



# THE OBSERVER

SAN BERNARDINO VALLEY AMATEUR ASTRONOMERS

Member of The Astronomical League

2009, International Year of Astronomy

<http://sbvaa.org/>



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Since 1958

November 2009

## Meeting:

November 7, 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

### Diviner Observes LCROSS Impact

James Butts, Club president (SBVAA) and long time NASA/JPL Solar System Ambassador, will give the latest update on the mission and show one of NASA's short videos on the event. The talk will cover the current state of the mission up to this point.



The LRO Diviner instrument obtained infrared observations of the LCROSS impact this morning. LRO flew by the LCROSS Centaur impact site 90 seconds after impact at a distance of ~80 km. Diviner was commanded to observe the impact site on eight successive orbits, and obtained a series of thermal maps before and after the impact at approximately two hour intervals at an angle of approximately 48 degrees off nadir. In this viewing geometry, the spatial footprint of each Diviner detector was roughly 300 by 700 meters.

Crater Impact Characteristics?The primary goal of LCROSS was to measure the concentration of water ice (ice to dust ratio) in permanently shadowed lunar regolith. Setting constraints on water ice will set a fiducial for the LRO studies of hydrogen neutrons, that are expected to have water ice as a source. Several important processes occurred when the body struck the lunar surface, including the initial impact, ejecta and plume dispersion, and the exposure of fresh subsurface. The mission continuously monitored the impact events at a variety of spatial (m to km to exosphere scales) and temporal scales (sec to minutes to days) allows us to understand lunar impact processes and assess the likelihood that water ice, due to impacts occurring within the permanently shadowed target crater, may be distributed non-uniformly.

## SBVAA Officers

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Star Party Coordinator: Tom Lawson  
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## Calendar of Upcoming Events

November 7, Club meeting, at the Museum

November 25, 27 & 28, Thanksgiving Star Fest,  
Lowell Observatory, Flagstaff, AZ

December 12, Holiday get together



## White House Star Party

Leaving more contentious political issues aside I think we might all agree that hosting a star party at the White House on October 7, was a pretty cool thing. Invited were some 150 Washington-area students. The idea behind the event was to promote science literacy. Special guests included two 15-year-old amateur astronomers, one who discovered a new supernova and the other a rare type of ultra-dense star known as a pulsar. Moonwalker Buzz Aldrin. Former astronauts Sally Ride and Mae Jemison, and current astronaut John Grunsfeld, the Hubble telescope repairman. "Middle school is right when we start to lose kids in science and technology," said Ride, the first American woman in space. This program, she said, was designed to "remind them that science is really cool."



(AP photo by Pablo Martinez Monsivais)

## Editor's Message

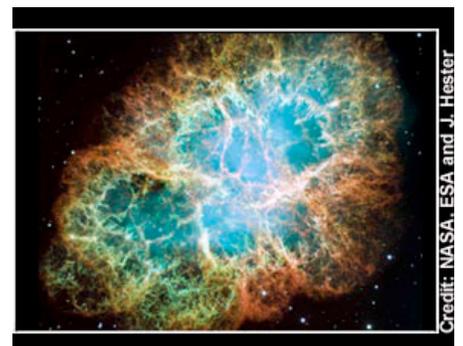
By Jim Sommer

Okay now, I know that some of you take astro-photos -- and good ones too! So how about sharing them with the club? The same goes for photos taken at outreaches and other club events. Send them to me at: [k75jim@aol.com](mailto:k75jim@aol.com). Got a new piece of gear... say a new Ethos? How about writing up a little article with you impressions, what kind of scope you used it in, etc. Got some gear to sell? Again, send me the info and I'll include it in the newsletter.

Don't worry too much about style or form; that's what editors are for. ;- ) Just write them up and e-mail to me at the above URL.

M1, The Crab  
Nebula.

