

# FIRST LIGHT



Journal of the South Bay Astronomical Society - February 2004  
on line at [www.geocities.com/sbas\\_elcamino](http://www.geocities.com/sbas_elcamino)

**Monthly General Meeting: Friday, February 6th, 7:30 PM**

**Guest Speaker: Dr. Luisa Rebull (Caltech)**

**“First Results from the Spitzer Space Telescope”**



## Observing Reports

**@Ridgecrest** – Jan. 17th, as I drove up Hawthorne Blvd., I could see the clouds rolling over the top of PV. This was more disappointing than usual as I was bringing the 15 inch Dobsonian I had purchased over the holidays. Al Fader and Ken Munson were waiting at the gate. We decided to think positively and open on up and set up with the hope the top of the fog would lower as the air cooled. Steve Schrier and Craig Gates (with neighbors in tow) looked at the conditions and decided that it was hopeless and moved on. More folks arrived as the sky teased us with glimpses of clear sky or Saturn and Venus through the fog. Once you found Venus, it was amazing how obscured it could be to the naked eye and still be seen through a scope. Then the fog retreated, not to be seen again until nearly 1:00 A.M. The sky was clear and the seeing good and improving through the night to very good.

A number of members showed up through the evening, some with scopes and some without. In addition to Al and Ken, Nora DeMuth, Bea Collu, Mike and Leslie Rivas, Joe Fierstein, John Evans, Delbert Crawford, Steve Morris, Annie Chu, and Todd Mabey were among the members recorded. Nonmembers recorded were the Granow family, Mike and Angie Peterson, Steve Pederson, and my neighbor Mike Mudallal and his daughter. I know there were others whose names were not recorded.

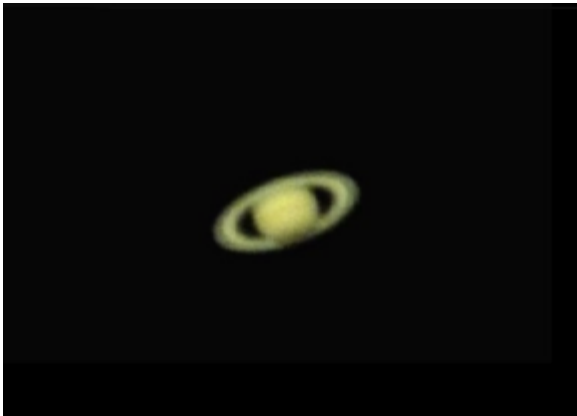
Mars was not much to see and Venus showed a clearly gibbous phase. Clearly the star of the evening was Saturn. I was able to bump the power to over 300x in my scope and I was positive I could make out the Encke Minimum. We ultimately identified 6 moons. Later Jupiter would rise and ultimately get high enough for some excellent views of the bands, though no Red Spot or interesting moon activity was seen. Ken Munson had a filter to isolate the Hydrogen beta line so we decided to try for the Horsehead Nebula. We spent quite a while trying to decide exactly where it should be and we were pretty certain we had looked in the right spot but could never pull it out of the background. With that we decided to pack it up as we could feel the moisture content of the air increase dramatically. Within a few minutes, the fog had rolled in and we knew we had made the right decision.

- Greg Benecke

## ***Green Laser Pointers - Another Group Buy?***

Many of the members who purchased green laser pointers in the "group buy" picked theirs up at the Ridgecrest star party. The sight of green beams in the sky seemed to spark the interest of others in possibly doing another purchase. If there is enough interest, I am sure we can do it again. The original group buy quantity was 10, which resulted in a price of about \$102 each, after shipping. Let me know if you are interested by e-mail or sign up at the next General Meeting.

