



THE OBSERVER

SAN BERNARDINO VALLEY AMATEUR ASTRONOMERS

Member of The Astronomical League

2009, International Year of Astronomy

<http://sbvaa.org/>



Volume #51, Issue 6

Since 1958

June 2009

Meeting:

June 13, 2009

Location:

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

Pre-meeting Dinner, 5:00 p.m.,
Hometown Buffet, Loma
Linda, CA

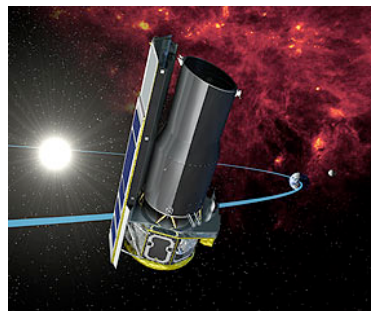
After the meeting telescopes
will be set up for viewing and
members will be available to
answer questions. Bring your
telescope to observe with us.

*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.

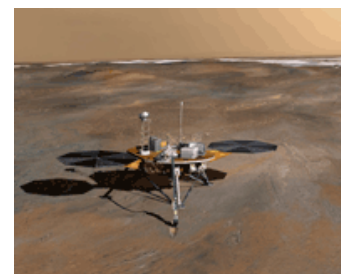
Program

**The Spitzer Space Telescope:
Images from the far side**



The evenings program will be on NASA SPITZER Space Telescope, which will cover Infrared and a segment on the man the craft is named after Lyman Spitzer know as a space visionary. Spitzer will be the final mission in NASA's Great Observatories Program - a family of four orbiting observatories, each observing the Universe in a different kind of light (visible, gamma rays, X-rays, and infrared). Other missions in this program include the Hubble Space Telescope (HST), Compton Gamma-Ray Observatory (CGRO), and the Chandra X-Ray Observatory (CXO). Spitzer is also a part of NASA's [Astronomical Search for Origins Program](#), designed to provide information which will help us understand our cosmic roots, and how galaxies, stars and planets develop and form. The program will feature a slide show of images taken with the scope.

We will also view a short video on the Phoenix Mars Lander called "Landing Day."



(Photos by NASA/JPL & SST)

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Calendar of Upcoming Events

June 13, Club meeting at the Museum

June 20, Grandview - the ultimate star party!

June 27, Moon/Saturn Party Outreach at the Museum

June 28, "Beyond the Apace Shuttle," at the Altadena library *(See clip below)*

President's Message

By James Butts

Report on RTMC

The RTMC was a well-attended event with all the usual vendor and swap-meet sellers and lots of speakers including our very own Martin Carey and myself. I saw many of our clubs members looking for that one or two good buys.

If I can say one thing the retailers all were pulling out their new scopes and mounts, what I can say without any reservation and something you heard at every spot is that manufactures haven't a clue that people are being hit with hard times layoffs and bleak economic out looks for the long range. They are continuing to accelerate

Prices as a time many can't support the price line.

What I heard around the lovely site of the RTMC is the same thing I hear online these prices are out of touch in today's market. What was once \$2,500 to \$3,000 is now \$5,000 plus. On the other hand I did see some good buys on eyepieces and other eye components had some reasonable pricing for today's market.

All in all I would say every one there had a fairly good time!!!

Get Ready For Grandview!

By Chris Clarke

Well, it's that time of the year again to go visit our favorite deep-sky site, Grandview! The name certainly lives up to its offerings, both terrestrially and celestially. Its location is situated high in the White Mountains, east of Bishop, and has one of the best night skies seen anywhere in California.

We'll be there from Friday, June 19, through Sunday, June 21. Saturday will mark the summer solstice, too, right at 10:45 pm PST. The temperatures during this time of the year are very comfortable, with daytime highs in the mid to upper 80s and lows down to maybe 40 at night; not bad for an altitude of 8600 feet!