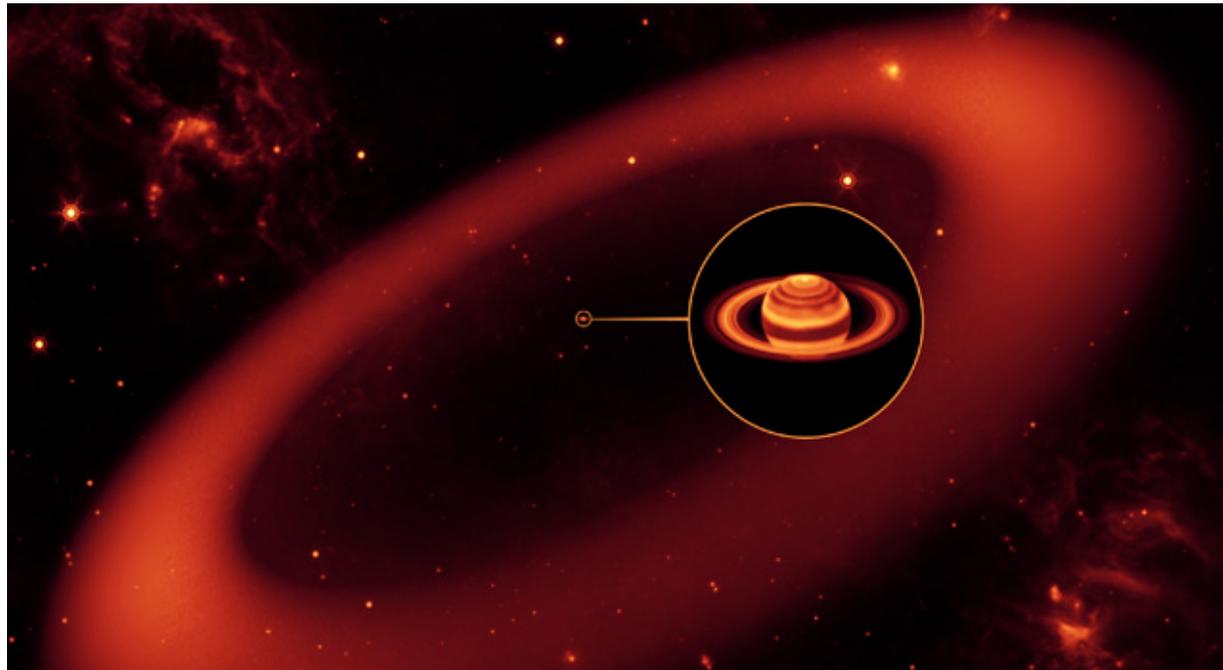
(Photo: NASA/ESA,  
J. Hester)



Credit: NASA, ESA and J. Hester

## Saturn Gets Another Ring

PASADENA, Calif. -- NASA's Spitzer Space Telescope has discovered an enormous ring around Saturn -- by far the largest of the giant planet's many rings.



The new belt lies at the far reaches of the Saturnian system, with an orbit tilted 27 degrees from the main ring plane. The bulk of its material starts about six million kilometers (3.7 million miles) away from the planet and extends outward roughly another 12 million kilometers (7.4 million miles). One of Saturn's farthest moons, Phoebe, circles within the newfound ring, and is likely the source of its material.

Saturn's newest halo is thick, too -- its vertical height is about 20 times the diameter of the planet. It would take about one billion Earths stacked together to fill the ring.

"This is one supersized ring," said Anne Verbiscer, an astronomer at the University of Virginia, Charlottesville. "If you could see the ring, it would span the width of two full moons' worth of sky, one on either side of Saturn." Verbiscer; Douglas Hamilton of the University of Maryland, College Park; and Michael Skrutskie, of the University of Virginia, Charlottesville, are authors of a paper about the discovery to be published online tomorrow by the journal Nature.

An artist's concept of the newfound ring is online at [http://www.nasa.gov/mission\\_pages/spitzer/multimedia/spitzer-20091007a.html](http://www.nasa.gov/mission_pages/spitzer/multimedia/spitzer-20091007a.html) .

The ring itself is tenuous, made up of a thin array of ice and dust particles. Spitzer's infrared eyes were able to spot the glow of the band's cool dust. The telescope, launched in 2003, is currently 107 million kilometers (66 million miles) from Earth in orbit around the sun.

The discovery may help solve an age-old riddle of one of Saturn's moons. Iapetus has a strange appearance -- one side is bright and the other is really dark, in a pattern that resembles the yin-yang symbol. *(cont. pg.4)*

The astronomer Giovanni Cassini first spotted the moon in 1671, and years later figured out it has a dark side, now named Cassini Regio in his honor. A stunning picture of Iapetus taken by NASA's Cassini spacecraft is online at <http://photojournal.jpl.nasa.gov/catalog/PIA08384>.

Saturn's newest addition could explain how Cassini Regio came to be. The ring is circling in the same direction as Phoebe, while Iapetus, the other rings and most of Saturn's moons are all going the opposite way. According to the scientists, some of the dark and dusty material from the outer ring moves inward toward Iapetus, slamming the icy moon like bugs on a windshield.

"Astronomers have long suspected that there is a connection between Saturn's outer moon Phoebe and the dark material on Iapetus," said Hamilton. "This new ring provides convincing evidence of that relationship."

*(Image & text courtesy of NASA-JPL)*

### **Fall in the Afton Canyon**

By Cliff Saucier

The sky gods have blessed us with warmer and better skies than usual for our Grandview pilgrimage, and now for our planned weekend in Afton Canyon. A nice change from the June Gloom and monsoonal summer weather we had been dealing with. A little warm for mid-day hiking, but, oh, the nights! Warm, with some of the most transparent air I've seen for some time. My trip out early Friday afternoon held the promise of one of those truly memorable experiences. The distance and quality of sky has me try for two nights when I go there, though it's only thirty-five miles further than our Johnson Valley site, and almost all of those are freeway miles. It's a quicker drive than you would expect.

