

FIRST LIGHT



Journal of the South Bay Astronomical Society - January 2004 Rev. B
on line at www.geocities.com/sbas_elcamino

Monthly General Meeting: Friday, January 9th, 7:30 PM

Guest Speaker: Bill Whidden (SBAS)

"South Pole total eclipse"



Presentation of "The Solar System & Beyond" to Peninsula Seniors

I was invited to give a talk about the Solar System to the Peninsula Seniors on Dec. 10th. The talk was entitled "The Solar System & Beyond". The solar system part was to be based on a Power Point presentation I had given before and the "beyond" part consisted of the group of deep sky photos taken by our club members. Since I don't have a laptop and Hesse park, where the talk was held, doesn't have a computer, I had planned to convert the Power Point presentation to .JPG files and show the slides on the TV using my digital camera.

Unfortunately, my camera suddenly quit working. In a panic I tried to generate 35 mm slides by taking photos of my monitor screen but that was awkward and I frequently captured the black band of the TV vertical retrace. Ray Grace came to my aid by graciously (no pun intended) offering to use his camera. Together we put the show on with Ray handling the camera and I did the talking.

There were about 20 to 30 people in attendance. It was well received and afterward we went out on the patio and looked for sunspots through my telescope. There weren't any to speak of, nevertheless people were interested and asked a lot of questions. We didn't have enough time to go into the deep sky stuff, but I had made up some CDs with the photos, both in .JPG and as a .PDF slide show. We offered them at a senior discount price of \$10, sold 4 and made \$40 for the club treasury. Remaining CDs are available to SBAS members at the same price.

- Joe Fierstein

“Astronomy for City Dwellers” Class Begins Jan. 6th

Do you ever wonder which star you're looking at or where the planets are? Have you ever viewed the terrain of the Moon up close? Perhaps you would just like to know a little more about the night sky, without all the math! Learn to recognize some constellations during observing sessions and have fun discussing the solar system and beyond. Mars and Saturn will be visible as well as the Orion Nebula, in the constellation Orion. The next P.V. Adult Education class begins Tuesday, January 6th from 7-9 PM, for six consecutive Tuesday nights. For registration and additional information, call **310-791-4698**.

- Mike Mayerchak

SBAS Support for the Whaley Middle School Star Party

Friday, **Jan. 30th** – We hope to have clear weather this year so we can make this star party a great success for the kids! Last year was clouded out, but the kids were still enthusiastic and attentive in discussing Astronomy and telescopes. **Directions:** Take the 91 eastbound. Switch to the 710 north. Exit Rosecrans and turn LEFT (west). The next block is Gibson; Turn LEFT (south) onto Gibson. The school is at 14401 S. Gibson, the southwest corner of Gibson and Rosecrans. Turn right into the parking lot and drive to the back and continue left around to the back of the school where the expansive PE fields are located. We'll set up the star party there.

December Observing Reports

@Ridgecrest School Dec. 13th - It started out a very clear night for the Ridgecrest School Observing Session. The seeing was very good as well. When Steve Schrier arrived with his classic LX200 10 inch he mentioned that Dr. Leon Palmer from El Camino had invited his class up for extra credit. We had a good turnout of members with their scopes, Bea Collue, Ray Grace, Al Fader, and I had our 8 inch SCTs, Mike Rivas had his 12 inch LX200, and Deanna Chaffee and Jim Madison had their 6 inch and 17.5 inch Dobsonians, respectively. The good seeing allowed the power to be bumped up 250-300 X range. The El Camino students wandered from scope to scope taking notes on what they had seen. Steve gave many of them a whirlwind tour of the sky. Mars showed some detail despite its dramatically reduced size from the recent opposition. Saturn was in beautiful form as it approached opposition later in the month. We were again able to view six moons, but not without some debate. The six stars of the Trapezium were visible in the Orion Nebula. As the moon rose the conditions started to deteriorate. The seeing got much worse and dew became heavy until the fog eventually rolled in.