There are plenty of pinion pines about for shade and the air is crystal clear. With all this in mind, load up your telescope, binoculars, and camping gear to spend a wonderful weekend with friends, nature and the beautiful heavens above. Besides money for gas, the actual cost for admission is a suggested \$3 donation in lieu of a camping fee.

As to site amenities, there's nice clean "outhouses" for answering nature's call, but no water is available at the campground, so bring plenty along for drinking and washing. Pit barbecues and picnic tables are available, too. Along with water, bring your favorite foods to

(Grandview, cont.)

enjoy, and there will be a potluck breakfast that everyone will feast upon Saturday morning.

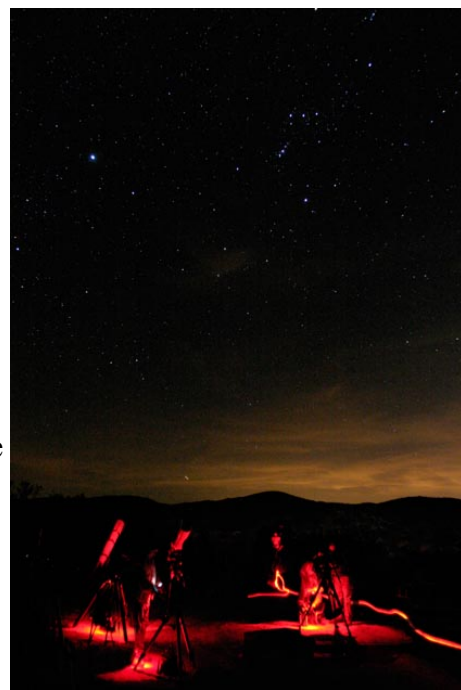


During the day, you can chat with other members, hike about, laze around, or just take a nice long nap until it's time to enjoy the stars. Early in the evening, the spring sky affords views of distant galaxies and Saturn, too. By 10:00, the silvery ribbon of the Milky Way will arch its way across the eastern sky, offering innumerable treasures to your telescope. If you've never seen a truly dark sky, this is the place to go!

Editor's Message

By Jim Sommer

Tis the season for Grandview, the ultimate star party for our club. Warm days and cool, clear nights with seeing and transparency way beyond what you can find anywhere in our local area. This is the time to bring as much aperture as you can carry!



June Moon Party!

By Chris Clarke

On Saturday evening, June 27, from 8:30 to 10:00 pm, the club will host a public "Moon Party" at the County Museum. We'll have a nice plump crescent moon to enjoy as well as a look at Saturn. Because of its angle of view, Saturn's rings will appear like sticks protruding from the sides of the planet's disk. Actually, the now closing rings will finally appear edge-on in early September, but the planet will be quite low on the dusky horizon to observe.

We see this ring crossing effect halfway through each Saturnian year, which is a tad less than 30 earth years long. Needless to say, the last time this happened, we were all 15 years younger! Before and after these "crossings," Saturn will have a rather strange look, but some of its moons can be easily seen along the ring plain, scattered along side the planet.

Be sure to come down with your scope to share the views of two of the most beautiful objects ever to be seen through an eyepiece!



NGC 7635 (The Bubble Nebula)

Away in the constellation of Cassiopeia some 7,100 light-years from [Earth](#), a star 40 times more massive than our Sun is blowing a giant bubble of its own material into space. Inside its magic blue sphere, the gigantic star burns at blue flame intensity - rendering a 6 light year wide envelope of hot gas around it that's expanding outward at a speed of 4 million miles per hour.

(Image by [JP Metsavainio](#) of [Northern Galactic](#) :June 2, 2009, in [UnverseToday.com](#))

This is only one of many beautiful deep space objects that you can see exceptionally well from the Grandview observing site. Bring lots of aperture and go deeeep!



Hubble: It's a Whole New Scope

The Hubble Space Telescope appears better than new as NASA puts the 19-year-old observatory through a battery of tests after its final facelift by an astronaut repair crew.

Ed Weiler, NASA's science missions chief, said Hubble is in the midst of meticulous systems and calibration checks following the [successful upgrades](#) and repairs by Atlantis shuttle astronauts.