Already out at the campsite were six or so from [HiDAS](#) (the High Desert Astronomical Society), out of Apple Valley, who we were sharing the skies with for a joint star party extravaganza. I grabbed a campsite, and later Robin, from our club, showed up and set-up camp at the other end of the area. She must have heard the tales of

## **CALENDARS**

The 2010 "**Deep Space Mysteries**" calendars from Astronomy Magazine are here. It will be available for sale starting with the club meeting on September the 12th. We will have 30 for sale on a first come first served basis. The retail for this calendar is \$12.95 plus \$1.00 tax or \$13.95 altogether. Your cost, through the club this year, is \$8 a savings of \$6.

See Fidel, the club treasurer, at the back of the room before or after the meeting to make your purchase. Reservations are accepted.

**GRIFFITH OBSERVATORY.**

Public Programs



### **Public Star Parties**

Free public star parties are held monthly with the assistance of the Los Angeles Astronomical Society and the Los Angeles Sidewalk Astronomers at the Griffith Observatory from 2:00 p.m. to 9:45 p.m. They are a chance for the whole family to look at the sun, moon, visible planets, and other objects, to try out a variety of telescopes, and to talk to knowledgeable amateur astronomers about the sky and their equipment.

#### **Public Star Parties remaining for 2009**

November 21

December 19

Visitor at Afton Canyon



my snoring, and in my own defense, I was *really* tired that time. And the other times I'm denying! Anyway, it helped lock up a nice area for more influx on Saturday night, and it's always nice to have a little dark enclave in the campground. The evening came with the Milky Way at it's best, and to my surprise, a last view for the season of the favorites in Saggitarius, most pleasingly M8 and M17, the Lagoon and the Swan. The only light dome was in the southwest, Barstow feeling her oats and playing Big City on a Friday Night!. A lot of light for a fairly undeveloped area, they have already made our slightly closer site at Owl Canyon just too bright to be usable. In all fairness, a lot of it may be from the military in the area, and outside of the city father's control. Yeah.

Okay, off my soapbox. All I can say about Friday night is that those who weren't there wouldn't want to hear just how incredible the skies were. I'll just say that they were slightly better than Saturday night, and we seldom get better conditions.

The mid-morning brought a shout out from Mike Simpson (HiDAS), "Big-horn Sheep!" Silhouetted against the sky were seven sheep! On a close hill, just checking us out as I passed around my binoculars. Suddenly a light-bulb went off, and someone pointed out that *we had telescopes!* Covers came off and we were eye-to-eye with Aries. I swear, you could almost smell them, though that could have been fellow campers. A first for me, a most unexpected bonus. The water-hole in the canyon draws a lot of wildlife.

Late Saturday afternoon saw the influx of the other astronomers, with HiDAs out numbering SBVAA by a few, but together we were a force to be reckoned with. The dark settled upon us and the radiance of the stars was unvieled. Boy Scouts and other campers were treated to glorious views of the grandeur, filling them with the some of the awe of the cosmos that is our attraction and driving force. The evening rolled over us, with everyone wandering around, making new friends and taking in the views from other telescopes. I didn't keep close track, but I would estimate twenty to twenty-five astronomers, with at least fifteen scopes. What a nice night! Many elected to drive home, a longer drive than I care for that time of night, but I'm betting that next year, and HiDAS is already making their plans, Friday night will see more showing up to make a weekend of it. This is a very nice spot, that I'm sure we will be using more in the future.



## Aperture Fever?

### **The James Clerk Maxwell Telescope**

With a 15 meter dish, the JCMT is the largest telescope (to date) in the world dedicated to submillimeter astronomy. Operating between the infrared and radio waes, it uses some of the most sensitive and sophisticated instrumentation to detect the coldest material in the Universe, only a few tens of degrees above absolute zero. Water vapor in the Earth's atmosphere intercepts this radiation, making the high and dry site of Mauna Kea vitally important for the research performed at the JCMT.

Also located at the JCMT is the Submillimetre Common-User Bolometer Array -2 camera (SCUBA-2) and the Heterodyne Array Receiver Program (HARP). SCUBA-2 is the most powerful camera of its kind. New technology and novel design means it will map the sky 1,000 times faster than its predecessor. HARP is an instrument which combines a camera and a spectrometer. This means scientists can learn about the chemistry of interstellar gas, its temperature, density and motion.

Ambitious survey projects using these intruments will revolutionize our understanding of how the planets, stars and galaxies were born and evolved into the Universe we see today.

The JCMT is funded by the UK, Canada, and the Netherlands. It was opened in April of 1987.

*(JCMT photo by R. Philips & A. Adamson)*