- Greg Benecke

@Backyard Viewing Sessions

Dec. 13th I wanted to get a look at Saturn tonight since I'm going to be too busy in the next couple of weeks to go on a dark-sky expedition. By about 9:30, Saturn had risen out of the worst of the heat waves and lights of LA and the image was stable. I could easily make out the Cassini Division and the Encke Minima in the outermost ring. What really caught my eye was the alignment of the moons. Tethys, Dione and Rhea were aligned in a straight line to one side of the planet. Seemingly off the polar cap and about twice as far from the planet as Tethys, lay bright Titan. To its right glowing faintly was Iapetus. The arrangement made a miniature copy of the constellation Orion (well, at least from the waist up). Titan stood in for Betelgeuse, Iapetus held the position of Bellatrix, while Tethys, Dione and Rhea formed the equivalent of Orion's belt. It was really a neat thing to see. Makes me wonder how often an alignment like that happens.

I was also checking out my newest filter, a Hydrogen-Beta filter, this evening. It's supposed to help bring out faint nebulas like the Horsehead. Amidst the light pollution around me, it really wasn't much help, except with M42, the Orion Nebula. Even in all the pollution, it brought out some more detail. I was trying to see the double stars among the Trapezium when I saw something move. A faint, unblinking object slowly drifted across the field-of-view (about 11 arcminutes with the eyepiece I was using) moving west to east. It must have been a satellite in a fairly high-altitude orbit. It was after 10 PM when I saw it and most low-earth orbit satellites can only be seen up to about 2 hours after dark. This one must have been pretty high to still be catching the sunlight that long after dark.

Dec. 18th

On the evening of the 18th, I got to see the special treat of a dual Iridium flare. I arrived home just in time and called my kids outside to watch as two magnitude -5 Iridium flares occurred within a second or two of each other within about a 2-4 degrees of each other. That was cool!

- Ken Munson

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, December 8th at 7:30 PM at the home of Joe & Miriam Fierstein. Take Hawthorne Blvd. south past Pacific Coast Hwy. up the hill passing Silver Spur Rd. and Highridge until you get to the light at Eddinghill Dr., then turn right and go downhill to the 'T' intersection at Golden Meadow where you turn left up 2 blocks and turn left on Willow Dr. to 3rd house on the right side from the corner – 7022 Willow Dr., Rancho Palos Verdes.

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 SBAS, c/o John Collins, 1904 Clark Lane #4, 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

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!

January - Comets & Asteroids

It's a pity that the best comets are so low in the western sky. Spring may well bring a couple of good ones. Not much is happening with the asteroids this month. Plenty of flybys but most are too far away for good photography attempts.

Comets Visible:

Name	Constellation	Magnitude
2001 HT 50	Pisces	12 and fading
2002 T7	Pisces-Andromeda-Pisces	8
2003 T3*	Ophiuchus-Sagittarius	7 and fading
2P/Encke*	Ophiuchus-Sagittarius	7

Comets at Perihelion:

	Identification	Magnitude
January 9	58P/Jackson-Neujmin	16.5
January 19	2003 L2	16.6

Near-Earth Asteroid Flybys:

	Identification	Magnitude	Distance
January 15	2001 BE10	13.7	0.06 AU
January 21	2002 AL14	15.4	0.156 AU

*Visible only for a short time after sunset.

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

- Ken Munson

JPL News

- **NASA Scientists Use Radar to Detect Asteroid Force**

NASA scientists have for the first time detected a tiny but theoretically important force acting on asteroids by measuring an extremely subtle change in a near-Earth asteroid's orbital path. This force, called the Yarkovsky Effect, is produced by the way an asteroid absorbs energy from the sun and re-radiates it into space as heat. The research will impact how scientists understand and track asteroids in the future.

Asteroid 6489 "Golevka" is relatively inconspicuous by near-Earth asteroid standards. It is only one half-kilometer (.33 mile) across, although it weighs in at about 210 billion kilograms (460 billion pounds). But as unremarkable as Golevka is on a celestial scale it is also relatively well characterized, having been observed via radar in 1991, 1995, 1999 and this past May. An international team of astronomers, including researchers from NASA's Jet Propulsion Laboratory in Pasadena, Calif., have used this comprehensive data set to make a detailed analysis of the asteroid's orbital path. The team's report appears in the December 5 issue of Science. "For the first time we have proven that asteroids can literally propel themselves through space, albeit very slowly," said Dr. Steven Chesley, a scientist at NASA's Jet Propulsion Laboratory and leader of the study.

