

Astronomy Club of Lompoc
Presents
The Sidereal Times



M104 Galaxy (see page 5)



Meeting News:

At the September ACL Zoom video meeting we had a Presentation by the ACL President about NASA Planetary Exploration..

Reminder: ACL club meeting October 9th is will be held on Zoom video again due to Covid-19 virus



Lunar Calendar

New Moon 16th
Full Moon 1st

Ghosts & Goblins Month



Happy and Healthy Halloween

Presidents Message

Hello, Friends,

Back in the Spring I began, before writing the current President's Letter, looking back at the message I had written all of you one year earlier. September a year ago, I see that we had a rare break in the clouds on the 21st, and had a very successful Star Party at the Observatory. [You do remember Star Parties, don't you?] Former member Dave Covey among the good crowd attending. From here, Dave had gone on to meet his Scottsdale club members for an overnight "working tour" of Mt. Wilson, ironic to read given the recent news we have followed about the fires at its perimeter.

Also mentioned in that letter was the annual picnic that was two weekends away. We will miss out on such a gathering this Fall, but we may be able to reschedule as soon as is safe, and not wait until fall to get together around food and story-sharing. We have been deprived of so much this year, that it would be wonderful to do this sooner than later.

Thank you to all who attended our September Zoom meeting. We have the process down now and this meeting was almost like being together. A very exciting contribution was Vahan and Joel sharing their photos with us! I hope we can look forward to seeing member photos shared at all future meetings. Our meeting on October 9 will be highlighted by the return of Dr. Joe Bassi, who will bring us up to date on the probes currently exploring the Sun.

Lastly, I can truly say that my spirits were boosted by joining Vahan in painting the Observatory's damaged door on Monday the 14th. Edmund and his son gave us an immediate sense of security by replacing the lock and handle, but covering that vandal's offensive shoe prints seemed to give a full sense of taking back our treasure from someone who had no idea what that site means to us. Plus, it was fun to share the work with Vahan, trading barbs and, yes, suffering through his jokes. JUST KIDDING! That was fun, too!

Skyward,

Tom



Events

Oct 1st Mercury at greatest Eastern Elongation of 25.8° from the Sun. Time to view Mercury since it will be at its highest above the horizon in the evening sky look low in the West just after sunset.

Oct 7th Draconids Meteor Shower is a minor shower producing only about 10 meteorites per hour. It is produced by dust grains left over by comet 21P Giacobini-Zinner. Best viewing is in early evening. Meteors will radiate from the constellation of Draco but can appear anywhere in the sky.

Oct 13th Mars at Opposition and will be at its closest approach to Earth. It will be visible all night long. This is the best time to view and photograph the Red planet

Oct 21 & 22 Orionids meteor Shower is an average shower producing up to 20 meteors per hour at its peak. It is produced by dust grains left over from Comet Halley. It peaks this year on the night of the 21st and the morning of the 22nd. Meteors will radiate from the constellation of Orion but can appear anywhere in the sky.

Oct 29, 30th Southern Taurids meteor shower is a long running minor meteor shower producing only about 5 –10 meteors per hour. The shower is famous for producing a higher than normal percentage of bright fireballs. The Taurids are produced by debris left over from Comet 2P Encke. Best viewing will be just after midnight. Meteors will radiate from the constellation of Taurus but can appear anywhere in the sky.

Oct 31st Uranus at Opposition and will be at its closest approach to Earth and will be brighter than any other time of the year and be visible all night long. This is the best time to view Uranus but due to its distance it will appear as a tiny blue dot in all but the largest more powerful telescopes.

Oct 10, 17, 24th -*Star Party at the Observatory Cancelled / corona Virus*



Grrr!



Star party's and Events

Sept 12, 19, & 26th Star Party at the Observatory cancelled due to Corona virus pandemic.



Nuts!



Oct 2020 Moon



Full 1st, New 16th, Last Quarter 10th, First Quarter 23rd .

