

Vandenberg Amateur Astronomical Society
presents
The Sidereal Times



M42 (see page 5)

Meeting News:

The June meeting we talked about when to schedule our annual VAAS family picnic. Had a light discussion about the summer break and star party activity during summer break. Discussed various events of the past operating year. Watched a video courtesy of Dave Covey

Reminder: VAAS meeting September 11th at 7:00 PM Manzanita school, Hope to see you there.



Lunar Calendar:

New Moon Sept 13th

Full Moon Sept 28th

Note: Summer break is over so we are back to the routine of meetings and scheduling events and taking care of business. Lets try and get more group activities and participation by the membership.

Presidents Message

Welcome back to VAAS after our summer break!

We hope all of you had a good summer, and managed to get away someplace for a vacation, or at least enjoyed our warm clear nights of the last 2 months in the Lompoc- Santa Maria area.

Last May, our Observatory pathway received a clearing of the weeds, and the telescope had repair work done by Vahan Y., Dave C., and Craig F. The solar filter received a new special Mylar cover, and the Naglar eyepiece was cleaned and found to be chipped inside. The Club voted at the May meeting to buy a new Baader Hyperion Modular Eyepiece for better viewing. We thank them all for keeping our equipment in good shape!

My husband Red and I drove to Nebraska for a reunion of his 50 relatives from all over the country. They had it in a huge state park between Lincoln and Omaha. What I enjoyed there, besides having a good time with his relatives- with 20 young children- 12 and under, was the lush greenness of the grass, trees, wild flowers, and water in the lakes and the Platte River!

I was scheduled to take a cruise through the inland passage of Alaska with my sister from Phoenix, but her cat attacked her 3 weeks before , with 6 deep bites on both her hands that got infected immediately and 2 days later she had to have hand surgery to get out the infection. We had to cancel the cruise, and I decided to fly to Phoenix to help her out.

I bet all of you have closely watched the New Horizons Voyage to Pluto arriving with no problems and sending back images and data- all after almost 10 years and 3 Billion miles ! What an Achievement for Astronomy and the men and women who made that possible!

Hope to see you at our Sept 11 Meeting !

Jana

Events

Sept 1st Neptune at opposition, the blue giant planet will be at its closest approach to Earth and its face will be fully illuminated by the Sun. It will be brighter than any other time of the year and be visible all night long.

Sept 4th Mercury at greatest elongation. The planet reaches greatest Eastern elongation of 27 degrees from the Sun. This is the best time to view Mercury since it will be at its highest point above the horizon in the evening sky.

Sept 5th *Star party at the observatory.*



Sept 12 *Star party at Figueroa Mountain site 1.5.*



Sept 13th New Moon, the Moon will be on the same side of Earth as the Sun and will not be visible in the night sky. Also there will be a partial Solar eclipse but will only be visible in Southern Africa, Madagascar, and Antarctica.

Sept 19th *Star party at the observatory.*



Sept 23rd September Equinox, The equinox occurs at 0921 UTC. The Sun will shine directly on the Equator and there will be nearly equal amounts of day and night throughout the world. This is the first day of Fall in the Northern hemisphere (Autumnal equinox) and the first day of Spring in the Southern hemisphere (Vernal equinox).

Sept 28th Total Lunar eclipse, This eclipse will be visible throughout most of North and South America, Europe, Africa, and western Asia.



Star Party and Events

Event: Dave Covey and Vahan have stored 5 of VAAS telescopes and mounts in the Observatory. They are tucked into the vertical supports of the observatory base and are out from under foot. This enables use of the instruments during outreach events if required etc.

