FIRST LIGHT

Journal of the South Bay Astronomical Society – March 2007
on line at www.geocities.com/sbas_elcamino

Monthly General Meeting: Friday, March 2nd, 7:30 PM

Guest Speaker: Dr. Nicholas Gessler

"Meteorite Collecting"

Catskill School Star Party

January 31st had been mostly cloudy all day long, not the most auspicious of signs for a day when we were scheduled to do a star party at an elementary school. Still, ten club members showed up at Catskill Elementary School in Carson with scopes in tow by 5:30 PM and began setting up. Amazingly, by the time the scopes were set up, the sky had suddenly become almost completely cleared of clouds. The nearly full moon precluded seeing some of the deep sky objects but still the fifth grade students and their families were treated to some spectacular sights of open star clusters, a globular cluster or two, double stars, the moon and, everyone's favorite, Saturn! The children

and their parents were very enthusiastic about the opportunity to see such extraordinary sights. The students showed lots of curiosity about the sky and the universe, asking lots of questions. The Passport to the Universe card that Joe Fierstein provided the students once again proved an excellent tool for setting goals and targets for the nights viewing. The show went from 6 PM to 8 PM by which time the crowd quickly faded. Shortly after the end of the party, the sky was suddenly filled with clouds. It's like the very center of the cut-off low which had plagued LA for the week passed directly overhead that night.

- Ken Munson

The February 2 Meeting

President Ken Rossi opened the meeting at 7:38 under makeshift lighting, as the El Camino Planetarium is undergoing a renovation. Lisa and Derek Lillie introduced themselves as new (and enthusiastic) members of the SBAS, and Scott Stegman (a guest of Ken Munson's) described his own interest in Earth satellites and astronomy. Joe Fierstein presented Nora Demuth, Bill Eisele, Ray Grace, Jacques Linder, Ken Munson, Ron Rennie and Arnie Stodolsky with commemorative pins, awarded for assisting the Night Sky Network. The Network, run by the Astronomical Society of the Pacific in conjunction with JPL, performs community outreach in support of astronomy.

President Rossi then reviewed upcoming observing events. Craig Gates announced that he will be giving a class on introductory astronomy at a local high school, and invited all who are interested to attend his class. Mona Delitsky distributed copies of her Science Newsletter to everyone. Greg Benecke reported on the club's most recent dark-sky observing session, and Ray Grace described his recent observing in Hawaii.

After a twenty-minute social break, President Rossi screened the documentary "Passport to Pluto" for the 40 people in attendance. This one-hour movie, produced for the Science Channel in 2006, describes the construction and observing plans of the New Horizons spacecraft, which will be the first NASA mission to explore the most distant of the nine planets. This movie was made before the recent controversial (and possibly ephemeral) ruling by the IAU demoting Pluto from the status of a planet to a 'dwarf planet', so the movie makes a distinction between Pluto and the Kuiper Belt objects on the outskirts of the Solar System.

The New Horizons spacecraft contains a suite of instruments to measure Pluto and its three moons as the spacecraft sweeps past the system in July 2015. The wide-angle camera will be able to resolve objects on Pluto's surface as small as a football field. An infrared spectrometer will study Pluto's surface composition, and an ultraviolet spectrometer and a radio antenna will measure the atmosphere. Two solar detectors and a dust counter are included as well.

The movie was produced before the successful launch of New Horizons on January 19, 2006. After the movie ended, Mona Delitsky pointed out that the spacecraft is passing near Jupiter at the end of February, to take advantage of the slingshot effect boosting its speed on the way to Pluto, and should produce excellent photographs of Jupiter in the next few weeks. President Rossi then adjourned the meeting at 9:37.

