FIRST LIGHT

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

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

Guest Speaker: Dr. Gary Peterson

"Meteorites and Other Space Debris"

The August 3 Meeting

Vice-President Greg Benecke began the meeting at 7:50, after a delay in opening the Planetarium doors. Joe Fierstein described a nine-acre parcel of land in Rolling Hills that includes a house and observatory. The new owners have asked for our help in showing them how to run the Compustar program that controls their observatory's Celestron 16 inch telescope. A sign-up sheet was then passed around for the Mt. Wilson 60-inch observing run on the evening of April 5, 2008.

After a five-minute social break, Greg Benecke gave the evening lecture, "Telescope Optics Evaluation Using the Roddier Test". A star seen through a telescope with perfect optics forms a tiny disk with faint diffraction rings around it. Unfortunately, real telescopes contain imperfections such as spherical aberration of the primary mirror and misalignment of the optics, which degrade the image. When the eyepiece or camera is shifted inside and outside the focal point, the out-of-focus image varies in appearance depending on which imperfections are present in the system.

Greg began by running a computer program that calculates and then pictures what the focused and out-of-focus images would look like, once the program was given the parameters of the telescope and the amounts of imperfection the system was assumed to have. He then demonstrated a much more useful and remarkable computer program, that reads in two out-of-focus pictures of a bright star taken by a ToUCam 740 Pro CCD camera, with one picture taken inside the focal point and the other taken outside, and from these images calculates the nature and amount of the various imperfections. Such an evaluation is called the Roddier Test.

For example, the program deduces the shape of the primary mirror's surface from the two images, and calculates the shape of the perfect mirror closest to that of the real mirror. By comparing the two surfaces mathematically, the program calculates the maximum deviation above and below the ideal surface (peak-to-valley), and the typical distance from one surface to the other (root-mean-square). The program also calculates how much spherical aberration and coma the real mirror possesses. The Strehl Ratio is the ratio between the amount of energy the real mirror brings to the central maximum of a bright star's image, and the amount of energy an ideal mirror would bring to the central maximum. An ideal mirror would create a Strehl Ratio of 1.00, and knowledge of this ratio for a real telescope gives a good clue as to how much one's images are being degraded.

The 36-minute movie "Building the Coolest X-Ray Satellite: Astro-E2" was shown to the 30 members still in attendance, and the meeting ended at 9:52.

- Dr. Steven Morris

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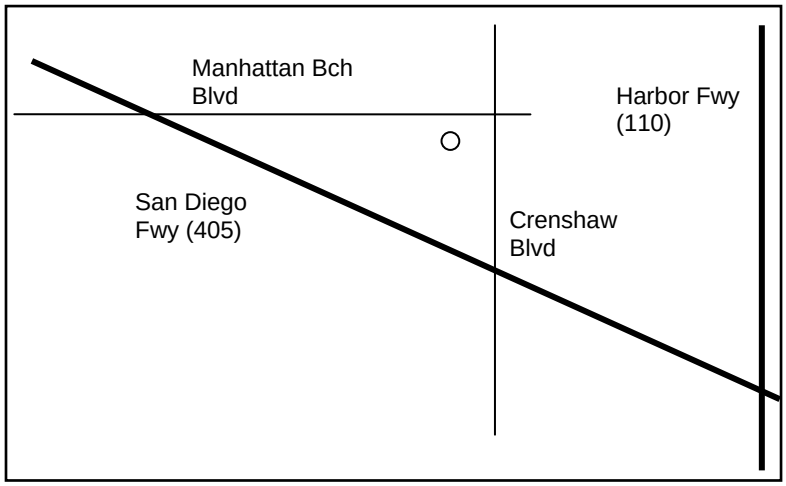

Monthly General Meetings

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 September 7th planning meeting will be held 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 Tree Dr. to 3rd house on the right side from the corner – 7022 Willow Tree Dr., Rancho Palos Verdes.

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!

