

Vandenberg Amateur Astronomical Society  
presents  
**The Sidereal Times**



M42 Great Nebula in Orion see page 5.

Meeting News:

The January meeting started at 6:00PM at the Mi Amore Pizza and Pasta parlor. See page 7. Election of VAAS Officers was completed.

**NOTE: it's that time of year again to pay your annual Dues for the 2013 operating year.**

**Reminder: VAAS meeting February 8<sup>th</sup> Manzanita school, Hope to see you there.**



Lunar Calendar:

Last  $\frac{1}{4}$  Feb 2  
New Feb 10th  
First  $\frac{1}{4}$  Feb 16th  
Full Feb 25th

Presidents Message

Well we kicked off the new year with a bang. The pizza party was well attended, (See page 7 photos). The existing VAAS officers were re elected for 2013, or shall I say Railroaded.

We had some folks drop by and inquire about VAAS that night and picked up two new members. Feedback on the party was let's do this every year in January. This time of year the evening sky is dominated by the constellations Taurus, Orion, Canis Major and Minor and Gemini. The winter triangle (3 bright stars) can be found in Orion, Canis Major and Canis Minor. Jupiter is currently in the constellation of Taurus of which the Pleiades (M45) is part. The weather this time of year can be troublesome, however when it is clear the viewing can be very good if not spectacular. Vince Tobin and I were at the observatory Saturday 11 January on one of those clear rare nights (details in Star Party report). I strongly encourage all the members to make an effort to attend the star parties on clear nights. Even if you don't want to bring your scopes or only stay for awhile, star parties are much better with more members and guests. I encourage all members to attend the 8 February meeting. VAAS officers would like your thoughts on what activities we should do or topics we should cover during membership meetings through out this year. One activity that is scheduled in March is a Messier Training event. This topic will be covered at the Feb 8<sup>th</sup> meeting.

Cheers Dave

February 2nd Star party at observatory (? weather) .

February 9<sup>th</sup> Star party at observatory (? Weather).

February 10<sup>th</sup> New Moon. The Moon will be directly Between Earth and the Sun and will not be visible from Earth. This phase occurs at 07:20 UTC.

February 16<sup>th</sup> Star party at observatory (? Weather).

February 25<sup>th</sup> Full Moon. The Moon will be directly Opposite the Earth from the Sun and will be fully Illuminated as seen from Earth. This phase occurs at 20:26 UTC.

### **Star Party Report 12 January**

Dave Covey and Vince Tobin on site opened dome and powered up the scope for star alignment. Sky was clear temperature was 50 degrees and getting colder.

After alignment the first object was Jupiter. Three moons were visible along with the bands near the equator. Next we tried the Orion nebula M42. The gas lanes and the trapezium popped out of the eyepiece! The view was spectacular! We then tried the Crab nebula (M1) in the constellation of Taurus. Again this was one of the best views of the nebula both of us have seen. The Air Police made an appearance so we explained what was going on, no further problem. Vince suggested looking at R Lepus better known as the crimson star. R Lepus is a variable star of magnitude 8 and is in the carbon phase of its life. In the eyepiece it stood out as a small but very deep red colored star compared to the surrounding star field. All-in-all an excellent viewing night under the stars but very very cold. Dave left Vince about 8:30 pm.

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**A few other Star Parties were Weathered out!**