- Dr. Steven Morris

Even Solar Sails Need a Mast

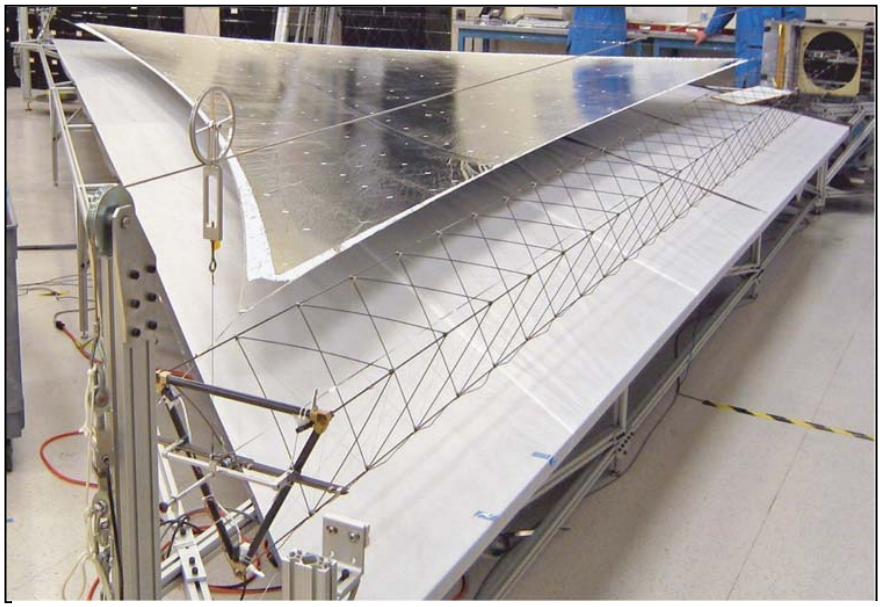
by Patrick L. Barry

Like the explorers of centuries past who set sail for new lands, humans may someday sail across deep space to visit other stars. Only it won't be wind pushing their sails, but the slight pressure of sunlight.

Solar sails, as they're called, hold great promise for providing propulsion in space without the need for heavy propellant. But building a solar sail will be hard; to make the most of sunlight's tiny push, the sail must be as large as several football fields, yet weigh next to nothing. Creating a super-lightweight material for the sail itself is tricky enough, but how do you build a "mast" for that sail that's equally light and strong?

Enter SAILMAST, a program to build and test-fly a mast light enough for future solar sails. With support from NASA's In-Space Propulsion Program to mature the technology and perform ground demonstrator tests, SAILMAST's engineers were ready to produce a truss suitable for validation in space that's 40 meters (about 130 feet) long, yet weighs only 1.4 kilograms (about 3 pounds)!

In spite of its light weight, this truss is surprisingly rigid. "It's a revelation when people come in and actually play with one of the demo versions—it's like, whoa, this is really strong!" says Michael McEachen, principal investigator for SAILMAST at ATK Space Systems in Goleta, California.



SAILMAST is the thin triangular truss in front of the picture. It is attached to a section of a silver foil solar sail section shown here in a laboratory test. The mast in the picture is 2m (6 ft) long. The Space Technology 8 mission will test the SAILMAST, which is 20 times longer.

SAILMAST will fly aboard NASA's Space Technology 8 (ST8) mission, scheduled to launch in February 2009. The mission is part of NASA's New Millennium Program, which flight tests cutting-edge technologies so that they can be used reliably for future space exploration. While actually flying to nearby stars is probably decades away, solar sails may come in handy close to home. Engineers are eyeing this technology for "solar sentinels," spacecraft that orbit the Sun to provide early warning of solar flares.

Once in space, ST8 will slowly deploy SAILMAST by uncoiling it. The truss consists of three very thin, 40-meter-long rods connected by short cross-members. The engineers used high-strength graphite for these structural members so that they could make them very thin and light.

The key question is how straight SAILMAST will be after it deploys in space. The smaller the curve of the mast the more load it can support. "That's really why we need to fly it in space, to see how straight it is when it's floating weightlessly," McEachen says.

It's an important step toward building a sail for the space-mariners of the future.

Find out more about SAILMAST at nmp.nasa.gov/st8. Kids can visit spaceplace.nasa.gov/en/kids/st8/sailmast to see how SAILMAST is like a Slinky® toy in space.

