

Vandenberg Amateur Astronomical Society presents The Sidereal Times



Messier 15 (see page 5)

Meeting News:

At the November meeting we discussed reschedule of Girl Scout outreach, Installation of VAAS club officers, the picnic and future Xmas party in Jan 2015. Talked about landing on the comet. Watched a video about discovering planets by Dr. Tyson.

**Reminder: VAAS meeting December 12th at 7:00 PM
Manzanita school.**



Lunar Calendar:

New Moon 22 Dec

Full Moon 6 Dec



Presidents Message



I wish to thank all the members for helping out with the various outreach events, picnic and attending the star parties. You helped in making these events a success throughout the past year. Let's try to make the 2015 events even more successful. A tip of the hat goes to the European Space Agency for their Rosetta/Philae mission. The agency scored a big success by placing the Rosetta spacecraft in orbit around a comet and then placing the bouncing Philae Lander on the comet. Although Philae didn't touch down as planned, it did settle onto the comet and operated at least long enough to collect some data. It might turn out to be a "very lucky bounce" indeed. The Lander is now upright against a cliff which is partially shielding it from direct Sun light. I'm sure that December will be a busy time for all of us. Speaking for myself, I'll not be able to attend the December meeting. However I look forward to the January 2015 pizza night meeting to start the New Year off with old friends and, hopefully, some new friends. Finally, during November's meeting we elected the new VAAS officers for 2015. We are still looking for someone to volunteer to be President.

Vice-President – Jana Hunking

Treasurer – Vince Tobin

Editor – Vahan Yeterian

As always, have fun and clear skies! Dave

Events

December 13th *Star Party at the Observatory see you there.*

December 13 & 14 Geminids meteor shower is the king of meteor Showers. It produces up to 120 multicolored meteors per hour at its Peak. It is produced by debris left behind by an asteroid known as 3200 Phaethon. The shower runs annually from December 7 to 17. It peaks this year on the night of the 13th and morning of the 14th. Meteors will radiate from the constellation of Gemini but can appear anywhere in the sky.

December 20th *Star Party at the Observatory, see you there.*

December 21st December Solstice occurs at 23:03 UTC. The South Pole of the Earth is tilted toward the Sun which will be directly over the Tropic of Capricorn at 23.44 degrees South Latitude. This Is the first day of Winter in the Northern hemisphere and the first day of summer in the Southern hemisphere.

December 22nd & 23rd Ursids meteor shower. The Ursids are a minor meteor shower producing only 5 to 10 meteors per hour. It is produced by dust grains left behind by Comet Tuttle. The shower runs annually from December 17th to 25th. It peaks this year on the night of the 22nd. This will be the best year to observe the Ursids because there will be no Moon light. Best viewing will be just after midnight. Meteors will radiate from the constellation of Ursa Minor but can appear anywhere in the sky.

December 27th *Star Party at the observatory, see you there.*



Fun Zone USA



Star Party and Events

November 1st The Girl Scout outreach event at the observatory was cancelled due to weather, rain and wind. Will reschedule.



Darn it!

November 8th The VAAS annual picnic was held at River Park at the Lutheran Pavilion. Dave and Vahan arrived at 10 Am to get things set up. At about noon members and some of their family began showing up. Vahan had the BBQ fired up and began slow cooking the Tri-Tip. On the menu was Tri-Tip, a pot of Grillin beans and various salads and deserts. Jana baked a wonderful German chocolate cake and Louise Spracker had several dishes of her famous deviled egg for folks to sample. There were a lot of other delights brought by the membership for all to share. A total of 15 and ½ members and family showed up. You may ask what the ½ member was and that was Jim VanCura's 2 year old son Tim. There was a lot of socializing and folks ate their fill of the goodies. All-in-all a good time was had by all. (See page 7 for photos).



November 14th A new addition to the Van Cura family arrived today at 9:50Am. Michael Franklin Van Cura 7lb 12oz and 20-1/2 inches long. Mom and Baby are doing well. Congratulations.



November 15th Star party at observatory. Dave Covey, Vince Tobin, Craig Fair and Vahan on site. Dave set up his 4 inch Newtonian, Craig his 8 inch SCT, Vince the observatory. Vahan worked with Craig star hopping from object to object. The seeing was good but after awhile it started getting a little dew. Dave had a motor problem with the declination drive. For the most part things went well for the evening.



