

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



Messier 101 Spiral Galaxy. See Page 5.

Meeting News:

The March meeting started at 7:00PM at the Manzanita School. Items discussed were Messier marathon and approaching comets. Also video presentation on Comets and asteroids and impact craters. Also welcomed a new VAAS member Dave Beck.

**Reminder: VAAS meeting April 12th  
Manzanita school, Hope to see you there.**



Lunar Calendar:

Last  $\frac{1}{4}$  3 April  
New 10 April  
First  $\frac{1}{4}$  April 18  
Full 25 April

Presidents Message

This is the time for changes in the night sky. We are starting to see the summer constellations and saying goodbye for now to the winter constellations. The early evening sky is still dominated by the winter constellations Taurus, Orion, Canis Major, Canis Minor and Gemini. However, by mid evening the summer constellations Leo, Virgo and Bootes come into view. Jupiter is still putting on a bright show in the early evening sky but Saturn is starting to make its appearance in the East by mid evening.

Please note that the new moon star parties will now be held at the Figueroa Mountain location rather than at the observatory location until late fall. We will continue to hold the 3<sup>rd</sup> quarter moon star parties at the observatory unless a special event changes that guidance.

During the March meeting we discussed the 15 February meteor events (near Earth and the explosion over Russia). A 30 minute DVD presentation was shown titled "Craters, Impacts and Cataclysms" which fit quite nicely with those recent events. Based upon the member's reception, we'll have more DVD presentations at future meetings.

A Big Welcome to the new members Ken and Louise Spraker and Dave Beck family!

The VAAS Officers encourage all the membership in providing inputs for topics to be discussed during regular meetings and articles/photos for the Newsletter. ....Dave.

**April 6<sup>th</sup>** Star party at VAAS Observatory. A practice Messier marathon and familiarization.

**April 13<sup>th</sup>** Star Party Figueroa Mountain.

**April 14<sup>th</sup>** Conjunction between Moon and Jupiter. The Moon will pass about 2 degrees of the giant planet. The crescent Moon will be magnitude-10.6 and Jupiter will be magnitude -2.1. Look for both objects in the West about 3 hours after sunset.

**April 20<sup>th</sup>** Astronomy day part one Star Party at the VAAS Observatory. Astronomy Day is an annual event intended to provide a means of interaction between the general public and various astronomy enthusiasts groups and professionals.

**April 21<sup>st</sup>** Lyrids Meteor Shower is an average shower producing about 20 meteors per hour at it peak. It is produced by dust particles left behind by Comet C/1861 G1 Thatcher. The shower runs annually from April 16- to 25. This year it peaks on the night of the 21<sup>st</sup> and morning of the 22<sup>nd</sup>. The full Moon will be a problem and the best viewing will be after midnight.

**April 25<sup>th</sup>** Partial Lunar eclipse but will only be visible throughout most of Africa, Europe, Asia and Australia.

**April 28<sup>th</sup>** Saturn will be at its closest approach to Earth and will be fully illuminated by the Sun. This is the best time to image and photograph Saturn and its moons.

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Some March Star parties were cancelled .....weather.