- ***Greg Benecke***



## ***Backyard Viewing***

I did a bit of backyard observing last weekend, on Jan. 10th. My backyard environment is even worse than it was now that my father-in-law decided to cut down all the trees. Now I've got 16 streetlights shining into my yard! Even so, the sky, at least directly overhead, was very clear and stable. I was able to see Saturn in such clarity that I could easily make out the very faint D-ring (remember what that looked like in the 60-inch at Mt. Wilson?). It was very faint but there was a clear transition to darker background between it and the planet. I could even see that this faint hazy ring extended for the entire circumference. The few times I've thought I'd seen it before, it

tended to be over-whelmed by the light of the planet. I could also clearly see five of the moons. I observed Saturn long enough to notice the positions of Tethys, Dione and Rhea changing.

I saw another cool sight while observing Saturn. While using the 15mm eyepiece, I saw some movement along the right edge. I immediately slew the scope over and started tracking the object. It was very faint and moving pretty fast and had no clearance lights so it wasn't a plane. It was moving north to south and the object was oblong in shape. I ran inside and checked the Heavens-Above website and, as near as I can determine, it was probably a Russian Cosmos booster. It had been naked-eye visible in full sunlight as it rose in the north and headed towards the southeast but quickly passed into the earth's shadow. It was probably still in the penumbral shadow as it passed by Saturn and through the field of view of my eyepiece. I've seen lots of satellites pass through while observing something but that's the biggest thing I've ever seen float by!

- ***Ken Munson***

## ***NGC-MAX Star Catalog Now Available***

The NGC-MAX control system is increasingly used by amateur astronomers for telescope pointing. The Messier and NGC catalogs are programmed into the computer memory, allowing the user to type in the number of any object in the catalog, and have the computer guide the telescope to the object. However, a word of warning is in order: the manufacturers apparently didn't bother to proofread their work, and the catalog contains more than a few errors. For example, star 447 and star 449 are both called  $\Upsilon$  Antilia<sup>2</sup>, and are given different positions in the constellation Antlia. The catalog is still useful, but as always, caveat emptor.

The star catalog uses a numbering system unique to the NGC-MAX, and has not been published in any easily-usable form. I recently obtained a version of the catalog from the Internet, and have rearranged it into an easy-to-use booklet. This booklet lists the stars by constellation, giving the name of the star, the catalog number to type into the NGC-MAX, and a brief description of the object. I have made a few extra copies, and will sell them at cost (\$5) at the February SBAS meeting.

- ***Steven Morris***

## Our SBAS Committee

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## Monthly General Meetings



We normally meet on the first Friday of each month at 7:30 p.m. in the Planetarium at El Camino College. If the first Friday is on or close to a holiday, we usually defer the meeting until the second Friday of the month.

The Planetarium is on the south side of Manhattan Beach Blvd., one block west of Crenshaw Blvd. (near the center of the map at left). Click on the map to get a display that can be zoomed out for a regional view. The zoom display appears in a separate browser window, which can be closed to return to this page.

The domed roof of the planetarium is visible from the street. There is on-street parking, and we can often use campus parking: check inside to see if you need a FREE parking permit for your car. Park in northeast corner lot, temporarily, due to the construction project.

We enjoy the planetarium facilities through the courtesy of the El Camino College Administration, and have several faculty members of the Astronomy Department as members of our Club. Our meetings always include an informal opening, when new attendees are invited to introduce themselves and let us know about their interests in astronomy. Members share their latest news and observations at this time. The rest of the evening is devoted to guest speakers, who range from amateur astronomers to professional astronomers to representatives from local aerospace companies to college professors. We are fortunate to have all these talented people in our area, willing to come and talk to us.

## Monthly Planning Meetings

Committee members (and anyone else with an interest in Society activities) meet each month, usually on the Monday following the general meeting. Meetings are sometimes rescheduled due to travel and other circumstances. Exact date and time of each month's meeting will be announced in the schedule of events in *FIRST LIGHT* each month, and should also be verified with a committee member by any member or visitor wishing to attend. All are welcome!