The idea behind the Yarkovsky Effect is the simple notion that an asteroid's surface is heated by the sun during the day and then cools off during the night. Because of this the asteroid tends to emit more heat from its afternoon side, just as the evening twilight on Earth is warmer than the morning twilight. This unbalanced thermal radiation produces a tiny acceleration that has until now gone unmeasured. "The amount of force exerted by the Yarkovsky Effect, about an ounce in the case of Golevka, is incredibly small, especially considering the asteroid's overall mass," said Chesley. "But over the 12 years that Golevka has been observed, that small force has caused a shift of 15 kilometers (9.4 miles). Apply that same force over tens of millions of years and it can have a huge effect on an asteroid's orbit. Asteroids that orbit the Sun between Mars and Jupiter can actually become near-Earth asteroids."

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

The Spitzer Space Telescope, formerly known as the Space Infrared Telescope Facility, was officially named today after the late Dr. Lyman Spitzer, Jr. He was 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."

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. Today's initial images revealed 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>

1. 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.
2. 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.
3. 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.
4. 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.

Redrock-Inyokern Road Observing Reports

A few hearty SBAS members converged at the site on Nov. 22, 2003. We knew it was going to be cold from the weather reports, but no one was expecting the low of 15°F that was reached. Things get interesting at that temperature and could be life threatening to the unprepared. Your ice chest freezes, as can your breath on your eyepieces or glasses. The computerized scopes started having problems with their hand controllers and slewing seemed noticeably sluggish. Represented in this category were Craig Gates and Ken Munson with Nexstar 11s, Mike Rivas with his LX200 12 inch, and new member Tim Moore with his brand new LX200 14 inch. Different methods were used for heating the hand controllers including wrapping dew heater straps around the body or strapping a chemical hand warmer to it or using the exhaust plume of a motor home heater. Steve Lindsey's Losmandy G11 with 10 inch SCT and my C8 Deluxe chugged along without complaint. I was surprised to find my Apple iBook still working, especially the display.

The sky was crystal clear though the seeing was only moderate. Mars was showing a clearly less than full phase and detail was hard to see, though a polar cap was visible. The Veil Nebula was spectacular. Saturn was quite a sight with six or seven moons visible depending on aperture, the most I had ever seen. In addition to the SBAS contingent, there were a few other astronomers there we had met before. Art, a professor at UCLA, had his f/4.5 20 inch Dobsonian. Clearly the highlight of the night was viewing the Horsehead Nebula through this scope with the aid of a Hydrogen Beta filter. Craig borrowed the filter to try on his 11 inch SCT, but you had to use a bit of imagination to conclude that you really saw the nebula.

- ***Greg Benecke***

The weather predictions were for clear skies but cold temperatures in the mid to high 20's and winds gusting to 20 miles/hour. By the time I got to our site, there wasn't a breath of wind but the temperature was about 35 degrees F and falling. It continued to drop until it finally bottomed out at 15 degrees F around 10:00 PM and stayed there all night. Fortunately, Craig Gates' motor home generator provided a warm exhaust to thaw things in so we could get something to drink. Around midnight, I began to have trouble with the hand controller as other people who've done observing in cold weather have reported. It began to get very slow, scroll continuously and finally locked up with a bunch of gibberish in the display. Fortunately, thanks to Celestron, I have two hand controllers and was able to switch to the spare and continue observing. The one that locked up happens to also be the one my dog thought was a new chew toy so that may have something to do with it. Wrapping an extra heater strip around the controller kept it just warm enough to keep it from failing. It was slow and I had to be very careful when pressing the buttons but it worked.