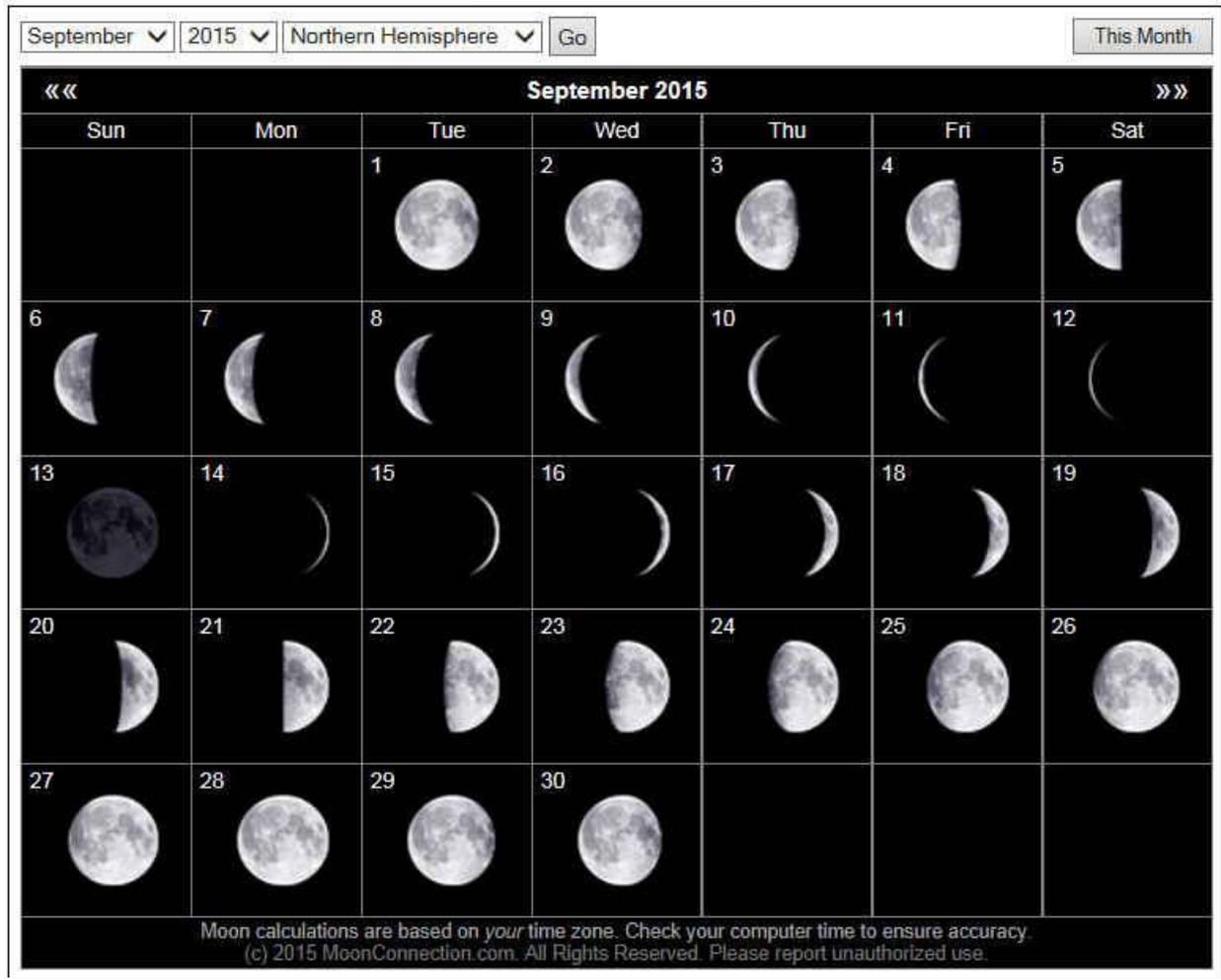
8 August Star Party at the Observatory. Vince Tobin, Dave McNally, Jon Walke, Vahan and his daughter, Nevert who is visiting from New Zealand, on site. The weather was good and could easily see the Milky Way. Some Dew problems were encountered. Vince performed a star alignment on the 14" Vahan assisted and Nevert was the dome position operator. Dave joined in on the activities. Jon was imaging several objects with his equipment then started to set up for photography. Had some issues with his camera and laptop that he resolved in short order. We imaged several objects with the 14" but the best was M13, beautiful image. It was another good night under the stars.

15 August Star party Figueroa mountain. Craig Fair was the only one from VAAS at site 1.5. There was one other guy named Robert that had a Celestron NexStar 8" scope. Craig and Robert shared scopes for visuals, Lagoon, Trifid, Swan etc. Craig did some photo work with his scope and Nikon D800E and Tokina 16-28 F/2.8 lens. Had good success with Milky Way photos. Just another great night under the stars.

