

Vandenberg Amateur Astronomical Society
presents
The Sidereal Times



The Bubble Nebula image on page 5.

Meeting News:

The November meeting started at 7:00PM at the Manzanita School. Election of VAAS Officers not taken. Watched a video about the Sun, thanks to Dave Covey. Cal Cluff proposed a Messier marathon for a learning experience to be held at the observatory in March.

Reminder: VAAS meeting 14 December see you there.

Crater Copernicus 93 Km



Lunar Calendar:

Last $\frac{1}{4}$ 6 Dec
New 13 Dec
First $\frac{1}{4}$ 20 Dec
Full 28 Dec



Presidents Message



Well the rain season has started and we have had 2 star party nights scrubbed due to cloudy weather already. I would like to suggest that we consider adding 1st quarter moon dates to the normal new moon and 3rd moon dates just to increase the chance of getting a few clear nights for star parties during the December to March span.

The VAAS Officers Elections were not taken at the November Meeting due to the lack of members present. The minimum membership required is at least 2/3 of current 13 active members to be present for a quorum per the VAAS constitution. That means we needed 8 2/3 members to be present for a quorum in order that the elections be held. I don't know where we'll get the 2/3 member so I'll settle for 8 members as the minimum.

President - Covey
Vice-President - Tobin
Treasury - Partridge
Editor - Yeterian

So we will have to try and conduct the elections at the December meeting if we have a quorum then. I would like to add a general plea to all the members that VAAS is your club. The more members attend the various events including the meetings, the more we all get in return. We have done quite a lot this past year with the Observatory maintenance, the many great star parties throughout the year, the publicity, the outreach events and finally the October picnic. I know we can do more with the involvement of all the membership. Here is looking towards a great year in 2013!Dave

Special events

December 3 Jupiter at opposition. The giant planet will be at its closest approach to Earth and its face will be fully illuminated by the Sun. This is the best time to view and photograph Jupiter and its moons.

December 8 Last $\frac{1}{4}$ Star party at observatory, weather permitting.

December 13 New Moon. The moon will be directly Between the Earth and Sun and will not be visible from Earth. This phase occurs at 08:42 UTC.

December 13 – 14 Geminids Meteor Shower. Considered by many to be the best meteor shower in the Heavens. The Geminids are known for producing up to 60 multicolored meteors per hour at their peak. The peak Of the shower usually occurs around December 13 & 14, Although some meteors should be visible from Dec 6- 16. The radiant point for this shower will be in Gemini. This year the Moon will guarantee a dark sky for what should be an awesome show. Best viewing is usually to the East after midnight.

December 15 New Moon Star Party at observatory, weather permitting.

December 21 December Solstice. The solstice occurs at 11:12 UTC. The South pole of the Earth will be tilted toward the Sun which will have reached its southernmost position in the sky and will be directly over the Tropic of Capricorn at 22.44 degrees south latitude. This is the first day of winter (winter solstice) in the northern hemisphere and the first day of summer in the southern hemisphere.

December 28 Full Moon, the Moon will be directly Opposite the Earth from the Sun and will be fully Illuminated as seen from the Earth. This phase occurs at 10:21 UTC.



Special Topics

At the 3 November observatory star party the dome drive motor pinion gear was slipping on the drive axel. Dome movement had to be done by hand. There were about 5 to 7 individuals attending. Seeing conditions were very good most of the night. Photos of the attendees are on Page 7.

On Sunday 4 November Dave McNally and Vahan removed the drive motor and found the pinion gear set screw had loosened. Also there was no keeper key to prevent slipping. A key was fabricated and the set screw locked down. Dome rotation is now restored.

