

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



Messier 13, Globular Cluster in Hercules by Gary Satterfield. Larger image on page 5.

**Meeting News:**

Meeting started at 7:00PM at the Manzanita School. Talked about the Out-reach at Casmalia school and the Boy Scout Out-reach at the observatory. Welcomed a new member, Tom Gerald. Discussed the power problems at the Observatory. Discussed future outreach events and the annular solar eclipse in April 2012. Discussed the results of the recent publicity about our Club.



**Lunar Calendar:**

Full Moon: 6 Apr.  
Last quarter: 13 Apr.  
New Moon: 21Apr.

**Presidents Message**

January, February and March has been a flurry of events and requests. First was the publicity the club received that was arranged by Jana. Then the requests to support various Out-reach events. We are sorting out the general maintenance that the observatory badly needed. And finally, the prime goal of the publicity; some new members have joined the club and some other individuals have expressed interest in joining, A great start to the New Year for the club. The recent early evenings have been dominated by the planets (Mercury, Venus, Jupiter and Mars). They were a big hit at the Out-reach events in February and March. So far we have been very fortunate this time of year to have mostly good weather at these events. It is a joy to watch the expressions or rather hear the vocal excitement of the kids and the adults after they look at the planets Moon or other deep sky objects through the telescope. That makes the Out-reach events fun and worth the effort for me.

The recent publicity has triggered base officials to be interested in VAAS and the observatory. They have been wondering about the apparent abandoned observatory on Maple High school grounds for almost a year. The recent news has made them connect the dots. I'll report on this subject at the April club meeting.

I purchased an LED projector that can be connected to a lap top for presentations during future VAAS meetings. We tried it out at the Rotary Club out-reach presentation and it works reasonably well. If members want to have short presentations at future VAAS meetings or events please contact me, Dave Covey, before the meeting date to arrange for the equipment to be available.

Clear Skies, Dave

## **Scheduled Events**

### **April 6th**

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.

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

Star party at the observatory weather permitting.

### **April 15<sup>th</sup>**

Saturn at Opposition. The ringed planet will be at its Closest approach to Earth and its face will be fully illuminated by the Sun.

### **April 21st**

New Moon.

The Moon will be directly between Earth and the Sun and will not be visible from earth. This phase occurs at 07:18 UTC.

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

Lynids meteor shower an average shower usually producing about 20 meteors per hour. Look for meteors radiating from the constellation of Lyra after midnight.

### **Messier Marathon**

New Moon Star party on Figueroa Mountain. Date 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.

### **Did You Know?**

Dandelions represent three celestial bodies; The Sun (the flower), the Moon (the puffball Seed head) and the Stars (the seeds that blow into the air).

## **Special Topics**

February 25<sup>th</sup> outreach event with Boy Scouts from Ventura Dave, Vince, and Vahan arrived at the observatory at 5:30 pm. Vince and Dave began setting up their telescopes Vahan opened up the observatory and prepared the 14" scope. Dave McNally showed up at 6:00 pm to help out. There were some scattered clouds but they slowly cleared. Visible were Mercury, Moon, Venus and Jupiter. At 6:30 pm about 30 Scouts and parents arrived, and began viewing the sky show. All three telescopes took turns viewing the planets and moon so the scouts and parents had a chance to see what the different types of scopes could do. They asked many questions about the objects viewed. All the visitors thanked us for our support and departed at 8:30 pm. Dave Vince and Dave McNally stayed on to have a little star party, Vahan left at 9:00 pm. During the star party the observatory dome was reverting to failure mode again only this time it was more severe than previous times. This problem will be looked into as time permits. Suspect are the Storage Batteries.

