

# ***FIRST LIGHT***



*Journal of the South Bay Astronomical Society – October 2009*  
on line at [www.geocities.com/sbas\\_elcamino](http://www.geocities.com/sbas_elcamino)

**Monthly General Meeting: Friday, October 2<sup>nd</sup> 7:30 PM**

**Guest Speaker: Tim Thompson, LA Astronomical Society**

**“The Hubble Deep Field”**

## ***The September 11 Meeting***

President Ken Rossi began the meeting at 7:36 by asking newcomers to introduce themselves. Peter Coffee (a returning member) and Steven Yen did so, and President Rossi then reviewed recent star-party activity. SBAS members had set up ten telescopes at a Long Beach observing session recently, which was well-attended by the public. Craig Gates reported that over a thousand people attended the Julian Starfest, including half a dozen SBAS members. One of our members won an 8-inch Celestron telescope!

Michael Harrison reminded the members of the upcoming LCROSS mission to the Moon, in search of water. Northrop Grumman Corporation has invited the SBAS to set up telescopes at their facility in Redondo Beach on the evening of October 8 and the morning of October 9, to witness the plume from the impact scheduled for 4:30 PDT in the morning. NASA recently decided that the impact would occur in the lunar crater Cabeus A, and one member thoughtfully brought in a large number of good-quality maps of the area, to help observers who will try to see this remarkable event. President Rossi noted that the annual election for club officers is coming up, and strongly encouraged the members to become more involved.

After a fifteen-minute break, President Rossi introduced John C. Smith, who has a Master's degree in celestial mechanics, and has spent 23 years at NASA's Jet Propulsion Laboratory designing missions to explore the planets. His talk, “The Cassini-Huygens Mission to Saturn and Titan” was an overview of the work he has done for the past seventeen years as a ‘tour designer’ for the spacecraft. John Smith began by assuring the thirty-three members of the audience that no significant damage occurred at JPL due to the recent Station fire, even though it burned to within a quarter-mile of the Lab.

The mission to Saturn was originally scheduled to operate for the years 2004 to 2008, and has been a complete success. The project is now halfway through its two-year extension, and there is some hope that a further extension may be possible if finances permit. Its science agenda involved five disciplines; Saturn, the rings, the moon Titan, the other icy moons, and the magnetosphere. John Smith showed some remarkable photos and movie clips of the ring system, including images of previously-unseen shadow effects, as the Sun passed through the ring plane. The rings can be a dangerous place for spacecraft even though they are only ten meters thick, and the speaker played an audio recording of the hits of ring particles on the spacecraft as it passed through the ring plane.

The moon Titan is shrouded in hydrocarbon smog (like Los Angeles), and in 2005 the Huygens probe descended through the surface, creating a stunning video as it floated through the atmosphere and landed. The moons Tethys and Dione seem to be geologically active, emitting plasma into the ring system. The moon Enceladus has warm fissures called ‘tiger stripes’ on its surface, that apparently lead to a liquid-water reservoir below. Plumes of vapor escaping from these areas resurface the moon, and escape into space as well.

The Cassini Orbiter will be sent plunging into Jupiter in the year 2017, to prevent it from crashing into any of the satellites and possibly contaminating one of them with life from Earth (admittedly a remote possibility). Cassini's

instruments (telescopes, dust detectors and radar) may be turned off for lack of funding between now and then, but they have already provided a flood of data. John Smith answered several questions from the audience and was given a plaque of appreciation. The meeting ended at 9:55.

- Dr. Steven Morris



## Spitzer, the Sequel

The Spitzer Space Telescope is getting a second chance at life.

The liquid helium “lifeblood” that flows through the telescope has finally run out, bringing Spitzer’s primary mission to an end. But a new phase of this infrared telescope’s exploration of the universe is just beginning.