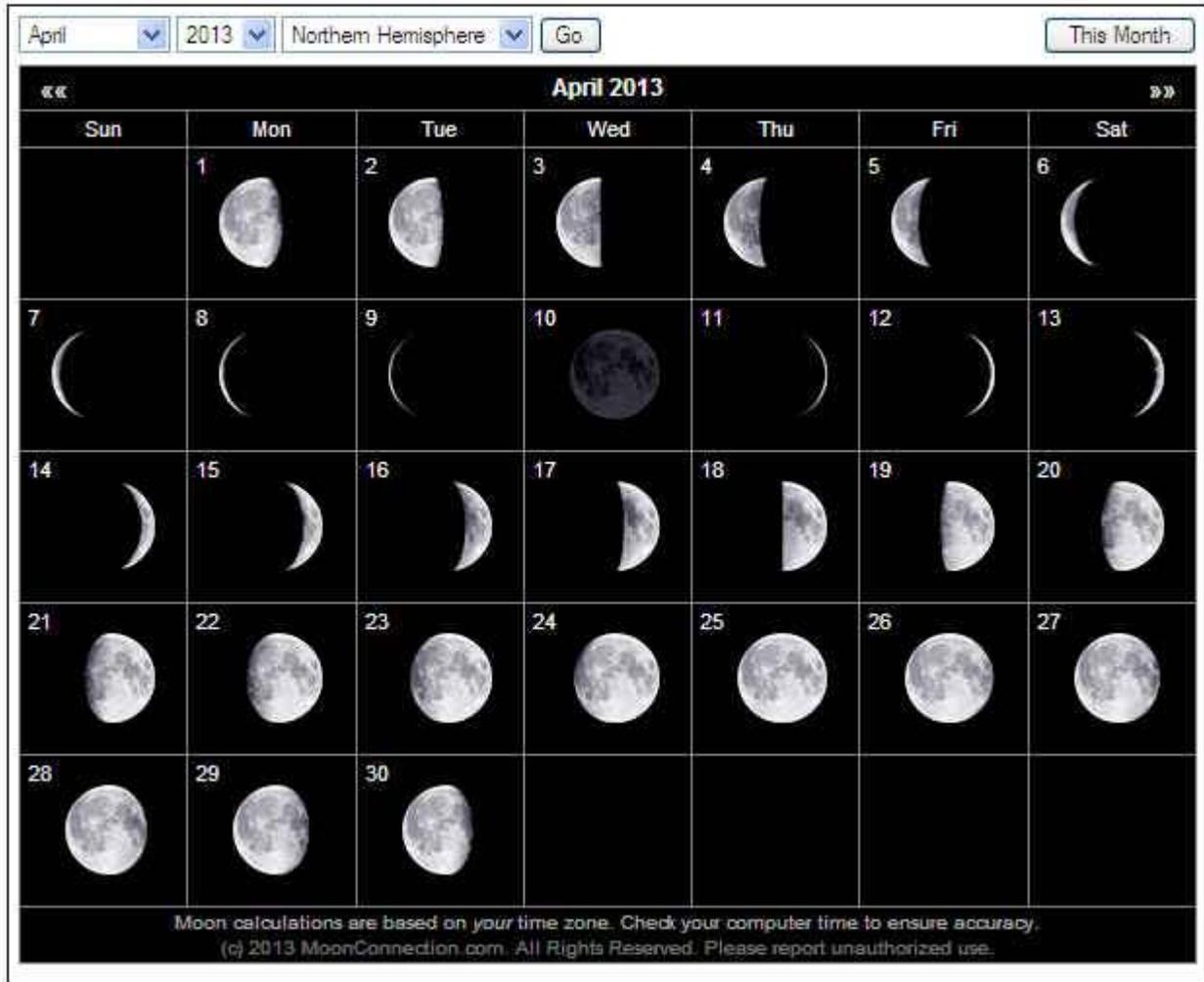
### **Special Topics**

**March 2<sup>nd</sup>** Star Party was scrubbed due to weather, overcast and marine layer.

**March 9<sup>th</sup>** Star party at Figueroa Mtn Scrubbed due to weather.

**Meteors** Feb 15<sup>th</sup> was a very eventful day, especially for the folks in the Chelyabinsk region of Russia. On any given day or year asteroids/ meteors hit the Earth's atmosphere and vary in size from a grain of sand to 15 inches. In any given century larger ones 20 meters or greater enter the atmosphere. Normally these objects become visible some 34 to 70 miles above the Earth. The 2013 Chelyabinsk region meteor was about 50 feet across (almost the size that would be expected in a century) and exploded about 10 to 12 miles above the Earth surface. Estimates of the blasts energy are between 300 to 500 kilotons. If it was significantly larger or exploded lower, the blast affect and injuries (yet alone loss of life) would have been much worse. In comparison, June 1908 Tunguska event (comet or meteor?) in central Russia was estimated to be about 330 feet across and exploded 3 to 6 miles above the Earth's surface. Estimates of the blasts energy are between 3 and 30 megatons. This event knocked down trees over an 830 square mile area. There have been other events in recent times to cause excitement due to their fireball entry in Earth's atmosphere but none were major explosions. This topic might cause all of us to pause and consider what must it have been like during the last bombardment period in the solar system.