November 22nd Star Party at Tally Vineyard Rugby ball field with CCAS. Star party cancelled due to generally bad weather.

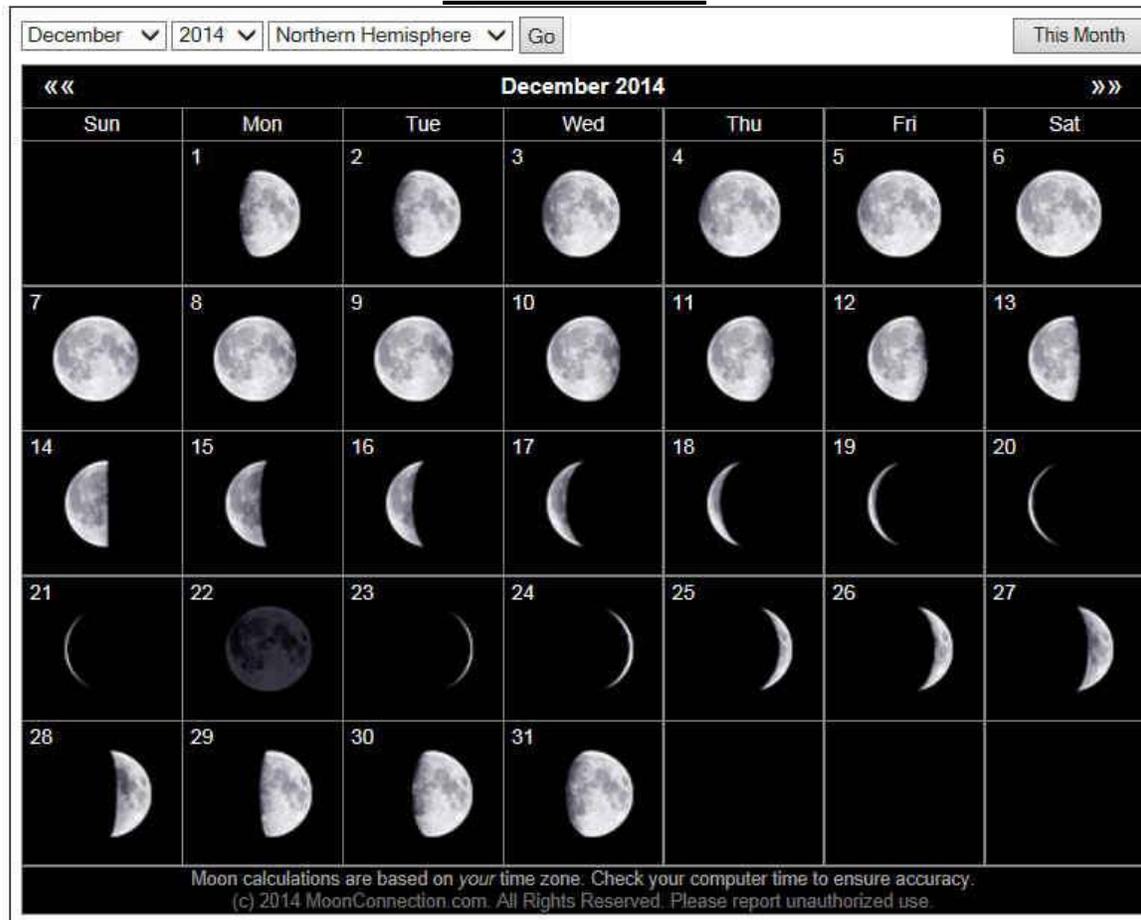


Nuts!

November 28th Star Party, Observatory attended by Vince T, Dave C, Craig F and Vahan Y. Good seeing and lots of object to view. Visited by the Air Police and gave them a tour. Cold and no wind, good all around fun night under the stars.



December Moon



Full 6 Dec, New 22nd, First Quarter 28 Dec , Last Quarter 14 dec

Moon Folklore

The new and first-quarter phases, known as the light of the Moon, are considered good for planting above-ground crops, putting down sod, grafting trees, and transplanting.

