FIRST LIGHT

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

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

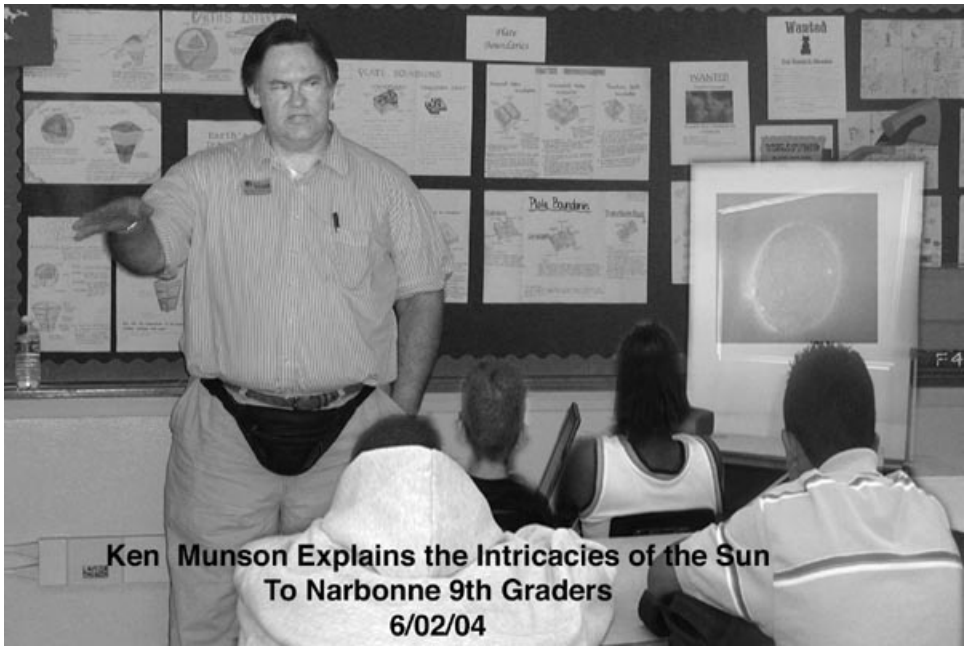
Guest Speaker : Prof. Gary Peterson (SDSU)

"Mercury – The Forgotten Planet"

Outreach

An Important Club Function

Recently, SBAS joined an organization called Night Sky Network. It is sponsored jointly by JPL and the Astronomical Society of the Pacific (ASP). The mission statement of ASP is "to increase the understanding and appreciation of astronomy". They do this through their publication "Mercury" and by developing and sponsoring programs such as Project Astro, which couples professional astronomers with science teachers.

