

Astronomy Club of Lompoc Presents The Sidereal Times



Messier 31(see page 5)

Meeting News:

Reminder: ACL June 10th club meeting cancelled due to Pandemic Virus Covid -19 and State mandate to stay home.



Lunar Calendar:

New Moon 21st
Full Moon 5th

Long time ago



Presidents Message

Greetings Star People!
Well, that's all from me.
Tom

JUST KIDDING! But it has been hard to come up with cheery words between the pandemic limits on our movements and the blasted nightly "June Gloom". However I can say that last night (Sunday, 24th) taught me a lesson in trying to stay positive. The afternoon offered a peerless sky without even a contrail, but I "just knew" that dusk would bring the return of the overhead blanket. I promised to watch a movie early with Molly and we settled in. Then, and this is no reflection on the movie or her delightful company, I just had to look outside and found the gloaming to be unblemished! I snagged my binoculars and went out to find a lovely celestial necklace of the crescent Moon and Venus with yellowish Mercury shining proudly between them. [Bonus feature: Gemini's beautiful "1 Geminorum" was hugging close by to the Moon's crescent, a lovely binary, though my binocs, of course, could not split them out] As this necklace becomes unstrung we will have a few more evenings of seeing Mercury as it rises even higher in the West and Venus sinks lower in its journey to reappearing in the East in the mornings.

One clear evening and I feel myself getting a surge of positivity. I will have a telescope set up and ready for tonight whatever it may bring! More good news on the way so stay tuned.
Ever skyward,
Tom

Events

June 4th

Mercury at greatest Eastern elongation of 23.6 degrees from the Sun. This is the best time to view Mercury since it will be at its highest point in the evening sky just after sunset.

June 5th Penumbral Lunar eclipse occurs when the Moon passes through the Earth's partial shadow. The eclipse will be visible throughout most of Europe, Africa, Asia the Indian Ocean and Western Australia.

June 13th *Star Party at the Observatory.* Cancelled Covid -19 virus.



June 21st Annular Solar Eclipse occurs when the Moon is too far away from the Earth to completely cover the Sun. The result is a ring around the darkend Moon. The Suns corona is visible during an Annular eclipse. The path of the eclipse will begin in central Africa and travel through Saudi Arabia, northern India and southern China before ending in the Pacific Ocean. A partial eclipse will be visible throughout most of Eastern Africa, the Middle East and South Asia.

June 20th *Star Party at the Observatory.* Cancelled Covid -19 virus.



June 20th June Solstice occur at 21.43 UTC. The north pole of the Earth will be tilted toward the Sun which will have reached its North most position in the sky and will be directly over the tropic of Cancer at 23.44 degrees North latitude. It is the first day of summer in the northern hemisphere and the first day of winter in the Southern hemisphere.

June 27th *Star Party at the Observatory.* Cancelled Covid -19 virus.



Some time past tour VAFB



Star party's and Events

May 2nd Star Party @ observatory, Cancelled due to Covid -19 virus.



May 16th Star Party @ the Observatory. Cancelled due to Covid-19 virus.



May 23rd Star Party @ the Observatory Cancelled due to Covid-19 virus.



May 30th Star party @ the Observatory cancelled due to Covid-19 virus.