SBAS Membership News

The Board will be presenting to the membership the need for a dues increase. The new dues proposed are $35.00 for membership including family membership with First Light by email, $40.00 if you choose postal service delivery, and $25.00 for students. The dues cover the first light mailings, post office box, insurance, various memberships to national and international astronomy organizations, such as, the Astronomical League, and the International Dark Sky Association. We also give to El Camino College a yearly donation and awards to the top students. Our speakers also receive an honorarium. The dues increase will be presented at the next meeting and a vote taken at the October meeting. If approved, the dues increase will be effective November 1, 2007. Per the club Bylaws, a 2/3 majority is required of those attending the October meeting when it is voted on.

The newsletter should announce that the yearly vote for club officers will be held in November. At the September meeting a nomination committee will be appointed by the President. That nominating committee will solicit interested individuals to put their names in nomination by the October meeting, with the election in November. Anyone interested in serving on the nomination committee have them contact Ken Rossi at 310-650-1388 or by email at ken_a_rossi@yahoo.com.

Attention members and prospective members! See the website http://www.geocities.com/membership.html for Membership Application forms, Renewal notices, Dues Schedule and Change of Address.

How about receiving the FirstLight via email? It will help reduce the cost of postage and printing. If you would like to receive the FirstLight via email, call or E-Mail to Ray Grace, Membership Committee.

RASC Handbook

We will be collecting monies at the September and October meetings for individuals who wish to purchase the 2008 edition of the Royal Astronomical Society of Canada's (RASC) handbook. The cost is $17.95. Individuals who cannot attend these meetings should send a check, made payable to SBAS, for $17.95 to the PO Box. All monies must be received by October 15th when the order will be placed.

Astronomy Day at PV Farmer's Market

On September 16th, SBAS will present another daytime observing session at the PV Farmer's Market. A sign-up sheet will be provided at the September meeting for those who are able to support this outreach activity.

September – Comets & Asteroids

Visible Comets:

Comet	**Mag**	**Constellation(s)**
None		

Asteroid Occultations:

Event Summary for Torrance

Date	Local Time		Durn	Star	Mag	Star	Planet	
y m d	Hr	Min	m/sec	mag	drop	No.	No	Name
10-Sep-07	1	54.2	2.0s	9.8	5.4	TYC 1328-00122-1u	585	Bilkis

Planetary Occultations:

Date	Local Time		Durn	Star	Mag	Star	Planet
	Hr	Min	m/sec	mag	drop	No.	Name
31-Aug-07	5	10.7	1.1s	11.3	1.8	TYC 1292-00576-1u	Phobos

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

Southern California Astronomy Exposition 2007

SCAE 2007 has come and gone. Though I didn't make it to the first Saturday of the event, I sure had lots of fun on the second Saturday the 28th of July. The drive that should have taken me 1 hour and 15 minutes according to Yahoo! maps actually took me 2 hours and 30 minutes. But it was worth it. Parking was no problem around the corner and it sure was cooler than back home. We weren't going to miss the raffle so the first order of business was retrieving our raffle tickets. With tickets in our pockets it was time to look around. I felt like a child in a toy store and didn't know where to begin. Lots of vendors with their latest offerings. First stop was the Stellarvue booth. I was interested in getting a close up view of their new SV102ED refractor. Very nice views, nice scope!

I left my Meade SC8 at the Meade booth for my free cleaning/checkup while my two sons (Jonathan and Brian) and I formed in line for the free pizza lunch. Thanks OPT! After making our rounds around the vendors and taking some of the free goodies it was off to the store. I like OPT, the employees are helpful and they have lots of scopes on display. I saw Steve but didn't get a chance to say Hi to him. I missed the Meade seminar on CCD imaging but made it to the Yankee Robotics seminar - CMOS Revolution and the Astrodon seminar - Narrowband Imaging. They were very interesting and informative.

The raffle was great with lots of great prizes. I won a $50 gift certificate from AstroZap but the highlight of the day was when we won the Orion 80mm ED refractor/CCD package worth $1200. Not bad for a 2 hour and 30 minutes drive. It was well worth it. Can't wait for SCAE 2008! We'll be there with our raffle tickets.

