

Astronomy Club of Lompoc Presents The Sidereal Times



Messier 3 (see page 5)

Meeting News:

The September 8th club meeting was cancelled and in its place we had a pot luck Picnic at River Park on Sept 9th. Photos from the Sept Pot Luck will be in the November News Letter.

Reminder: ACL club meeting Oct. 13th will be held at Manzanita School Teachers Lounge 7:00 Pm.



Lunar Calendar

New Moon 14
Full Moon 28

Happy Halloween



Presidents Message

Our Annual Picnic- this time a potluck, at River Park on Sept. 9, went well with eventually 12 attending. Bonnie brought 2 potential members. The food was good, with Tom's barbequed tri-tip steak, and a variety of salads, fruit and a chocolate cake that Jana made. The weather was just about perfect with warm temperatures and sunny skies. Thanks to both Tom and Vince we could observe sunspots through their telescopes and a "Sunspotter" device that projected the sunspots on a paper inside the open wooden box.

Reserve this **October 14, the Saturday** the day after our next meeting- for viewing the partial Eclipse of the sun. It will be an **Annular Solar eclipse** but only parts of Oregon, Colorado, New Mexico, and Texas will see the "ring of Fire"-totality as the moon does not completely cover the sun in the view that day. Our local area will see almost a 70% partial eclipse- But remember- You can only see the eclipse SAFELY with solar glasses, a real solar telescope filter, or a handmade pin hole box for viewing it, without looking at the sun directly. Jana will bring an example of this device to the Oct. Meeting and solar North American **Total** solar Eclipse will be on April 8th **next year in 2024**. As an Astronomy Club, we will need to plan for the public viewing of the Partial eclipse for our local area. Be thinking how you would like to participate with us in this exciting event.

The Star Party Night at Sunburst on August 12 went very well with over 70 persons attending. Hopefully at our next meeting one of our members that attended will fill us in on that night.

Our Presentation for October, will be on the critical issue of **Space Junk**, and what can be done about eliminating it.

Hoping for Clear skies! Jana

Events

Oct 17, 25 & 31 -Star Party at the Observatory

October 7 Draconids Meteor shower is a minor shower producing only about 10 meteors per hour. It is produced by dust grains left behind by comet Giacobini-Zinner. It is best viewed in the early evening. It peaks this year on the night of the 7th. Meteors will radiate from the constellation of Draco but can appear anywhere in the sky.

October 14 Annular solar eclipse the path will begin in the Pacific ocean off the coast of Canada and move across the Southwestern United States and Central America, Columbia, and Brazil. A partial eclipse will be visible through out North and South America.

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

October 23 Venus at greatest Western Elongation of 46.4° from The Sun. Best time to view Venus since it will be at its highest point above the horizon in the morning sky just before Sunrise.

Setup Solar array



Star party's and Events

Solar Star party



Replacing Batterys



Solar Eclipse time



Oct 2023 Moon



Full 28, New 14, Last Quarter 6, First Quarter 22

Moon Facts and folk lore

Average distance from Earth 238,855 miles (384,400 Klm)

Perigee 225,700 miles (363,300 Klm)

Apogee 252,000 miles (405,500Klm)