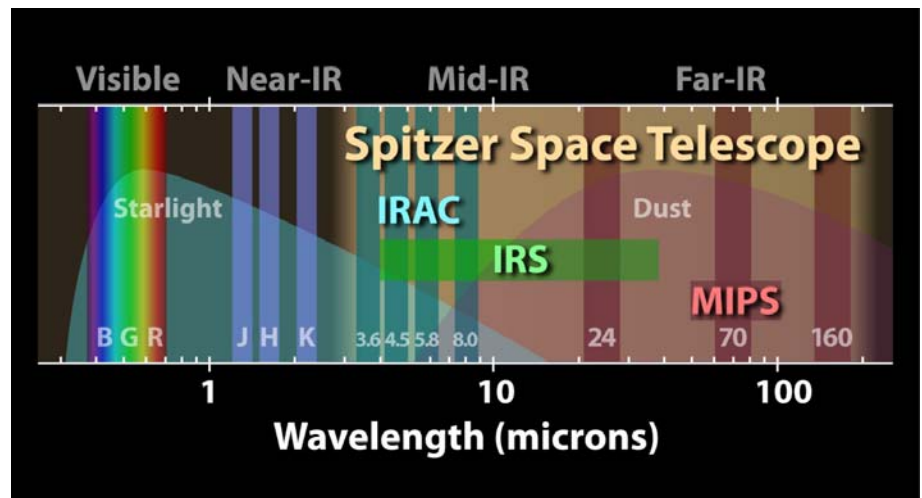
Even without liquid helium, which cooled the telescope to about 2 degrees above absolute zero (-271°C), Spitzer will continue to do important research—some of which couldn’t easily be done during its primary mission. For example, scientists will use Spitzer’s “second life” to explore the rate of expansion of the universe, study variable stars, and search for near-Earth asteroids that could pose a threat to our planet.

“We always knew that a ‘warm phase’ of the mission was a possibility, but it became ever more exciting scientifically as we started to plan for it seriously,” says JPL’s Michael Werner, Project Scientist for Spitzer. “Spitzer is just going on and on like the Energizer bunny.”

Launched in August 2003 as the last of NASA’s four Great Observatories, Spitzer specializes in observing infrared light, which is invisible to normal, optical telescopes.

That gives Spitzer the power to see relatively dark, cool objects such as planet-forming discs or nearby asteroids. These objects are too cold to emit light at visible wavelengths, but they’re still warm enough to emit infrared light.

In fact, all warm objects “glow” with infrared light—even telescopes. That’s why Spitzer had to be cooled with liquid helium to such a low temperature. Otherwise, it would be blinded by its own infrared glow.



*The “warm mission” of the Spitzer Space Telescope will still be able to use two sensors in its Infrared Array Camera (IRAC) to continue its observations of the infrared universe.*

As the helium expires, Spitzer will warm to about 30 degrees above absolute zero (-243°C). At that temperature, the telescope will begin emitting long-wavelength infrared light, but two of its short-wavelength sensors will still work perfectly.

And with more telescope time available for the remaining sensors, mission managers can more easily schedule new research proposals designed for those sensors. For example, scientists have recently realized how to use infrared observations to improve our measurements of the rate of expansion of the universe. And interest in tracking near-Earth objects has grown in recent years—a task for which Spitzer is well suited.

“Science has progressed, and people always have new ideas,” Werner says. In its second life, Spitzer will help turn those ideas into new discoveries.

For kids, The Space Place Web site has a fun typing game using Spitzer and infrared astronomy words. Check it out at [spaceplace.nasa.gov/en/kids/spitzer/signs](http://spaceplace.nasa.gov/en/kids/spitzer/signs).

