

FIRST LIGHT



Journal of the South Bay Astronomical Society - January 2003
on line at www.geocities.com/sbas_elcamino

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

Guest Speaker: Mr. John Dobson

"An Evening with John Dobson"

SBAS Supports the P.V. Art Center "Exploring the Cosmos"



From left to right: Jim Madison, Greg Benecke, Dan Trimble, Ron Rennie, Bill Eisele, Mike Mayerchak, Al Fader (not shown – Steve Lindsey and Joe Fierstein) at the Palos Verdes Art Center.

On Jan. 17, 2003, the SBAS hosted a star party in conjunction with the opening night of "Exploring The Cosmos" Art Festival at the Palos Verdes Art Center. Nine member of the SBAS brought their scopes including one 14 inch and three 8 inch SCTs, 6 and 13 inch Dobs, an ETX, a 6 inch APO refractor, and a couple of binoculars. The moon was full and so was the intensity of the parking lot lighting. Fortunately, they were able to turn out the flood lights in the viewing area. After the opening night presentation by Chris Butler, the Art Center guests enjoyed the views of the full Moon, Saturn, Jupiter, and some star clusters and other sights. Despite variable clouds that hampered transparency, the seeing at the zenith got steadier as the night progressed. Eventually, Saturn was coming in very nicely. Its moons were pinpoints through Mike's APO. We watched a complete occultation of Europa by Callisto as the Great Red Spot was swinging into view. For many of the guests this was their first view through a telescope. There was more than one exited outburst heard throughout the crowd that evening.



The star party was a great success, not only from the club's perspective ie: clear skies and a very appreciative audience, but also from the artistic and astronomical side. The evening started with a lecture by Chris Butler a local artist and space enthusiast. Chris talked to our club some time ago about his involvement in the shuttle program. This time he took us on a different kind of journey. Using artistic skills and great imagination he took us on a visual trip through space to different planets and stars within our local galaxy; all within the bounds of scientific knowledge (thanks to computers and planetary programs). It was an exciting voyage and many in the audience were astounded when we actually showed them some of those objects in our telescopes. In addition Bill Hood, an accomplished astrophotographer, had an exhibit of his work which combined not only great photography, but also great imagination. In fact, imagination was the underlying factor that united all of this cosmically oriented work. Lita Albuquerque, who designed the "Stellar Axis" for the PV Library was represented by a series of glass etchings featuring star charts and ephemeral backgrounds representing communication with extraterrestrials. SBAS also has a small display and slide show running. It was a great show and I recommend it highly for both its artistic and astronomical interest. It is free and will be open through March 8th.

- Joe Fierstein

SBAS to Participate in Montemalaga School's "Star Party"

SBAS members will be gathering at for the "Star Party" Thursday evening, **February 20th**. The school is on the top, back side of the hill with no street lights so viewing should be great. "Come early for a complimentary dinner and we will be happy to make a donation to your group. Thank you so much, we are very excited!" Cathy Webster, Event Coordinator. **Directions:** Take Hawthorne Blvd South to top of peninsula. Turn right at Grandvia Altimira (there's a 7-11 on the corner). Go 5 blocks to Via Visalia turn right. Go to bottom of small hill, 3 blocks, turn right on Via Nogales. The school is on left side of Via Nogales.

Your 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 who are 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 10th 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 subscriptions, at club rates, to "Sky & Telescope" at \$29.95 and \$29.00 for "Astronomy" magazines! Make your check payable to SBAS and mail payment and your subscription / renewal form directly to SBAS c/o Microcosm, Inc. at 401 Coral Circle, El Segundo, CA 90245-4622.

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!

Thanks to Bill Eisele for the new battery to provide a longer power supply for the Nexstar! He becomes the newest addition to "**Friends of the Nexstar**", the group of members who have donated equipment or accessories for the SBAS telescope, who have been granted the privilege of a waiver of the deposit & fee for borrowing the Nexstar8.