We will meet on Monday, February 9th at 7:30 PM at the home of Greg Benecke. From Crenshaw Blvd., head West on 182nd St. Shortly after going under the 405 overpass you will see a Fire Station on the right. Turn right into the cul-de-sac just after the Fire Station. From Prairie Ave., head East on 182nd St. Go one block past the second traffic light (Yukon Ave.) and make a left into the cul-de-sac just before the Fire Station. You are making the correct turn if you see a sign saying "Park Place" on the white fence on the Northwest corner next to the Fire Station. Greg's house is the first one on the left side of the cul-de-sac 18161 Patronella Ave., Torrance.

## **SBAS Membership Benefits**

Contact John Collins for magazine subscriptions at club rates: "Sky & Telescope" \$32.95 and "Astronomy" \$29.00! Make your check payable to SBAS and mail the payment and your subscription / renewal form directly to South Bay Astronomical Society, P.O. Box 1999, Redondo Beach, CA 90278.

Part of your SBAS membership dues goes toward membership in the Astronomical League. All paid members should be receiving the "Reflector", the league's newsletter, four times a year. As a member organization, we can participate in a number of award programs they offer. These are based on completing various observing challenges. Check out the Astronomical League website at [www.astroleague.org](http://www.astroleague.org)

## **NexStar 8 Available to SBAS Members**

All members in good standing (with at least six months of continuous membership) can borrow the club's Nexstar8 for up to 7 days. The fee of \$5 for a weekend, or \$10 for an entire week, is nonrefundable and will be added to the club's Accessories Fund "Wish List" for future purchases. A fully refundable deposit of \$200 cash or check is required. Loss or damage is the responsibility of the borrower. A copy of the complete South Bay Astronomical Society Nexstar 8 Borrowing Rules and Agreement is available upon request. The **Accessories Fund "Wish List"** – Member contributions of any amount or donations will be appreciated, as will any suggestions for new purchases!

## **Next Mt. Wilson Observatory Trip Scheduled!**

I have confirmed our reservation for the 60-inch Telescope with Mt. Wilson for Saturday, May 15, 2004. This date will allow SBAS members to observe objects during late spring this year. Space is limited to 25 participants, with preference given to SBAS members before non-members. I will take sign-ups at the Feb. 6th General Meeting.

- Greg Benecke

## **February - Comets & Asteroids**

Surprisingly, there is another comet we can get a look at through the month of February as it rises after midnight. We had an amazingly good viewing night last Saturday at Ridgecrest School and I was amazed that through the fading fog, my first object of the evening, Comet 2002 T7, stood out clearly. It's moving fast too - it changed position appreciably throughout the evening!

### **Comets Visible In February:**

<b>Name</b>	<b>Magnitude</b>	<b>Constellation</b>
2002 T7	8	Pisces-Pegasus-Pisces
2003 H1	11-12	Virgo-Hydra*

### **Comets at Perihelion:**

<b>Date</b>	<b>Identification</b>	<b>Magnitude</b>
Feb 13	C/2003 E1	18.5
Feb 22	C/2003 H1	11.8

### **Near-Earth Asteroid Flybys:**

<b>Date</b>	<b>Identification</b>	<b>Magnitude</b>	<b>Distance</b>
Feb 2	6239 Minos	15	0.056 AU
Feb 15	2004 AS1	17	0.079 AU
Feb 19	2003 YR70	16	0.105 AU

\*Rises after midnight.

Check the JPL Ephemeris Generator page for coordinates of the objects at:  
<http://ssd.jpl.nasa.gov/cgi-bin/eph>

- Ken Munson

## ***NASA Releases Dazzling Images From New Space Telescope***

A new window to the universe has opened with today's release of the first dazzling images from NASA's newly named Spitzer Space Telescope, formerly known as the Space Infrared Telescope Facility. The first observations demonstrate the power of the telescope's infrared detectors to capture cosmic features never before seen. The Spitzer Space Telescope has been officially named after the late Dr. Lyman Spitzer, Jr., one of the 20th century's most influential scientists, and in the mid-1940s, he first proposed placing telescopes in space. "NASA's newest Great Observatory is open for business, and it is beginning to take its place at the forefront of science," said NASA's Associate Administrator for Space Science, Dr. Ed Weiler. "Like Hubble, Compton and Chandra, the new Spitzer Space Telescope will soon be making major discoveries, and, as these first images show, should excite the public with views of the cosmos like we've never had before."