Some November Meeting events

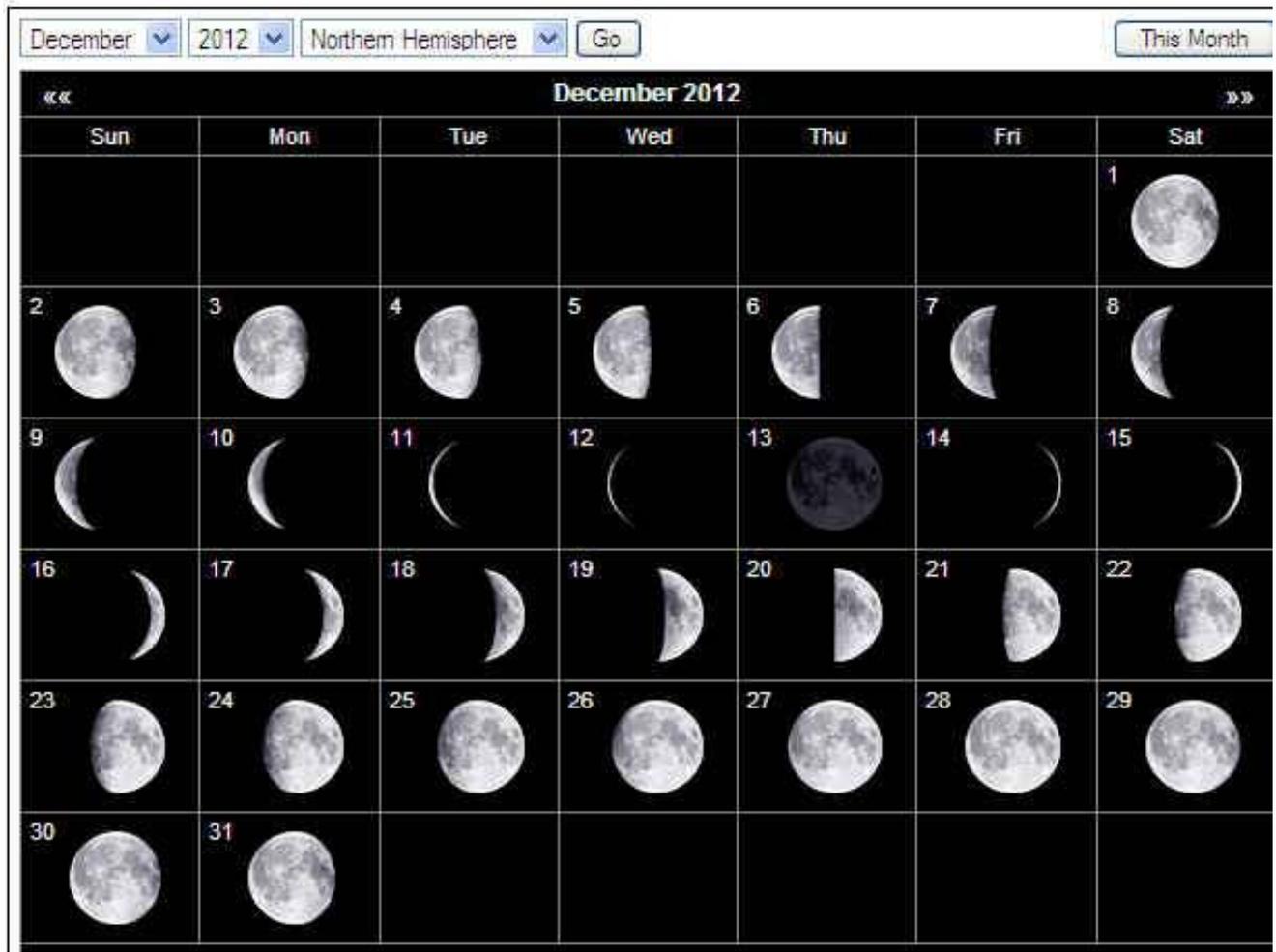
We discussed the possibility of having our holiday party some time in January. After a brief discussion we tentatively scheduled the holiday party for Friday 11 January 2013. The “Where” is pending.

Cal Cluff will conduct a Messier Marathon on 9 March at the Observatory. It is not intended to be a race to view all the Messier objects in one night but instead a learning experience for experienced and non experienced membership.

Ken Jorgenson recommended a book on solar eclipses that is very informative, from ancient times to present. Reference, Eclipse by J.P. McEvoy.

Dave presented a 30 minute video about the Sun and its structure. The video was very informative and was well received by attending members.

December Moon



Moon Phase:

