Website: https://acl.universeii.com January 2, 2024

Astronomy Club of Lompoc
Presents
The Sidereal Times


Eagle Nebula (see page 5)

Meeting *News:*
At the December ACL Club meeting we had some Xmas treats and a general discussion about the past year meetings and where and when our annual New Year Pizza party will be.

Reminder: ACL club meeting and Pizza party at the MiAmore Pizza Restaurant in Lompoc 7:00 PM January 12th. Area reserved 7 PM to 9 PM try to be on time.

Lunar Calendar
New Moon 11th
Full Moon 25 th

Photos in this issue exhibit past various ACL activities.

Presidents Message

Our Dec. Holiday party went well with some tasty snacks and casual talk enjoyed by the members. Our 3 photo albums were available to view with the newest member photos included. Jana would like the club to have a viewing session for the upcoming **April 8th** Solar eclipse with about a 45% Partial Eclipse for the Lompoc area. Be thinking where the best place would be to reach the most people for this event that will peak at 11:10 am that Monday. Jana grabbed the chance to be able to travel to Arlington Texas and stay with her brother-in-law to observe the **Totality** that will cover that city along with Ft. Worth and Dallas Texas.

Edmund Burke brought a heavy duty combination key lock and a latch for the new shed that he gave to our club. This is to hopefully thwart any more vandals that want to break into the Observatory site! We appreciate this gift and **Thank you Edmund!** Tom and Vahan installed the lock and latch.

January is an important month for our club as we collect dues $20 at that date but also have the Party/ meeting – **7 pm** at **MiAmore Pizza Restaurant** 1321 North H St. Lompoc. It is in the shopping center at the corner of H and Central Ave. try to attend and be on time because the area is reserved only from 7:00 to 9:00 PM

Free Pizza, Antipasto salad, and (**chicken wings** for the members who arrive early or on time!) A great chance to get to know our new members! I hope we get a good turnout for this annual event!

As President of your Astronomy Club, I would like to wish everyone a safe and **Happy New Year for 2024!** It looks like an exciting year for Astronomical events! Being a member of ACL will keep you informed and an active participant of these events!

Hoping for Clear Skies in 2024! Jana

Events

January 6, 13 and 20 -***Star Party at the Observatory***


Yea???

January 3 & 4 Quadrantids Meteor Shower is an above average shower with about 40 meteors per hour at its peak. It is thought to be produced by dust grains left behind by an extinct comet known as 2003 EH1. Meteors will radiate from the constellation of Bootes but can appear anywhere in the sky.

January 30th Mercury at greatest Western Elongation of 23.5° from the Sun. It is best time to view Mercury since it will be at its highest point above the horizon in the morning sky. Look low in the Eastern sky just before Sunrise.

Solar scope at the ACL picnic

Star party's and Events

December 9, 16, 23 Star Party at the Observatory cancelled due to weather, rain, wind and very cold weather.


Nuts!

