FIRST LIGHT

Journal of the South Bay Astronomical Society - June 2005
on line at www.geocities.com/sbas_elcamino

Monthly General Meeting: Friday, June, 3rd, 7:30 PM

Guest Speaker : Dr. Steven Morris (SBAS)

"Einstein's Theories of Relativity 2"

NOAA-18 Launched from Vandenberg

One of the benefits of living in the Los Angeles area is that we can watch rocket launches from Vandenberg Air Force Base. The most recent launch was on Friday May 20 at 3:22 PDT in the morning. I have a moderately-good western horizon from my backyard, so observing a launch is convenient. Of course, "convenient" is a relative term. Many of these launches are of military satellites, which are often not announced beforehand, and even the launches that are publicized are often scrubbed (NASA-speak for "delayed"), sometimes at the last minute. Indeed, it is difficult to describe anything scheduled to occur at 3:22 in the morning as "convenient".

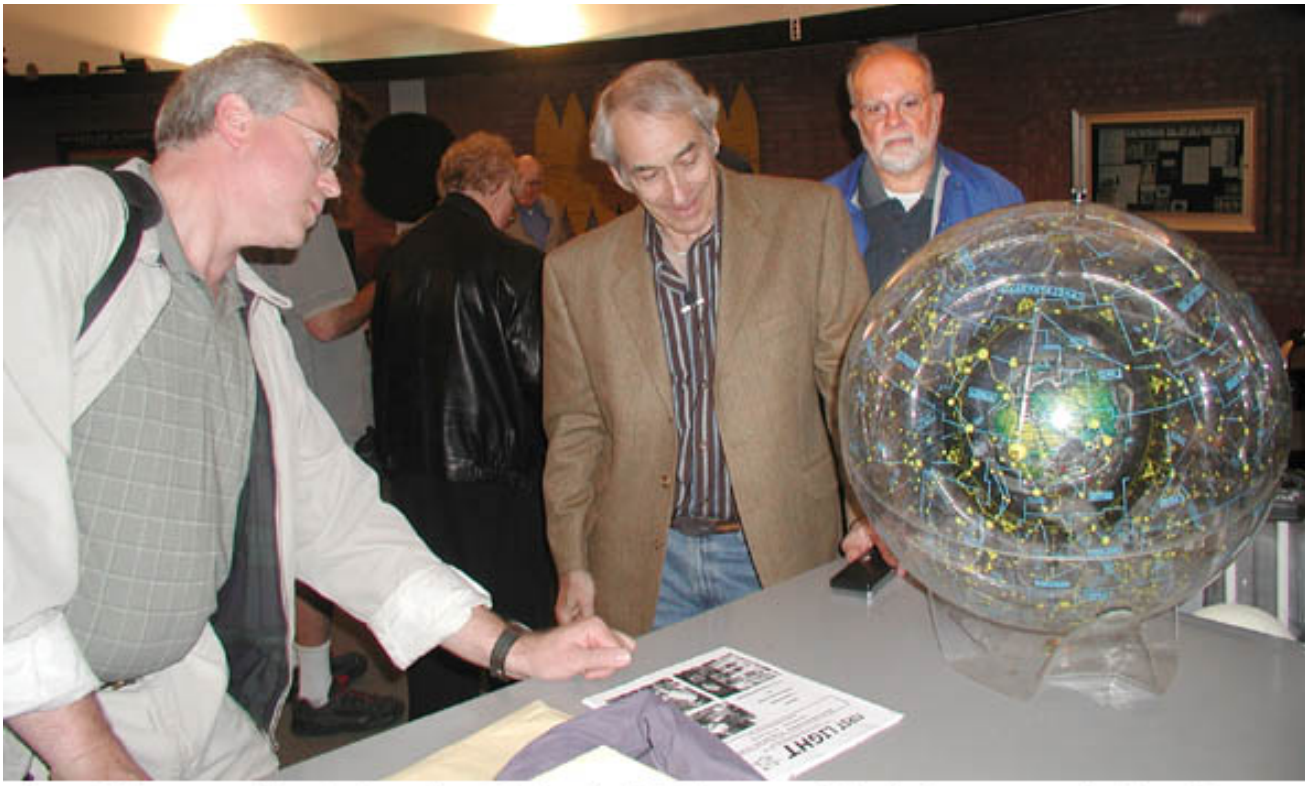
This particular launch was a Delta II rocket built by Boeing, to place the NOAA-18 weather satellite into polar orbit. The NOAA-18 was built by Lockheed Martin to orbit 540 miles above the Earth, to provide the National Oceanic and Atmospheric Administration with the imagery, temperature measurements and atmospheric profiles needed to monitor the Earth[1] s environment and weather. The satellite replaces the aging NOAA-16 craft, launched in September 2000, that has experienced some instrument problems and has well-surpassed its two-year design life. The NOAA-18 satellite, its instruments, Delta rocket and assorted support cost $341 million.