Tour Group



Treats at a meeting



June 2020 Moon



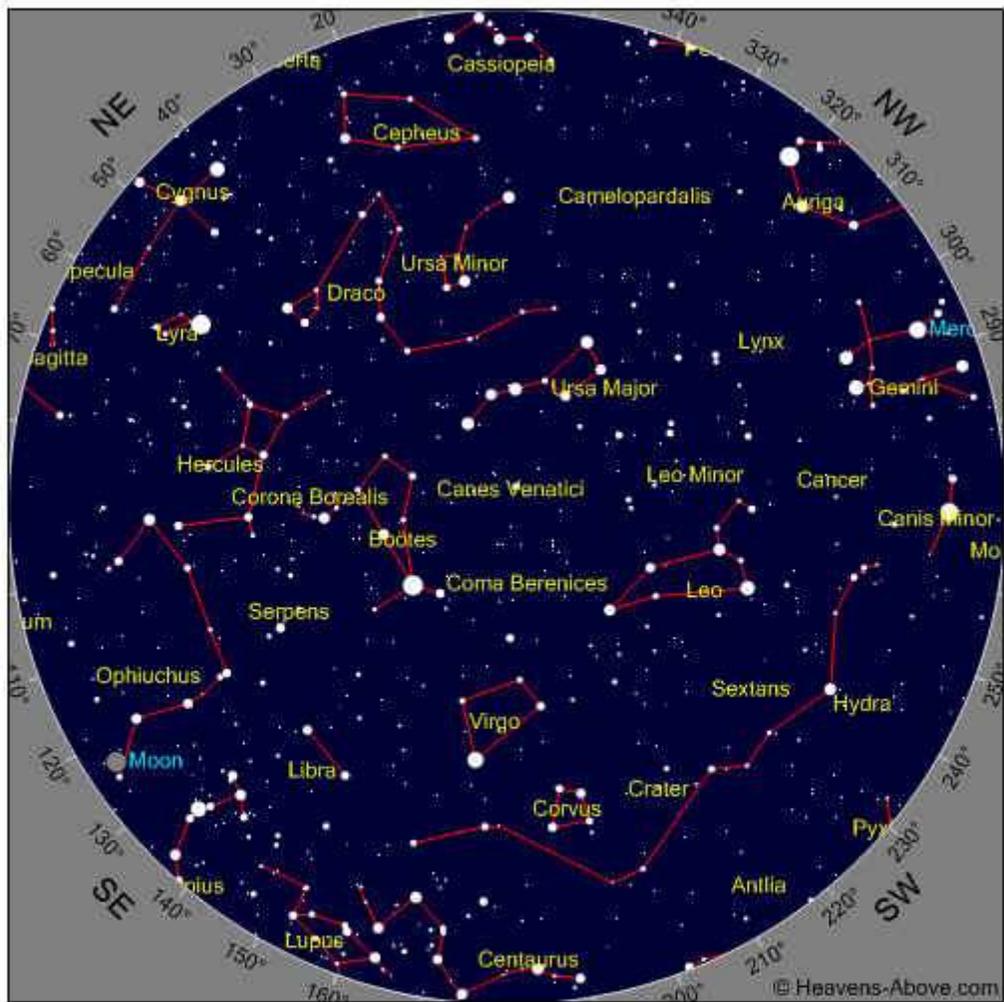
Full 5th , New 21st , Last Quarter 13th , First Quarter 28th

Moon Facts and Folklore

There is a British legend that if Christmas fell on a Dark Moon the following years harvest would be a bountiful one. In some parts of the Isles it is believed that a Waning Moon on Christmas meant a good crop next fall but a Waxing Moon meant a bad crop.