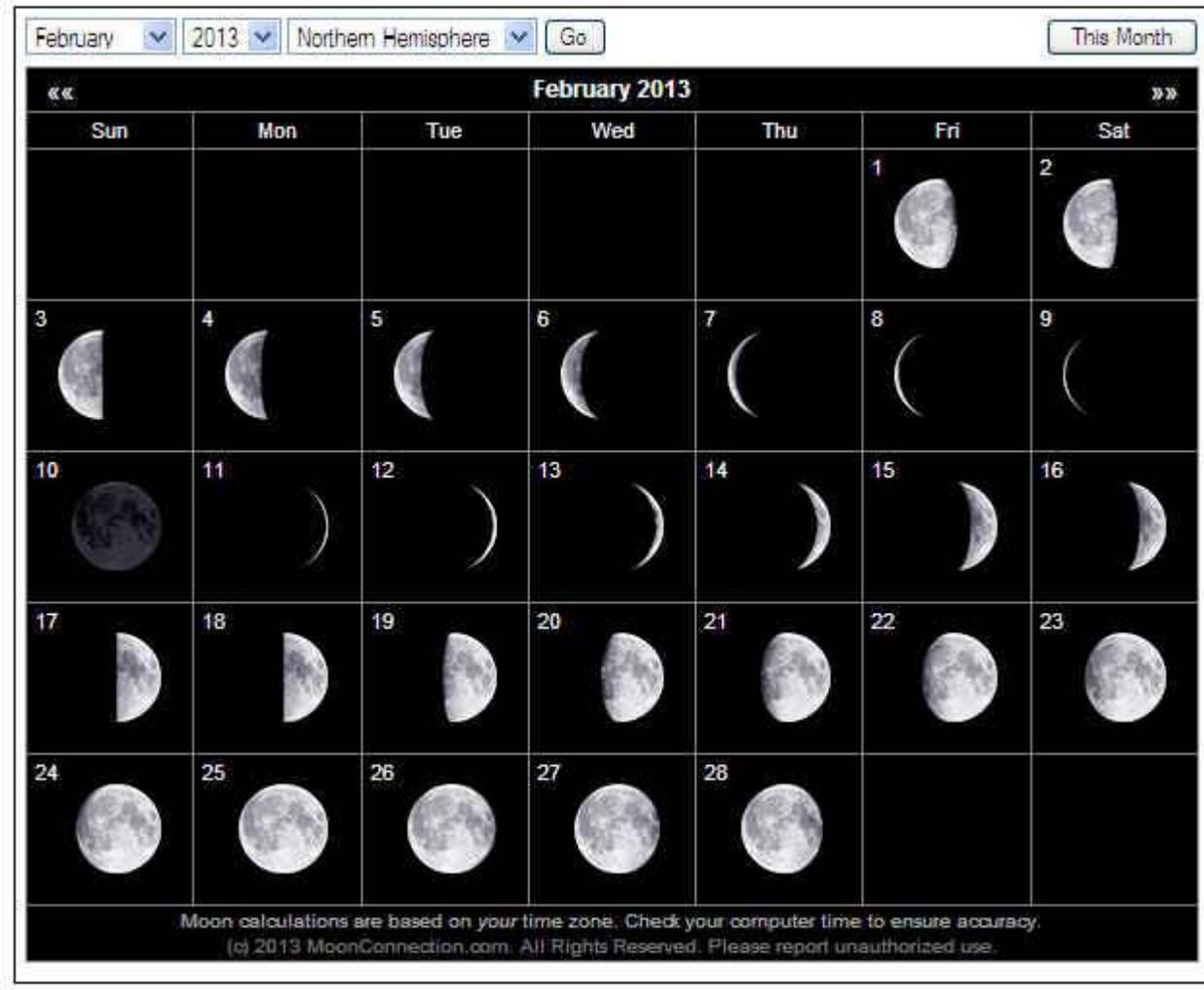
### **Special Topics**

Some time this month we need to do a little preventive maintenance on the Observatory power system. The Battery pack terminals and wiring should be inspected for corrosion and tightness. Also the Inverter cabling and the regulator will require the same inspection and maintenance. This effort can be scheduled in conjunction with a scheduled Star Party wherein we can be on site about an hour prior to the scheduled Party time.