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

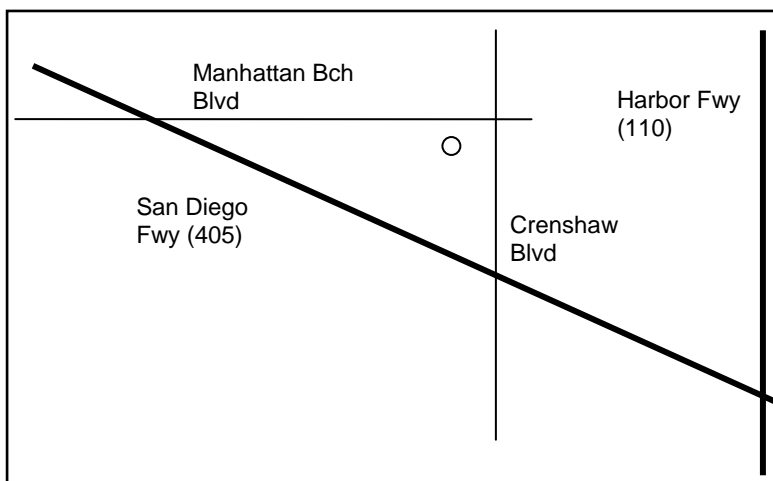
## SBAS Executive Board

<b>President</b>	Ken Rossi	515-1586	<a href="mailto:ken_a_rossi@yahoo.com">ken_a_rossi@yahoo.com</a>
<b>Vice-President</b>	Ron Rennie	326-5589	<a href="mailto:vidron@sbcglobal.net">vidron@sbcglobal.net</a>
<b>Secretary</b>	Steve Pedersen	378-6479	<a href="mailto:epsonstlyusc82@earthlink.net">epsonstlyusc82@earthlink.net</a>
<b>Treasurer &amp; Astronomical League Rep.</b>	Arnie Stodolsky	937-0220	<a href="mailto:astodols@ix.netcom.com">astodols@ix.netcom.com</a>

## SBAS Committees

<b>Program Chairman</b>	Ron Rennie	326-5589	<a href="mailto:vidron@sbcglobal.net">vidron@sbcglobal.net</a>
<b>Astronomical League Liaison</b>	Bill Eisele	542-5070	<a href="mailto:Astronomy131@msn.com">Astronomy131@msn.com</a>
<b>Newsletter Reproduction</b>	Arnie Stodolsky	937-0220	<a href="mailto:astodols@ix.netcom.com">astodols@ix.netcom.com</a>
<b>Publications Committee:</b>			
<b>SBAS Website Webmaster</b>	Alex Athas		<a href="mailto:sbas_elcamino@yahoo.com">sbas_elcamino@yahoo.com</a>
<b>First Light Editor</b>	Ken Munson	2571971	<a href="mailto:kenmunson333@sbcglobal.net">kenmunson333@sbcglobal.net</a>
<b>Observing Committee</b>	Greg Benecke	217-1512	<a href="mailto:BeneckeRUs@aol.com">BeneckeRUs@aol.com</a>
	Craig Gates	376-6387	- - -
<b>Membership Committee</b>	Ray Grace	370-1913	<a href="mailto:rgrace3@verizon.net">rgrace3@verizon.net</a>
<b>Publicity Committee</b>	Joe Fierstein	377-9834	<a href="mailto:joefiers@aol.com">joefiers@aol.com</a>
<b>Property Committee</b>	Arnie Stodolsky	937-0220	<a href="mailto:astodols@ix.netcom.com">astodols@ix.netcom.com</a>
<b>Outreach Committee</b>	Arnie Stodolsky	937-0220	<a href="mailto:astodols@ix.netcom.com">astodols@ix.netcom.com</a>
	Joe Fierstein	377-9834	<a href="mailto:joefiers@aol.com">joefiers@aol.com</a>

## 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 (16007 Crenshaw Bl. In Torrance). 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).

The planetarium is the only round, domed building on campus. 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.

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 Meeting**

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. The October 5<sup>th</sup> planning meeting will be held at the home of Ray Grace, 2706 Spreckels Lane in Redondo Beach (310) 370-1913. Take Hawthorne Blvd to 190th St., turn West to Inglewood Ave., then turn North (right) and proceed two blocks to Spreckels Lane and turn Right. If driving South on Inglewood Ave., Spreckels Lane is two blocks south past the light at Ralston Ave., and turn Left, to the 4th house on the right (South side). Parking is available on both sides of the street.

## **RASC Handbook**

Cost is \$20/copy. Arnie will be taking orders at the October General Meeting or you can mail a check to the PO box. Checks made out to SBAS. Orders can be sent to:

SBAS  
PO Box 1937  
Redondo Beach, Ca 90278

Orders must be received by October 15th.