## April Moon



**Moon Phase:** Last – 3<sup>rd</sup>, New - 10<sup>th</sup>, First ¼ - 18, Full – 25<sup>th</sup>,

### Moon Folklore

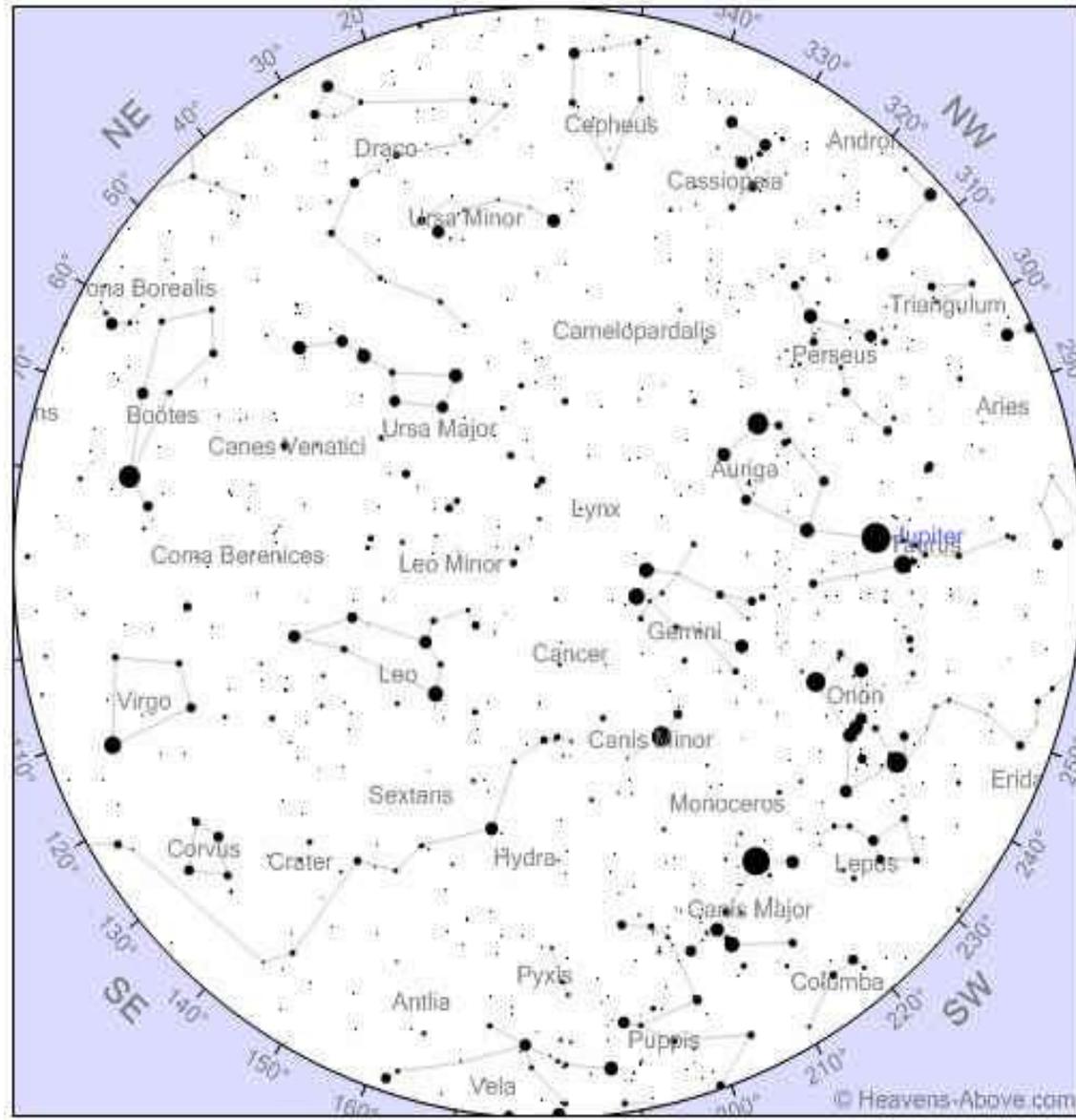
The night of the full Moon is believed to be a good time for Divination and Scrying.

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

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

## April Sky

Objects of interest:



**Time**

Year	2013	Month	4	Day	5	Hour	20	Minute	56
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Photo Courtesy Vahan Yeterian



Messier 101, NGC 5457 is a face on spiral galaxy distanced at 21 million light years in the constellation of Ursa Major. It is approximately 70 percent larger than our own galaxy, the Milky way. It has a disk mass of 100 billion solar masses along with a bulge of 3 billion solar masses. A remarkable property of this galaxy is the huge and extremely bright H II regions of which 3000 can be seen on photographs (not necessarily on my photo). H II regions usually accompany enormous high density molecular hydrogen gas contracting under their own gravitational force where stars form. H II regions are ionized by large numbers of extremely bright and hot young stars. M101 is asymmetrical on one side. It is thought that in the past a near collision with another galaxy and the associated gravitational tidal forces caused the asymmetry. In addition the encounter amplified the density waves in the spiral arms. Image capture was accomplished using a 12 inch SCT and DSI 2 CCD camera, exposure 20 frames combined at 15 seconds per frame (5 minutes).

## **For What it's Worth**

Here are some data that may be useful in filter use.