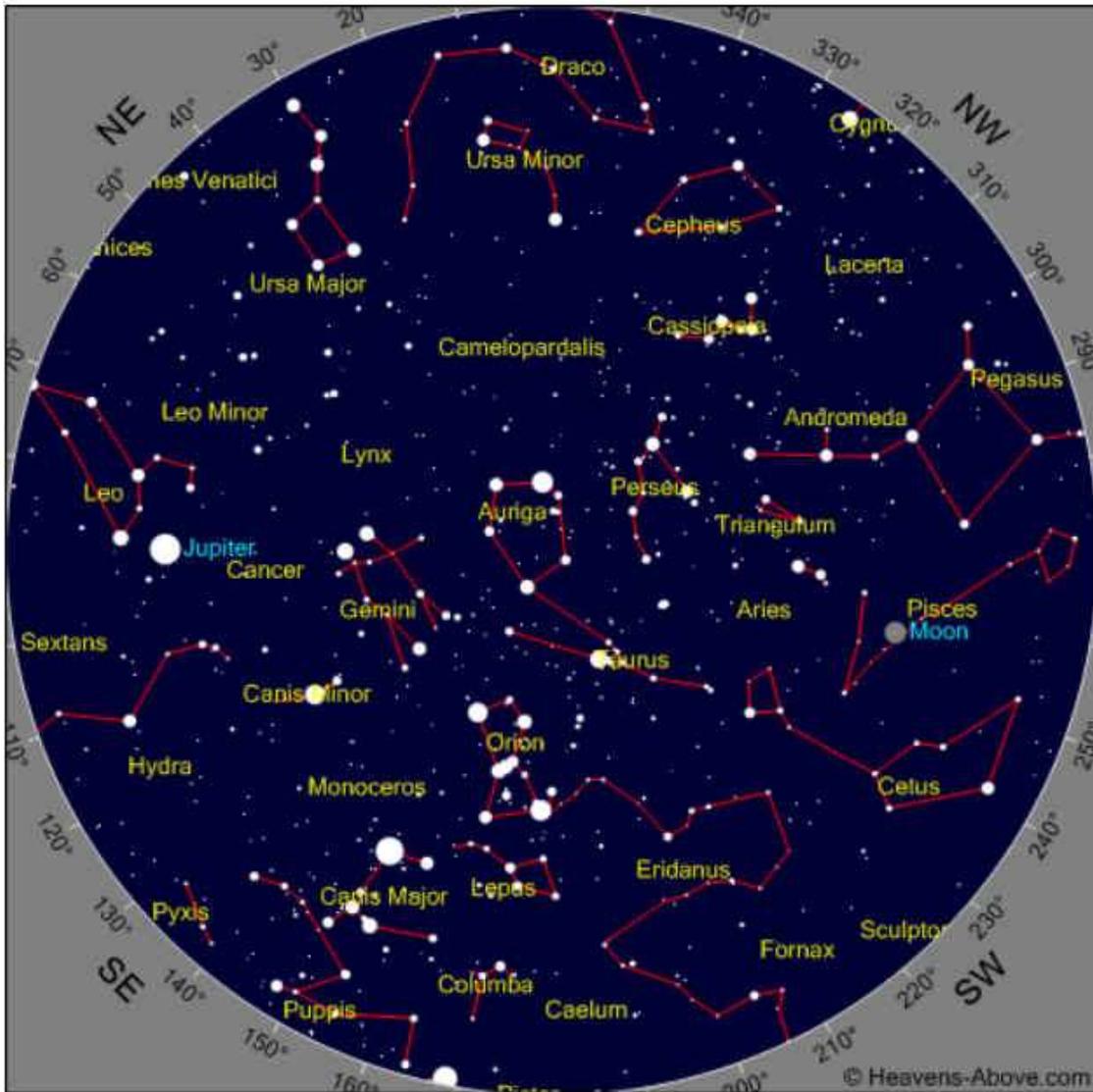
The time just before the full Moon is considered particularly wet, and is best for planting during drought conditions.

Don't begin weaning when the Moon is waning.



