

Vandenberg Amateur Astronomical Society
presents
The Sidereal Times



Messier 15 (see page 5)

Meeting News:

At the June meeting we discussed Vince's Adventure on Figueroa Mtn. Watched a video about Night Sky. Discussed Star Parties during summer break.

**Reminder: VAAS meeting September 13th
Manzanita school, Hope to see you there.**



Lunar Calendar:

New Moon 5th
Full Moon 19th

Presidents Message

Welcome back everyone!

Summer is almost over and the marine layer has been stubbornly sticking around the Central Coast for most of June, July and August. Currently the evening skies are dominated by the constellations Bootes, Hercules, Lyra, Cygnus and Pegasus above the Ecliptic with Scorpius and Sagittarius just below the Ecliptic during the month of September. Venus is putting on a bright show in the early evening sky followed by Saturn. Hopefully the marine layer is starting to weaken and to top it off the nights are getting longer. You might get the hint that I'm an incurably optimistic sort or just a frustrated amateur astronomer. We did manage to hold a couple of out-reach events at the observatory in July, refer to star party report elsewhere in the newsletter.

We'll have a few items to cover at the next meeting on September 13th (oh what a lucky day).

First item is when and where to hold the fall picnic, suggestions from the membership are encouraged.

Second item is future star party and out-reach events where/when to hold them.

Third item is nominations for VAAS club officers. So put on your thinking caps.

Fourth item is we need to encourage more membership participation at star parties. During the summer events we nominally had 3 members attending many of the events. Any suggestions to improve the numbers attending the star parties etc. are welcome.

Sept 5th the Moon will be directly between Earth and Sun and not be visible, New Moon, this occurs at 11:36 UTC.

Sept 7th **Star party at Figueroa Mountain.**

Sept 8th Conjunction of the Moon and Venus. The Moon will pass within a half of a degree from the planet Venus in the early evening sky. Also on this date there be a conjunction of Venus and Saturn. The two planets will be about 3 degrees of each other in the early evening.

Sept 14th **Star Party at the Observatory.**

Sept 19th Full Moon , this full Moon was known By early native American tribes as the full corn Moon Because corn is harvested around this time of year.

Sept 22nd The September equinox occurs at 20:44 UTC. The Sun will shine directly on the Equator and there Will be equal amounts of day and night throughout the World. This is also the first day of Fall. In the Northern Hemisphere it is the Autumnal Equinox and in the Southern Hemisphere it is the Vernal Equinox.

Sept 28th **Star party at the Observatory.**

Some June, July and August Star parties were cancelled due to weather. This year it seems the Marine layer has been hanging in the local area for many long months, May through August.



On 10 August Dave Covey and Vahan went to site 1.5 on Figueroa Mtn. for the scheduled star party. There was Some thin layer smoke and haze from local fires. Could have imaged some of the brighter deep space stuff but the wind was approximately 15 mph with gusts bit higher. Would not be worth staying wind loading on the scope makes for shaky images. Departed, home by 10:30pm.

Star Party and Outreach Reports:

Star party on June 1st at the observatory was attended by only 3 VAAS members Vince, Dave and Vahan. The seeing conditions were fair and several deep space objects and Saturn were viewed.