"The Spitzer Space Telescope is working extremely well. Launched Aug. 25 from Cape Canaveral, Fla., the Spitzer Space Telescope is the fourth of NASA's Great Observatories, a program designed to paint a more comprehensive picture of the cosmos using different wavelengths of light. While the other Great Observatories have probed the universe with visible light (Hubble Space Telescope), gamma rays (Compton Gamma Ray Observatory) and X-rays (Chandra X-ray Observatory), the Spitzer Space Telescope observes the cosmos in the infrared. Spitzer's unprecedented sensitivity allows it to sense infrared radiation, or heat, from the most distant, cold and dust-obscured celestial objects. Initial images reveal the versatility of the telescope and its three science instruments. The images are available at <http://www.spitzer.caltech.edu> and <http://photojournal.jpl.nasa.gov>

- The Spitzer image of a dark globule in the emission nebula IC 1396 is in spectacular contrast to the view seen in visible light. Spitzer's infrared detectors unveiled the brilliant hidden interior of this opaque cloud of gas and dust for the first time, exposing never-before-seen young stars.
- The dusty, star-studded arms of a nearby spiral galaxy, M81, are illuminated in a Spitzer image in unprecedented detail. Red regions in the spiral arms represent infrared emissions from dustier parts of the galaxy where new stars are forming. The image shows the power of Spitzer to explore regions invisible in optical light, and to study star formation on a galactic scale.
- Spitzer revealed, in its entirety, a massive disc of dusty debris encircling the nearby star Fomalhaut. Such debris discs are the leftover material from the building of a planetary system. While other telescopes have imaged the outer Fomalhaut disc, none was able to provide a full picture of the inner region. Spitzer's ability to detect dust at various temperatures allows it to fill in this missing gap, providing astronomers with insight into the evolution of planetary systems.
- Data from Spitzer of the young star HH 46-IR, and from a distant galaxy 3.25 billion light-years away, show the presence of water and small organic molecules not only in the here and now, but, for the first time, far back in time when life on Earth first emerged.

JPL manages the Spitzer Space Telescope mission for NASA's Office of Space Science, Washington. Science operations are conducted at the Spitzer Science Center at the California Institute of Technology in Pasadena.

- **JPL News Release**

## ***Mission Captures Galaxies Galore***

The most sensitive and comprehensive ultraviolet image ever taken of the Andromeda Galaxy, our nearest large neighbor galaxy, has been captured by NASA's Galaxy Evolution Explorer. The image is one of several being released to the public as part of the mission's first collection of pictures. "The Andromeda image gives us a snapshot of the most recent star formation episode," said Dr. Christopher Martin, Galaxy Evolution Explorer principal investigator and an astrophysics professor at the California Institute of Technology in Pasadena, which leads the mission. "By studying this view of the galaxy in the process of forming stars, we can better understand how that fundamental process works, such as where stars form, how fast and why."

The image of Andromeda, the most distant object the naked eye can see, is a mosaic of nine images taken in September and October of 2003. It combines two ultraviolet colors, one near ultraviolet (red) and one far ultraviolet (blue). For comparison, a second image shows the Andromeda Galaxy, also called Messier 31, in visible light. Both images, along with other new pictures from the Galaxy Evolution Explorer, are available online at <http://www.galex.caltech.edu> and <http://photojournal.jpl.nasa.gov/mission/GALEX>. The new collection of images also includes views of several nearby galaxies; Stephan's Quintet of Galaxies; an all-sky survey image of the globular star cluster M2; and a deep image of the sky in the constellation Bootes.