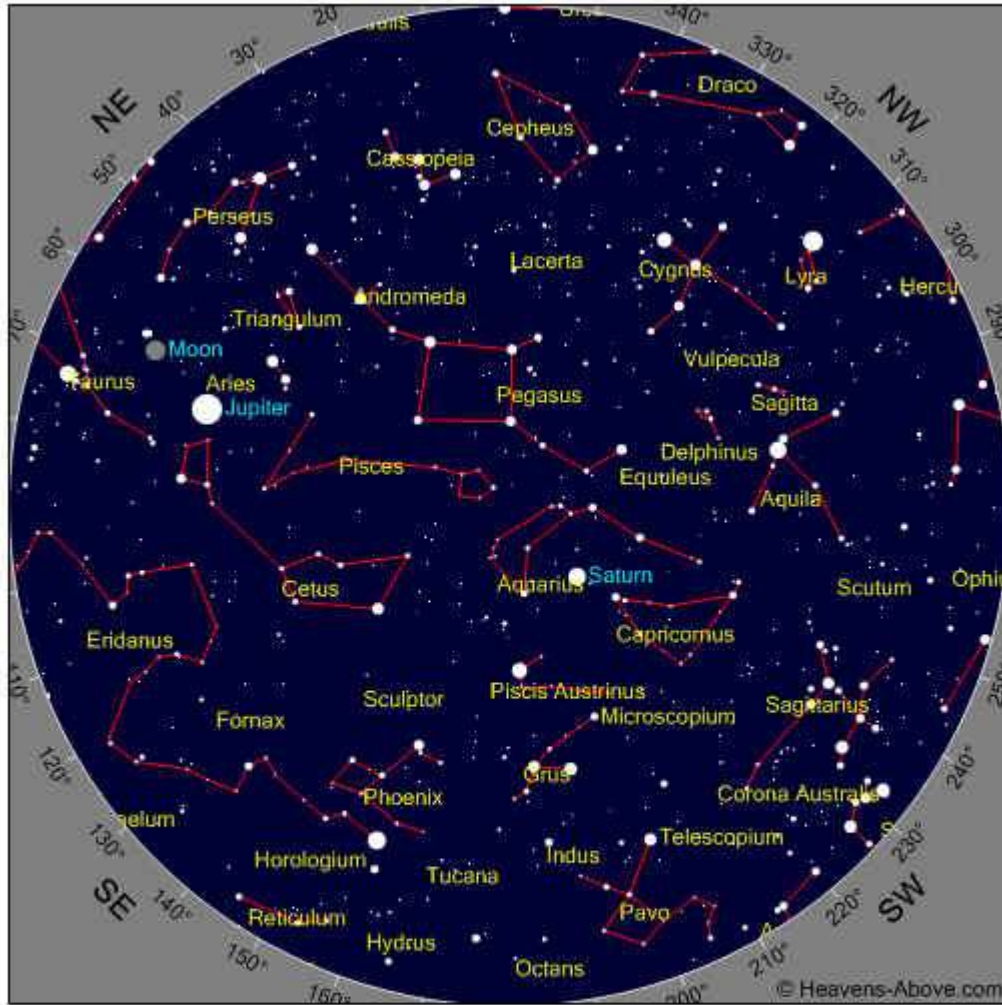
Orbit circumference 1,499,618.58 miles (2413,402 Klm)

Mean orbital velocity 2287 mph (3680.5 Klm)



Oct 2023 Sky

Some Objects of interest, M 31, Jupiter, Saturn, Moon



Time

Year	2023	Month	10	Day	2	Hour	22	Minute	20
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Photo Courtesy of Vahan Yeterian



Messier 3 Globular Cluster NGC 5272 is a globular cluster of stars in the Northern constellation of Canes Venatici. It is one of 250 known globular clusters in the Milky Way galaxy. M3's overall spectral class is F2. The cluster has a bright core with a diameter of about 6 arcminutes and spans a total of 12 arcminutes. The cluster is one of the largest and brightest and is made up of around 500,000 stars. It is estimated to be about 8 billion years old and is located at a distance of about 33,000 light years from Earth. Messier 3 is located 31,600 light years above the galactic plane and roughly 38,800 light years from the center of the Milky Way galaxy. It contains 274 known variable stars, by far the highest number found in any other globular cluster. These include 133 RR Lyrae variables of which about a third display the Blazhko effect of long period modulation. Messier 3 also contains a relatively high number of blue stragglers, blue main sequence stars that appear to be young and are bluer and more luminous than other stars in the cluster. These stars are now believed to form as a result of stellar interactions. The overall abundance of elements other than hydrogen and helium, what astronomers term the metallicity, is in the range of -1.34 to -1.50 dex. This value gives the logarithm of the abundance relative to the Sun, the actual proportion is 3.2 - 4.6% of solar abundance. Messier 3 is the prototype for the Oosterhoff type I cluster which is considered "metal rich" for a globular cluster. Messier 3 also has a relatively high abundance of heavier elements. Image capture with Celestron AVX mount, 9.25 inch SCT, Cannon T3 DSLR modified. 5 x 3 min lights, Darks, bias and flats. Processed with DSS 3.3.4 software.