**Planet Saturn** Here are some interesting information about the planet. Saturn was the Roman name for Cronus, the lord of the Titans in Greek mythology. It happens to be the root of the English word Saturday. Saturn is a gas giant made up of mostly hydrogen and helium. It has the lowest density of all the planets and is only one less dense than water. If one had a bathtub large enough to hold Saturn it would float. It spins faster than any other planet except Jupiter, one rotation every 10.5 hours. Because of this rapid rotation it bulges wider at the equator than the poles by some 8000 miles. Saturn's magnetic field is about 578 times more powerful than Earths. Saturn seems to have a hot solid inner core of iron and a rocky material 10 to 20 times as massive as Earth. This core is surrounded by another core probably composed of Ammonia, methane and water. Next is a layer of highly compressed metallic hydrogen and helium. This hydrogen and helium becomes gaseous near the planets surface and merges with the planets atmosphere. Saturn has at least 62 moons. The rings are made up of billions of particles of ice and rock ranging in size from a grain of sand to the size of a house.

Average distance from the Sun 885,904,700 miles.  
Perihelion 838,519,000 miles. Aphelion 934,530,000 miles.

## February Moon



### **Moon Phase:**

2nd Last quarter, 10th New Moon, 16<sup>th</sup> First Quarter, 25<sup>th</sup> Full Moon

### **Moon Folklore**

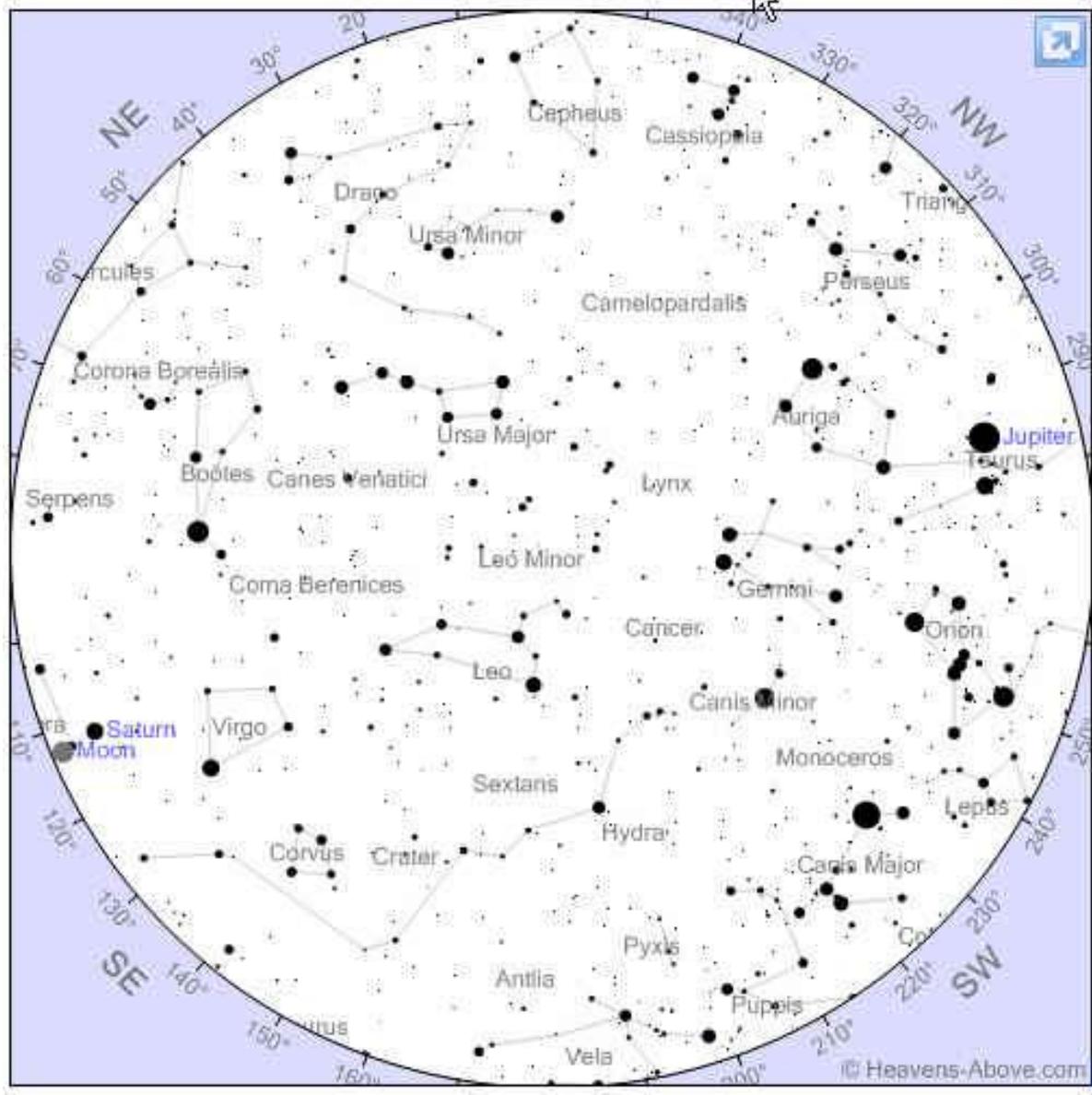
A ring around the Moon means rain or snow.