January 2020 Sky

Some Objects of interest, M13, Moon, M95



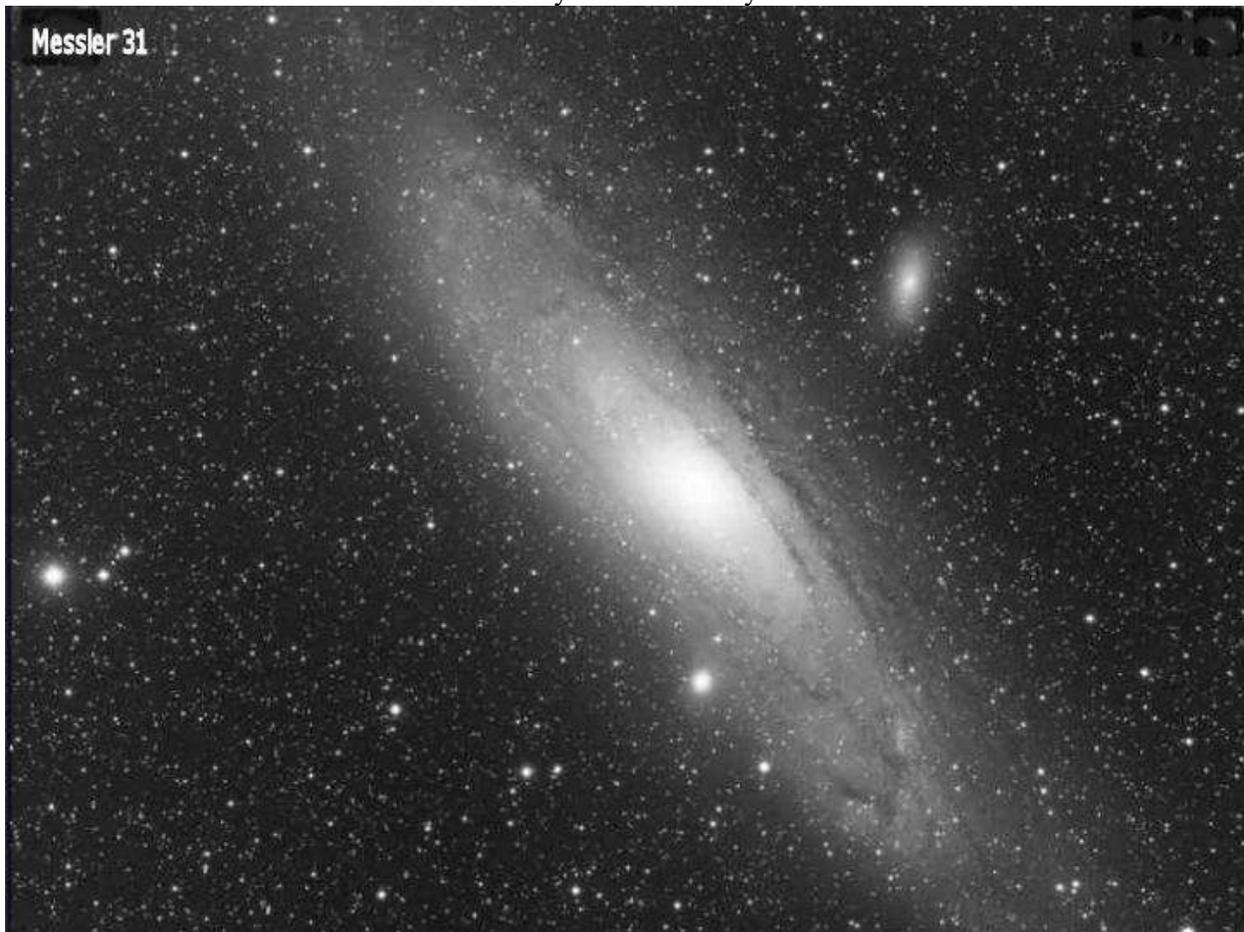
Time

Year	2020	Month	6	Day	5	Hour	21	Minute	6
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Solar camp out



Photo courtesy David McNally



The Andromeda galaxy also known as Messier 31, M31, or NGC224 is a spiral galaxy approximately 780 kiloparsecs (2.5 million light years) distant. It is the nearest major galaxy to the Milky Way and is often referred to as the Great Andromeda Nebula in older texts. It received its name from the area of the sky in which it appears, the constellation of Andromeda that was named after the mythological princess Andromeda. Andromeda is approximately 220,000 light years across. It is the largest galaxy of the local group also containing the Milky Way, the Triangulum galaxy, and other small galaxies. Despite earlier findings that suggested that the Milky Way contains more dark matter and could be the largest in the grouping, the 2006 observations by the Spitzer Space Telescope revealed that Andromeda contains one trillion stars at least twice the number of stars in the Milky Way that is estimated to be 200-400 billion. The mass of the Andromeda galaxy is estimated to be 1.5×10^{12} solar masses while the Milky Way is estimated to be 8.5×10^{11} solar masses. The Milky Way and the Andromeda galaxies are expected to collide in 4.5 billion years eventually merging to form a giant elliptical galaxy or perhaps a large disc galaxy. The apparent magnitude of the Andromeda galaxy at 3.4 is among the brightest of the Messier objects making it visible to the naked eye on moonless nights or when viewed from areas with moderate light pollution. Image capture sigma 170-500 f/5.6 telephoto lens. Canon T3i modified Baader filter, Celestron CGEM mount hypertuned. DSS 3.3.4 processing software. Frames 20 x 120" 0.7 hrs integration time.