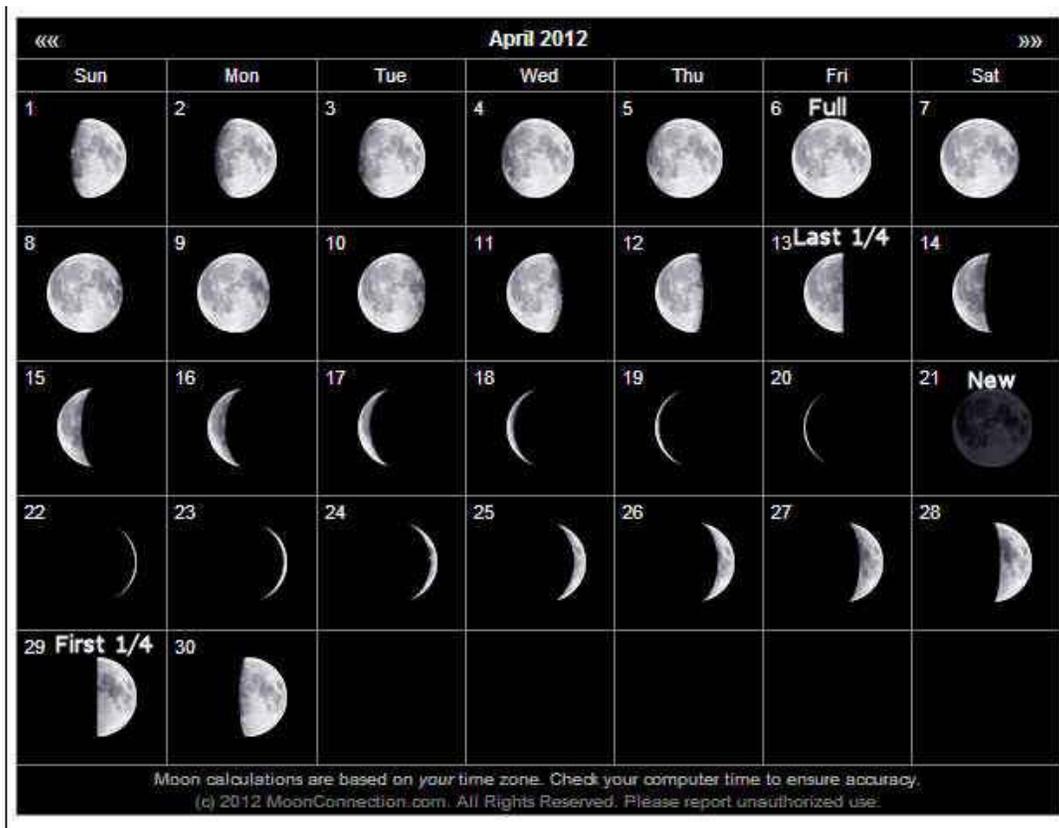
February 28<sup>th</sup> Vahan looked into the dome problem. The storage batteries are at the end of their useful life and need to be replaced. Hygrometer test for specific gravity of each cell of each of the 6 batteries showed they were no longer able to hold a charge. This is typical of storage batteries that are 6 to 8 years old. Vahan contacted Steve Kliever ( Director of Endeavor Center) and informed him that the Batteries need to be replaced. Steve contacted Edmond Burke (Space Information Labs) who approved \$1000.00 to the purchase of new batteries. Once the new batteries arrive. We will do the installation .

March 2<sup>nd</sup> Out-reach event at Casmalia school.

Dave and Vince set up their telescopes and prepared for the Evenings Out-reach event. Six adults and 10 students were In attendance that night. Objects viewed by the class were Mercury, Venus Jupiter, Moon, Mars and M42. Vince and Dave split up the objects, Vince's two scopes viewed the Moon and Venus, Dave's two scopes viewed Jupiter and Mars and the Moon. Between the two they also viewed M42 and M31. The class asked many questions and seemed very happy with our Out-reach effort. The principal also asked if we could support the Olga Reed elementary school in Los Alamos. Date to be determined.

**Moon Phase:**

**April Moon**



**Moon Folklore**

Ancient astrologers recognized conjunction and opposition of the Sun and Moon as unfortunate and claimed that when the lights of heaven are in bad aspect there is a state of imbalance in all-mundane and human affairs.

When a large star or planet is near the Moon the weather will be violent. Fog and a small Moon bring easterly winds.