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

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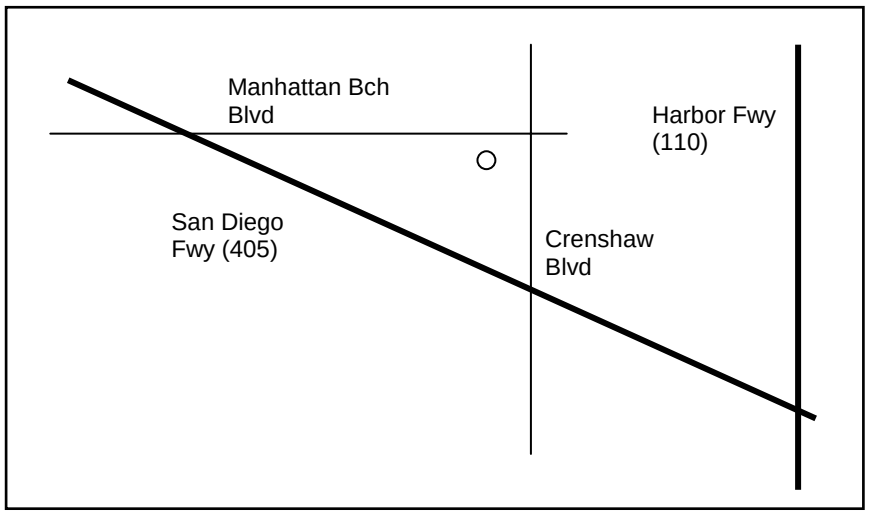
Monthly General Meetings



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).

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 March 5th planning meeting will be held at 7:30

PM 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.

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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!

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! Make your check payable to SBAS and mail the payment and your subscription / renewal form directly to South Bay Astronomical Society, P.O. Box 1937, 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.

March – Comets & Asteroids

Comets Visible in September:

Comet	**Mag**	**Constellation(s)**

None

Asteroid Occultations:

None.

Check the JPL Ephemeris Generator page for coordinates of these objects at:
http://ssd.jpl.nasa.gov/horizons.cgi#top

South Bay Astronomical Society Membership Dues Schedule

Month Join/Due	Member (Family)	Student	Expires
January	$27.50	$22.90	12/2007
February	$25.00	$20.85	12/2007
March	$22.50	$18.75	12/2007
April	$20.00	$16.70	12/2007
May	$17.50	$14.60	12/2007
June	$15.00	$12.50	12/2007
July	$12.50	$10.45	12/2007
August	$10.00	$8.40	12/2007
September	$7.50 or $37.50	$6.25 or $31.25	12/07 or 12/08
October	$5.00 or $35.00	$4.20 or $29.20	12/07 or 12/08
November	$2.50 or $32.50	$2.10 or $27.10	12/07 or 12/08
December	$30.00	$25.00	12/2008

To simplify the dues, we suggested that all memberships expire in December. Dues are $30.00/year ($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. Memberships that expire in September, 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.

Renovation of the Mt. Wilson 60-Inch Telescope

Several times over the last few years, members of the club have had the privilege of enjoying a night of observing with the 60-inch telescope atop nearby Mt. Wilson. When it was built in 1908 and for the next 10 years it was the largest telescope in the world. The success of the 60-inch telescope led George E. Hale, the founder of the Mt. Wilson Observatory to build the 100-inch telescope on the same site and then the 200-inch scope atop Mt. Palomar. Today the 60-inch scope is, in fact, the largest telescope in the world made available to the public on a regular basis.

The Observatory is now in the process of making improvements to the 60-inch scope. These improvements will enable it to find objects more quickly and track them more accurately across the night sky. This will greatly reduce the amount of time visitors have to wait as it moves from one object to the next. Other improvements will make the telescope and dome area safer for visitors (remember the bare wires that carry the current for the motors that turn the dome?). All of this is being done by retired engineers who are donating their time. However, as always, such refurbishments will require the purchase of various supplies. So, they are seeking donations to help with the refurbishment.

To that end, SBAS has decided to donate $50 from its club funds. If other members would like to contribute as well, please make out checks payable to the Mount Wilson Institute (that way it tax deductible), bring them to the February or March meetings or send them to the club's PO box (address is on the Newsletter)..