Redrock State Park Meeting Report

On Jan 18, 2003, Bill Eisele and I made the three hour drive to the Ridgecrest City Council Chambers for the second Public Meeting on the General Plan Amendment for the Last Chance Canyon Addition to Redrock State Park. As at the first meeting, we represented the only voices advocating unaltered access to the viewing site on Redrock Inyokern Road. Three alternate plans were presented by the State Parks authorities. One had the Redrock Inyokern Road area designated as a Focused-Use zone, which would allow for some development of campsites and facilities. The other extreme had the area designated a Sensitive Resource zone which would likely prevent overnight access of any kind. The plan for which we expressed support designated the area a Primitive zone which would allow limited primitive camping in designated areas. I pointed out that the site was listed in Sky and Telescope as one of the 10 best viewing sites in Southern California and I explicitly expressed our desire to keep the same kind of access we have now. The majority of those in attendance were representing hikers, preservationists, hunters, off-roaders, equestrians, miners, the movie industry, bird watchers, etc. There were many divergent views expressed. Truly democracy in action.

- Greg Benecke

Updates on SBAS Observatory Trips

Our trip to the Mt. Wilson Observatory on Saturday, May 3rd has been confirmed and there are only four openings left for an SBAS member to sign up!!! The members who attended the January Planning Meeting have decided on our 1st, 2nd & 3rd choice dates and times for the Mt. Palomar Observatory's educational tour application. We will publish the final arrangements when the schedule has been approved.

Interesting & Useful Websites

For Vandenberg AFB missile launch information and updates: <http://spaceflightnow.com> and check on the progress of Dr. Perry Hacking's 42" Project at: <http://www.elcamino.cc.ca.us/faculty/phacking/42inproj.htm>

Ridgecrest School Observing Report

We had a good turnout at Ridgecrest School on Jan. 25, 2003. Scopes were brought by Al Fader, Ken Munson, Mike Rivas, Jim Madison, Bob Baker, Joe Fierstein, Craig Gates, Tom Aspargo and myself. The scopes included an ETX, 6 and 17 inch Dobs, 5, 8 and 12 inch SCTs, and an Orion Maksutov-Cassegrain. Craig brought a neighbor family whose kids were excited to see the sights. As the night progressed there were periods where the seeing was quite good. We had some excellent views of Saturn and were able to make out 5 (yes 5) moons of Saturn in the 8 inch and larger instruments. That's a first for me! Later we watched as Callisto emerged from behind Jupiter. Ken was splitting doubles he had never been able to split before in his 5 incher. We went galaxy hunting for a while and were able to find a number of 9-10 magnitude galaxies. Collimation became a theme for a while as we tweaked or checked several of the scopes. The major image improvements obtained were from adjustments which reinforced how important it is to ensure that our instruments are well collimated. Last but not least, the floodlight is now on a timer and goes out at 8:00 P.M. It was nice to have the dark schoolyard back!

- Greg Benecke

White House Supports NASA's Nuclear Space Initiative (NSI)

NASA chief, Sean O'Keefe has confirmed White House support for the space agency to accelerate work on space nuclear power and propulsion, as well as grapple with the challenges of extended long-duration human spaceflight. O'Keefe discussed a speed up in several space research areas, saying that President Bush's release on February 3 of the space agency's Fiscal Year 2004 budget will carry "a number of very important initiatives", central to the agency's future directions. "There are a couple of themes to be on the lookout for," O'Keefe said. First and foremost, he said, is an acceleration of work on power generation and propulsion capabilities, to be undertaken through Project Prometheus. A second theme, O'Keefe noted, is taking on a list of daunting medical issues related to long-duration human space travel. "We are beginning to discover what in many ways our Russian cosmonaut colleagues and the Russian Space Agency have known from their experiences in the past," O'Keefe said. The consequences of longer duration spaceflight have some "really serious consequences," he added, noting bone and muscle loss caused by long-term stints in microgravity, as well as increased radiation exposure.