The launch had been scrubbed five times because of high winds, electrical problems and a broken kerosene-fuel venting hose, but all systems were "go" on Friday morning. The sky was clear, with the Big Dipper faintly visible through the light pollution, half-way down the north-west sky. Suddenly, at 3:23:10 PDT, I saw a brilliant red dot lift through the thin layer of coastal fog lying on the northwest horizon, and rapidly head south. This was much brighter (V ~ -5), redder and faster than the planes taking off from LAX, so there was no chance of confusion.

A tail slowly developed from the red dot of the rocket, and became brighter and longer as the rocket dimmed. Two minutes after I first sighted the launch, the tail was about half a degree long as seen through image-stabilized binoculars, and had started to broaden to form a fan-shaped plume. By this time, the rocket was 40 miles in altitude, 75 miles downrange from Vandenberg, and had increased its speed to 6,400 miles per hour. As the spectacle passed out of sight at 3:26:40 behind some trees to the southwest, it was moving noticeably faster than at the start.

Three-and-a-half minutes after the show began, it was over, with no exhaust trail left behind. This marked the 117th successful Delta II rocket launch out of 119 flights since 1989, and extended the string of consecutive successes to 64 dating back to 1997. If you wish to see future launches yourself, check to see what's scheduled on the internet **http://www.spacearchive.info/vafbsked.htm** or **http://spaceflightnow.com/tracking/index.html**. From my backyard near Crenshaw and PCH, the rocket reached a maximum altitude of only 20 degrees, so the closer you are to the coast, with a low western horizon, the better.

- Steven Morris



Lou Herman Explains the Celestial Sphere to Mark Stratton & Ray Grace

Pictures are a provided by Joe Fierstein

Our SBAS Committee

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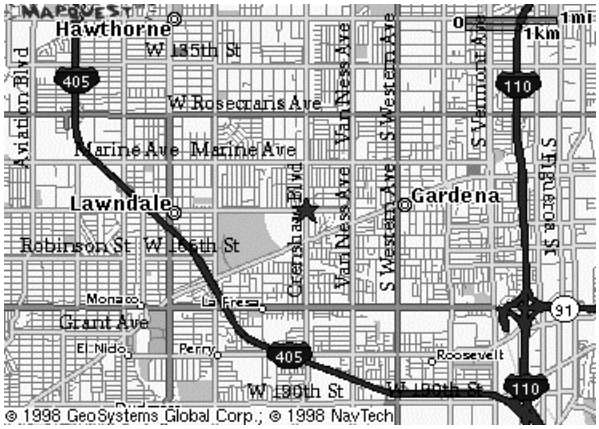
Monthly General Meetings



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, **June 6th** at 7:30 PM at the offices of Microcosm, 401 Coral Circle in El Segundo. Taking the 405 Fwy. north from Torrance, exit at El Segundo Blvd. and turn left. Take El Segundo Blvd. to Douglas and turn left. Take Douglas to Coral Circle and turn right. Follow Coral Circle around the bend to the left and then straight ahead. Microcosm occupies the crook of the next curve to the left and the company name is on the upper part of the building.

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 South Bay Astronomical Society, P.O. Box 1999, 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!