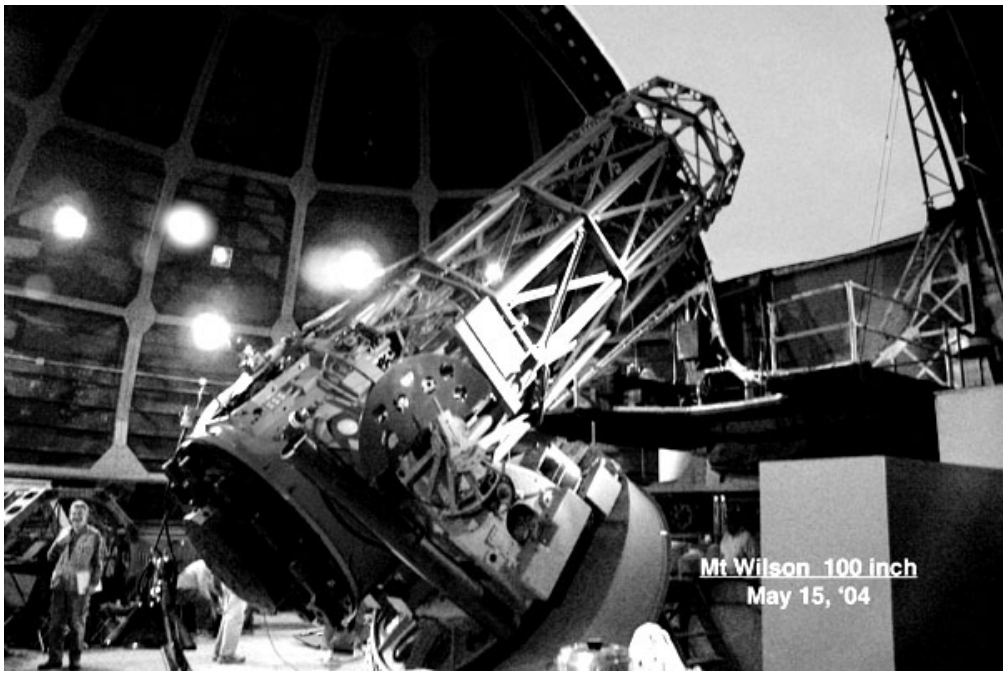


Ken Munson Explains the Intricacies of the Sun
To Narbonne 9th Graders
6/02/04

Night Sky Network is their latest project, which reaches out to schools via amateur clubs. Over 200 clubs have joined, including SBAS, in this their first year. They provide us with materials and instructions we make the school contacts and do the presentations. We are committed to doing 4 presentations a year. The picture above shows Ken Munson making a presentation to the 9th Grade at Narbonne School's Math and Science Day. Programs such as this are important to all clubs. Not only do they help spread the appreciation of astronomy, as do our public star parties, but in addition, they put a human face on the club and help make our presence known in the community. If you would like to be part of this program, or would like to review the kit of materials that we have, contact me at (310) 377-9834. Try it, it's fun and personally very rewarding.

- Joe Fierstein

SBAS Astronomy Award



I wanted to drop you a line for SBAS to say thank you for the Excellence in Astronomy Award. As you know, SBAS sponsors an award for students at El Camino College who receive an "A" in three astronomy classes at the school: two lectures and one lab. Students who receive the award are also required to maintain a 3.0 or above GPA at El Camino. There were four recipients this year, and at least two of the four are SBAS members: Deanna Chaffe and I. Students who take two astronomy lecture classes at El Camino generally do so knowing that the classes won't completely transfer - many 4-year universities will accept only 4 of the 6 credits earned by taking both the solar system and the stellar astronomy lecture courses. I think the fact that so many students do take both lecture courses is at least in part due to the excellence of the astronomy faculty and the facilities available at El Camino College. I feel very fortunate to be learning astronomy in such a supportive environment. Again, "Thank you!" from me to everyone at SBAS for the award. Deanna and I will have our names inscribed on the plaque outside the Planetarium, and the club has gifted us with subscriptions to Astronomy magazine (I requested Sky and Tel) and a copy of "Turn Left at Orion." Thank you! and I'll see everyone in September, when I return from my summer internship in Richland, WA to start my next year at El Camino College.

Here's a link to an article about my enthusiasm for astronomy in the PV News.
http://pvnews.nminews.com/articles/2004/06/07/local_news/news3.txt I'm pretty sure I didn't say that the Copernican Revolution was 1,300 years ago, but that's what the interviewer wrote. Well, it's only off by about a thousand years!

One more piece of exciting news: I just found out that I will be spending two weeks in August as an undergraduate intern at Mt. Wilson through the CUREA program **www.curea.org** I learned about the program and applied for CUREA after SBAS went to Mt. Wilson last autumn to observe through the 60-inch. Joe Fierstein spoke with the curator regarding internships at Mt. Wilson and announced the information at the following meeting. I promptly applied, and I got the news that I was accepted the day before I left CA. Wow! It's a program open for amateur astronomers as well as undergraduates studying physics and astronomy, so if any other SBAS'ers are interested in applying next year, that might be a great opportunity.