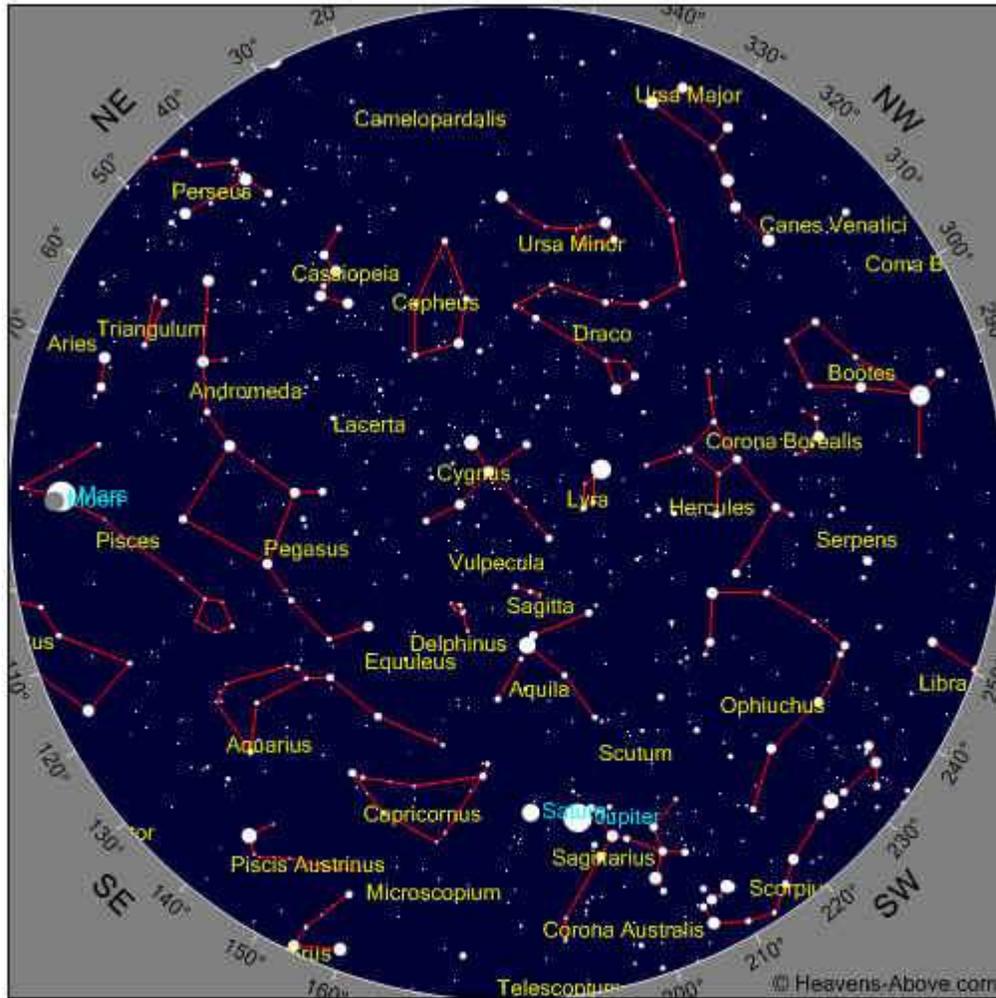
Moon Facts and folk lore

The Moon is the fifth largest natural satellite in the Solar System. At 3,475 km in diameter, the Moon is smaller than the major moons of Jupiter and Saturn. Earth is about 80 times the volume than the Moon, but both are about the same age.



October 2020 Sky

Some Objects of Interest, M13, M 57, M27, M31, Jupiter



Time

Year	2020	Month	10	Day	2	Hour	20	Minute	18
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Photo Courtesy of Gary Satterfield



Messier 104 spiral galaxy known as the “Sombrero” (the Mexican Hat) because of its particular shape. It lies a distance of approximately 30 million light years. This luminous and massive galaxy has a total mass of about 800 billion suns and is noted for its dominant nuclear bulge, composed mainly of mature stars and is nearly edge-on disk composed of stars, gas and dust. The complexity of this dust is apparent directly in front of the bright nucleus but is also evident in the dark absorbing lanes throughout the disc. A large number of small diffuse objects can be seen as a swarm in the halo of M104. Most of these are globular clusters similar to those found in our own Milky Way Galaxy but M104 has a much larger number of them ranging from 1200 to 2000. This galaxy also appears to host a super massive black hole of about 1 billion solar masses, one of the most massive black holes measured in any nearby galaxy and 250 times larger than the black hole in the Milky Way. Despite having such a massive black hole at the center the galaxy is rather quiet implying that the black hole is on a very stringent diet. The galaxy is receding from us at 1024 Km/s. Its enormous recession velocity was measured at Lowell observatory in 1912 and at the time it was the largest red shift ever measured in a galaxy. Equipment AT8RC on a CGEM mount with a Canon 500D DSLR, 7 min x 36 frames at ISO 800. Darks, Flats and Bias frames. Images Plus for calibration, stacking and DDP, CS2 for final adjustments.