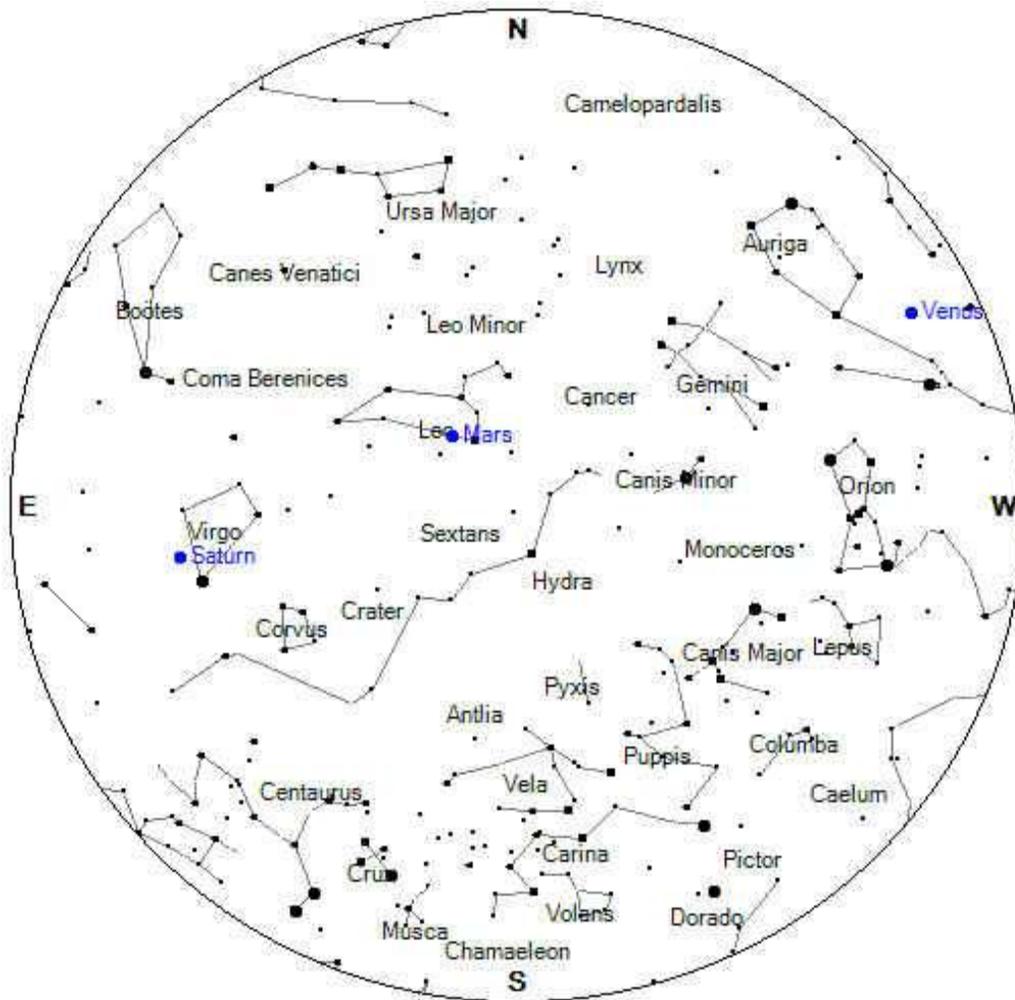
**Lunar facts:**

Earth's rotation carries the Earth's bulges slightly ahead of the point directly beneath the Moon. This means that the force between the Earth and the Moon is not exactly along the line between their centers producing a torque on the Earth and an accelerating force on the Moon. This causes a net transfer of rotational energy from the Earth to the Moon slowing down the Earth's rotation by about 1.5 milliseconds a century and raising the Moon into a higher orbit about 3/8 centimeters per year. The asymmetric nature of this gravitational interaction is also responsible for the fact that the Moon rotates synchronously; i.e. it is locked in phase with its orbit so that the same side is always facing Earth. Just as the Earth's rotation is now being slowed by the Moon's influence so in the distant past the Moon's rotation was slowed by the action of the Earth, but in that case the effect was much stronger.