Basically if your scope is smaller than 8" aperture then you want filters with a high light transmission, lower light transmission require a 8" aperture or larger which they collect a lot more light. Knowing what filters do one can then plan a observing session and achieve better results

Knowing which filter to use and what it does helps train the eye to see what they are actually enhancing. When you use a color filter try not to see the color but what they are suppose to enhance. The most important purpose of color filters in astronomical applications is in the enhancement of visual detail, and increase in observable contrast, on the Moon and planets, and in this application filters often provide the difference between seeing fine detail or not.

### #11 Yellow-Green (78% transmission)

Contrasts well with the red and blue characteristics of surface features on Jupiter and Saturn. Darkens the Maria visible on Mars and improves visible detail on Uranus and Neptune in larger telescopes.

### #12 Yellow ( 74% transmission)

Contrast strongly with blue-colored features on Jupiter and Saturn, while enhancing red and orange features. Lightens red-orange features of Mars, while reducing or blocking the transmission, and thereby increasing the contrast, of blue-green areas. Useful in increasing the contrast of lunar features in telescopes 6" aperture or larger.

### #21 Orange (46% transmission)

Reduces or blocks transmission of blue-green wavelengths. Use on Jupiter or Saturn to enhance detail in the belts and polar regions. Sharpens boundaries between yellow-orange areas and blue-green regions on Mars, resulting in a darkening of edge-detail in the Maria.

### #23A Light Red (25% transmission)

On telescopes of 6" aperture and larger, the #23A does approximately the same functions as the #21 filter, but with stronger contrast and enhancement of marginally defined blue-green surface detail. Useful primarily on Jupiter, Saturn, and Mars. Increases contrast between Mercury and bright blue sky during daylight observations or during twilight.

### #25A Red (14% transmission)

The #25A filter strongly blocks the transmission of blue and blue-green wavelengths, resulting in a very sharply defined contrast between, for example, blue-tinted cloud formations on Jupiter and the lighter-toned features on the disc. Also useful for delineation of the Martian polar ice caps and Maria. Because of its relatively low total light transmission, the #25A should be employed on telescopes of 8" aperture or larger.

#47 Violet (3% transmission)

Strongly rejects red, yellow, and green wavelengths, useful for the study of Martian polar cap regions, and for the observation of occasional phenomena in the upper atmosphere of Venus. Enhances contrast between the rings of Saturn. Use only on telescopes of 8" aperture or larger.

#56 Light Green (53% transmission)

Excellent for the observation of Martian polar ice caps as well as yellow-tinted dust storms on the Martian surface. Increase contrast of red and blue regions in Jupiter's atmosphere as well as details the cloud belts. Also useful for enhancing lunar detail.

#58 Green (24% transmission)

Use on telescopes of 8" aperture or larger to reject blue- and red-toned structures on the surface of Jupiter and thereby increase their contrast relative to lighter parts of the disc. Also use for the enhancement of Saturn's cloud belts and polar regions. Strongly increases contrast of Mars's polar ice caps, and increases contrast of atmospheric phenomena on Venus.

82A Light Blue (73% transmission)

Useful on the Moon, Mars, Jupiter, and Saturn, this subtle pale blue filter enhances areas of low contrast while avoiding significant reduction of overall image brightness.

80A Blue (30% transmission)

The most popular filter for the study of Jupiter and Saturn. Enhances contrast of rills and festoons in Jupiter's cloud belts, as well as details of the Red Spot. Brings out detail in Saturn's belts and polar phenomena. Very useful as a contrast-enhancing lunar filter.

### **Star Party Reports:**

**09 March:** High clouds and windy. No reports from anyone.

**16 March:** Mostly clear night. Vince Tobin went to the observatory. The first order of business was to find Comet PanSTARRS through binoculars since it was about to set in the west. It did not stand out clearly from the haze, but it seemed like the tail was standing straight up. Next I turned to open the observatory and discovered that I didn't need to; the door was already wide open! It's been getting harder to get the door to latch, so I suggest giving the handle a good tug to make sure it catches. Don't just turn the knob, pull on it, too. Fortunately, nothing was missing or damaged inside as far as I could tell.

The moon's terminator had lots of little spots that looked disconnected from the rest of the lit portion - more than usual, I would say. Very cool. The seeing wasn't good enough to see much detail on Jupiter, but there were moments when you could see a couple of narrower belts aside from the two main equatorial belts.

Observed a couple of open clusters and then a series of galaxies. There were two pairs that fit in the field of view and that I would like to observe again under darker skies: NGC 3607 & 3608 in the hindquarters of Leo, and NGC 4490 (Cocoon Galaxy) and NGC 4485 in Canes Venatici. Secured and Departed.

## 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 12 April 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/>