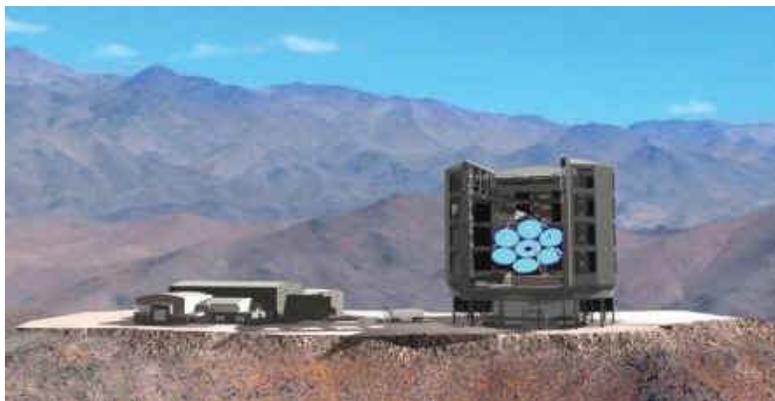
For What its Worth

A brief Account

The Giant Magellan Telescope will be one member of the next generation of giant ground-based telescopes that promises to revolutionize our view and understanding of the universe. It will be constructed in the Las Campanas Observatory in Chile. Commissioning of the telescope is scheduled to begin in 2029. The GMT has a unique design that offers several advantages. It is a segmented mirror telescope that employs seven of today's largest stiff monolith mirrors as segments. Six off-axis 8.4 meter or 27-foot segments surround a central on-axis segment, forming a single optical surface 24.5 meters, or 80 feet, in diameter with a total collecting area of 368 square meters. The GMT will have a resolving power 10 times greater than the Hubble Space Telescope. The GMT project is the work of a distinguished international group of universities and science institutions.

Light from the edge of the universe will first reflect off of the seven primary mirrors, then reflect again off of the seven smaller secondary mirrors, and finally, down through the center primary mirror to the advanced CCD (charge coupled device) imaging cameras. There, the concentrated light will be measured to determine how far away objects are and what they are made of. The GMT primary mirrors are made at the Richard F. Caris Mirror Lab at the University of Arizona in Tucson. They are a marvel of modern engineering and glassmaking; each segment is curved to a very precise shape and polished to within a wavelength of light—approximately one-millionth of an inch. Although the GMT mirrors will represent a much larger array than any telescope, the total weight of the glass is far less than one might expect. This is accomplished by using a honeycomb mold, whereby the finished glass is mostly hollow. The glass mold is placed inside a giant rotating oven where it is “spin cast,” giving the glass a natural parabolic shape. This greatly reduces the amount of grinding required to shape the glass and also reduces weight. Finally, since the giant mirrors are essentially hollow, they can be cooled with fans to help equalize them to the night air temperature, thus minimizing distortion from heat.

One of the most sophisticated engineering aspects of the telescope is what is known as “adaptive optics.” The telescope's secondary mirrors are actually flexible. Under each secondary mirror surface, there are hundreds of actuators that will constantly adjust the mirrors to counteract atmospheric turbulence. These actuators, controlled by advanced computers, will transform twinkling stars into clear steady points of light. It is in this way that the GMT will offer images that are ten times sharper than the Hubble Space Telescope's. The location of the GMT also offers a key advantage in terms of seeing through the atmosphere. Located in one of the highest and driest regions on earth, Chile's Atacama Desert, the GMT will have spectacular conditions for more than 300 nights a year. Las Campanas Peak (“Cerro Las Campanas”), where the GMT will be located, has an altitude of over 2,550 meters or approximately 8,500 feet. The site is almost completely barren of vegetation due to lack of rainfall. The combination of seeing, number of clear nights, altitude, weather and vegetation make Las Campanas Peak an ideal location for the GMT.



Astronomy Club Officers



President
Tom Gerald

Vice President &
Treasurer
Jana Hunking

ACL Support Personnel

ACL News letter Editor
Serf / Minion Vahan Yeterian



ACL Webmaster
Serf / Minion David McNally



Club Meeting

Reminder Club meeting Oct 9th 7:00 Pm via Zoom video conferencing.

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)

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/>

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

ACL Club Logo