The Galaxy Evolution Explorer team is also releasing the first batch of scientific data, so the science community can propose additional observations for the mission. These images and data display the power of the Galaxy Evolution Explorer to collect sensitive ultraviolet images of large parts of the sky. "It's very rewarding and exciting for the team to see the fruits of their labors," said Kerry Erickson, the mission's project manager at NASA's Jet Propulsion Laboratory, Pasadena, Calif. "Because people are accustomed to seeing objects in visible light, it's amazing to see how different the universe looks in ultraviolet and how much information is revealed to us by those observations." Scientists are interested in learning more about the Andromeda galaxy, including its brightness, mass, age, and the distribution of young star clusters in its spiral arms. This will provide a tremendous amount of information about the mechanisms of star formation in galaxies, and will help them interpret ultraviolet and infrared observations of other, more distant galaxies.

- JPL News Release

## ***Help for Hubble: Officials Mull Donations, Russian Service Mission*** ***Excerpted from an article by Robert Roy Britt, Senior Science Writer for Space.com***

Every idea under the Sun will be considered for maintaining the popular and scientifically valuable observatory even though NASA has decided to let it die. "We're in the mode of pursuing every wacky concept out there," said Steven Beckwith, the director of the Space Telescope Science Institute (STScI), which operates Hubble for NASA. Citing safety concerns, NASA declared Friday it would not go forward with a planned servicing mission in 2006, in which astronauts would repair defective pointing gyroscopes and install two new and powerful instruments on Hubble. The decision came two days after President Bush's call for NASA to refocus on human spaceflight with an eye toward returning to the Moon.

Without a servicing mission, Hubble has a life expectancy of, at most, 3-1/2 years if some creative solutions can be employed. There is no other telescope in existence, or any slated to go online in the next decade, that can replace Hubble's optical view of the universe. "You miss what the human eye can see," Beckwith said. "You miss all the visible." The two new Hubble instruments are already built. The Wide Field Camera 3 and the Cosmic Origins Spectrograph cost a combined \$167 million and would have provided unprecedented peeks into the formation of the cosmos, astronomers say. The camera is nearly ready at NASA's Goddard Space Flight Center and the spectrograph, which splits and analyzes light, is ready and waiting at Ball Aerospace Technology Corp. in Boulder, Colo. They would have made Hubble 10 times more capable of examining the early universe, making Hubble's final years "the best ever," Beckwith said. "If you liked Hubble up to now you would have loved it after Servicing Mission 4." No one knows what will become of the two instruments, but it is unlikely they could be adapted for use on any other telescope.

"I've had a lot of e-mail from people who want to donate money to help keep Hubble alive," Beckwith said. He and his team will consider the feasibility of accepting donations but he said "billionaires might be needed." NASA still plans a robotic mission to attach a device to Hubble that would safely deorbit and destroy it. There might also be discussion with the European Space Agency (ESA), which partnered with NASA to fund the original development of Hubble. Others have suggested that the Russians might be willing to send a manned mission to upgrade and service Hubble. "The Russians probably have the capability to do it," Beckwith said, and he plans to pursue the possibility. Hubble has six gyroscopes onboard used for pointing the telescope. They fail regularly – and three are needed to make Hubble work. Engineers are currently working on ways to point the telescope with just two gyroscopes. If they can't succeed, then gyroscope failures could end operations in less than three years, Beckwith said. In reality, the end could come any day. Beckwith will ask his employees to present options for possibly servicing Hubble or extend its life without servicing. They might cycle power off during certain portions of the observatory's orbit to conserve batteries. Or they might immediately turn off one of the four working gyros to maximize its lifetime.

