

# The Observer

SAN BERNARDINO VALLEY AMATEUR ASTRONOMERS

Member of The Astronomical League

<http://sbvaa.org/>



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Since 1958

November, 2012

## Meeting:

November 17, 2012

### Location:

San Bernardino County  
Museum, 7:00 p.m.  
Redlands, CA. California  
St. exit, I-10 Fwy.

Pre-meeting Dinner, 5:00  
p.m.,

***The Sizzler***  
***1800 So. Waterman***  
***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!*

After viewing the group will  
head for Coco's in Redlands,  
Tennessee exit, I-10 Fwy.

## Program

# A walk under the Fall Stars

Our November meeting will be highlighted by a power point presentation on the autumn season of stars by Martin Carey and Chris Clarke. Featuring the famous constellations of the mythical story of Andromeda and her rescue from a terrifying sea monster by the hero, Perseus, the stars and deep sky objects found in that broad region of the heavens will be explored.

Not only are beautiful clusters and nebulae present, but beyond our Milky Way lie the famous galaxies known as the "Pinwheel," "The Silver Dollar," and the "Great Andromeda Galaxy" as well as many others. Some of these "island universes" are like our own and provide views of what our own galaxy would look like from an outside perspective.



The fall sky has much to offer to both the casual star gazer and the deep sky observer. See what's up and then go out and enjoy it on a crisp autumn evening!

## SBVAA Officers

President:

Vice President:

Treasurer: Fidel Hernandez 909-864-0615

Secretary - Educational Outreach: Chris Clarke  
909-384-8539 Work  
909-875-6694 Home

Star Party Coordinator: Tom Lawson  
909-8828198

SBVAA Webmaster: Steve Miller 626-859-7776

Newsletter Editor: Jim Sommer 909-792-3587

## Calendar of Upcoming Events

November 10, Star Party at Johnson Valley

November 10, 11, 1st Arizona Science &  
Astronomy Expo, Tucson, AZ

November 17, Club meeting at the Museum

December 1, Annual "end of year" club party.  
(More info to follow)

December 15, Star Party at Afton Canyon

January 12, 2013, Star Party at Johnson Valley

## Outreach Roundup

By Chris Clarke, Outreach Coordinator

Well, we finished our last outreach for the year at the Redlands Asistencia recently and now we can finalize the tally of events and the number of people who attended. We had a very busy season from March to October, with a total of 12 outreaches. Six were for the Museum, two were at The Wildlands Conservancy and four were at schools. We saw at least 735 people at the Museum events, 225 at Wildlands and 800 at the schools, making a total of 1760 visitors. We also received \$300 in donations from the school events.



To all those who participated, *THANK YOU SO MUCH* for sharing your time in making these events happen! Most of the people who looked through your telescopes had never looked through one before, so *YOU* made a difference in their seeing and experiencing something new and wonderful. The intangible reward from all this is beyond description, but I'm sure that you all felt it as you saw and heard the reactions of the viewers. Even if you didn't bring a telescope, just being on hand made a difference, as helpers are always needed too. We are planning our schedule again for next year, so we hope that you will join us for more fun under the stars then!