June - Comets & Asteroids

Comets Visible:

Name	Magnitude	Constellation
9P/Tempel 1	9.36 – 9.46	Vir
Denning-Fujikawa	9.9 – 9.7	Cet-Ari-Tau
2004 Q2/Macholz	10.3 – 11.5	CVn
2004 V2 (Hartley-IRAS)	11.5 – 11.0	Psc-Tri-And-Per-Cas

Comets at Perihelion:

Date	Identification	Magnitude
June 20	2004 V2 (Hartley-IRAS)	11.1

Near-Earth Asteroid Flybys:

Date	Identification	Magnitude	Distance
No near Earth asteroids visible			

Asteroid Occultations:

Date y m d	LocTm h m secs	Durn	Star mag	Mag drop	Star No.	Planet No.	Name
2005 Jun 04	2 30.3	5.8	10.1	3.4	TYC 0434-00031-1u	483	Seppina
	RA = 18h 01m 29.3s		Dec = 2° 50' 37.7"				
2005 Jun 12	11 29.8	10.3	8.2	3.5	TYC 5702-01942-1	233	Asterope
	RA = 18h 26m 57.1s		Dec = -13° 51' 16.9"				
2005 Jun 26	3 7.7	5.7	10.9	3.6	TYC 1027-00044-1u	1051	Merope
	RA = 18h 24m 6.6s		Dec = 10° 59' 6.5"				
2005 Jul 07	2 40.7	15.1	9.6	2.3	HIP 104753	187	Lamberta
	RA = 21h 13m 19.6s		Dec = -33o 44' 38.6"				

Star charts for the Asteroid Occultations are available on the SBAS website! Check on the JPL Ephemeris Generator page for coordinates of objects: **http://ssd.jpl.nasa.gov/cgi-bin/eph**

- Ken Munson

In Memoriam

I am sure that all SBAS members will join me in expressing our deepest heartfelt sympathy to Ann Koons, who very unexpectedly lost her husband Harry, due to illness. Both Ann and Harry attended our General Meetings, a Mt. Wilson Observatory Trip and a tour of Mt. Palomar. Ann doesn't know at this point if she will continue to star gaze in the future, but we hope that she will.

- Greg Benecke

First Light Editor Seeks Successor

I am officially announcing that I will be stepping down as the SBAS Newsletter Editor. I look forward to passing on this important position to the next member that will be keeping everyone informed on SBAS and other events and maintaining the open communication lines between the Planning Committee and the general membership. The July 2005 newsletter will be my last issue.

My first issue of the First Light Newsletter was August 2001. I had just joined SBAS when I volunteered to become the next editor as Peter Coffee's term ended. I had no experience at putting together subject matter that might appeal to such knowledgeable readers, but I made the decision to focus on our members' wide range of interests and activities and throw into the mix some topics that interested me personally. I receive emails from members who contribute articles about observing, school star parties and other community outreach activities, astrophotography, missile launches and dark-sky issues, which prompted me to join the International Dark Sky Association, a worthy organization deserving all of our support. Each month, I read articles posted on space related websites to get current information for our newsletter that may be of interest to other SBAS members.

As editor, I receive many photos taken of our members and their family and friends at the SBAS Annual Messier Marathons and other group outings, which I have made the focus of many newsletters. Whenever possible, I include space related articles because some members may not have access to the information. Special interests to SBAS have included club participation in the Night Sky Network, a federal land use review project related to the Redrock-Inyokern Road observing site and our proposed Constitution and By-Laws. I arrange the articles in some semblance of order, and then rearrange them to fit the structure of our newsletter format. I spend a few minutes updating the Schedule of Activities section, rolling in the next month's dates and events, including JPL Lectures and annual events such as meteor showers, Nightfall and RTMC. I get to "welcome" new members into SBAS and include a solemn farewell to those we have lost.

I believe that accepting the editor's position has greatly enhanced my participation within SBAS, much more so than if I had not, because I have learned more about astronomy than textbooks can supply. I had a sense of belonging in this group right from the start, so I packed up my little telescope and headed up to Ridgecrest School for our monthly in-town star party. People are always willing to talk to you about their telescopes, letting you look through their eyepieces and answering any questions you might have. I felt like a kid in a candy store because I was a "newbie" (and I still am!). I've participated in school star parties, which is the most rewarding activity I have ever had the pleasure to experience.