In Italy they say that if the Moon changes on a Sunday there will be a flood before the month is out.

In Cornwall, if a Boy born during the waning Moon they say the next birth will be a Girl.

## February Sky

Objects of interest: Saturn, M42, Jupiter, Double Cluster



### Time

Year	2013	Month	2	Day	3	Hour	8	Minute	58
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Photo Courtesy Vahan Yeterian



**Messier 42, NGC 1976 Great nebula in Orion** is approximately 1300 light years distant. It is the closest region to Earth of massive star formation. The nebula is estimated to be 24 light years across and has a mass 2000 times that of the Sun. The nebula has revealed much about the process of how stars and planetary systems are formed from collapsing clouds and dust. Astronomers have directly observed protoplanetary disks, brown dwarfs, intense and turbulent motions of the gas and photo-ionizing effects of massive nearby stars in the nebula. There are also supersonic bullets of gas piercing the hydrogen clouds of the Orion nebula. Each bullet is 10 times the diameter of Pluto's orbit and is tipped with ion atoms glowing bright blue. They were formed one thousand years ago from an unknown violent event. Image capture 2 February 2013 using a Celestron 4 inch F#9 refractor, Canon 450D DSLR CCD camera. One 90 second exposure, image processed using PSP 9.

## **For what its worth**

### **Sun Spots (SDIC)**

Sunspots are extended regions on the Sun with a strong magnetic field. They have a lower temperature (3500-4500 K) than the surrounding photosphere (5800 K). The sunspots radiate less energy than the undisturbed photosphere of the Sun and are therefore visible as dark spots on the surface of the Sun. Sunspots are observed with some regularity since 1700 and on a strict daily basis since 1849; the relative number Sunspot number (defined as ten times the number of groups + the number of spots) shows an 11 year cycle detected by Schwabe in 1843. The sunspot number reflects the magnetic activity of the Sun, which has a large impact to the magnetosphere of the Earth and is responsible for e.g. magnetic storms, polar lights. The objective of the SIDC is to carry out and to collect observations of sunspots, to compute, to distribute and to forecast the INTERNATIONAL SUNSPOT NUMBER.

### **Focal Ratio (Photographic Speed or F/Stop)**

Focal ratio is the ratio of the focal length of the telescope to its aperture. To calculate it, divide the telescope's focal length by the diameter of the objective. For example, a 6" telescope with a 48" focal length has a focal ratio of 8. This is normally expressed as f/8.

Generally, the slower and simpler an optical system is, the gentler the curvatures of its optics and the freer from optical aberrations it will be. For example, slow Newtonians and Refractors have very gentle curvatures and complete freedom from coma and field curvature. A telescope is considered slow if its focal ratio is f/10 or greater. Medium speeds occur at focal ratios of f/7 to f/9. Focal ratios f/6 or less are considered fast.

Beginners are often under the false impression that the surface brightness of an extended object image is determined by a telescope's focal ratio. In reality, surface brightness is determined by the telescope's total light grasp and the magnification. Stars differ from extended objects in this respect by actually becoming easier to see at higher magnifications, again, completely regardless of focal ratio.

Holiday Pizza Party at Mi Amore 11 Jan 2013



## 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 8 February 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.

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/>