School Display

Solar Star Party

January 2024 Moon

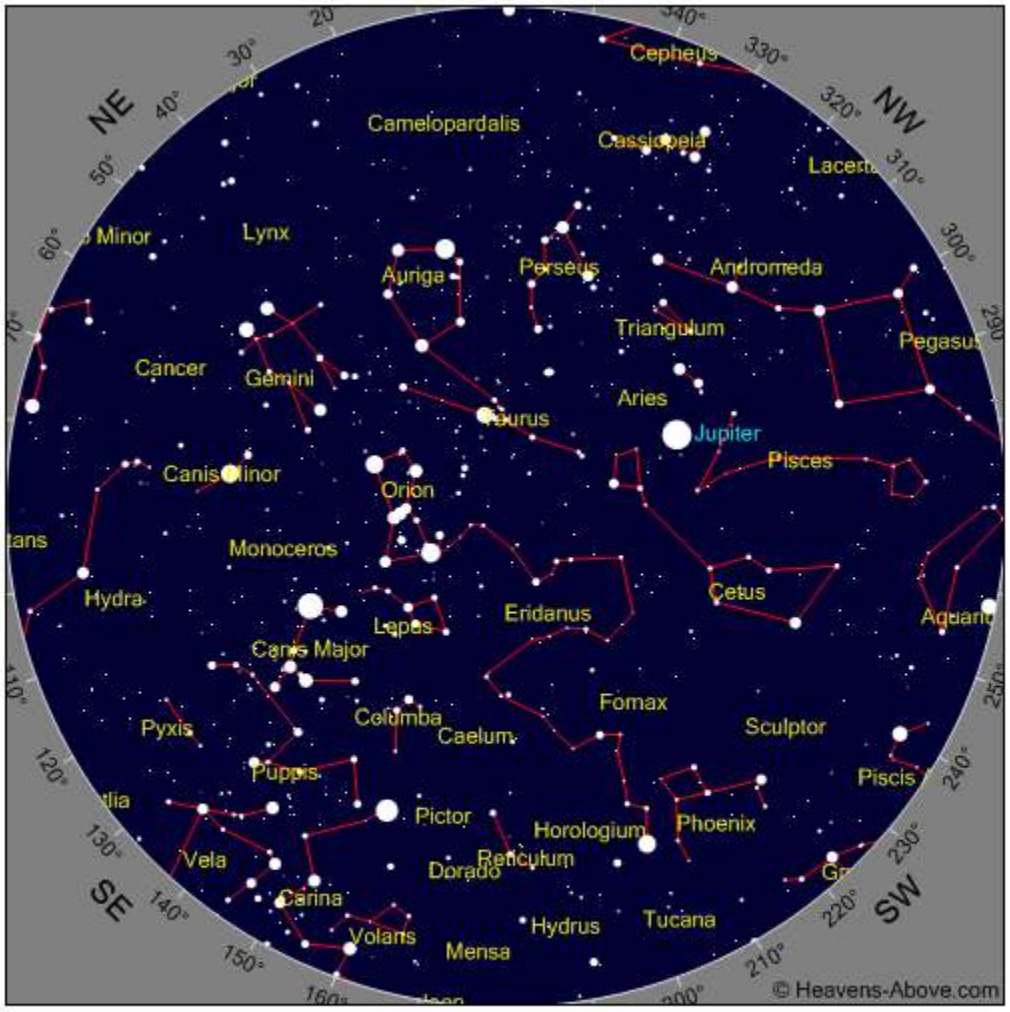
Full 25th, New 11th, Last Quarter 4th, First Quarter 18th .

Moon Facts and folk lore

A full day on the Moon, one sunrise to the next, last about 29.5 days.
The Moon is moving away from Earth by 3.8cm (1.48 inches) per year.
If there are 2 full moons in the same month the second is called a Blue Moon.
The ring around the Moon is caused by refraction of Moonlight from ice crystals in the upper atmosphere.
Folklore has it that a ring around the Moon signifies bad weather is coming.

January 2024 Sky

Some Objects of interest, M31, M42, M1, Jupiter



Time

Year 2024 Month 1 Day 5 Hour 21 Minute 20

Observatory Bunch

VAFB Display

Photo Courtesy of my friend Steven

Messier 16, NGC 6611, the Eagle Nebula in the constellation of Serpens is about 7000 light years distant. It is a diffuse emission nebula or H ll region and appears to be a current active star formation region. The brightest star in the nebula HD168076 has an apparent magnitude of 8.24 and is a binary star formed of O3.5V plus an O7.5 V companion. The cluster associated with the nebula has approximately 460 stars, the brightest of O type and a mass of 80 solar masses. Its luminosity is up to one million times of the Sun. Its age is approximately 1 to 2 million years. M16 contains several star forming regions including the “Pillars of Creation”. The interstellar hydrogen gas and dust act as incubators for new stars. Evidence from the Spitzer telescope suggests the “Pillars” in M16, may have been destroyed by a supernova explosion some 8000 or 9000 years ago. The more slowly moving shock wave would have taken a few thousand years to move through the nebula and would blow away the delicate “Pillars”. The light showing us the destruction will not reach us for another millennium.