6th Last quarter, 13th New Moon, 20th First Quarter, 28th Full Moon

Moon Folklore

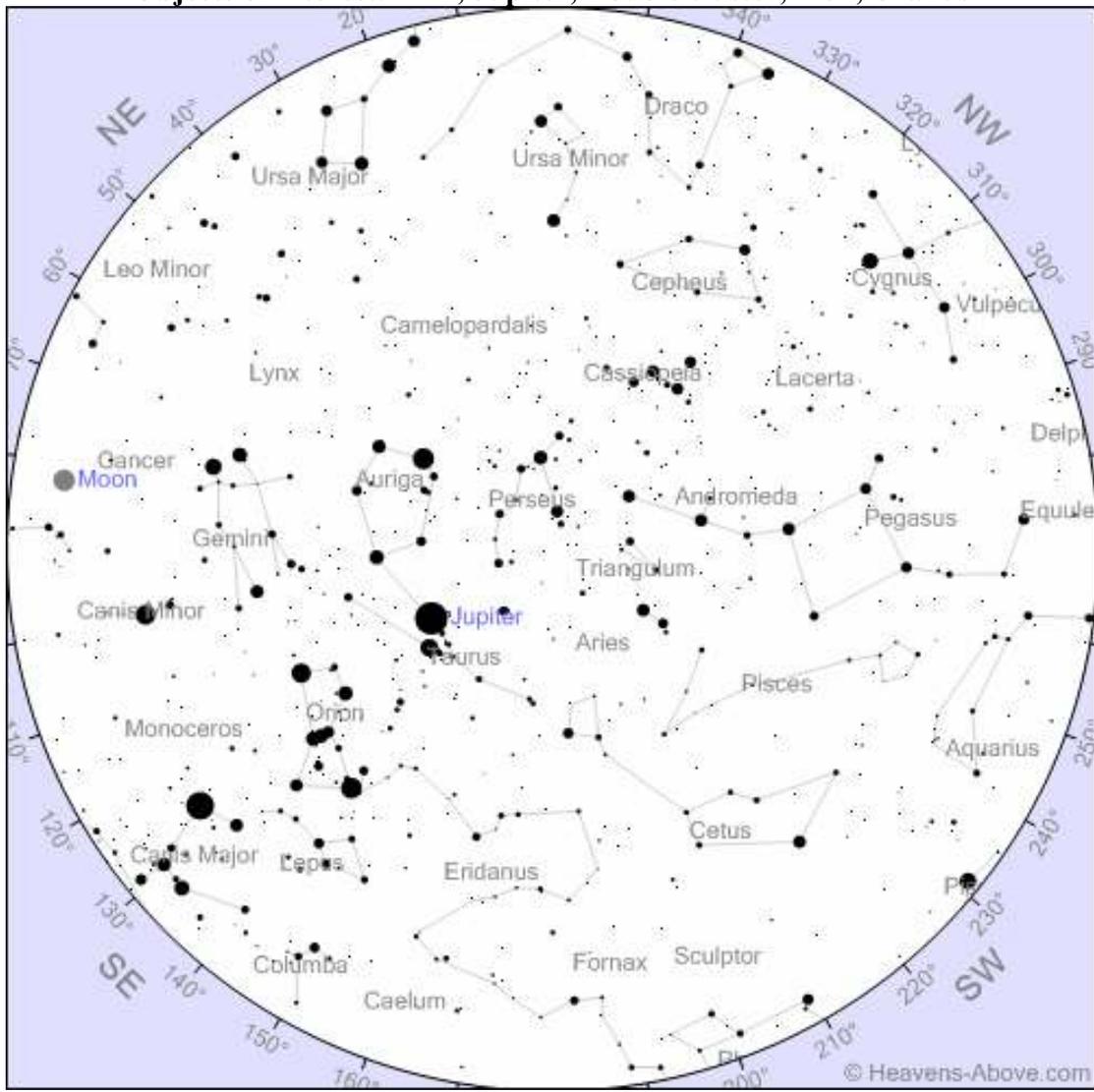
In some Chinese folklore there is a rabbit on the moon that is constantly pounding the elixir of life in a mortar and pestle for the moon goddess, Chang'e.

Two new moons in any one month were said to predict a month's bad weather.



December Sky

Objects of interest: M42, Jupiter, Double cluster, M31, Uranus



Date/Time (Local Time)

Year:	2012	Month:	12	Day:	3	Hour:	22	Minute:	20
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Photo Courtesy Gary Satterfield



The Bubble Nebula NGC 7535 located in the constellation of Cassiopeia is 11,000 light years distant. The bubble was formed by gasses being compressed by strong stellar wind from massive star BD+602522 40 times as massive as our Sun and thousands of times more luminous. As moving gas escapes the star it compresses surrounding gas into a shell. The shell consists of hydrogen oxygen and sulphur and is ionized by the radiation from BD+602522 causing it to glow. The bubble is approximately 6 light years in diameter. BD+602522 is a Wolf-Rayet star in the end stages of its life. It emits fierce stellar winds in the order of 1500 kilometers per second. The surface temperatures are approximately 30,000 to 60,000 degrees Kelvin. The image was captured using an AT8RC, a Canon 500D (modified) DSLR and a hyper tuned CGEM mount guided. 21 frames @ ISO 800/7 minutes and 33 frames at ISO 1600. Darks, flats and bias calibration frames were also included in image processing using Images Plus 4.0 and CS2.

For what its worth

What is a meteor shower? Most meteor showers are spawned by comets. As a comet orbits the Sun it sheds an icy dusty debris stream along its orbit. If Earth travels through this stream we see a meteor shower. Although meteors can appear anywhere in the sky, if you trace their paths the meteors in each shower appears to “rain” into the night sky from the same region. Meteor showers are named for the constellation that coincides with this region in the sky, a spot known as the radiant. The radiant for a

Perseid meteor shower is so named because meteors appear to fall from a point in the constellation of Perseus.

Shooting stars and falling stars are both names that describe meteors – streaks of light across the night sky caused by small bits of interplanetary rock and debris called meteoroids vaporizing high in Earth's upper atmosphere. Traveling at tens of thousands of miles per hour meteoroids quickly ignite from the searing friction with the atmosphere 30 to 80 miles above the ground. Almost all are destroyed by this process but the rare few that survive and hit the ground are known as meteorites. Meteorites include some of the oldest and most primitive solar system material. Radiometric dates suggest some meteorites are as much as 4.54 billion years old. Some even include cosmic material formed before the solar system itself was born. Meteorites also represent some of the rarest material on Earth. The scarcity and scientific importance of meteorites leads collectors and researchers alike to seek them out.

Meteor Showers:

Name	Date of Peak	Moon
Quadrantids	night of January 3	Sets after midnight
Lyrids	night of April 21	New
Eta Aquarids	night of May 5	Full
Perseids	night of August 11	Morning crescent
Orionids	night of October 20	First quarter
Leonids	night of November 17	Evening crescent
Geminids	night of December 13	New

Examples: Iron and Rock



November 3rd Star Party



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 14 December 2012 7:00 PM
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.

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

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