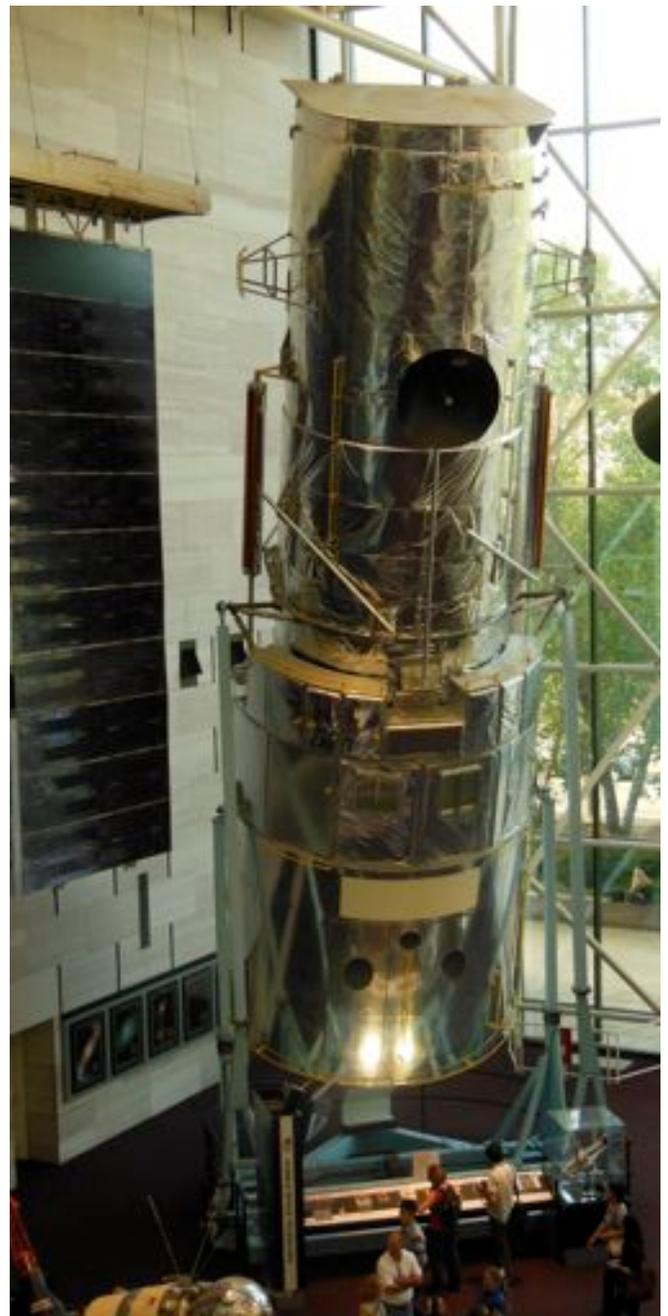
## National Air & Space Museum

By Jim Sommer

This past October my wife and I decided to fit in a brief trip to Washington D.C. along with visiting relatives. While there we visited a number of monuments and museums. Just walking up and down The Mall is worth the trip! Among the several museums visited was the National Air & Space Museum. If you are an aviation buff or a space nut this is the place for you. On display was John Glenn's Mercury capsule, the first American to orbit the Earth. Looking at it makes one realize just how brave he was. It is TINY -- kind of like being shrink-wrapped in an office chair. The severe scorching of the shield end of the capsule offered mute testimony to the tremendous heat generated during the re-entry. Glenn's back was mere inches from it. A number of other Mercury and Apollo capsules were also on display including an Apollo 11 lunar module.

Many classic and exotic aircraft are on display. An early WACO monoplane in which Amelia Earhart set numerous flight records. Also the Gossamer Condor -- the first human powered aircraft. Civilian and military aircraft of all types are parked or suspended everywhere. One of the first you notice when you enter the Museum is Lindbergh's Spirit of St. Louis. Yes, it's THE Spirit of St. Louis.

Then there was the Hubble. I knew it was big but the full sized model was really brought the true size of it home. (Notice the size of the people at the bottom of the photo at the right.) When you stand at the base of it you begin to realize what a triumph it was for NASA and the Hubble team to build and launch this amazing instrument. Then, of course, there were the servicing missions. It seems incredible that someone in a clumsy space suit could ever hope to perform the delicate operations require to first repair the optics and later to change cameras, install new gyros and other highly delicate instruments. Heros all -- they are the real deal!

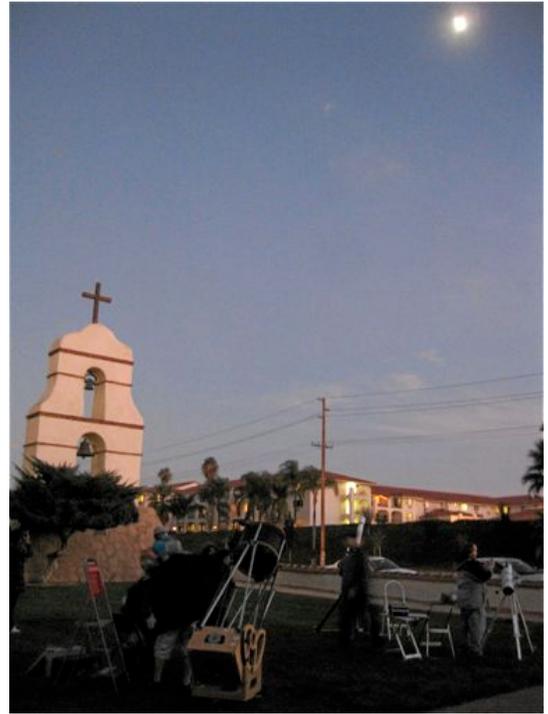


*Photo by Jim Sommer*

### Hubble Facts

Launch date: April 24, 1990  
Orbit height: 354 miles  
Speed of orbit: 4.66 miles per second  
Orbit time: 97 minutes  
Telescope type: Cassegrain reflector  
Primary mirror diameter: 94.5 inches  
Power: Solar, 2,800 watts  
Length: 43.5 feet  
Weight: 24,500 pounds  
Maximum diameter: 14 feet

# Highlights from the outreach at the Asistencia on October 23.



*Photos by Robin Hennen*