Project Prometheus, a multi-pronged nuclear effort, includes development of a space nuclear reactor. Given the power levels attainable with that capability, NASA will attain flexibility in selecting future exploration objectives. The program would develop new types of radioisotope thermoelectric generators (RTGs), as well as perform research on nuclear propulsion. An early target for the money is fabricating a new generation of multi-mission RTGs that use heat created by the natural decay of Plutonium-238 to generate electricity. In the past, these devices have been used in a variety of deep space missions, such as the Galileo mission to Jupiter, as well as onboard the now enroute Cassini spacecraft to Saturn. A Kuiper Belt – Pluto spacecraft expected to be launched in the 2006-2007 time frame would also be RTG powered. Nuclear propulsion technology would not only support robotic exploration of the Solar System, it could open the door for more rapid human access to targets beyond low Earth orbit. Nuclear power reactors will be essential for Mars base surface power including powering life support hardware, ultra-high data rate communications and making on-the-spot propellants.

In other topics, O'Keefe touched on the Orbital Space Plane (OSP). Over the next 18 months, a number of alternative designs and approaches are to be reviewed. That work will involve industry input, as well as NASA experts. Beyond that 18-month period, an OSP developmental phase will include flying test hardware over a three-year period. An initial ability of an OSP to take on crew return and transfer duties at the International Space Station is targeted for decade's end. A fully operational fleet of space planes -- the number yet to be determined -- is eyed to be up and running in the 2010 to 2012 time frame. "We'll have a better grip on that in the next 18 months," O'Keefe said. Meanwhile, NASA is on a "vigorous schedule" to identify the appropriate upgrades and capability improvements to the existing Space Shuttle fleet, he said, better using those craft for cargo hauling and heavy-lift assignments.

O'Keefe underscored his excitement over the newly announced NASA Educator Astronaut Program. More than 600 teachers have been nominated to become permanent members of the Astronaut Corps. NASA web sites that carry information about the program have already been accessed by some 200,000 people. Reaction to the recruitment effort has been "overwhelming," O'Keefe said, clearly indicated the tremendous drawing card that is NASA. Submissions will be accepted until the end of April, beginning of May.

- SPACE.com

Astronomers Find a Hero

Heroes are usually confined to comic books and movies, but as the saying goes, we all need one. So astronomers have turned to the deep, dark cosmos to find their heroic figure -- the "Hyper Extremely Red Object," or "Hero." At the American Astronomical Society winter meeting in Seattle recently, an astronomer from the California Institute of Technology in Pasadena reports the discovery of a Hero near the radio galaxy 53W002, more than 10 billion light years away. This marks the first time a Hero has been found near a radio galaxy, suggesting that radio galaxies -- which are optically dim but have strong radio emissions -- may provide a guidepost for scouting out other Hero objects.

"Hero objects are intriguing. Like comic book heroes, they travel really fast -- almost at the speed of light. They are virtually invisible to our eyes and they are very mysterious. Most importantly, this type of Hero may hold a key for understanding how the first galaxies formed and evolved in the universe," said Dr. Myungshin Im, a staff research scientist at the Space Infrared Telescope Facility Science Center, located at Caltech. So far, the astronomical version of a hero has taken on the unassuming guise of a small, glowing, red patch in deep space. More advanced infrared telescopes like NASA's Space Infrared Telescope Facility, managed by the Jet Propulsion Laboratory, Pasadena, Calif., and launching in spring 2003, may, among other things, lift this red veil and reveal these remote objects for what they really are -- quite possibly the universe's earliest stars and galaxies.

Due to expansion of the universe after the Big Bang, a distant object in the universe races away from us so fast that any visible light from it "redshifts" -- in other words, a light source becomes redder when it recedes from observers on Earth, and, conversely, bluer when it approaches. So when a visible light source moves away from us at nearly the speed of light, it often appears in infrared wavelengths. Big Bang theory also implies that the farther away an object is, the faster it moves away from us. 53W002_HERO1, the designation for the newly found Hero, is so far away and moves so fast it appears as a faint infrared source. In fact, it took two powerful telescopes equipped with infrared cameras to spot it in the deep sky. Im discovered 53W002_HERO1 from images taken by the near-infrared camera and multi-object spectrometer on NASA's Hubble Space Telescope and the cooled infrared spectrograph and camera attached to the Subaru 8-meter (26-foot) telescope atop Mauna Kea in Hawaii. Dr. Toru Yamada and collaborators at the National Astronomical Observatory of Japan provided Im with the Subaru data.