"All of those have gone beautifully," Weiler told reporters after Atlantis' smooth California landing on Sunday. "Everything is going well, as far as I can tell."

The calibrations and electronics tests should run their course by the end of summer, with a new and improved Hubble once more ready for science observations in late August, Weiler said.

Atlantis and its crew of seven astronauts [touched down](#) at Edwards Air Force Base in Southern California at 11:39 a.m. EDT (1549 GMT) on Sunday, though it was early morning at their desert runway. The astronauts returned triumphant after a 13-day Hubble service call.

"Now and only now can we declare this mission completely a success," said Weiler, who served as Hubble's chief scientist between 1979 and 1998. "The astronauts are safely on the ground."

Commanded by veteran spaceflyer Scott Altman, the Atlantis astronauts launched toward Hubble on May 11 and performed a five-spacewalk marathon that left the iconic space observatory more powerful than ever before.

A whole new telescope

Atlantis' mission was NASA's fifth and last-ever shuttle flight to overhaul Hubble. NASA plans to retire its three aging space shuttles fleet next year and their replacement, the capsule-based Orion, is designed to ferry astronauts to the International Space Station and, ultimately, the moon.

During their five back-to-back spacewalks, Atlantis astronauts installed two new instruments in Hubble - a powerful wide-field camera and a super-sensitive spectrograph.

They swapped out old gyroscopes and batteries with new ones, performed two intricate repairs to [revive two instruments](#) - Hubble's main Advanced Camera for Surveys and a versatile imaging spectrograph - that were never designed to be fixed in space.

The enhancements, he added, should be the focus, and not the fact humans will never visit the space telescope again.

"We just repaired the Hubble Space Telescope," an emphatic Weiler said. "We've got a whole new telescope. We've got four new instruments. Two of them dead, now alive.

"These are truly the best of times," Weiler said. "Not the worst of times."

The upgrades by the Atlantis crew should extend the space telescope's life through at least 2014 if not longer, which would overlap with NASA's next great observatory - the infrared-scanning James Webb Space Telescope slated to launch in 2013.

Atlantis spacewalkers also attached a docking ring to Hubble so that, sometime after 2020, a robotic spacecraft can latch onto the telescope and discard it in the Pacific Ocean at its mission's end.

(Story by Tariq Malik, Space.com,

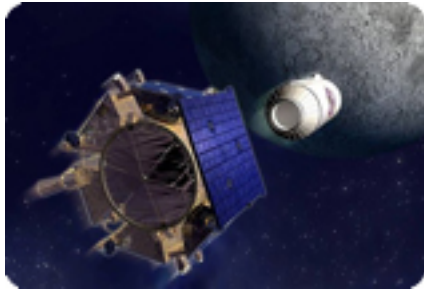
May26, 2009: photos from

Space.com.



LRO & LCROSS

Launch Date Set
for June 17



Mark June 17th on your calendar—that's when NASA's Lunar Crater Observation and Sensing Satellite (LCROSS) and Lunar Reconnaissance Orbiter (LRO) will launch on an Atlas V from Cape Canaveral Air Force Station.

This past week, LCROSS and LRO were finally mated together, LCROSS on the bottom, and LRO on top, as shown in the photos below. Both spacecraft were encapsulated inside the Atlas V payload fairing where they will remain until they are released into space after launch. Launch is one month away! LRO is the silver-colored spacecraft, LCROSS the gold-colored spacecraft.

Having never seen LRO, members of our flight team were stricken by how different the two spacecraft look. Both are covered in Multi-Layer Insulation (MLI for short) that protects the spacecraft from the harsh thermal environment of space. But the kinds of materials each spacecraft uses in their MLI are tailored to their respective missions – their orbits, how long they expect to dwell in the shadow of the moon, which sides of the spacecraft will face the sun, the sensitivity of some spacecraft elements to heat and cold, and the amount of heat specific electronics units produce.