As a member of the Planning Committee, I have the great privilege of working with dedicated individuals whose efforts on behalf of all members provide the cornerstone of support for the existence of the South Bay Astronomical Society. I very much enjoy these monthly meetings, discussing society business, past and future events, star party planning, compiling objects for viewing on our trips to the Mt. Wilson Observatory, telescopes and any related equipment, and the list goes on. I will continue attending these meetings because this is where our ideas and suggestions are considered and when approved, have an impact on what the SBAS will be in the future.

- Laura Lucas

No Observing Reports…

@Ridgecrest School - April 30th The weather forecast predicted clouds. It was so overcast that I didn't go up the hill to open the gate and I hope no one was inconvenienced by it. I also did not go out to a dark-sky site on ***May 7th***.

- **Greg Benecke**

How I Became Interested in Space Exploration

My first memory of anything space related was watching a man in a space capsule on television when I was a little kid. From that day forward, I was hooked. On February 21st, 1962 as a 7-year old, I wrote a note to Astronaut John Glenn asking him "if he had a good time and if he liked the ride"! I still have a copy of my note (a clear case of "hero worship") and the letter that I received in response, definitely one of my personal treasures.

- Laura Lucas

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
WASHINGTON 25, D.C.

IN REPLY REFER TO:

May 7, 1962

Miss Laura Lucas
936 South Oak, #1
Inglewood, California

Dear Miss Lucas:

Thank you for your interest and thoughtfulness in writing about the flight of the Friendship 7 spacecraft.

Many things were learned from this and from the earlier flights of Alan Shepard and Gus Grissom. Each flight is a stepping-stone in our ever-expanding manned space flight research program.

Project Mercury is a team effort of many, many thousands of people. Beyond those working directly on the project, however, the flight of Friendship 7 had the support, thoughts and best wishes of many thousands, perhaps even millions of people throughout the world.

Again, I appreciate your thoughtfulness in writing to me.

Sincerely,

John H. Glenn, Jr.
Lt. Col. U.S.M.C.
Mercury Astronaut

Voyager Spacecraft Enters Solar System's Final Frontier

NASA's Voyager 1 spacecraft has entered the solar system's final frontier. It is entering a vast, turbulent expanse where the Sun's influence ends and the solar wind crashes into the thin gas between stars. "Voyager 1 has entered the final lap on its race to the edge of interstellar space," said Dr. Edward Stone, Voyager project scientist at the California Institute of Technology in Pasadena. The consensus of the team is that Voyager 1, at approximately 8.7 billion miles from the Sun, has at last entered the heliosheath, the region beyond the termination shock.

The most persuasive evidence that Voyager 1 crossed the termination shock is its measurement of a sudden increase in the strength of the magnetic field carried by the solar wind, combined with an inferred decrease in its speed. This happens whenever the solar wind slows down. Voyager 1 also observed an increase in the number of high-speed electrically charged electrons and ions and a burst of plasma wave noise before the shock. This would be expected if Voyager 1 passed the termination shock. The shock naturally accelerates electrically charged particles that bounce back and forth between the fast and slow winds on opposite sides of the shock, and these particles can generate plasma waves. "Voyager's observations over the past few years show the termination shock is far more complicated than anyone thought," said Dr. Eric Christian, Discipline Scientist for the Sun-Solar System Connection research program at NASA Headquarters, Washington. The result was presented on May 24th at a press conference in the Morial Convention Center, New Orleans, during the 2005 Joint Assembly meeting of Earth and space science organizations. For more information about Voyager visit: **http://voyager.jpl.nasa.gov/.**

NASA May Partially Abandon Space Station

By Larry Wheeler, FLORIDA TODAY

WASHINGTON - NASA may have to partially abandon the International Space Station if the Bush administration can't figure a way around a law that prevents the United States from paying Russia for future flights to the orbiting outpost. "If we don't have (an) agreement with the Russians, then we won't be able to have people in space for long periods of time," said U.S. Rep. Sherwood Boehlert, R-NY, chairman of the House Science Committee. Boehlert said he and other congressional leaders want a new agreement for more Russian Soyuz flights, but not if it means backing down on concerns that Russia may be passing along weapons secrets to Iran.