For What its Worth

You may have heard references made to the "dark side" of the Moon. This popular term refers to the fact that the same physical half of the Moon, the "near side", is always facing Earth, which in turn means that there is a far side or so-called "dark side" that is never facing Earth and can only be seen from space.

This phenomenon has nothing to do with illumination or the periodic light and dark we see as the phases of the moon change. Sometimes people refer to a New Moon as a "dark moon" because the moon is fully in shadow as viewed from Earth and we can't see it, but that's not the same thing as the dark side of the moon. The side of the moon facing us during a New Moon is the same as any other moon phase, such as a Full Moon when we can see the entire face.

So why can we only see one side of the moon from Earth? We all know that the Earth rotates on its own axis, so theoretically, the Moon should also do the same, allowing us to get a full picture of the planetoid. Why are we limited to seeing only 50 percent? It turns out that the speed at which the Moon rotates has led to this particular phenomenon. Millions of years ago, the Moon spun at a much faster pace than it does now. However, the gravitational influence of the Earth has gradually acted upon the Moon to slow its rotation down, in the same way that the much smaller gravitational influence of the Moon acts upon the Earth to create tides. This influence slowed the rotational period of the Moon to match that of its orbit – about 27.3 days – and it is now "locked in" to this period. (Note that to observers on earth a full moon cycle takes 29.5 days. If the Moon didn't spin at all, then eventually it would show its far side to the Earth while moving around our planet in orbit. However, since the rotational period is exactly the same as the orbital period, the same portion of the Moon's sphere is always facing the Earth.

Another interesting fact is that actually a little bit more than half of the Moon's surface is observable from Earth. Since the Moon's orbit is elliptical, and not circular, the speed of its orbital travel increases and decreases depending on how close it is to our planet. The rotational speed of the Moon is constant however – and this difference between orbital speed and rotational speed means that when the Moon is farthest from the Earth, its orbital speed slows down just enough to allow its rotational speed to overtake it, giving observers a small glimpse of the usually hidden area. The term for this "rocking" motion of the Moon is called **libration** and it allows for 59 percent of the Moon to be seen in total (over time).

Finally, one reason that the far side of the Moon is frequently referred to as the "dark side" is because many people mistakenly think that it never sees any light from the Sun. In that sense the term "dark side" is wrong and misleading. In fact, since the Moon is constantly rotating on its own axis, there is no area of the planetoid which is in permanent darkness, and the far side of the Moon is only completely devoid of sunlight during a Full Moon – when the Sun is facing the Moon with the Earth in between



Astronomy Club Officers



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Treasurer
Jana Hunking

Vice President
Tom Gerald



Secretary
Katharine Black

ACL Support Personnel

ACL News letter Editor
Serf /Minion Vahan Yeterian



ACL Webmaster
Serf / Minion Aaron Anderson
(New Zealand)



Club Meeting

Reminder Club meeting Oct. 13th 7:00 Pm
Manzanita School Teachers lounge.

Star Parties (as always weather permitting)

Other Astronomy club meetings and links to sites.

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

[Astronomy Club of Lompoc \(ACL\) \(universeii.com\)](http://www.universeii.com/)

[http:// www.sbau.org/#AU EVENTS Calendar](http://www.sbau.org/#AU_EVENTS)

[Sunrise and sunset times in Lompoc \(timeanddate.com\)](http://timeanddate.com/)

[Moonrise, Moonset, and Moon Phase in Lompoc \(timeanddate.com\)](http://timeanddate.com/)

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

<https://spaceweather.com>

<https://www.space.com>

<http://spacemaps.com>

Happy Halloween



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

(Plato)

ACL Club Logo