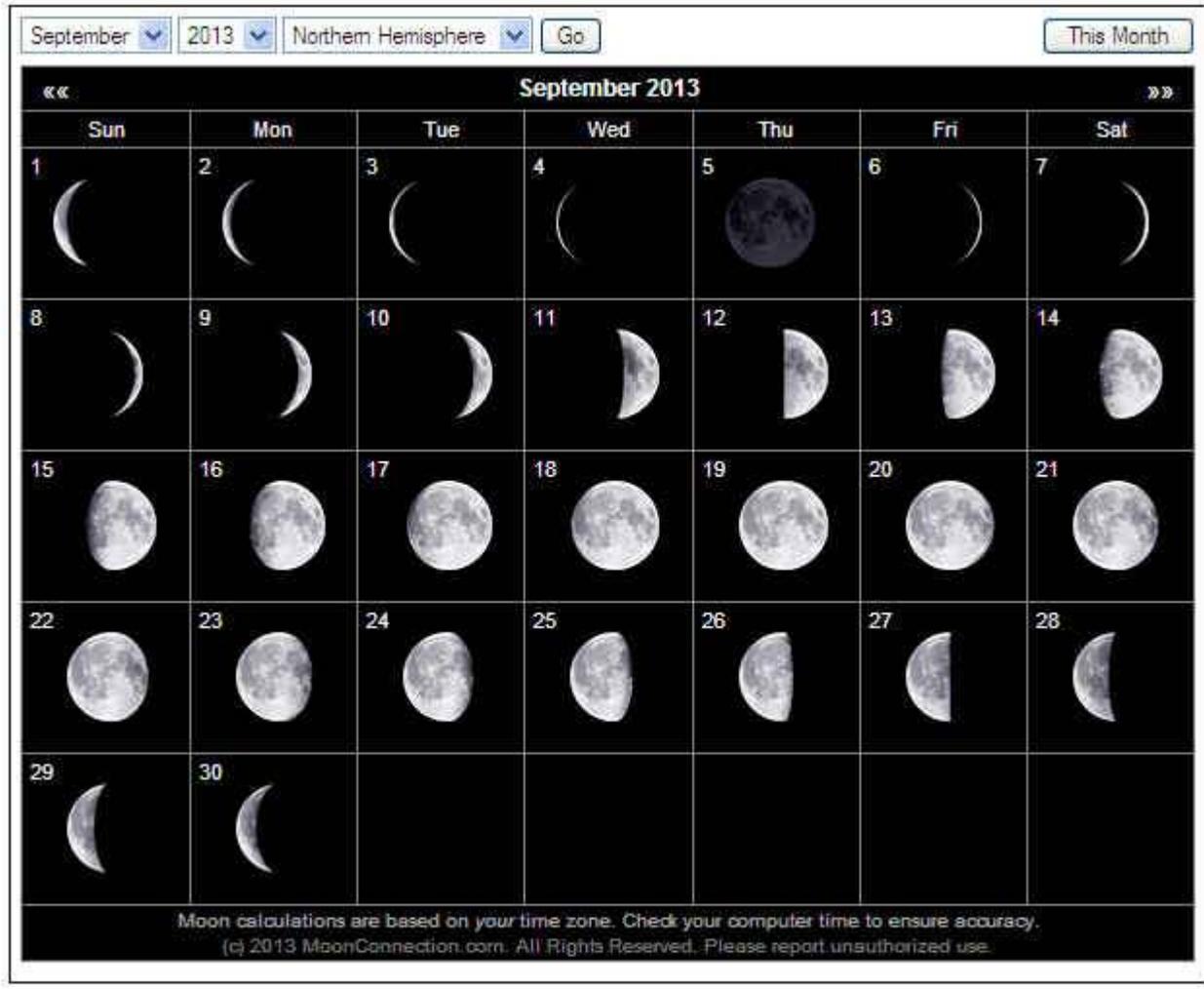
Star Party on 29 June at the observatory was attended by Vince Dave Covey and Dave McNally and Vahan. Early on Dave McNally had to leave due to an insect entering his ear canal causing him misery.

Vahan did some photographic imaging on several deep space objects using his Canon DSLR and lap top computer. Weather was an issue due to intermittent cloud cover.

On 20 July an outreach event was held at the observatory for several families from Orcutt and Santa Maria. Weather was very uncooperative with much cloud cover. The Moon shone through and once in a while Saturn was observed. A show and tell and Q and A was the Order of business.

On 27 July an outreach event was conducted by Vince Dave and Vahan at the observatory for the Girl Scout troop from Lompoc and VAFB. Approximately 20 plus were in attendance. The weather was solid overcast and high in moisture content. We held a show and tell in the observatory and also presented video images from Vahan's lap top. Dave had 2 of his scopes on display for the troop to see. A Q and A was conducted for the attendees. Some excellent questions were presented by the Scouts. All-in-all it was a good event and the scouts want to do the event again in better weather conditions. (See page 6).

September Moon



Full 19th, New 5th

Moon Folklore

This full moon was known by early Native American tribes as the Full Strawberry Moon because it signaled the time of year to gather ripening fruit.

It also coincides with the peak of the Strawberry harvesting season.