The Iran Nonproliferation Act bans U.S. payments to Russia for services related to the $100 billion international station unless the president confirms Russia is working to prevent its scientists and engineers from passing weapons technology to Iran. Exempted from the 2000 ban were 11 flights of the Russian-built Soyuz spacecraft to and from the station. The three-person Russian capsules have been the only way for the U.S. to rotate astronauts aboard the $60 billion station since the shuttle Columbia disaster in February 2003. And, for the life of the station program, the Soyuz has been the only escape system for the crew.

The last of the exempted 11 Soyuz flights to carry a U.S. astronaut launches in September and returns in April 2006. After that, NASA must rely on its shuttles to transport astronauts to the research vessel. But the astronauts won't be able to remain for extended periods because NASA safety rules demand they have access to a "lifeboat" for emergency escape. Under normal circumstances, a shuttle stays in orbit about two weeks. The Soyuz can dock to the station for six months. Plus, the shuttle is to retire in 2010 and, while NASA is working to speed development of a replacement vehicle, it's too soon to tell if it will be ready to start flying astronauts to and from the space station at that time.

The possibility that U.S. astronauts could not fly long-duration missions on the station could impact the initiative to send astronauts to the moon and Mars. NASA is counting on testing long-term impact of space flight on humans -- a key hurdle to flights to Mars or long stays at a lunar base -- aboard the space station. Congressional leaders have pressured the administration to come up with a solution that will allow the U.S. to continue buying seats on Russian spaceships while maintaining a hard line on weapons proliferation. NASA and Bush administration officials declined to discuss in detail how they plan to get around the ban on buying more space services from Russia. At a recent Capitol Hill hearing, a top NASA official said the Bush administration won't seek a waiver from the ban, but will offer some other proposal. "There are probably other ways where we can extract the International Space Station from the legislation," NASA Deputy Administrator Fred Gregory said. "I cannot tell you at this point how it will be presented, but I would anticipate very soon that we will engage."

Scientists Warn Against Weaponizing Space

By Nick Wadhams, Associated Press

UNITED NATIONS (AP) – On May 19th, a scientists' group warned the United States against weaponizing space, saying the move would be prohibitively expensive and could set off a new arms race. The Union of Concerned Scientists, a watchdog group that opposes weapons in space, said the United Nations should consider drafting a treaty that would prohibit interfering with unarmed satellites, taking away any justification for putting weapons in space to protect them. "The United States has a huge lead in the space field -- it can afford to try out the multilateral approach," said Jonathan Dean, a former U.S. ambassador and an adviser on global security issues.

The Union's demand comes as the administration of President Bush is reviewing the U.S. space policy doctrine. Some scientists worry that the review will set out a more aggressive policy that could lead to the greater militarization of space. On May 18th, White House spokesman Scott McClellan told reporters that the policy review was not considering the weaponization of space. But he said new threats to U.S. satellites have emerged in the years since the U.S. space doctrine was last reviewed in 1996, and those satellites must be protected. "There are changes that have occurred over the last eight or nine years, and there are countries that have taken an interest in space", McClellan said. "And they have looked at things that could -- or technologies that could -- threaten our space systems. So you obviously need to take that into account when you're updating the policy."

The Bush administration has also included some money in the budget for space-based weapons programs to defend satellites, strike ground targets and defend against missile attacks, said Laura Grego, a scientist with the union. Any complete weapons system in space would be very expensive, running into the many billions of dollars. Developing a shield to defend against a single missile attack would require deploying 1,000 space-based interceptors and cost anywhere between $20 billion and $100 billion, said David Wright, a union scientists and co-author of a recent report on the feasibility of space weapons. The United States currently launches between 10-12 large rockets a year, while with space interceptors, it would need to launch many times more that each year. Wright argued that space-based ground attack systems were not yet practical either. One, dubbed "Rods from God" -- which would fire rods of tungsten from space -- would cost 50-100 times as much as a similar attack from the ground. "The fact that it's still being considered I think suggests that there's some sort of emotional attachment to it for putting weapons in space rather than a hard-nosed analysis," Wright said.