- Nora DeMuth

** Special Notice **

For Sale: Dark sky site - 5 acres with 3b+2ba (1,100 sq ft) 4 yr. old home, 3,550? Elev. (never snowed in). Tile and ?pergo? flooring, freshly painted interior, shed, evap. cooler. Very safe community, good neighbors. Zoned for adding 2nd home, horses, etc. Half hr. south of Lake Isabella, 2+1/2 hrs north of LA. $169,000. Fotos available. I'm selling this great place to find a bigger one (similar to the telescope syndrome!). I am a member of the OCA, former VP (and work for Aerospace). Hopefully this can go to an amateur astronomer!
Email: Jayeffie@hotmail.com; eve 310-831-4199.

Our SBAS Committee

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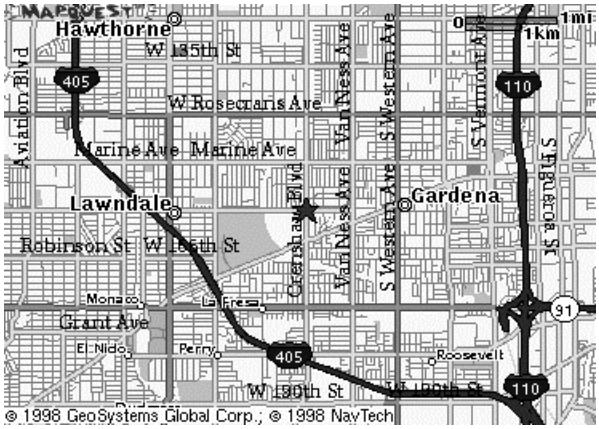
Monthly General Meetings



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, July 12th at 7:30 PM at the home of Ray Grace, 2706 Spreckels Lane in Redondo Beach (310) 370-1913. Take Hawthorne Blvd to 190th St., turn West to Inglewood Ave., then turn North (right) and proceed two blocks to Spreckels Lane and turn Right. If driving South on Inglewood Ave., Spreckels Lane is two blocks south past the light at Ralston Ave., and turn Left, to the 4th house on the right (South side). Parking is available on both sides of the street.

SBAS Membership Benefits

"Welcome" to our newest SBAS members: Chris Stratton and Clifford Weiss.

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!

July - Comets & Asteroids

Comets Visible In July:

Name	Magnitude	Constellation
2002 T7	8 - 10	Sex
2001 Q4	6.5 – 8	UMa
2003 K4	9 – 8.5	Her-Boo
2003 T3 (Tabur)	9.8 – 10.5	Cam-Lyn
2004 H6	8.0 – 8.6	Cet-Aqr

Comets at Perihelion:

Date	Identification	Magnitude
July 10	Schwassmann-Wachmann 1	13.4

Near-Earth Asteroid Flybys:

Date	Identification	Magnitude	Distance
July 18	Ida	13.8	1.94 AU
July 19	Columbia	13.5	1.60 AU
July 25	2000 PH5	16.0[+]	0.013 AU
July 26	Comet 2004 H6	8.3	0.61 AU

[+]Reaches maximum magnitude of 15.79 on July 27

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

- ***Ken Munson***

Observing Reports

@Ridgecrest School –Saturday night I joined the crowd up at Ridgecrest School for the observing session. Since my kids had gone to a friend's party earlier and I didn't have time to take them home, they came along. They were quite thrilled to finally have some other kids to play with! After getting set up, I found my power cable had broken. Thankfully, Greg Benecke happened to have a spare that he let me borrow. Thanks, Greg! My first targets of the evening were three comets that I knew to be up and in visual magnitudes. Comet 2002 T7 was low in the southwest but thanks to coordinates from JPL's Ephemeris Generator, my Nexstar 11 found it right away. It was hard to see at first but gradually grew better as the light faded. 2001 Q4 was still very bright and high in the sky and very clearly a comet. 2003 K4 on the other hand could easily have been mistaken for a nebula, though it's movement throughout the night betrayed it's cometary behavior. This was the first time I'd seen K4 from in-city. I'd only seen it as a faint, small blob from up on the Pacific Crest before.