Whatever happens, Hubble is still a working observatory for the moment. Beckwith will set up a committee of astronomers from inside the STScI and outside, in the general astronomy community, to advise him on a short-list of observations that should be done under the assumption that time is running out. "We all feel it as a devastating blow," said Catherine Pilachowski, president of the 6,000-member American Astronomical Society. Perhaps the most telling measure of Hubble's success comes by comparison. Operators of other telescope often make the claim, and rightfully so, that they've observed a distant object with resolution comparable to or exceeding that of Hubble. They do so on a limited basis in a narrow bandwidth, but they do it and they are proud to point it out. Their desire to match what Hubble does so easily on a regular basis is always apparent. "We enjoy being the gold standard," Beckwith said with some determination today, "and we will remain so." The STScI will set up a web site within a week or so to take suggestions from the public and to communicate the status of the effort to save Hubble.

## **Schedule of Coming Events**

<b>6 February Friday 7:30 P.M.</b>	<b>Monthly General Meeting:</b> Dr. Luisa Rebull, Staff Scientist, Spitzer Science Center, Caltech presents “First Results from the Spitzer Space Telescope”.
<b>9 February Monday 7:30 P.M.</b>	<b>Monthly Planning Meeting</b> Refer to page 3 for directions.
<b>19 (JPL) 20 (PCC) February 7:00 P.M.</b>	<b>Von Karman Auditorium Lecture Series – FREE</b> “Artificial Life: Life NOT As We Know It” is presented by Dr. Chris Adami, JPL Principal Scientist, JPL Quantum Computing Technologies Group. For more information call: (818) 354-0112. Current and archived webcasts can be viewed at <a href="http://www.jpl.nasa.gov">http://www.jpl.nasa.gov</a>
<b>14 February Saturday Evening</b>	<b>In-Town Dark Sky Observing at Ridgecrest School – Weather Permitting:</b> If the weather conditions are marginal, contact Greg Benecke to confirm that he will be opening the gate! Take Hawthorne Blvd. south across Pacific Coast Hwy.; continue up the hill past Silver Spur and turn left at Highridge. Go one mile and turn left on Whitley Collins, up one block and turn left on Northbay Rd., the new parking lot is at the end on the left. Enter parking lot and turn left, the gate is at the east end (it should be open about 15 minutes before sunset) and a paved road leading into the playground where we have traditionally set up. If at all possible, drop your equipment off and park your car in the new parking lot (less than 200 feet away). If you are absolutely certain that your vehicle does <u>not</u> drip anything you can park with your equipment. <b>Drive with care</b> to avoid steel pillars supporting basketball nets...
<b>21 February Saturday Evening</b>	<b>Out-of-Town Dark Sky Observing – New Moon Feb. 20th</b> Contact Greg Benecke to arrange site location.
<b>25 February Wednesday Evening</b>	<b>Montemalaga School Star Party</b> SBAS will set-up at 4:30, pizza dinner will be served at 5:30, then the star party begins at 6:00!
<b>5 March Friday 7:30 P.M.</b>	<b>Monthly General Meeting:</b> The speaker for the evening will be announced in the March Newsletter.
<b>8 March Monday 7:30 P.M.</b>	<b>Monthly Planning Meeting</b> The location of this meeting will be announced in the March Newsletter.
<b>13 March Saturday Evening</b>	<b>In-Town Dark Sky Observing at Ridgecrest School – Weather Permitting.</b> Refer to February 14th entry for directions to the site & instructions on weather conditions.
<b>20 March Saturday Evening</b>	<b>Out-of-Town Dark Sky Observing – New Moon Mar. 20th</b> Site location for the <b>4th Annual Messier Marathon</b> will be published in the March newsletter.
<b>27 March Saturday Evening</b>	<b>Lomita Math &amp; Science Magnet School Star Party</b> Details and directions to be published in the March newsletter.

# South Bay Astronomical Society

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*General Meeting at El Camino College Planetarium:  
Friday, February 6th at 7:30 P.M.*

*Guest Speaker: Dr. Luisa Rebull (Caltech)*

***“First Results from the Spitzer Space Telescope”***

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South Bay Astronomical Society  
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