

The Observer

SAN BERNARDINO VALLEY AMATEUR ASTRONOMERS

Member of The Astronomical League

<http://sbvaa.org/>



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Since 1958

August, 2015

Meeting:

August 22, 2015

Location:

Pico Park

21950 Pico St., Grand Terrace.

Our reservation is from 4:00 to 8:00 pm

Setup for cooking is 4:30 and the potluck begins about 5:00.

(You could even try for a little solar viewing before dinner!)

Program

Annual Club Outdoor BBQ



As in years past, we don't have a regular club meeting in August, instead we have a social get-together. **On Saturday, August 22, we'll meet at Pico Park in Grand Terrace.** This is the same park we set up at for the Transit of Venus in 2012.

Set up will begin about 4:00 pm and eating will commence after 5:00 pm. Our reservation ends at 8:00 p.m.

Bring any kind of food you like, and everyone usually shares what they have. If you can't bring food, we always need napkins, plastic ware, paper plates and beverages too.

It's a nice opportunity to simply chat and hang out with your fellow members.

Good food and great company reign supreme at this club function---hope to see everyone there!

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Calendar of Upcoming Events

August 15, Star Party, Pioneer Town
Mountain Preserve Wildlands Conservancy
August 22, Annual Club outdoor BBQ
September 11 - 13, Grandview
September 19, Club meeting
October 10, Star Party, Johnson Valley
October 24, Club Meeting
November 14, Star Party, Johnson Valley



Total Eclipse Coming!

See Chris' article below.

*(Photo credit: Fred Espenak, NASA's
Goddard Space
Flight Center)*

Club Star Party Dates (Updated)



October 10, Johnson Valley

August 8, Wildlands Cons., Oak Glen, November 14, Johnson Valley

August 15, Pioneer Town Preserve December 12, Johnson Valley

September 11 - 13, Grandview,

Super Bloody Harvest Moon Rising Over “Berdo!”

By Chris Clarke

No, this isn't the title of a 'grade z' cheapo horror movie, this a combination of colloquial terms used to describe the full moon that will grace our early evening sky on Sunday, September 27. A “syzygy” will occur, with the sun, earth and moon all in a straight line, causing a total eclipse of the moon. On that night, the rising full moon will be eclipsed, possibly giving it a reddish or ‘bloody’ color during the period of totality. In recent years, the eclipsed moon has been called a “blood moon.” The color is caused by the refraction of sunlight through the earth's atmosphere into the cone-shaped shadow, called the umbra, that falls upon the moon.

As seen from the moon, the silhouetted earth has a thin bright ring of light around it caused by the sun shining through the atmosphere. Red light has the longest wavelength and is able to make it to the moon's surface, if the atmosphere is reasonably clear. Other colors may also be seen, like orange, copper and pink. If the atmosphere is filled with dust, clouds or volcanic ash, little or no light will pass into the shadow and the moon can completely disappear. No one knows just what to expect, so every total eclipse will be different.

As the moon will also be at “perigee,” or its closest point in its orbit around the earth, it will be a “super moon”, a term recently used by newscasters to dramatize the closeness. The moon's distance from the earth varies from 221,000 miles to 252,000 miles, with the average being 238,000 miles. The percentage is actually quite small and only experienced lunar observers can see the difference. However, the so-called ‘moon illusion’ will also be at play here when the rising moon appears to be larger than normal, due to its appearance relative to other objects on the horizon.

Since this is the full moon nearest the autumn equinox, it is called the “harvest moon”, a name dating back centuries, given by European and North Americans farmers. Long ago, farmers would use the light of the rising full moon to help harvest crops after dark. Around the equinox, when day and night are of equal length, the full moon would only rise 20 to 30 minutes later each evening, so for a few nights, there was an added ‘nightlight’ to assist farmers well after sundown.

All of this will be visible from San Bernardino, or “Berdo” , as the local folks have long called it. Sunset is around 6:38 pm, and the moon will be rising at that time, already partially eclipsed. Partial phases actually begin at 6:07 pm, while the moon is below our local horizon. The earth's shadow will be ‘gobbling up’ the moon like an ever growing bite until 7:11 pm when totality occurs. Mid-eclipse is at 7:47 pm and that's when any colors will be at their best. Totality ends at 8:23 pm and for the next hour and four minutes you can watch the moon slowly slide out of the earth's shadow. After 9:27 pm, it's all over and we'll have a beautiful full moon visible all night long.

The best views are with the naked eye and a pair of 7 power binoculars. Magnifying the moon with a telescope actually fades out the colors. This total eclipse is the last out of a set of four total eclipses that have been occurring for the past two years, six months apart. This one completes the “tetrad”, or foursome, and this is the only one of them to happen at a reasonably early hour of the night.

So there you have it—a neat combo of full moons all occurring at the same time, visible right after dark, from your own backyard—enjoy!

Ceres: The Mystery Continues

Washington Post, July 10, Rachael Feltman

We've been salivating over the mysterious white spots on its surface since NASA's Dawn orbiter sent its first photos home. But according to the mission's principal investigator, the crowd favorite theory -- that the spots are made of some kind of water or ice -- is probably about to be debunked. According to [Christopher Russell](#) of the University of California at Los Angeles, the Dawn mission's principal investigator, the team is "shying away from there being ice on the surface."

"The general consensus on the team right now is that water is definitely a factor on Ceres, but that the spots themselves are more likely to be just highly reflective salt, rather than water," Russell told The Post.

The mystery is far from completely solved, Russell cautioned. The team failed to get the quality of measurements they wanted in examining the spots, and they'll have to try again at a closer orbit -- like the next planned mapping orbit, which will take them from 2,700 miles over the surface to just 900. The photos taken at that height will also have significantly better resolution, which should further help the team determine what the spots are made of.

But based on the spectral data the team did get, Russell said, the spots "really don't look like mounds of ice."

That doesn't mean water isn't important on Ceres. We already know [that there's water vapor in the planet's atmosphere](#). But while it was reasonable to think that the water-vapor find and the bright spots might be linked, Russell said -- with the dots representing geysers, fountains, or places where water seeped out of the ground -- salt is now the most likely culprit.

"The bright spots are probably -- like you might find in the desert on Earth -- a salt plain where maybe water came out at one time and evaporated," Russell said.

The spacecraft's current mapping orbit is going to be extended while mission scientists [investigate an anomaly Dawn recently experienced](#), but they report that the closer orbit will still occur -- whenever they decide to move forward. Until then, the resolution of the spot mystery will remain unconfirmed.