## **Membership Dues Schedule**

Month Join/Due	Member (Family)		Student	Expires
	USMail	Email		
January	\$38.50	\$33.00	\$22.90	12/2009
February	\$35.00	\$30.00	\$20.85	12/2009
March	\$31.50	\$27.00	\$18.75	12/2009
April	\$28.00	\$24.00	\$16.70	12/2009
May	\$24.50	\$21.00	\$14.60	12/2009
June	\$21.00	\$18.00	\$12.50	12/2009
July	\$17.50	\$15.00	\$10.45	12/2009
August	\$14.00	\$12.00	\$8.40	12/2009
September	\$10.50	\$9.00	\$6.25	12/2009
October	\$49.00	\$42.00	\$29.20	12/2010
November	\$45.50	\$39.00	\$27.10	12/2010
December	\$42.00	\$36.00	\$25.00	12/2010

To simplify the dues, we suggest that all membership expire in December. Dues are \$42.00/year for FirstLight via US Mail, or \$36.00 via Email notification (\$25.00/year for students) and expire on December 31, of the current year. New members use Month Join, and current members select your expiring Month to calculate the amount. Members that expire in October or November may wish to write one check and include next years membership. Make checks payable to the South Bay Astronomical Society. Dues may be paid at the general meeting or mailed to:

**South Bay Astronomical Society**

**Attn: Arnie Stodolsky**

**P.O. Box 1937**

**Redondo Beach, CA 90278**

## ***SBAS Membership Benefits***

Contact Arnie Stodolsky for magazine subscriptions at club rates: "Sky & Telescope" \$32.95 and "Astronomy" \$34.00/1 year or \$60.00/2 years!

Note: S&T subscribers at the club rate renew their subscriptions by mailing their renewal notice and check or calling the 800# on the renewal notice.

Only new subscribers or subscribers converting their subscription to the club rate need to contact Arnie or send a check to the PO Box. Astronomy subscriptions and renewals still go through Arnie or via the PO Box.

### ***Astronomical League Observing Clubs***

All SBAS members in good standing are also members of the Astronomical League and are eligible to participate in the League's Observing Clubs. The Astronomical League provides many different observing programs (clubs). These programs are designed to provide a direction for your observations and to provide a goal. The programs have certificates and pins to recognize the observers' accomplishments and for demonstrating their observing skills with a variety of instruments and objects. For more information go to:

<http://www.astroleague.org/observing.html>.

## ***Welcome New Members***

We give a big welcome to new club members: Peter Coffee and Stuart Capewell.

## ***SCHOOL KIDS TRACK LCROSS***

September 21, 2009: Using a colossal radio telescope in the Mojave Desert, school kids around the world are helping NASA track the LCROSS spacecraft as it heads for a crash landing on the Moon.

On Oct. 9th, LCROSS will smash into the inky-dark shadows of a crater near the Moon's South Pole in search of water. Eager youngsters are locked on to LCROSS's signal as intently as they've ever viewed a video game, and they're feeding NASA valuable data about the spacecraft's health and status.



*The Goldstone Apple Valley Radio Telescope (GAVRT).*

Students attending 283 schools world-wide are participating in the Goldstone Apple Valley Radio Telescope Project, or GAVRT -- a joint project between NASA's Jet Propulsion Laboratory and the Lewis Center for Educational Research. Boys and girls control the behemoth telescope via the internet and they have been learning how to do radio astronomy just like real mission scientists

Brian Day of NASA Ames Research Center explains how the students "adopted" LCROSS.

"Because LCROSS has a very steeply inclined orbit, we have only a

2-hour window once every 3 days when we can check out the spacecraft using the Deep Space Network. So we decided to ask GAVRT for help. These kids help us get extra listening time for our spacecraft, and they get an incredible educational experience in return."

Lewis Center founder Rick Piercy is the visionary who sparked GAVRT's creation, making this extraordinary hookup possible.

"In 1994, I heard that NASA was decommissioning a fully functional radio telescope," says Piercy. "I knew that this particular telescope had been used to communicate with the Apollo spacecraft and realized that it was something special. I wanted it for the students at our school, the Academy for Academic Excellence. I figured we could load it up in a couple of pickup trucks and bring it to the school if we could get permission."

He called California Congressman Jerry Lewis, who put him in touch with then-NASA Administrator Daniel Goldin. Piercy convinced Goldin and NASA to give the telescope to the school and make the instrument available to students nationwide.

"I contacted Dr. Michael Klein, who was a foremost authority on Jupiter radio astronomy but has since passed away. When I told him that I wanted to go load up the telescope in a truck to bring to the school, he got very quiet and then said, 'The scope is 110 feet wide, weighs almost a million pounds, and is 9 stories tall.'"

Piercy's response? "Oh."

