

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

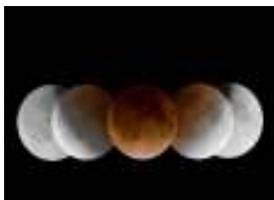


Messier 42, Great Nebula in Orion by V. Yeterian  
Larger image on page 5.

**Meeting News:**

Meeting started at 7:00PM at the Manzanita School. We have a new VAAS member, David McNally. Discussed hosting Scouts at the Observatory on Feb. 25<sup>th</sup>.

Discussed an outreach event at the Orcutt Academy School for 2 March. Discussed an Outreach event at Lompoc Rotary Club on 22 Feb. Talked about the Annular solar eclipse in April 2012.



**Lunar Calendar:**

First quarter: March 1st  
Full Moon: March 8th  
Last quarter: March 15th  
New Moon: March 22nd

**Presidents Message**

Friday, 10 Feb. was clear and warm, however shortly before 5PM the clouds rolled in. By the meeting's normal start time, heavy drizzle was the general order of the night. To top that off, the Manzanita Charter School was having a PTA function that filled the parking lot. Many of the club members and guests had to find parking spaces available nearby. We welcomed a new member, David McNally, and introduced ourselves. David had contacted Vince before coming to the 21 January star party at the observatory. Even though the sky was mostly cloudy, Vince did manage to view a few objects with his scope. In recent weeks Jana Hunking has been instrumental in getting the word out about us to the general public. Her efforts are starting to show material progress on a few fronts. An example of her efforts was at the 10 Feb club meeting when we were joined by a photographer from the Lompoc Record/Santa Maria Times. The photographer took pictures of the telescopes that some of us brought to the meeting, and at the observatory. Another reporter had interviewed Jana and me earlier that week, so the article will be published in the Lompoc Record/Santa Maria Times by the time the March Newsletter is distributed.

To end the evening we were visited by Base security at the observatory area. Their vehicle was not dimly lit. The security police inquired about what we were doing on such a night. They accepted our explanation.

Clear Skies, Dave

## **Scheduled Events**

### **March 2<sup>nd</sup>**

Outreach event at the Orcutt Academy in Casmalia. Lets have a good turn out of the membership for support.

### **March – 3<sup>rd</sup>**

Mars at opposition, The red planet will be at its closest approach to Earth. Best time to view and photograph Mars.

### **March 8<sup>th</sup>**

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 9:29UTC.

### **March 14<sup>th</sup>**

Conjunction of Jupiter and Venus. They will be within 3 degrees of each other in the evening sky.

### **March 20<sup>th</sup>**

Vernal equinox at 05:14 UTC. The sun will shine directly on the equator and there will be nearly equal amounts of day and night throughout the world.

### **March 22<sup>nd</sup>**

New Moon.

The Moon will be directly between Earth and the Sun and will not be visible from earth. This phase occurs at 07:39 UTC.

### **Messier Marathon**

New Moon Star party on Figueroa Mountain. Two dates are possible, March 24<sup>th</sup> or April 21<sup>st</sup>. At the Jan meeting it was decided to hold the event April 21<sup>st</sup>. This would be an all night affair.

### **Solar Eclipse**

Sunday May 20<sup>th</sup> there will be an annular eclipse of the sun. Starts at 5:11 pm and ends at 7:36 pm. Locally we will be in the partial path. For total annular one has to be located in Northern Ca. around Redding.

## **Special Topic**

### **Dome Drive and telescope Ra drive**

On Jan 28<sup>th</sup> Dave and I went to the observatory to check out the dome drive Ac voltage under load. We checked the battery connections again to insure they were tight since previously we had cleaned and burnished each connection. We then measured the Ac voltage from the inverter while slewing the dome CW and CCW. The voltage was stable and there were no interruptions in operation. Second, we disconnected the solar array from the battery pack to simulate nighttime operation and measured the voltage again while slewing the dome CW and CCW. The voltage was stable and there were no interruptions in dome operation. It is felt that the dome drive problem has been resolved and the battery pack is still viable. We also checked out the telescope, there is still a problem with the right ascension drive (Ra).

**Feb 18<sup>th</sup>** 0930 hrs Vince, Dave & Vahan started work on the Telescope Ra drive. The mount was disassembled. Drive motors were tested bearings were cleaned of congealed grease like glue! Everything was cleaned and lubed with fresh oil. The mount was reassembled, gear mesh tolerances set and the mount balanced in Ra and Dec. The clutches were adjusted for both Ra & Dec. Vince reset the software, new Lat and Long input and limits checked. An operational test was conducted the results of which were positive. Will have to wait until a clear night to do a star alignment incase there might still be some issues to clear up. Secured the observatory and departed at 1415 hrs.