Setup Ken's Scope

Show and Tell for School Kids

For What its Worth

When it comes to astronomical observations, it is important to note what your sky conditions are. The reason is simple enough - sky conditions affect how you see things. You may find, like most amateur astronomers, that you'll enjoy keeping a record of your observations. Understanding how to assess and log factors such as transparency, limiting magnitude and stability are important contributions as to how, and when, you can see certain astronomical subjects. By reading the tips below, you'll be better equipped to more accurately record sky conditions in your observing journals.

Transparency or Clarity

If you have ever taken notice of a blue sky, then you know there is more than one shade of blue. One day it might be pale, the next day a break-your-heart shade that seems like it almost has purple in it. This is caused by transparency - the volume of moisture in the atmosphere - and the amount of thin cloud cover (or even pollutants) at any given time. This same transparency factor carries over into the night. While it might be dark, just how dark is it? Darkness or transparency is judged on a scale of one to ten, with one representing totally cloudy and ten representing maximum clarity. For example, a slightly hazy sky would have a transparency of around five or six. A partly cloudy sky might be considered a three. A perfectly clear night high in the mountains with no Moon, where stars seem to have a life of their own could be a nine! You can even have a moonlit night where very little light is scattered by thin clouds... a seven! The most important thing is to be consistent on the numerical value you assign to any given evening's transparency factor because it affects limiting magnitude.

Limiting Magnitude

The next factor to help you judge sky conditions is limiting magnitude , which indicates the faintest star you can see without optical aid. To assist, you will need to know the magnitude of several stars visible at the time of your observation. You can find this information on almost all star charts. For example, if you were viewing during the summer in the northern hemisphere, you might use such stars as Alpha Cygni (Deneb) with a magnitude of 1.2. Now take a look at Beta Cygni (Albireo). It has a magnitude of 3.1. Next, try 61 Cygni, which has an apparent magnitude of 5.2. If you can see this star, then the limiting magnitude of your sky is at least 5. These stars are only examples, and you can use any star for which you have a given magnitude. Take your samples from various positions around the night sky and list the faintest you can see! Always be sure to wait until you are fully dark adapted.

Stability

The next factor in judging sky conditions is stability. This is how "steady" the sky - and the image in your eyepiece - appears to be. Stability can be attributed to atmospheric conditions, or it may be nothing more than rising heat. Using your telescope, take a look at several stars in different locations in the sky. You will be judging stability, like transparency, on a scale of one to ten. Stars seen near the horizon will almost always appear to twinkle, wink in and out and move around. This is an unstable viewing condition and would rate around a two. If you are looking high above the horizon and the view looks like it is under running water, you might have great clarity, but poor stability. To help you further refine your reading, take a look at something which relies on stability to be seen, like the reasonably close double star Polaris. Does the image split into two stars easily? Do you have to focus and refocus again? If so, you might have a slightly unstable sky. However, don't make a hasty judgment. Ask yourself two very important questions: (1) Are your telescope optics at ambient temperature? And (2) Is your telescope set up in a place that might cause temperature "waves" like a concrete or blacktop surface? These two factors also play a very important role in how you see things. An unstable sky won't stop you from viewing, but never being able to come to perfect focus because of image waiver could cause you to miss small details which would otherwise be visible.

Putting It All Together

Now that you've judged your sky conditions and marked your field notes, don't stop there. While you might have great transparency, great limiting magnitude and poor stability when the evening begins, these conditions can change in a short period of time. Sometimes you'll find the most unusual combination of conditions, too. For example, a night with poor transparency might be the most stable. After you have logged sky conditions for awhile, you'll also be able to judge what types of nights work best for certain observations. For example, very stable nights are great times to shoot for tight double stars and planetary details, while nights with exceptionally good limiting magnitude could be the time to find that extremely faint galaxy you've been craving!

Astronomy Club Officers

President & 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 and Pizza Party on January 12th 7:00 PM at MiAmore Pizza Restaurant in Lompoc.

Star Parties (as always weather permitting)

Other Astronomy Club Meetings

http://www.centralcoastastronomy.org/

Astronomy Club of Lompoc (ACL) (universeii.com)

http:// www.sbau.org/#AU_EVENTS_Calendar

Sunrise and sunset times in Lompoc (timeanddate.com)

http:// www.heavens-above.com/

https://spaceweather.com

https://www.space.com

http://spacemaps.com

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

ACL Club Logo