## April Sky Chart

### Objects of interest

Saturn, Mars, Venus  
M104, M51, M13



### Date/Time (Local Time)

Year:	2012	Month:	4	Day:	15	Hour:	22	Minute:	00
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## Picture of the Month Courtesy Gary Satterfield



Messier 13 Hercules Globular Cluster. Distance approximately 25,100 light years. It contains approximately 300K stars. It glows at magnitude 5.8 and is approximately 23 minutes of arc in diameter which corresponds to 145 light years. In dark skies it is visible to the naked eye. Image capture in fairly dark skies with an AT8RC and Hypercams modified Canon 500D riding on an auto guided, hyper tuned Celestron CGEM mount. A total of 17 frames at 7 minutes ISO800 were dark calibrated processed in Images Plus.

### Some food for thought

#### Entrance Pupil

The optical aperture of a telescope or other optical system through which light initially enters.

#### Monochromatic

Denoting radiation, especially light of one wavelength or color. Pure monochromatic radiation is not possible although light from a Laser occupies a very narrow band of wavelengths and is virtually monochromatic as are some spectral lines.

#### Diffraction Grating

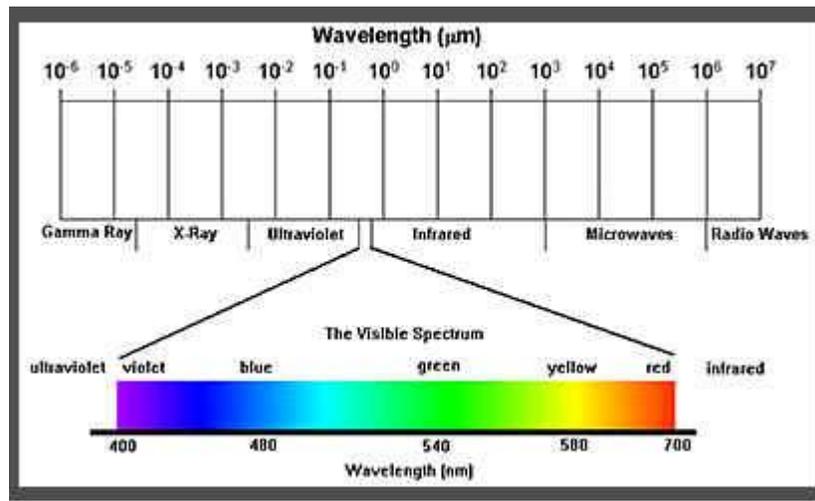
An optical device used to disperse light into a spectrum. It is ruled with closely spaced lines fine parallel grooves, typically several thousand per centimeter that produce interference patterns in a way that separates all the components of incoming light. A diffraction grating can be used as the main dispersing element in a spectrograph.

## Interference Pattern

Alternating light and dark bands known as fringes that are produced by interference. In general the pattern of peaks and troughs that result when two or more waves that traveled slightly different paths from the same source are brought together. The term is also used in radio astronomy to describe the pattern that results when the signals picked up by two or more elements of an interferometer are combined; interference is the basic principal used in interferometry to increase resolving power.

## Electromagnetic Radiation

Electromagnetic radiation that can be detected by the human eye. It extends from a wavelength of about 780 nanometers ( $780 \times 10^{-9}$  m) at the end of the red spectrum to one of 380 nm (Violet light). Visible light spans the divide between infrared and ultraviolet radiation. So, all we see with the eye is a small portion of the electromagnetic spectrum.



## Observing 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. And our night vision sees almost everything as shades of gray. Much of what the universe has to offer is subtle, and of course *extremely* distant. On the other hand, the Moon and planets are bright and easy to find. These make excellent first targets for budding sky watchers. The Moon is one celestial object that never fails to impress when seen in a telescope. It's our nearest neighbor in space — big, bright, beautifully bleak, and just a quarter million miles away. This makes the Moon a wonderful target for even the most humble astronomical instrument. An amateur telescope can keep you busy on the Moon forever. There's more to the night sky than planets, of course. Winter evenings often bring crisp, transparent skies with a dazzling canopy of stars. But with so many inviting targets overhead, where should you point first?

## Club Officers



President  
Dave Covey



Treasurer  
Liberty Partridge



Vice President  
Vince Tobin



Newsletter Editor  
Vahan Yeterian



## Club Meeting

Club meeting 13 April 2012 7:00 PM

Star Parties (as always weather permitting)

14 April (Observatory around 5:00PM)

21 April (Observatory around 5:30 PM)

27 or 28 April, place to be determined.

## 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/>