Observing Reports

Ridgecrest School – Arnie Stodolsky, Freddie Limas and son, Ken Lehmer and family Bill Eisele, Dennis Robertson and myself spent Saturday evening at the Ridgecrest School site. Although there were intermittent clouds, mostly thin and wispy, observing was still fairly enjoyable. Among the objects observed during the evening were: Messiers 34,35,36,37,38, 41, 42, 43, 44, 45 47,48, 50, 67, 78, 79, 81, 82, and 93. NGC Object 2204 in CMaj and 2451, 2477, and 2446 in Puppis were also seen. Venus was visible early in the evening and nearly a full globe. Saturn was very steady but with only 3 moons visible due to the haze. Yet, on a lark, I used a Barlow to bump the power up to 500x on my 12" Dob and was surprised at how steady the seeing was. The Cassini Division was clearly visible along with two bands on the globe. Around midnight more substantial cloud cover moved in and so we called it a night.

- ***Ken Rossi***

Redrock-Inyokern Road - I went out to Redrock-Inyokern Road with Dan Trimble and Steve Lindsey. The conditions were not predicted to be great but it was the only possibility that Saturday night. When we got there some large gathering of off-roaders was going on at the off road vehicle area across the highway, kicking up quite a plume of dust. You could taste it. As we set up the sky looked less than promising with high, thin clouds. I brought both my 15 inch Dob and the C8D with the intent of doing some photography.

After completing a drift alignment on the C8D it was obvious that deep sky shots with film were not in the cards, so I decided to try some eyepiece projection shots of Saturn. At and effective focal length of 20,000 mm and a focal ratio of f/100 the image was very dim and difficult to focus, even with the JMI NGF-S motorized SCT Crayford focuser I had just purchased on Astromart. The seeing varied widely through the night.

At times Saturn came in quite clearly and I was able to see 6 of its moons through the Dob. At one point it was pretty clear at 450 power. At other times it was a swimming blob at 150 power.

Dan was busy through the night getting his AP 160 mm refractor operating with AP1200 mount, robofocuser, CCD camera, and auto guider. An impressive setup. Steve grabbed some shots with his 140 mm refractor setup he spoke about at the January meeting. The digital technology allowed them both to get usable shots under less than ideal conditions.

By about 1:00 it was pretty much solid overcast, so we packed up a few things and turned in for the for the night.

- Greg Benecke

Schedule of Coming Events

23 February Friday Evening	**Pt. Vicente Star Party** 30540 Rue de la Pierre St. Rancho Palos Verdes.
23 February Friday Evening	**Cornerstone School Star Party** 6069 Groveoak Place, Rancho Palos Verdes
28 February Wednesday Evening	**Monte Malaga Star Party** 1121 Via Nogales, Palos Verdes Peninsula
2 March Friday Night 7:30 PM	**Monthly General Meeting** Speaker: Dr. Nicholas Gessler Topic: Collecting Meteorites
5 March Monday Night 7:30 PM	**Monthly Planning Meeting** Location: See Page 6.
10 March Saturday Evening	**In Town Dark Sky Observing Session –** Weather Permitting**:** Please contact Greg Benecke to confirm that the gate will be opened! 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 not drip anything you can park with your equipment. *Drive with care* to avoid steel pillars supporting basketball nets**. Note: If you a visitor, not bringing a scope, it is requested that you park in the small parking lot on Northbay Rd.**
17 March Saturday Evening	**Out of Town Dark Sky Observing Session** Contact Greg Benecke to coordinate a location.
22 March Thursday Evening	**Von Kármán Auditorium (Thursday) & Vosloh Forum at Pasadena City College (Friday)** "MRO: Details of Young and Old Mars" by Dr. Richard Zurek. In November 2006, the spacecraft began its primary science phase, consisting of two week observation cycles that will span slightly more than one Mars year of observations. This presentation will give an overview of early mission results, including observations of potential landing sites for Mars Science Laboratory and the Phoenix Mission.

South Bay Astronomical Society

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General Meeting at El Camino College Planetarium:
Friday, March 2nd at 7:30 P.M.

Guest Speaker: Dr. Nicholas Gessler

"Collecting Meteorites"

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South Bay Astronomical Society
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