

# The Observer

SAN BERNARDINO VALLEY AMATEUR ASTRONOMERS

Member of The Astronomical League

<http://sbvaa.org/>



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Since 1958

May, 2015

## Meeting:

May 30, 2015

### Location:

**First Christian Church**  
**2102 E. Foothill Dr.**  
**San Bernardino, CA**

**7:00 p.m.**

**Pre-meeting Dinner,**  
**5:00 to 6:30 p.m.,**

**Coco's in Highland has**  
**closed**

**Denny's** ← **NEW!**  
**702 E. Highland Ave**  
**San Bernardino, CA**

After the meeting telescopes will be set up for viewing and members will be available to answer questions. Bring your telescope to observe with us.

***No telescope is too humble,***  
***and beginners are always***  
***made welcome!***

## Program

# Dark Matter

May's program will be an episode from The Universe series in which the mysteries and theories behind the unusual component of the universe are explored.

Scientists hunt for dark matter in the strangest of places. They know where it is, what it does and can sort of see it if they look in the right way. They just can't quite figure out what it is or how to get their hands on it even though it's everywhere. But it is well understood compared to dark energy which is an even bigger mystery.



Dark matter is invisible. Based on the effect of gravitational lensing, a ring of dark matter has been detected in this image of a galaxy cluster CL0024+17, and has been represented in blue.

The total mass-energy of the known universe contains 4.9% ordinary matter, 26.8% dark matter and 68.3% dark energy. Thus dark matter is estimated to constitute 84.5% of the total matter in the universe, while dark energy plus dark matter constitute 95.1% of the total mass-energy content of the universe.

## SBVAA Officers

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## Calendar of Upcoming Events

May 23 -26, RTMC. Camp Oaks,  
Big Bear City, CA

May 30, Club meeting

**June 11-14, Grandview Star Party**

June 27, Club Meeting

July 18, Star Party, Johnson Valley

July 25, Club meeting (dinner only --  
just food & friendship)

## Looking to Buy, Sell or Swap Equipment?

Why not check first with  
your fellow members to  
see if you can find a match.  
Advertise in your news-  
letter. It's free!



Binoculars? There are  
probably some out  
there.



And if you're looking  
for a Lego scope, well...

## Club Meeting Dates for 2015

Mark your calendars:

May 30

June 27

July 25, (dinner only, no regular meeting)

August 22, outdoor BBQ

September 19

October 24

November 21

December 5, (To be confirmed later)

## Joshua Tree Nat'l Park Plans Big Night Sky Festival

There will be a great opportunity to combine some great star time with outreach next October in J-Tree. The only information your editor has at this point in the date, October 16 - 18. As I receive more info from the Park Service, I will post it in your newsletter. Plan now.

The following is from park ranger Beth Hudick:

*"We have just begun planning for our Night Sky Festival here in Joshua Tree National Park, which will be held October 16-18. We are reaching out to local astronomy groups... to take part in the festival. We are hoping to have night sky viewing at several locations, and we are looking for amateur astronomers to set up some telescopes for the public and to help educate them about night sky features."*



## Club Star Party Dates (Updated)



**June 11 - 14, Grandview**

July 18, Johnson Valley

August 8, Wildlands Cons., Oak Glen

August 15, Johnson Valley

**September 11 - 13, Grandview**

October 10, Johnson Valley

November 14, Johnson Valley

December 12, Johnson Valley



Evening at Arch Rock, Joshua Tree National Park.

*(Photo credit: Q.T. Luong for the National Park Service)*

## Exploring The Southern Cross

In some strange and mysterious way, the four stars that comprise the constellation Crux — better known as the Southern Cross — have come to represent the lands that lie below the equator.



(Photo credit: European Southern Observatory)

Indeed, travelers in the Southern Hemisphere eagerly look for their first glimpse of the Cross, [as your editor did in 1961 and 1962 while he was on active duty in the South Pacific]. Crux certainly looks like an almost perfect small cross, perhaps marred to a slight degree by a dim, superfluous fifth star. (Two of the main four stars, Acrux and Becrux, are of first-magnitude brightness.)

From top to bottom, Crux measures just 6 degrees — only a little taller than the distance between the pointer stars of the Big Dipper. (Reminder: Your clenched fist held at arm's length is 10 degrees wide.) In fact, the Southern Cross is the smallest (in area) of all the constellations.

Like the Big Dipper of the northern sky, the Southern Cross indicates the location of the pole and as such is often utilized by navigators. The longer bar of the Cross points almost exactly toward the south pole of the sky, which some aviators and navigators have named the "south

polar pit" because, unfortunately, it is not marked by any bright star

It is believed that Amerigo Vespucci was the first European explorer to see the "Four Stars," as he called them, while on his third voyage in 1501. Yet, Crux was plainly visible everywhere in the United States some 5,000 years ago, as well as in ancient Greece and Babylonia.

According to the writings of Richard Hinckley Allen (1838-1908), an expert in stellar nomenclature, the Southern Cross was last seen on the horizon of Jerusalem around the time that Christ was crucified. But thanks to precession — an oscillating motion of the Earth's axis — the Cross ended up getting shifted out of view well to the south over the ensuing centuries.

Immediately to the south and east of the Cross is a pear-shaped, inky spot, about as large as the Cross itself, that looks like a great black hole in the midst of the Milky Way. Legend holds that, when Sir John Herschel first saw this feature from the Cape of Good Hope in South Africa in 1835, he wrote his Aunt Caroline about this "hole in the sky."

Indeed, few stars are seen within this hole, and it soon became popularly known as the "Coalsack." People initially thought the Coalsack was some sort of window into deep space, but today we know that it's really a great cloud of gas and dust that absorbs the light of the stars that must lie beyond it.

For more information on Crux, read the rest of the article by Joe Rao at:

[www.space.com/29445-southern-cross-constellation-skywatching.html](http://www.space.com/29445-southern-cross-constellation-skywatching.html)