet. Asteroids large enough to cause global disaster, on average, strike Earth once every 1,000 centuries.

Smaller asteroids that are believed to strike Earth every 1,000 to 10,000 years could destroy a city or cause devastating tsunamis. Space rocks smaller than 82 feet will most likely burn up as they enter Earth's atmosphere meaning that even if 2015 TC25 (mentioned earlier) entered the atmosphere it probably wouldn't make it to the ground.

Club Officers



President
Tom Gerald

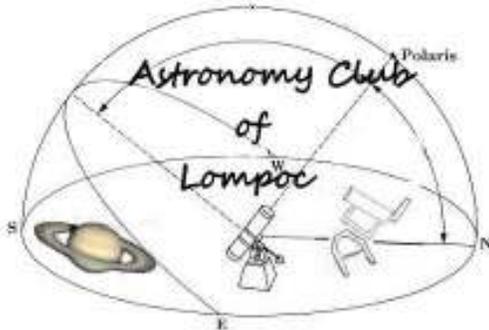
Vice president
& Treasurer
Jana Hunking



News Letter Editor
Vahan Yeterian

*“Astronomy compels the soul to look upward,
and leads us from this world to another”.*
(Plato 428 – 347 BC)

Possible New Club Logo



Club Meeting

Reminder Club meeting November 8th at 7:00Pm Manzanita School teachers Lounge.

Star Parties (as always weather permitting)

Other Astronomy Club Meetings

Central Coast Astronomical Society

Link to web site...

<http://www.centralcoastastronomy.org/>

Santa Barbara Astronomical Unit

Link to web site...

[http:// www.sbau.org/#AU_EVENTS_Calendar](http://www.sbau.org/#AU_EVENTS_Calendar)

Night Time Bright Objects (no scope required)

Link to “Heavens Above” web site

[http:// www.heavens-above.com/](http://www.heavens-above.com/)

(Iridium Satellite)

(ISS Visible Pass)

Be sure to set the nearest location from their pull-down menu.

The web site link below will take you to some Great Milky Way interactive images and how It was developed. (Type it in the search box.)

<http://skysurvey.org/>

ACL "Astronomy Club of Lompoc"

Dave McNally is the ACL Web Site Serf/Minion

Dave