Any such move would also likely draw swift international condemnation. In 2002, after the United States withdrew from the 1972 Anti-Ballistic Missile Treaty, China and Russia submitted a proposal for a new international treaty to ban weapons in outer space. The United States has said it sees no need for any new space arms control agreements. It is party to the 1967 Outer Space Treaty, which prohibits stationing weapons of mass destruction in space.

Telescope Needs A New Home

I have been contacted by the family of an elderly amateur astronomer that would like to find a new home for the telescope he built about 30 years ago. They would prefer to see it go to a school or club where it could be used to serve the public. The scope is an equatorial fork mounted Newtonian. I can't measure the mirror directly due to the design of the mirror cell but it looks to be about 13 inches in diameter at about f/6 with a 2 inch diagonal and 2 inch rack and pinion focuser. There are 10 inch declination and 12 inch R.A. setting circles. The R.A. drive is via a large worm and 10 1/2 inch 365 tooth ring gear. While I cannot say for sure that it is, the quality looks like it could be by Byers. The mount is not portable and is bolted to the observing platform on which it sits. The fork is substantial with 3 foot tines of boxed construction. The scope was housed in a homemade dome that deteriorated to the point of requiring that it be torn down. The scope is being protected by tarps now. It has been about five years since it was last operated. Since the builder is in an advanced stage of Alzheimer's, I am not able to get any first hand information. The craftsmanship of this instrument is excellent. I understand that the builder was a top Naval engineer in his prime. I don't know if the mirror was hand figured by the builder, but my guess is that someone who would go to the effort and expense that obviously went into this project would have made sure it had a top notch mirror. This scope does need some work. The mirror looks like it might need resilvering. I would view it as a restoration project that would be great for a school or a club with a permanent location from which to operate it. The owners will be sending me some digital photos in the near future. If anyone knows of a group or school that might be interested in taking this on, please let me know. I will ultimately contact other clubs in the area if I need to expand my search for a home.

- Greg Benecke

Schedule of Coming Events

28 May Saturday Evening	**In-Town Dark Sky Observing at Ridgecrest School** – Weather Permitting: If you plan to go up to the school and the weather conditions are acceptable, please contact Laura Lucas 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…
3 June Friday 7:30 P.M.	**Monthly General Meeting:** Our own SBAS member, Dr. Steven Morris, will present "Einstein's Theories of Relativity 2" (to be interpreted as: Einstein's 1st and 2nd theories of Relativity).
4 June Saturday Evening	**Out-of-Town Dark Sky Observing** – New Moon June 6th Contact Greg Benecke to confirm the site location.
6 June Monday 7:30 P.M.	**Monthly Planning Meeting** The meeting will be held at the offices of Microcosm. Refer to page 3 for directions.
16 JPL 17 PCC June 7:00 P.M.	**Von Kármán Auditorium (Thursday) & Vosloh Forum at Pasadena City College (Friday)** "A Bipolar Year: What We Can Learn About Looking for Life on Other Planets By Working in Cold Deserts", presented by Dr. Pamela Conrad, JPL Research Scientist. Admission is free. For more information, call (818) 354-0112.
2 July Saturday Evening	**In-Town Dark Sky Observing at Ridgecrest School** – Weather Permitting. Refer to May 28th entry for directions to the site & instructions on weather conditions.
8 July Friday 7:30 P.M.	**Monthly General Meeting:** A discussion of questions and comments on the Constitution and By-Laws will be held! The speaker for the evening will be announced in the next newsletter.
9 July Saturday Evening	**Out-of-Town Dark Sky Observing** – New Moon July 6th Please contact Greg Benecke to confirm the location.
11 July Monday 7:30 P.M.	**Monthly Planning Meeting** The Planning Committee and any interested members will meet to establish the Nominating Committee to select officer candidates for the next annual meeting in November when voting will take place. The location of this meeting will be announced in the next Newsletter.
30 July Saturday Evening	**In-Town Dark Sky Observing at Ridgecrest School** – Weather Permitting. Refer to May 28th entry for directions to the site & instructions on weather conditions.

South Bay Astronomical Society

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General Meeting at El Camino College Planetarium:
Friday, June 3rd at 7:30 P.M.

Guest Speaker: Dr. Steven Morris (SBAS)

"Einstein's Theories of Relativity 2"

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South Bay Astronomical Society
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