December Sky

Objects of interest M42, Jupiter, M33, M31, Moon



Time

Year	2014	Month	12	Day	2	Hour	8	Minute	20
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Photo Courtesy Vahan Yeterian



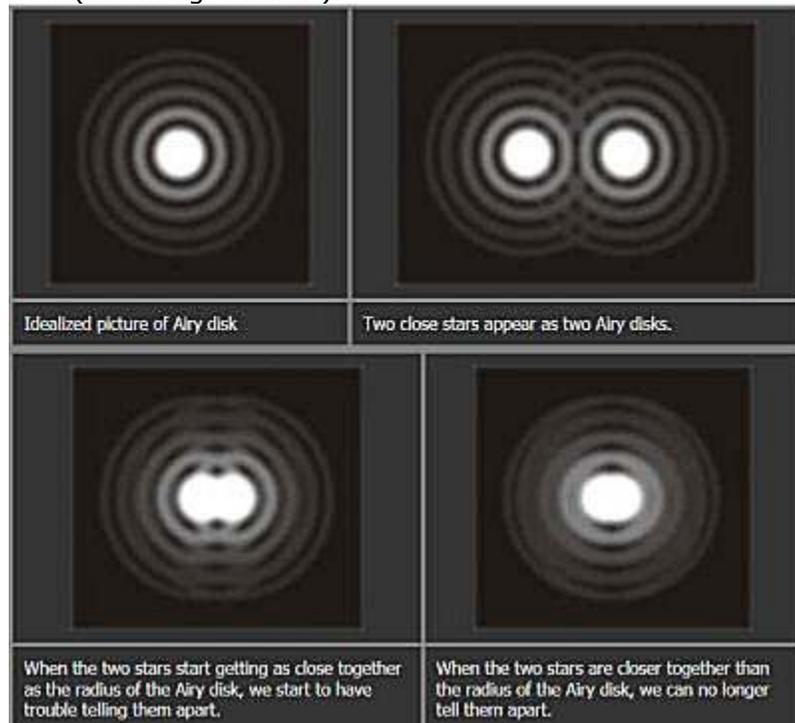
Messier 15 NGC 7078 Globular Cluster is in the constellation of Pegasus. It is 33,600 light years distant. It has a diameter of 18 arc minutes which translates to a linear extension of 175 light years. Its total visual magnitude of 6.2 corresponds to a total absolute magnitude of -9.17 or about 360,000 times that of our Sun. It is one of the most densely packed globular Clusters in the Milky Way galaxy. It contains of approximately 100,000 stars and has a large population of variable stars and Pulsars including a double neutron star system. It also contains Perse1, the first planetary nebula discovered within a Globular Cluster. Additionally two bright X-ray sources reside in this cluster. The clusters core is undergoing a contraction known as core collapse and has a central density cusp with an enormous number of stars surrounding what may be a central black hole. Image capture was with an 8 inch SCT and Canon DSLR (modified). 10 x 2 minute exposures and 4 dark images were processed using Deep Sky Stacker and PSP 9 software. The SCT was in guided mode using PHD guidance program.



For What it's Worth

Dawes Limit: An empirical formula derived by English amateur astronomer William Dawes (1799 to 1865) that gives the smallest angular separation of two stars in which each is still observable with a telescope of a given aperture. The Dawes limit in arc seconds is $11.6/D$ where D is the aperture of the telescope in centimeters. Alternately $4.56/D$ where D is in inches instead of centimeters yields the same result.

Resolving Power: The smallest separation between two stars that can possibly be distinguished with the scope. This is an indication of the finest detail the scope is capable of seeing – regardless of the magnifying power (see images below).



Dark Adaptation: Is a heightened sensitivity to light when the eye is subjected to darkness for an extended period. Chemical changes take place in the eye in the first 20 minutes but continues up to two hours that greatly improves the observers ability to see faint objects. This can be cancelled quickly by a sudden exposure to light. Use a red filtered light when observing to keep dark adapted.

Field Curvature: A form of optical aberration in which the focus changes from the center to the edge of the field of view. In the presence of astigmatism the problem is compounded because there are two separate astigmatic focal surfaces. Field curvature varies with the square of the field angle or the square of the image height. Therefore, by reducing the field angle by one half it is possible to reduce the blur from field curvature to a value of 0.25 of its original size. Positive lens elements usually have inward curving fields and negative lenses have outward curving fields. Field curvature can then be corrected to some extent by combining positive and negative lens elements with virtually no field curvature, these are called flat field lenses.

VAAS PICNIC 8 October 2014 River Park Lompoc Ca.



Clarence Ruth Outreach 14 October 2014





Club Officers



President
Dave Covey



Vice President
Jana Hunking



Treasurer
Vince Tobin



Newsletter Editor
Vahan Yeterian

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



Club Meeting

Club meeting December 12th 7 PM
Manzanita school, Hope to see you there...

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.

