

Vandenberg Amateur Astronomical Society
presents
The Sidereal Times



Messier 31 (see page 5)

Meeting News:

At the Oct meeting we were treated to a presentation of Space Weather by Dr. Joseph Bassi. We also reviewed the picnic event at River park in October and some other items.

Reminder: VAAS club meeting Manzanita School Teachers Lounge November 10th 7:00 Pm.



Lunar Calendar:

New Moon 18th
Full Moon 4th

Dave Covey's Observatory, at his Home Prescott Az



Presidents Message

Wow! What a GRAND month October turned out to be for us at VAAS and the world of astronomy! Space Weather, Picnic, Solar Views, Gravity Waves, Neutron Star Collisions, Oh MY! We kicked off our month with a wonderful program by Dr. Joe Bassi who took us into a deeper understanding of the relationship of the Sun and Earth and how Solar Weather directly impacts our life here on planet Earth. We hope to have Joe return in the Spring to present his history of the Space Race. Speaking of weather, the ONLY negative for our Annual Picnic on the 21st was the incredibly stiff Lompoc wind. Otherwise the company and food shared by the seven of us more than cancelled out the hassles of holding onto our plates. As always, Master Chef of the Grill Vahan turned out some mouthwatering Tri Tip to center all the delicious sides and deserts the rest of us contributed. AND we had the incredible bonus of viewing flares, prominences, and filaments on our Sun thanks to Vince and the amazing double-stacked solar scope he brought to the party! October also held the announcement of the Nobel Prize in Physics being awarded to three scientists for their discovery of gravitational waves and thus confirming Einstein's prediction of Gravitational Waves. Two of these men are Emeritus Professors at CalTech. This announcement was followed within days by the startling, first ever, sighting of two neutron stars colliding. Our upcoming November meeting will give us time to discuss this "golden moment" in astronomical history in more depth. In addition, Vince has offered to share his experiences and photos of Totality from the John Day Oregon area. Also, if you haven't visited the Lompoc Public Library lately, they have an amazing offering of NASA materials available! The materials are furnished through the NASA LIFTS program and are open to the general public for browsing. Looking forward to seeing all of you at our meeting on Friday, November 10th!

Tom

Events

Nov 4th & 5th

Taurids meteor shower is a long running shower producing about 5 to 10 meteors per hour. It consists of two separate streams, the first by dust left behind by asteroid 2004 TG 10 and the second by debris left over from Comet Encke. Best viewing will be after midnight. Meteors will radiate from the constellation Taurus.

Nov 11th *Star party at the Observatory.*

😊 Yea!

Nov 13th Conjunction of Venus and Jupiter will be visible in the evening sky. They will be extremely close appearing only 0.3 degrees apart. Look East just before sunrise.

Nov 18th *Star party at the Observatory.*

😊 Yea!

Nov 18 & 18 Leonids meteor shower is an average shower providing up to 15 meteors per hour. This shower is unique in that it has a cyclonic peak about every 33 years with hundreds of meteors per hour. The last being in 2001. The Leonids meteor shower is produced by dust grains left over by comet Temple-Tuttle. It peaks on the night of the 17th and morning of the 18th.

Nov 24th Mercury will be at its greatest Eastern elongation of 22 degrees from the Sun. Best time to view Mercury is in the evening low in the West just after sunset.

Nov 25th *Star party at the Observatory.*

😊 Yea!

Vince & Solar scope VAAS BBQ 2017



Star party's and Events

Oct 14th Star party at the Observatory. Vince, Rick, Dave, Vahan and Amber on site. Vahan set up his refractor and the others worked the observatory trying to do a star alignment. The weather was good, no wind and lots of stars overhead including a very visible Milky Way. It was a good night under the stars.

😊 Yea!

Oct 21st Our annual club picnic and BBQ went very well. Had a good crowd of members and family 17 in all. Tri-tip, Garlic bread and beans for the main menu and members brought all kinds of goodies to share with the group. It was a bit windy, well a bit more than windy so we had to strap everything down pretty snug. Vince brought a Lunt solar scope double stacked and members had a good time viewing the Sun. Every one had a good time and lots of camaraderie.

😊 Yea!

Oct 21st Star party Figueroa Mt. No input for this event.

🦃 Nuts!