For What its Worth

Comets: a brief account;

As of 1995, 878 comets have been cataloged and their orbits at least roughly calculated. Of these 184 are **periodic** comets (orbital periods less than 200 years); some of the remainder are no doubt periodic as well, but their orbits have not been determined with sufficient accuracy to tell for sure.

Comets are sometimes called ‘dirty snowballs’ or ‘icy mudballs’. They are a mixture of ices (both water and frozen gases) and dust that for some reason didn’t get incorporated into planets when the solar system was formed. This makes them very interesting as samples of the early history of the solar system. When they are near the Sun and active, comets have several distinct parts:

nucleus: relatively solid and stable, mostly ice and gas with a small amount of dust and other solids;

coma: dense cloud of water, carbon dioxide and other neutral gases sublimed from the nucleus;

hydrogen cloud: huge (millions of km in diameter) but very sparse envelope of neutral hydrogen;

dust tail: up to 10 million km long composed of smoke-sized dust particles driven off the nucleus by escaping gases; this is the most prominent part of a comet to the unaided eye;

ion tail: as much as several hundred million km long composed of plasma and laced with rays and streamers caused by interactions with the solar wind.

Comets are invisible except when they are near the Sun. Most comets have highly eccentric orbits which take them far beyond the orbit of Pluto; these are seen once and then disappear for millennia. Only the short and intermediate-period comets (like Comet Halley), stay within the orbit of Pluto for a significant fraction of their orbits. After 500 or so passes near the Sun most of a comet’s ice and gas is lost leaving a rocky object very much like an asteroid in appearance. (Perhaps half of the near Earth asteroids may be “dead” comets.) A comet whose orbit takes it near the Sun is also likely to either impact one of the planets or the Sun or to be ejected out of the solar system by a close encounter (esp. with Jupiter). Meteor shower sometimes occur when the Earth passes thru the orbit of a comet. Some occur with great regularity: the Perseid meteor shower occurs every year between August 9 and 13 when the Earth passes thru the orbit of Comet Swift-Tuttle. Comet Halley is the source of the Orionid shower in October.

Many comets are first discovered by amateur astronomers. Since comets are brightest when near the Sun, they are usually visible only at sunrise or sunset. Charts showing the positions in the sky of some comets can be created with a planetarium program. Comets come from the Kuiper belt and the Oort Cloud. These areas of space are way out in the solar system far away from the Sun. The Oort cloud is so far away we have never even seen it! The comets visible from Earth are most likely ones that came from the closer Kuiper belt which is near Pluto. There are millions of comets, and they are all orbiting the Sun. Most take less than two hundred years to do so, and others travel much slower, potentially taking millions of years to complete an orbit. Comets spend most of their years in the Kuiper belt and Oort cloud. Every now and again two comets can crash into one another. When this happens, they often change direction, and this can throw them out towards the inner solar system. When a comet approaches the inner planets, it is warmed by the Sun. When this happens, it begins to melt and throws out dust and gas. This creates a head and the tail. The tail is the part of the comet we see in the sky. The tail always points away from the Sun. This means that sometimes the tail is behind the comet and sometimes it is in front. It all depends on whether the comet is traveling towards or away from the Sun. The word comet comes from the Greek word Kometes meaning long hair. This is because of how a comet’s tail can look like long flowing locks of hair. Like asteroids, comets are leftovers from the formation of the solar system. We don’t know a lot about them at this point, but scientists believe they may hold clues to how the solar system came to be. The most famous of all time is Halley’s Comet. Halley is a periodic comet and is visible from Earth every 76 years and has been for centuries. Its last appearance was in 1986. Other famous comets include the Hale-Bopp comet, Donati’s comet and the Shoemaker-Levy-9 comet.

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Club Meeting

Reminder ACL Club meeting June 10th Cancelled due to Covid -19 Virus and stay home mandate by the State..

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)

Link to "Heavens Above" web site
[http:// www.heavens-above.com/](http://www.heavens-above.com/)

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