### **Outreach Event**

On Wednesday February 22<sup>nd</sup> Liberty and Vahan were guest speakers at the Lompoc Rotary Club meeting. They discussed the function of the VAAS, its interaction with the general public, and various events that we schedule for schools such as the Orcutt Academy in Casmalia. Vahan also gave a photo presentation with his Laptop and Dave's Projector. The Liberty' and Vahan's presentation was very well received by the attending Rotary Club membership (approx. 30 members in attendance). Several of the Rotary members said they would be interested in joining VAAS. This outreach event with the Lompoc Rotary is another example of Jana's on going publicity efforts on behalf of our club.

Note:

Results of the Scout outreach on 25 Feb will be addressed In the May Newsletter.

**Moon Phase:**

**March Moon**

<b>Moon Phases: March 2012</b>						
<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>	<b>Saturday</b>	<b>Sunday</b>
			1 	2 	3 	4 
5 	6 	7 	8 Full 	9 	10 	11 
12 	13 	14 	15 	16 	17 	18 
19 	20 	21 	22 New 	23 	24 	25 
26 	27 	28 	29 	30 		

**8 Mar - Full Moon:**

**22 Mar – New Moon:**

**Moon Folklore**

Chinese legend speaks of the man in the moon who secures the destiny of lovers by uniting them with an invisible silken cord, which he ties around their waist.

Some ancient civilizations considered the moon a masculine deity whose role was to structure society as a measure and recorder of time.

The man in the moon is often described as carrying a bundle of twigs or a bucket and is generally reported to be a thief or a tramp that was transported to the moon in punishment for some criminal or immoral activity.

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.