The more distant a cosmic object is, the further in the past we see it. For Im and colleagues to glean information about the early universe from 53W002_HERO1, they first need to determine its intrinsic color -- that is, how would this astronomical hero appear to a human observer nearby? It could be red, indicating either dust-obscured galaxies cocooning intense star formation, or older galaxies filled with an over-abundance of elderly, reddish stars, both of which would lie about 10 billion light-years away. If the former condition exists, astronomers will appreciate the degree to which dust hid star formation during that epoch. However, if the latter holds, then scientists can trace back to a time when a significant population of stars were born. Another possibility is that a Hero might really be blue -- a very young galaxy populated with fresh, super-hot blue stars at a distant 13 to 14 billion light years. In this instance, we may be witnessing the formation of the universe's very first galaxies.

To determine whether 53W002_HERO1 is intrinsically red or blue, Im and his colleagues will peer at these mysterious objects in the redder part of infrared, a feat that requires a view from above Earth's infrared-absorbing atmosphere. This will be accomplished with the Space Infrared Telescope Facility. Images of 53W002_HERO1 are online at - <http://spider.ipac.caltech.edu/staff/myung/hero.html> and more information on the Space Infrared Telescope Facility is available at <http://sirtf.caltech.edu/>

Desert Sunset Star Party - May 1-4, 2003

The Desert Sunset Star Party (DSSP), scheduled for May 1st-4th at the Kartchner Caverns State Park in Benson, AZ will include vendors, demonstrations, a Simple Astronomy Tool (SAT) Contest and door prizes. Presentation topics will include identifying stars, supernovae, Mars and the weather in the southwest. Catered meals can be ordered for Thursday & Saturday nights -- and there is a Friday Night Pizza Party. You can arrange day trips to visit Kitt Peak National Observatory, the Univ. of AZ Mirror Lab and Flandrau Planetarium, the Pima Air and Space Museum, Titan Missile Silo Museum, Biosphere 2 Center, and many non-astronomy related sites such as the Arizona Sonora Desert Museum, Old Tucson, Tombstone, and much more. If you plan to tour Kartchner Caverns (advanced registration is required for this very popular tour) you can access the Cavern tours through our Day Trip links for details). For additional information and registration forms: <http://chartmarker.tripod.com/sunset.htm>.

Schedule of Coming Events

1 February Saturday Evening	Out-of-Town Dark Sky Observing Trip – New Moon Contact Greg Benecke to arrange dates and site locations.
7 February Friday 7:30 P.M.	Monthly General Meeting: Our celebrated speaker of the evening will be Mr. John Dobson!
10 February Monday 7:30 P.M.	Monthly Planning Meeting See page 3 for location and directions.
20 February Thursday 6:00 P.M.	Monetamalaga Elementary School “Star Party” Come early for dinner before we setup! Details can be found on Page 2.
20 (JPL) 21 (PCC) February 7:00 P.M.	Von Karman Auditorium Lecture Series – FREE “New Weather and Climate Tools for the 21 st Century” Dr. Moustafa Chahine, JPL senior research scientist & science team leader for the Aqua spacecraft sounding system: benefits of the mission, which is observing Earth’s weather and water cycle in unprecedented detail. For more information call: (818) 354-0112
22 February 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.
1 March Saturday Evening	Out-of-Town Dark Sky Observing Trip – New Moon Mar. 3rd Contact Greg Benecke to confirm scheduled date and site location.
7 March Friday 7:30 P.M.	Monthly General Meeting: Speaker to be arranged at a later date.
10 March Monday 7:30 P.M.	Monthly Planning Meeting Location to be scheduled.
22 March Saturday Evening	In-Town Dark Sky Observing at Ridgecrest School – Weather Permitting. Refer to February 22nd entry for directions to the site & instructions on weather conditions.
29 March Saturday Evening	3rd Annual SBAS Messier Marathon – New Moon Apr. 1st We plan to hold our annual marathon at the Inyokern Redrock Rd. site. More details will be published in the March newsletter.

South Bay Astronomical Society

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

Guest Speaker: Mr. John Dobson

“An Evening with John Dobson”

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South Bay Astronomical Society
c/o Microcosm, Inc.
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