Spent some time hunting galaxies, trying to see how faint I could go. The sky didn't seem too stable but I was able to bring in some fairly faint galaxies around 10th magnitude or more. I checked out M20, the Trifid Nebula, and could make out a lot of detail on the dark lanes that trisect this glowing nebula cloud. I also visited a nice little cluster I found last year, NGC 6231, in Scorpio's tail. It's a very tight little cluster made up of fairly bright stars. I finished up the night hunting globular clusters in Scorpio and Ophiuchus. It's amazing how many dark sky objects there are in Ophiuchus, just not a lot of good stars for doing any star-hopping to get to them. Also in Ophiuchus is a nice gem of an open cluster, NGC 6633. It's a loose, oblong cluster of bright stars with a secondary, smaller grouping nearby, very pretty. It was midnight by then and my kids wanted to go home and get to bed so I packed up.

- Ken Munson

@Ridgecrest School – The observing session on **June 12th** was truly a star party. As I recall we counted at least 13 scopes and a large pair of binoculars. This was by far the largest turnout of scopes in recent memory and the marine layer cooperated! Unfortunately, I did not get around and record all who were there. There were several newcomers with whom I spent some time helping getting their scopes set up and polar aligned. Though the sky was clear there was a fair amount of moisture in the air, which did not allow the sky to darken as much as it might have. The seeing was reasonably good. Comet Linear T7 was too low in the twilight to be seen but Comet NEAT Q4 was readily observed with the coma and some tail visible. I spent much of the night sharing some of the brighter highlights with others. The Ring Nebula looked very nice through my 15 inch Dob. Later in the night attention was turned to some of the brighter globular clusters that were rising with the summer Milky Way. The few remaining observers started packing up before 1:00 A.M. As we were packing the tower light came on. It was nice that it had remained off until we were done for the night.

@Redrock Inyokern Rd. - The weather predictions looked about the same at Cottonwood Springs and Redrock Inyokern Road, so we opted for the shorter drive to Redrock for the **June 19th** dark site trip. The prediction included some wind, so we hoped it would not be too bad. When I arrived Steve Lindsey and Dan Trimble were finishing setup. They indicated that the wind had been decreasing as we got closer to sunset. Paul and Julia Rumsey soon joined us with binoculars as well as a new couple with a Nexstar 114, whose names I did not record (I should know better than to trust my memory). A very thin crescent Moon could be observed in the twilight. Craig Gates and a couple of his friends were also arrived at the end of twilight. I was able to locate Comet Linear T7, even though at its best it was hard to make out the tail, the coma could be clearly seen. Comet NEAT Q4 was another matter completely. In the dark sky there was an almost stellar point of brightness seen in the center of the coma and both the dust and ion tails could be made out. I spent a fair amount of time on this as this view beat anything that I had seen from the city when it had been much brighter.

The wind never died down completely though it was reasonably calm for a while, but the occasional gusts became more frequent and lulls disappeared completely. The wind was coming from the West. It became a challenge to look at anything from the South, West or North due to the aerodynamics of the shrouded Dob. Views to the East were much more manageable. The other threat was dust, as at times you could taste it in the air. Inspection of my mirror at home afterward showed a considerable buildup of dust due to the open backed mirror cell of the Dob. We finally gave up some time after 2:00 A.M. as it was clear that the wind was only getting stronger. Of course, as I finished loading up as the sun rose, the air was perfectly still.

- Greg Benecke

Observing At Mojave National Preserve

After reviewing the weather satellite data, it looked like the air over the eastern Mojave was going to be slightly better than that further west. So, I packed up the Nexstar 11 and headed out to the Mid Hills Campground at 6000 feet in the Providence Mountains on Saturday, **June 19th**. As expected the weather was amazingly clear. The air grew visibly clearer the further east I headed. I found myself camped next to a group of Boy Scouts, Troop 127 out of Corona. I talked to their Scoutmasters and offered a look through the telescope after dark. They were very excited and brought the boys over around 9:30.