The telescope stayed where it was, but that didn't stall Piercy's plans. "Our school became the first to take over a NASA telescope," he says. To date, 38,000 students, including boys and girls at Department of Defense schools across the globe, have run the telescope. NASA scientists and Lewis Center staff train teachers. In turn, the teachers train groups of students.

"Best of all, the scientists mentor the students – answering questions and offering guidance as needed."

According to Piercy, one mother was a little worried at first, saying, "I don't even let my daughter run the washing machine -- and she's going to operate a 15 million dollar piece of NASA equipment?"

No worries, mom. It's all done remotely. Piercy never had to test his pickup truck. Students access the massive radio telescope, which resides at the Goldstone Tracking Station in California's Mojave Desert, via the Internet in their classrooms.

"Dr. Klein used to say that looking at a radio signal on a screen was about as thrilling as watching the grass grow," says Piercy. "But the kids love it because they're participating in real space missions and learning from NASA scientists what those signals mean."

If a problem occurs with LCROSS while NASA isn't able to listen, students at one or more of the participating schools may know it first and can alert the space agency.

"The kids realize how important they are to the mission's success," says Piercy. "Besides, it's fun."

"I'm really excited about being able to do this," says Anthony Cole, a ninth grader at the Academy for Academic Excellence. "It's a once in a lifetime opportunity to be able to track a spacecraft looking to find water on the Moon."

Kids learn best by participating -- using all their senses," explains Piercy. "The proof's in the puddin'. The students at our school have had the highest standardized high school test scores in the county for several years now. Results for this year aren't out yet, but we expect similar success."

Students, including homeschoolers, who want to join in the fun can sign up at [LewisLearning.org](http://LewisLearning.org). There's room for everyone -- the Lewis Center is equipped to handle more than 60 million students from anywhere in the world. All you need is a speaker phone and a computer connected to the Internet.

And how's this for thrilling? There are plans in the works for GAVRT students to help listen for communications from extraterrestrials.



*GAVRT students attend the launch of LCROSS with Brian Day (center) at the Kennedy Space Center.*

"Is there anybody out there?"

Yes. 38,000 clever kids hearing you loud and clear! Wassup?

- Reprinted from Science@NASA

## Schedule of Coming Events

<b>2 October Friday Night 7:30 PM</b>	<b>Monthly General Meeting</b>  Guest Speaker: TBD  Topic: TBD
<b>5 October Monday Night 7:30 PM</b>	<b>Monthly Planning Meeting</b>  See directions on Page 4.
<b>10 October Saturday Night 7:00 PM</b>	<b>In Town Dark Sky Observing Session at Ridgecrest Middle School</b> – 28915 North Bay Rd. RPV, Weather Permitting: Please contact Greg Benecke to confirm that the gate will be opened!  Alternate site: Rancho Del Mar High School -
<b>15 October Thursday Evening 7:00 PM</b>	<b>JPL's Von Karman Lectures: How to Drive a Robot</b> by Dr. Andrew Howard  The last few years have witnessed some great strides in the field of autonomous mobile robotics. On Earth, autonomous ground vehicles have been driving through environments ranging from forests to suburban streets, while rovers on Mars have spent several years negotiating rock fields, craters and sand dunes. This talk will look at some of the key challenges of autonomous mobile robot navigation with a particular focus on the problem of perceiving and understanding the world.  Location: Von Karman Auditorium at JPL 3800 Oak Grove Dr. Pasadena
<b>17 October Saturday Evening</b>	<b>Out-of-Town Dark Sky Observing Session</b>  Contact Greg Benecke to coordinate a location.
<b>No Astro Imaging Meeting This Month</b>	<b>Astro Imaging Meeting</b>  New to astrophotography? Experienced at it? Join fellow SBAS members for a meeting to discuss astrophotography and to help each other grow and learn this fun hobby.  902 N. Prospect Ave Redondo Beach Ca. Contact Craig Gates to confirm: 310 779 9737
<b>5 November Thursday Evening</b>	Star Party  Pacific School , corner of Manhattan Beach Blvd & Pacific Ave, Manhattan Beach

# South Bay Astronomical Society

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***General Meeting at El Camino College Planetarium:  
Friday, October 4<sup>th</sup>, at 7:30 P.M.***

***Guest Speaker: Tim Thompson***

***“The Hubble Deep Field”***

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**South Bay Astronomical Society  
P.O. Box 1937  
Redondo Beach, CA 90278**