- Freddie Limas

Publication for Amateur Astronomy Outreach

The Astronomical Society of the Pacific, a Meade 4M Community Alliance Organization, is announcing a new book, Science Educators Under the Stars: Amateur Astronomers Engaged in Education and Public Outreach, (Astronomical Society of the Pacific, 2007), paperback, 124 pages. Edited by Michael G. Gibbs, Marni Berendsen, and Martin Storksdieck. Foreword by Terry Mann. contributing authors: Marni Berendsen, Michael Gibbs, Jim Kaler, Judy Koke, David Levy, Mike Reynolds, Scott Roberts, Tim Slater, and Dan Zevin.

Science Educators Under the Stars: Amateur Astronomers Engaged in Education and Public Outreach is the first comprehensive treatise of the amateur astronomer's role in communicating knowledge and passion about astronomy to the public. The book reviews the topic from many angles: it characterizes the nature of education and public engagement with astronomy that amateur astronomers are currently doing; it features projects and organizations that support and aid these practices; it discusses the potential impact on the public and on astronomy and amateur astronomers; and it embeds these pieces into a larger framework of astronomy education as a whole. The book also provides a summary of research conducted on amateur astronomers engaging in education and public outreach along with presenting new research findings on women in astronomy.

The book is $10 plus postage and is available this September through the ASP's ASTRO Shop located online at www.astrosociety.org/aspbook.html (product number BO 432). One hundred percent of the proceeds from the book will be donated to support the ASP's mission-based programs.

Google Sky

On August 22nd, the media announced to the world the launch of Google Sky.

Google Sky is a feature of the Google Earth platform and uses the same easy-to-use interface to search and zoom in on stars, planets, and deep sky objects. The high-resolution imagery is supplied by Hubble. Click on an object and Google Sky will produce lots of information about the object.

Google Sky is sure to attract the interest of many people who are interested in space and science, and if you are interested in Google Sky, we invite you to join Google Sky on Yahoo at tech.groups.yahoo.com/group/googlesky.

To learn more about and download Google Sky, go to: http://earth.google.com/sky/skyedu.html

Observing Reports

Ridgecrest School - The Ridgecrest outing was a wash due to fog. However, a number of individuals from the general public showed up and Greg Benecke presented his power point presentation that he gave at the general meeting from his laptop for the enjoyment of the public. Joe also had a CD of a presentation from JPL that was played on Greg's laptop while we waited in vain for the sky to clear. The members that showed up with scopes that were not even taken out and set up were Ken Rossi, Greg Benecke, Freddie Limas, Dennis Robertson, Steve Pederson, and Joe Fierstein. By 10 PM we were heading home.

- ***Ken Rossi***

Pleiades with Perseid Meteor by Greg Benecke

Inyokern Road – Greg Benecke, Steve Lindsey, Ken Rossi and I made the trek out to the Inyokern Road observing site at Redrock Canyon State Park. What a difference from last month! The sky was beautifully clear and crisp with excellent seeing conditions as the sun set. I did a dummy alignment on my scope and then re-aligned using the sun and then went to find Jupiter as another alignment point. That worked well and I was surprised to see how much detail was visible on Jupiter even before the sun went down. As twilight began, I reconfigured for doing some photos of Jupiter with the DSI. I was really surprised at the amount

of detail I got almost immediately. Not only was the Great Red Spot nearly dead center but a shadow was clearly visible in the photo which I hadn't noticed when doing the visual observations. A quick check of Starry Night and I found that it was Io's shadow.

Once a few more stars came out, I got ready to test a new piece of software. WCS, short for WebCam Sheinern, is a program that was written to help with doing polar alignments by using a webcam, DSI or one of several other cameras to provide a precise measurement of the drift and then compute the necessary amount of azimuth or elevation movement needed to align the scope with the earth's axis. Alas, it did not work for me. Although it apparently detected the DSI, I could not get an image on-screen no matter what I did. Both the DSI software and the PHD Guiding software were able to produce images so I don't know what the problem was with WCS. After about half and hour I gave up on it and went back to manually doing a drift alignment.