So what's the big deal about mating the two spacecraft together? You might think that connecting two spacecraft together would simply mean bolting them, but in reality, the interfaces between LCROSS and LRO, and between LCROSS and the Centaur, are pretty intricate.

Most importantly, the mechanical interface between each vehicle has to be entirely reliable during launch so as not to damage either spacecraft or to amplify vibrations that might endanger the stability of the launch vehicle. For LCROSS, since we carry the Centaur with us for most of our mission, this connection persists for months beyond liftoff, all the way to 10 hours before lunar impact.

However, each spacecraft must also be able to reliably separate from the rest of the stack. This is a tricky operation. On command, the mechanism holding the spacecraft must transform from an ultra-solid connection, to one that releases and pushes the two pieces from each other using strong springs. The release must avoid snags, and must provide a good push off – just the right amount of speed, as little rotation as possible, and without re-contact!

Aside from the mechanical aspects, there are a number of electrical connections bridging the interfaces. On the pad, the Centaur acts as a conduit for telemetry data from both spacecraft on the launch pad so that both the LRO and LCROSS teams can monitor spacecraft health immediately prior to launch. Just after the stack leaves Earth orbit, the Centaur also sends the signal to activate the separation mechanism between LRO and LCROSS. That means data cabling has to somehow get from LRO to the Centaur, with LCROSS in between. LRO's data lines cross the LRO-LCROSS boundary, run down the side of LCROSS, and across the LCROSS-Centaur boundary. In the meantime, LCROSS launches powered off. Some time after LRO separates, the Centaur also sends signals commanding LCROSS to wake up, and other signals to notify LCROSS it is time to take control of the Centaur. All of these electrical connections cross the separation planes between the vehicles. The connectors must reliably transmit data after the rough ride to orbit, but then disconnect when they're supposed to at separation.

In October, LCROSS will have its final, brief hurrah in just 4 minutes of data transfer back to Earth, observing the Centaur impact. At the end of that 4 minutes, it too will impact, and will become part of the moon.



*(Story & photos from NASA
Lunar Science Institute,
May 18, 2009)*

James Bartlett to Speak at Altadena Library June 28
on “**Beyond the Space Shuttle**”

James Bartlett, an aerospace engineer with the Rocketdyne team responsible for Space Shuttle launches, will give a public lecture on Sunday, June 28, 2:30 p.m. at the Altadena Library. His subject is “Beyond the Space Shuttle.”

The talk will first offer an overview of the current U.S. space flight system (the Space Shuttle), and then introduce the Constellation Project along with some competing space flight architectures.

James Bartlett graduated with a B.S. in Aerospace Engineering from the University of Oklahoma in 1996. He has worked for Rocketdyne on the Space Shuttle Main Engine program since 1998.

This lecture is free of charge, and all are welcome. There will be light refreshments beginning at 2:00 p.m.

The Altadena Public Library is located at 600 E. Mariposa Street in Altadena, two stop signs west of Lake Avenue at the corner of Mariposa and Santa Rosa Avenue (“Christmas Tree Lane”).

Exit the 210 freeway at Lake Avenue in Pasadena and go approximately 2.5 miles north to Mariposa Street in Altadena. Turn left on Mariposa, go to the second stop sign, turn left on Santa Rosa, and turn into the parking lot at the first driveway on your right. Go to the Community Room.

This talk is sponsored by the Mount Wilson Observatory Association (MWOA), a group of volunteers assisting the Observatory in public outreach. For more information about the talk, contact Bob Eklund, MWOA Programs Chairman, at beklund@sprynet.com or (310) 216-5947. For more information on MWOA, including how to become a member, see the web site www.mwoa.org.

Julian Starfest
August 20 - 23, 2009

The second annual Starfest will be held on the above dates high in the Cuyamaca Mountains of San Diego County at the Menghini Winery.



Campsites, hotels, lodges and bed-and-breakfast inns are available for participants. There will be lots of activities including vendor exhibits, various speakers and a swap meet. Historic Julian offers a variety of daytime activities for attendees: Gold mine tours shopping and of course the famous Julian apple pie shops.



For additional information:

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