15 August Vince Tobin supported an outreach event, with his 16 inch Dob, in the Santa Maria area.

22 August Star Party at the Observatory. Dave Covey, Dave McNally, Vince Tobin, Craig Fair, Jon Walke, Ken & Louise Spraker and Vahan Yeterian on site. Sky was partially overcast and getting worse by 9:00pm. Opened the observatory, Jon, Craig and Vince set up their scopes. Looked for the Iridium satellite but it was hidden in the overcast, missed it. About 9:40PM the clouds dissipated and the sky was clear with the Milky Way visible. Dave Covey, Dave McNally, ken & Louise and Vahan enjoyed viewing several celestial objects with Craig and Jon's scopes. There was some dew to contend with but it was a clear sky the rest of the evening. Although the evening started out overcast it was another good night under the stars.

September Moon



Full 28th, New 13th, 1st Quarter 21st, Last Quarter 5th

Moon Facts

Tides on Earth are caused mostly by the moon (the Sun has a smaller effect). Here's how it works:

The moon's gravity pulls on Earth's oceans. High tide aligns with the Moon as Earth spins underneath. Another high tide occurs on the opposite side of the planet because gravity pulls Earth toward the moon more than it pulls the water.

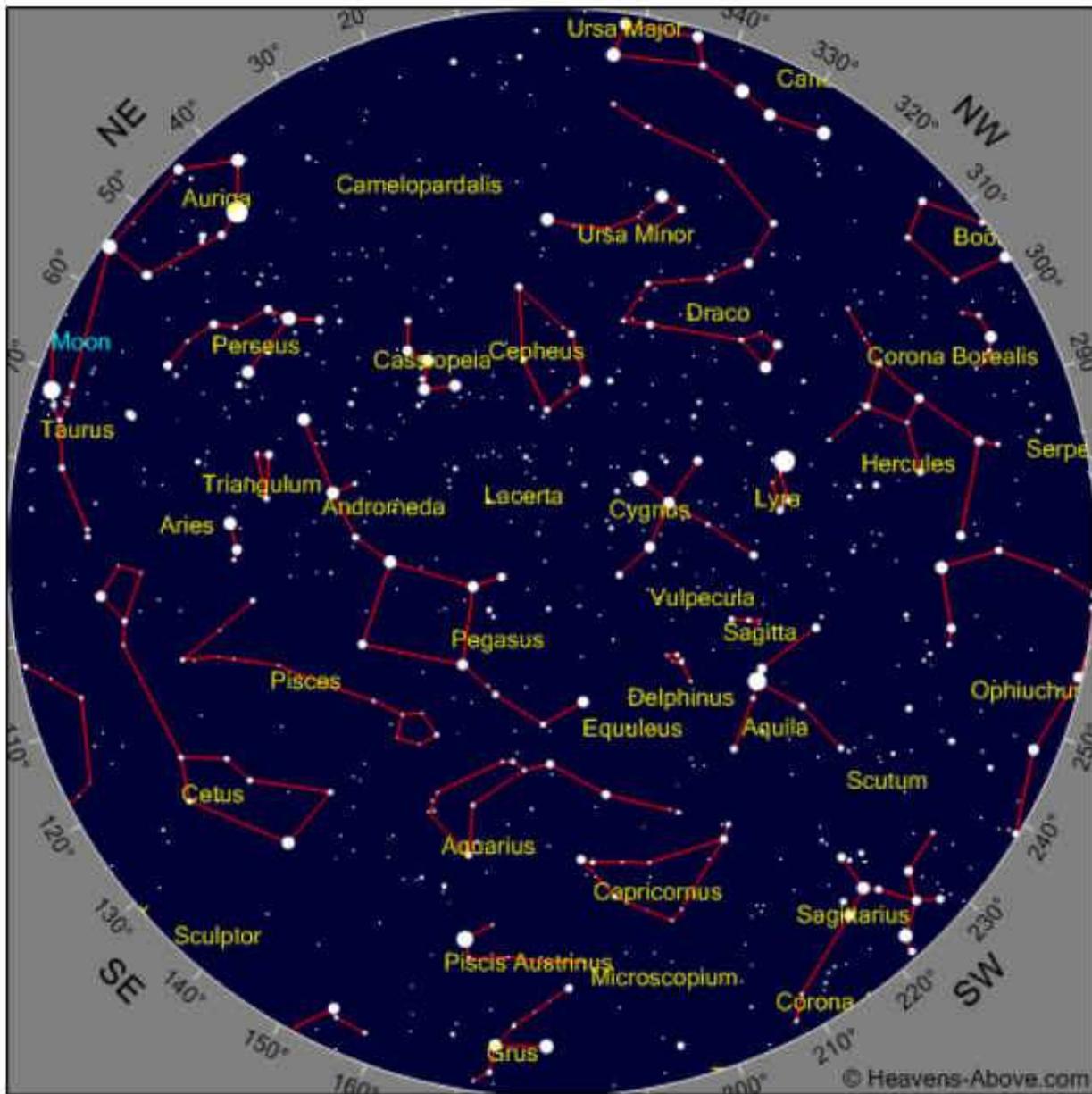
At full moon and new moon, the Sun, Earth and moon are lined up, producing the higher than normal tides (called spring tides, for the way they spring up). When the moon is at first or last quarter, smaller neap tides form. The Moon's 29.5-day orbit around Earth is not quite circular. When the moon is closest to Earth (called its perigee), spring tides are even higher, and they're called perigean spring tides.