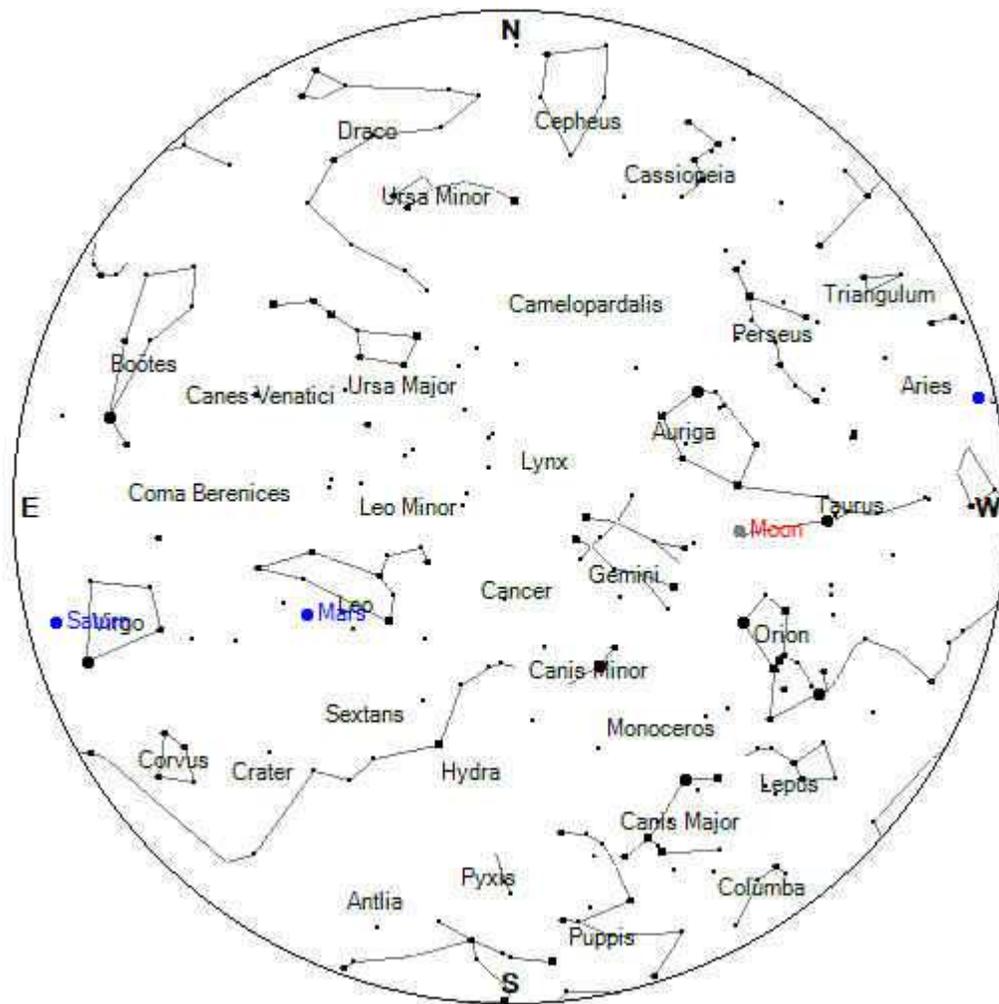
## March Sky Chart

### Objects of interest

M42 Orion Nebula

M1 Crab nebula

Saturn, Mars, Venus, & moon



**Date/Time (Local Time)**

Year:	2012	Month:	3	Day:	1	Hour:	22	Minute:	0
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## Picture of the Month Courtesy Vahan Yeterian



Messier 42 Great Nebula in the Constellation of Orion. Distance approximately 1200 light years. The nebula is a stellar nursery where new stars are being born. M42 is one of the brightest nebulae and is visible with the naked eye. The nebula is approximately 30 light years across and has a mass 2000 times the mass of the Sun. Study of the nebula has revealed much about the process of how stars and planetary systems are formed from collapsing gas and dust. On its northern end, the nebula is divided by a conspicuous dark lane. It is an emission nebula shining by the light emitted from its atoms after being excited by the high energy radiation of massive very hot young stars within it. Image capture was accomplished using a 12" SCT, a Canon 450D DSLR modified and a 3.3 focal reducer. Four (4) images at 40 seconds each combined and processed.

### Some food for thought

#### Active Optics

A computer controlled system that compensates for the distortion of a telescope's mirrors caused by gravity, and thus allows a thinner mirror and lighter support structure to be used. It works by monitoring the image of a guide star and sending appropriate signals to actuators behind the mirror to correct the mirror's shape and alignment.

#### Corrector Plate

A thin lens, or combination of lenses placed at the front of a catadioptric telescope to correct the spherical aberration of the primary mirror, also known as a correcting lens.

### **H-Alpha**

A red spectral line at wavelength of 6563 Angstroms (656.3 nanometers) emitted by a Hydrogen atom when its electron falls from the 3<sup>rd</sup> lowest energy level (n=3) to the 2<sup>nd</sup> lowest energy level (n=2). The same line appears in absorption when electrons are raised from n=2 to n=3. Many solar features such as solar prominences show up best in H-alpha so that observation of the sun, filters are often used that allow only light close to the H-alpha wavelength to pass.

### **General Tips**

Spend time with each sky object you're able to find, and really get to know it. Too many first time telescope users expect Hubble-like brightness and color in the eyepiece, when in fact most astronomical objects are very dim to the human eye. Our night vision sees almost everything in shades of grey. Much of what the universe has to offer is subtle and of course extremely distant. On the other hand, the moon and planets are easy to find and make excellent first targets for budding sky watchers. Tip – Suggest using a red light to keep your eyes adjusted to the dark. A regular flashlight with a red filter or red film over the lens will work just fine.

The worst kind of telescope to buy is the one that never gets used!

Eleven (11) reasons for joining an astronomy club.

1. Camaraderie
2. Family Activities
3. Fun
4. Field trips
5. Help with your telescope
6. Intellectual stimulation
7. Learning
8. Meeting people
9. Opportunities to educate
10. Star Parties
11. Night life (of sorts)

### **Focal Ratio**

Also known as “F/Stop” or “Photographic Speed”, the focal ratio is the relationship between the focal length and the aperture. A 10-inch scope with a focal length of 100 inches would have a focal ratio of 10; this would be expressed as f/10. Just like cameras the lower the focal ratio the faster (brighter) the optical system. Lower focal ratios have a gentler curvature to their optical elements and produce fewer aberrations. Frequently there is a false impression that the surface brightness of an astronomical object is determined by the focal ratio of the telescope. In reality, the surface brightness is determined by the light grasp of a telescope, which is a function of the area of the aperture of the telescope.

## Club Officers



President  
Dave Covey



Treasurer  
Liberty Partridge



Vice President  
Vince Tobin



Newsletter Editor  
Vahan Yeterian



### Club Meeting

Club meeting 9 March 2012 7:00 PM  
Since it is a new moon we could have a little star party at the observatory after the meeting.

### Star Parties (as always weather permitting)

17 March (Observatory around 5:00PM)  
24 March (Observatory around 5:30 PM)

### 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/>

(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/>