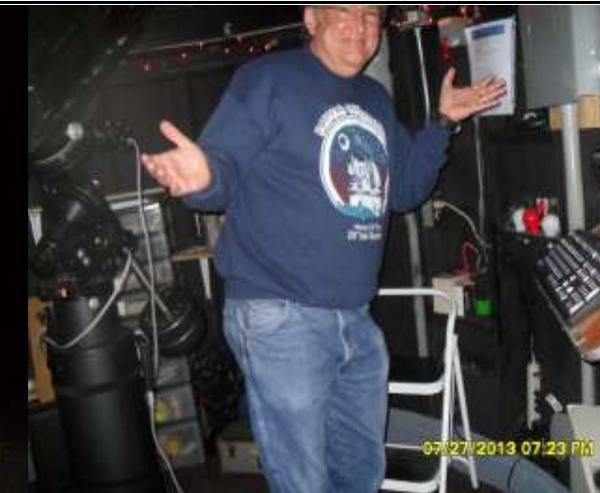
This Moon has also been known as the Full Rose Moon and the Full Honey Moon.

Photo Courtesy Vahan Yeterian



Messier 15, NGC 7078 lies at a distance of 33,600 light years in the constellation of Pegasus. It is estimated the cluster contains over 100,000 stars and is about 12 billion years old. It is one of the oldest known globular clusters. It is 175 light years in diameter and includes a double neutron star. The globular has the third rank in known variable star population after Messier 13 and Omega Centauri. A total of 112 variables have been identified in M15 and is the densest of all globular clusters in our Milky Way galaxy. M15 contains a considerable number of known pulsars, Neutron Stars, nine of which are remnants of ancient super nova explosions from the time the cluster was young. It also contains two bright X-ray sources one of which appears to be the first astronomical source detected in Pegasus. M15 was the first globular cluster in which a planetary nebula could be identified. Image capture was accomplished using an eight inch SCT and a Meade DSI 2 CCD camera. Exposure time was 60 seconds.

Girl Scout Outreach 27 July



FOR what it's Worth

Apochromatic lenses, a lens or optical system virtually free of chromatic aberration which for practical purposes means that light of at least three different wavelengths is brought to focus at the same point. The best apochromatic lenses use fluorite crystal and may correct three different wavelengths with only two optical elements. However, because fluorite is expensive to manufacture and because of its brittleness is difficult to grind and polish and mount. High quality apochromatic refracting telescopes are costly. Reflecting telescopes, on the other hand, are apochromatic in performance without the extra cost.

Refraction The refraction of light rays passing through the Earth's atmosphere is due to Variations in the density and temperature which produce produce corresponding variations In the refractive index. Atmospheric refraction gives rise to a shift in the apparent direction of the celestial object. The effect increases the observed altitude of a celestial Object and is greatest at the horizon. Unusual density variations close to the surface may produce mirages, shimmer and other deceptive effects.

Light intensity The reduction in the intensity of light from a celestial body is due to absorption and scattering by Earth's atmosphere. It increases from the zenith to the horizon and effects short wavelengths more than long wavelengths, so that objects near the horizon appear redder than they do at zenith. The brightness of a star in the zenith will be reduced by only 0.3 magnitudes whereas the extinction at 20 degrees altitude is about 0.9 magnitude and at 10 degrees altitude about 1.6 magnitudes.

Aberration of star light The difference between the observed position of a star and its true direction is a combined result of the observers motion across the path of the incoming star light and the finite speed of light. The effect is similar to that observed by someone walking in the rain. Though the rain is in fact falling vertically, because of the person's motion the rain appears to be falling at an angle. There are three components of the aberration of star light, Annual aberration caused by Earth's revolution around the Sun, Diurnal Aberration cause by Earth's axial rotation and a very small Secular Aberration caused my the motion of the solar system through space. Stars on the Ecliptic appear to move To-and-Fro. Stars 90 degrees from the ecliptic appear to trace out a circle and stars in intermediate positions trace out ellipses.

Astigmatism A form of optical aberration in which the focus changes from the center to the edges 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. Positive lens elements usually have inward curving fields and negative lenses have outward curving fields. Field curvature can be corrected to some extent by combining positive and negative lens elements. Lenses with virtually no field curvature are called flat-field lenses.

Club Officers



President
Dave Covey



Treasurer
Liberty Partridge



Vice President
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 13 September 2013 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 web site that includes a discussion group.

Dave McNally runs the web site and sends reminders to those that have registered into the discussion group.

<http://tech.groups.yahoo.com/group/vaastronomy/>