We started off with Jupiter, which was very sharp and stable. Although we'd just missed the Great Red Spot, the turbulence that trails in it was clearly visible as well as three of the moons, Io, Europa and Callisto, flying in a tight formation to one side. Next we swung up to take a look at Comet 2001 Q4, since 2002 T7 was hidden behind a tree. The comet and its coma were very bright but no tail was visible. The boys were somewhat disappointed in that. Then I swung over to M13 and put the 15mm eyepiece in. At 180x, M13 fills the eyepiece. What expressions of amazement and joy were heard when they got a look at that! The final object I showed them was a nice edge-on Galaxy, NGC 4565, Berenice's Hair Clip. It was very bright with a distinct dark line across the thin line of light that marks the disk. It was a lot of fun and well worth the time to be able to do a star party for them under real dark-sky conditions so they could see the heavens in all their glory! Being tired from having spent the day on a bicycle trip, they all retired early and left me to do my own observing.

I started out looking up some obscure named galaxies. NGC 4681 is called the Whale Galaxy and darned if it doesn't resemble a whale. A humpback, I think, though I'm not very good at recognizing whale species. The sky was so transparent; I could make out a faint, distant galaxy just above the bulge of the core. Next up was the Cocoon Galaxy, NGC 4490. It seems to bulge more on one end thus giving it the appearance of a cocoon dangling from a tree limb. I suspect it must be a barred spiral that is lying at an angle to us. M64 was very nice with the dark smudge that gives it the name Black Eye Galaxy clearly visible. I spent some time in Scorpio and Sagittarius visiting some old friends, the Messier Objects as well as a number of NGC globulars. With the sky conditions so good, I was finally able to make out the nebulosity around Rho Ophiuchus. It's a very faint, diffuse nebula that extends over a large part of the sky between Ophiuchus and Scorpio. It's most brightly illuminated around Rho Ophiuchus, a 4.5 magnitude star. It was very hard to see being just a slightly brighter haze around the star. Found another similar faint patch of nebulosity around a pair of stars in Corona Australis, NGC 6726.

I then spent some time hunting down small, faint planetary nebulas from Sagittarius to Cygnus. I was able to find several very small, 0.1 arcminute, faint (12th magnitude) planetaries. With the sky conditions being so good for most of the night, I was able to use higher power to clearly distinguish the round blobs of the planetaries as opposed to the bright points that were the stars. One of the more interesting was the Box Nebula, NGC 6309. Most planetaries appear round but this one was clearly a rectangular shape. I also took a look at the Crescent Nebula, which although visible, was not very clear. The Veil Nebula, however, was spectacular! One end was very bright with varying shades indicating some structure to it. As I slowly slewed the telescope over the length of this thin strand it gradually faded and split into what looked like two, possibly three fingers. The Network Nebula was equally spectacular. This night also marks the first time I've visually managed to see the North American Nebula. Not very distinct, the most noticeable part was the 'Gulf of Mexico' area wherein I could clearly distinguish the faint nebula against the darker background (or maybe it's a dark foreground). I also managed to catch a glimpse of the Cocoon Nebula, IC 5146 (not to be confused with the Cocoon Galaxy) between Cygnus and Cepheus. It was visible in my hydrogen-beta filter as a faint haze surrounding a star.

I swung the scope up to take a look at Comet 2003 K4, much brighter than when I first saw it two months ago. It's around 9th magnitude and has developed a noticeable tail, best seen by moving the comet out of the field-of-view. Once the bright comet was no longer blinding the eye, the faint haze of the tail could be seen extending about 3 degrees behind the comet. By then it was after 3:00 AM so I finished up the night with a quick look at some old friends in Cassiopeia, NGC 457 the ET Cluster, M103 and the Double Cluster in Perseus. I also took a look at M31, it's so amazing! Not just the central core but the entire disk plus the dark dust lanes were clearly visible and could be seen extending about 2 degrees or so from the core. I'm not sure but I might have even seen that giant globular in M31. There was one slightly bright patch of fuzz far out to the one side of the core. M33 was also spectacular and its large, star-forming nebula, NGC 604, was clearly visible. The H-Beta filter brought it out a little more. It was an excellent night and well worth the 250 mile one-way trip!

- Ken Munson

RTMC Pictures by Joe Fierstein

Aperture Fever Anyone?
Rick Hedrick, VP of Engr'g
& Joe Haberman, Optical Designer
Show off Celestron's New 20 inch
A Mofified Cass.