The skies overhead were clear and the seeing conditions good but not excellent. Once things got above the 30 degrees elevation, the seeing improved remarkably. I managed to find all three of the nights major comets: 2P/Encke (fairly bright, around magnitude 8 or 9), 2001 HT50 (a very faint gray smudge barely seen at nearly 12th magnitude and 2002 T7, which seems to have faded to 10th or 11th magnitude since I first sighted it a month ago. At about 7:30 PM we were treated to a special show as a large piece of space debris re-entered the atmosphere. It came in just west of the Little Dipper and streaked across the sky all the way to the southern horizon. It trailed a long tail of flaming debris with a 2nd large piece that broke off following behind. My guess is that it was probably a rocket booster stage. It made an incredible sight. Another treat was a late-arriving Leonid meteor made a spectacular appearance. I was lucky to be looking at the patch of sky where it entered and saw the brief blazing trail that abruptly ended in an incredibly bright flash. Other people who hadn't seen it saw their shadows on the ground.

I saw NGC 2335, in Monoceros, a small open cluster that probably wouldn't be noteworthy by itself, but what interested me about it was the noticeably thick band of dark nebula near it. I found out later that this cluster is part of a large nebula called the Seagull Nebula. NGC 2343, also apparently part of the Seagull Nebula area was interesting for a different reason. It's a very small open star cluster that is, strangely enough, in the shape of a star! I had a good look at M46 again, it's a real gem of a cluster and the N11 really made that planetary nebula within the cluster apparent. I used the OIII filter to bring out some contrast and was surprised to see that it appears to be another ring-shaped nebula. Saturn was really magnificent once it got high enough and I was actually able to see at least 5 or maybe 7 of the moons.

I finally gave up fighting the cold and got in the car to wrap up in a blanket around 3:30 AM. I left the scope running and aimed at Jupiter, just a blurry smear for a long time, and when I got up just as dawn was breaking, Jupiter was finally high enough to see clearly. The detail was very good and numerous cloud bands could be seen even in the growing light of dawn.

- ***Ken Munson***

Schedule of Coming Events

9 January Friday 7:30 P.M.	Monthly General Meeting: Bill Whidden (SBAS) will discuss "South Pole total eclipse".
12 January Monday 7:30 P.M.	Monthly Planning Meeting Refer to page 3 for directions to Joe Fierstein's house.
16 (PCC) January 7:00 P.M.	Von Karman Auditorium Lecture Series – FREE "The Northridge Earthquake – Ten Years After" is presented by Patrick Abbot, Professor of Geological Sciences at SDSU and Ron Bloom, JPL Geologist and Remote Sensing Specialist. For more information call: (818) 354-0112. Current and archived webcasts can be viewed at http://www.jpl.nasa.gov
17 January Saturday Evening	In-Town Dark Sky Observing at Ridgecrest School – Weather Permitting: 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. Drive with care to avoid steel pillars supporting basketball nets...
24 January Saturday Evening	Out-of-Town Dark Sky Observing – New Moon Jan. 21st Contact Greg Benecke to arrange site location.
30 January Friday Evening	Whaley School Star Party See page 2 for instructions and directions to the school.
6 February Friday 7:30 P.M.	Monthly General Meeting: The speaker for the evening will be announced in the February Newsletter.
9 February Monday 7:30 P.M.	Monthly Planning Meeting The location of this meeting will be announced in the February Newsletter.
14 February Saturday Evening	In-Town Dark Sky Observing at Ridgecrest School – Weather Permitting. Refer to January 17th entry for directions to the site & instructions on weather conditions.
21 February Saturday Evening	Out-of-Town Dark Sky Observing – New Moon Feb. 20th Contact Greg Benecke to arrange site location.
25 February Wednesday Evening	Montemalaga School Star Party SBAS will set-up at 4:30 PM, then dinner will be served at 5:30. The star party begins at 6PM!

South Bay Astronomical Society

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**General Meeting at El Camino College Planetarium:
Friday, January 9th at 7:30 P.M.**

Guest Speaker: Bill Whidden (SBAS)

“South Pole total eclipse”

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South Bay Astronomical Society
c/o John Collins
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