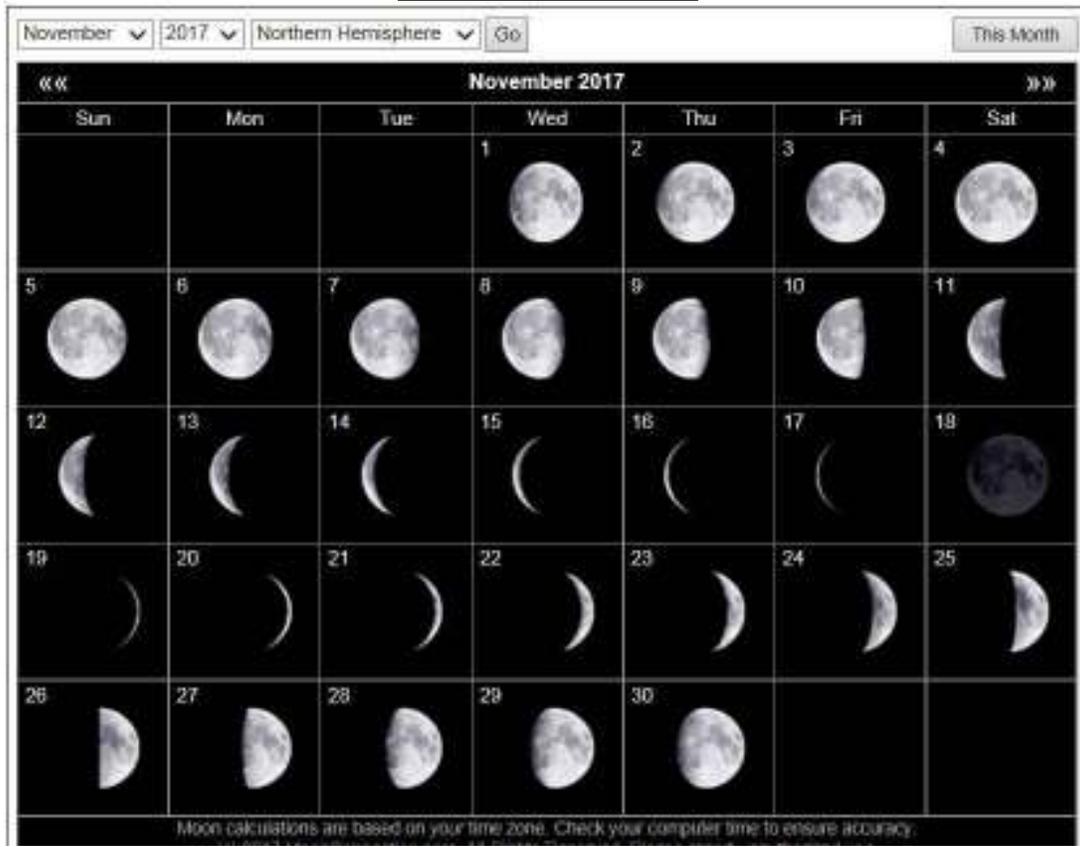
Oct 28th Star party at the Observatory. Reports say the Marine layer moved in and the star party at the observatory is cancelled.

🦃 Nuts!

VAAS BBQ 2017



November 2017 Moon



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

Moon Facts

- The surface of the Moon features a huge number of impact craters from comets and asteroids that have collided with the surface over time. Because the Moon lacks an atmosphere or weather these craters remain well preserved.
- Although research is continuing, most scientists agree that the Moon features small amounts of water.
- The Moon is very hot during the day but very cold at night. The average surface temperature of the Moon is 107 degrees Celsius during the day and -153 degrees Celsius at night.

VAAS BBQ 2017

Tom & Molly



Amber

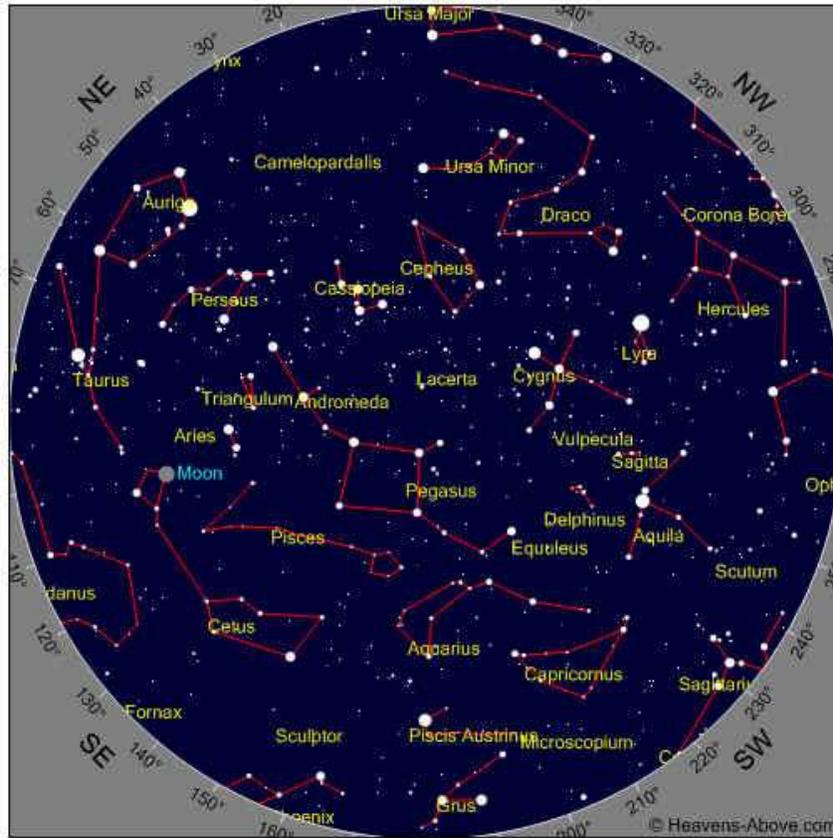


Vahan & Carla



November 2017 Sky

Some Objects of interest, M42, M31, M57



Time

Year	2017	Month	11	Day	3	Hour	21	Minute	4
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VAAS BBQ 2017



Photo Courtesy David McNally



The Andromeda Galaxy also known as Messier 31, M31, or NGC 224, is a spiral galaxy approximately 780 kiloparsecs (2.5 million light years) distant. It is the nearest major galaxy to the Milky Way and was 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, which was named after the mythological princess Andromeda. Andromeda is approximately 220,000 light years across, and it is the largest galaxy of the Local Group, which also contains the Milky Way, the Triangulum Galaxy, and other smaller 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, which 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 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, even 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.**

VAAS Special events



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 lo 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.

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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 a while, 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!

Club Officers



**President
Tom Gerald**



**Vice President
Jana Hunking**



**Treasurer
Vince Tobin**



**News Letter Editor
Vahan Yeterian**

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



Club Meeting

Reminder Club meeting Nov 10th at 7:00Pm
Manzanita School.

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/>

VAAS.

Dave McNally is the VAAS Web Site Serf/Minion

Dave