Check Your Calendars!

2004 Nigthfall Tentatively Scheduled for September 10-11

Sponsored by the RTMC, Nightfall is a fall observing session held at the Palm Canyon Resort in Borrego Springs, California. The Palm Canyon Resort is a resort hotel with 60 rooms and 82 R.V. spaces. It is located 50 miles southwest of Indio. The 2004 Nightfall is tentatively scheduled for Friday, September 10 and Saturday, September 11.

You need to call the Palm Canyon Resort for a room or RV space at their facility. When making reservations, please indicate that you are with the RTMC or astronomy group, or you may be told that no rooms are available. Prices for the 2004 Nightfall have not been set. Their phone number is (800) 242-0044.

FYI - As a reference, 2003 prices were:
Standard Room (for two nights)$170
Deluxe Room (with patio or balcony, for two nights)$180
RV/Camping Spaces (per night)$27

Alternate accommodations are available nearby at the Oasis Motel & RV Park (1/4 mile away) and the Borrego Valley Inn (1/2 mile away).

Cassini Opens a Cosmic Time Capsule

Like a woolly mammoth trapped in Arctic ice, Saturn's small moon Phoebe may be a frozen artifact of a bygone era, some four billion years ago. The finding is suggested by new data from the Cassini spacecraft. Cassini scientists reviewed data from the spacecraft's June 11, 2004, flyby of the diminutive moon. They have concluded that Phoebe is likely a primordial mixture of ice, rock and carbon-containing compounds similar in many ways to material seen in Pluto and Neptune's moon Triton.

Scientists believe bodies like Phoebe were plentiful in the outer reaches of the solar system about four and a half billion years ago. These icy planetesimals (small bodies) formed the building blocks of the outer solar system and some were incorporated into the giant planets Jupiter, Saturn, Uranus and Neptune. During this process, gravitational interactions ejected much of this material to distant orbits, joining a native population of similar bodies to form the Kuiper Belt. "Phoebe apparently stayed behind, trapped in orbit about the young Saturn, waiting eons for its secrets to be revealed during its rendezvous with the Cassini spacecraft," said Dr. Torrence Johnson, Cassini imaging team member at NASA's Jet Propulsion Laboratory, Pasadena, Calif.

“All our evidence leads us to conclude, Phoebe's surface is made of water ice, water-bearing minerals, carbon dioxide, possible clays and primitive organic chemicals in patches at different locations on the surface," said Dr. Roger N. Clark, team member for the visual and infrared mapping spectrometer, U.S. Geological Survey in Denver. "We also see spectral signatures of materials we have not yet identified." Cassini's observations gave scientists the first detailed look at one of these primitive icy planetesimals. Phoebe's mass was determined from precise tracking of the spacecraft and optical navigation, combined with an accurate volume estimate from images. The measurements yield a density of about 1.6 grams per cubic centimeter (100 pounds per cubic foot), much lighter than most rocks, but heavier than pure ice at approximately 0.93 grams per cubic centimeter (58 pounds per cubic foot). This suggests a composition of ice and rock similar to Pluto and Triton.

Spectral measurements, light intensity as a function of color or wavelength, confirmed the presence of water ice previously detected by Earth-based telescopes. The measurements provided evidence for hydrated minerals on Phoebe's surface, and detected carbon dioxide and solid hydrocarbons similar to those found in primitive meteorites. "One intriguing result is the discovery of possible chemical similarities between the materials on Phoebe and those seen on comets," said Dr. Robert H. Brown, team leader for the visible and infrared mapping spectrometer, University of Arizona, Tucson. Evidence that Phoebe might be chemically kin to comets strengthens the case that it is similar to Kuiper Belt Objects. Measurements taken by the composite infrared spectrometer were used to generate temperature maps. The maps show the surface of Phoebe is very cold, only about 110 degrees above absolute zero (minus 163 degrees Celsius, or minus 261 degrees Fahrenheit). Even colder nighttime temperatures suggest a fluffy, porous surface layer. “One of the first results from this map is the surface of Phoebe has been badly chewed up, probably by meteorite impacts," said Dr. John Pearl, a Cassini co-investigator for the composite infrared spectrometer, at NASA's Goddard Space Flight Center, Greenbelt, Md. "We are discovering Phoebe is a very complex object, with large variations in topography."