Most of the night was devoted to experimenting with the PHD Guiding software to do photography with my Nikon D100. Here again, the results were rather disappointing. Using settings that, in the past, had produced some reasonably good pictures, I had no luck at all. Usually a 30-second exposure would show some signs of the target, but this time even 5 minute exposures barely brought out any stars! I had better luck in my back yard! Obviously, I'm going to have to do some more experimentation.

Eventually, my camera batteries all went dead so I settled in for some visual observing. After all the excitement of finally having an autoguided platform, I had kind of forgotten the simple pleasure of seeing deep sky objects. It was nice to, once again, just spend a couple of hours visiting some of the Messier Objects (M2, M15) and various open clusters and nebulae. One of the more surprising ones was NGC 246 in Cetus. I don't recall having seen this one before although it has always shown prominently on my star maps. I can see why now. Although it's a very large planetary, it's rather faint and hard to see, although it is listed as being magnitude 8.

Of course, this was also the last night before the peak of the Perseid Meteor Shower. We saw quite a few meteors throughout the night. Although there were a few really bright ones, most were pretty dim. The brightest one that I saw was apparently not even a Perseid. It came streaking in from south to north and flared very brightly for just a second or two before disappearing. Although I didn't get to see the peak of the shower, it was nice to see so many in a single night. I couldn't help but cringe a little bit, though, when I thought about all the billions of dollars worth of vital spacecraft assets that are now orbiting the earth, fully exposed to these little cosmic bullets.

Since he was the only one of the five that was looking at objects and not photographing Ken Rossi had a pretty lengthy list of the objects seen using his 12 inch Dobsonian. He ran through 40+ Messier and NGC objects through the night plus Jupiter with the shadow of Io cast on its surface and the great red spot. The objects were observed in the constellations of Capricorn, Sagittarius, Scorpius, Cetus, Scutum, Perseus, Andromeda, Pegasus, Hercules, Lyra, Triangulum, Cassiopeia, Sagitta, Sculptor and Corvus.

-Ken Rossi, Greg Benecke & Ken Munson

Schedule of Coming Events

1 September Saturday Night	**In Town Dark Sky Observing Session at Ridgecrest Middle School–** 28915 NortbBay Rd. RPV, 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 <u>not</u> 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.**
7 September Friday Night 7:30 PM	**Monthly General Meeting** Speaker: Dr. Gary Peterson Topic: Meteorites and Other Space Debris
8 September Saturday Evening	**Out of Town Dark Sky Observing Session** Contact Greg Benecke to coordinate a location.
10 September Monday Night 7:30 PM	**Monthly Planning Meeting** Location: See Page 4.
16 September Sunday Morning	**Astronomy Day at Palos Verdes Farmer's Market** Located at the Rolling Hills Shopping Center, at the intersection of Hawthorne Blvd and Silver Spur Road. Setup begins about 7:30 AM and the Market runs from 8 AM to 1 PM.
20 September Thursday Evening	**Von Kármán Auditorium (Thursday) & Vosloh Forum at Pasadena City College (Friday)** "Voyager: 30 Years in Space" Dr. Alan Cummings. Launched in 1977, the twin Voyager spacecraft were assigned an ambitious mission — to explore the giant outer planets. Both spacecraft flew by Jupiter in 1979 and Saturn in 1981. Voyager 1's flight path at Saturn bent away from the ecliptic plane, while Voyager 2 continued on to encounter Uranus (1986) and Neptune (1989). Both Voyagers are now heading out of the solar system, with enough onboard resources to continue sending data until at least 2020.

South Bay Astronomical Society

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

Guest Speaker: Dr. Gary Peterson

"Meteorites and Other Space Debris"

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South Bay Astronomical Society
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