Note:

All this tugging has another interesting effect: Some of Earth's rotational energy is stolen by the moon, causing our planet to slow down by about 1.5 milliseconds every century.

September Sky

Some Objects of interest, M57, M27, M31, M13



Time

Year	<input type="text" value="2015"/>	Month	<input type="text" value="9"/>	Day	<input type="text" value="5"/>	Hour	<input type="text" value="8"/>	Minute	<input type="text" value="5"/>
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Photo Courtesy Jon Walke



Messier 42: The great nebula in the constellation of Orion is the closest region to Earth of massive star formation. It is approximately 1325 light years distant and is 24 light years across. The nebula is located in the same spiral arm of our galaxy as the Sun (Orion Arm). Its age is approximate 3 million years. It has a mass 2000 times that of our Sun. It is mainly composed of ionized hydrogen. It is an emission nebula the energy to keep the nebula glowing comes from very hot young stars in the formation called the Trapezium imbedded in the bright part of the nebula. There are also supersonic bullets piercing the hydrogen clouds of the nebula. Each bullet is 10 times the diameter of the orbit of Pluto and is tipped with ion atoms glowing bright blue. They were formed some 10,000 years ago from an unknown source. The nebula has revealed much about the process of how stars and planetary systems are formed from collapsing clouds gas and dust. Astronomers have directly observed proto-planetary disks, brown dwarfs and turbulent motions of the gas and photo-ionizing effects of massive nearby stars and nebula. The hot young stars are known as Proplyds with stellar jets spewing material at high speeds. About 2 million years ago this cluster has been the home of runaway stars AE Aurigae, 53 Arietis, and MU Columbae. They are currently moving away from the nebula at velocities greater than 100 Km/sec. Image capture was using a Celestron C8 at F#6.3, CGEM mount and Canon T3i DSLR at ISO 800. Post processing with Pixinsight software.

For What its Worth

The Double Cluster Caldwell 14, NCG 869 and NGC 884 (h & Chi Persei) are a few hundred light years apart in the constellation of Perseus. The distance from us is approximately 7500 light years. NGC 869 has a solar mass of 3700 and 884 weights in at 2800 solar masses. The latest research shows that both clusters are surrounded with a very extensive halo of stars. The total mass of the complex is at least 20,000 solar masses. The clusters are believed to originate from the same star forming gas cloud. It is a relatively young group, h about 5.6 million years old and Chi about 3.2 million years old. There are more than 300 blue-white super giants in each cluster. The clusters are blue shifted and are approaching Earth at 39 kilometers per second (24 miles per sec). The hottest of the main sequence stars are of spectral class B0. The cluster lies within the Perseus arm of the Milky Way galaxy. Our solar system resides in the Orion arm of the Milky Way galaxy. Therefore when we look at the double cluster we are looking through our local spiral arm and all the way to the next spiral arm outward from the galactic center. The Double Cluster is a magnificent pair to observe in almost any telescope at low power and wide field.

Figueroa June 2015

Jon



Craig



Dave



Club Officers



President
Jana Hunking



Vice President
Dave Covey



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

Reminder Club meeting Sept 11th 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