Cassini also made radar observations of Phoebe's enigmatic surface, making it the first spacecraft radar observations of an outer-planet moon. The results are consistent with the dirty, rocky, icy surface suggested by other observations. "We have conducted our first analysis of an outer solar system resident akin to Kuiper Belt Objects," said Dr. Dennis Matson, project scientist of the Cassini-Huygens mission at JPL. "In two short weeks, we have added more to what we know about Phoebe than we had learned about it since it was discovered 100 years ago. We did this by having multiple instruments conducting investigations all at one time during our flyby."

Mission Status - On **June 30**, Cassini will pass through a known gap between two of Saturn’s rings, called the F and G rings. The region of passage through the ring plane was searched for hazards with the best Earth- and space-based telescopes and by Cassini itself. To protect the spacecraft from particles too small to be detected from Earth, Cassini will be turned to use its high-gain antenna as a shield.

The Cassini-Huygens mission is a cooperative project of NASA, the European Space Agency and the Italian Space Agency. JPL manages the mission for NASA's Office of Space Science, Washington. For the latest images and more information about the mission on the Internet, visit **http://www.nasa.gov** and **http://saturn.jpl.nasa.gov**

- JPL / NASA News Releases

Schedule of Coming Events

9 July Friday 7:30 P.M.	**Monthly General Meeting:** Prof. Gary Peterson, of San Diego State University, returns for his 4th visit with SBAS to present "Mercury – The Forgotten Planet".
10 July 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 not drip anything you can park with your equipment. ***Drive with care*** to avoid steel pillars supporting basketball nets…
12 July Monday 7:30 P.M.	**Monthly Planning Meeting** Refer to page 3 for directions.
15 JPL 16 PCC 7:00 P.M.	**Von Karman Auditorium Lecture Series** – FREE "The Rings of Saturn" presented by Dr. Linda Spilker, JPL Cassini Deputy Project Scientist. Magnificent golden bands encircle Saturn, comprised of millions of icy particles ranging in size from dust to large boulders. The particles undergo an intricate dance as they orbit Saturn - the gravity of nearby moons causes the ring particles to bump into each other and create interesting patterns in the rings, such as waves and wakes. Fundamental questions remain about Saturn's rings. Why are the rings there at all? How did they form? How old and how stable is the ring system, and how does it maintain itself? So far, we only have bits and pieces of answers. The Cassini mission to Saturn will provide a wealth of information to help answer many of these puzzling questions about Saturn's rings. For more information call: (818) 354-0112. Current and archived webcasts can be viewed at **http://www.jpl.nasa.gov**
17 July Saturday Evening	**Out-of-Town Dark Sky Observing** – New Moon July 17th Contact Greg Benecke to confirm site location.
6 August Friday 7:30 P.M.	**Monthly General Meeting:** The speaker for the evening will be announced in the August Newsletter.
7 August Saturday Evening	**In-Town Dark Sky Observing at Ridgecrest School** – Weather Permitting. Refer to July 10th entry for directions to the site & instructions on weather conditions.
9 August Monday 7:30 P.M.	**Monthly Planning Meeting** The location of this meeting will be announced in the August Newsletter.
13 August Friday Morning	**Palos Verdes Library Lecture** Joe Fierstein will present his lecture on the Library's telescope-like sculpture and the Analemma.
14 August Saturday Evening	**Out-of-Town Dark Sky Observing** – New Moon August 16th Contact Greg Benecke to confirm site location.

South Bay Astronomical Society

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

Guest Speaker: Prof. Gary Peterson (SDSU)

"Mercury - The Forgotten Planet"

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South Bay Astronomical Society
P.O. Box 1999
Redondo Beach, CA 90278

Attention: Contact SBAS President if you left a cell phone behind at the June General Meeting.