

FIRST LIGHT



Journal of the South Bay Astronomical Society – April 2006
on line at www.geocities.com/sbas_elcamino

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

Guest Speaker: Dr. David Dunham

“Asteroid Occultation Observing”

The March 3 Meeting

President Ken Rossi opened the meeting at 7:38 by asking any newcomers to introduce themselves, and a few among the audience of 40 did so. Ken then announced some upcoming events for the SBAS, and reviewed some recent observing sessions, before introducing the evening's talk, "History and Astronomy" given by our very own Ken Munson.

Ken began by noting that while the stars do not influence our daily lives (as Ken illustrated by reading his horoscope for the day from two separate sources), celestial events such as comets and eclipses have influenced the course of history. He then gave several examples, and for each one, the planetarium was set to that date and time, so we could see for ourselves what the sky looked like for the following events:

- In 660 BCE, a Phoenician fleet, under orders from the Egyptian king, circumnavigated the continent of Africa. This remarkable feat is recorded by Herodotus, who expressed his doubts that such a voyage ever took place. His reason? Because they claimed that at the southern end of their trip, they saw the Sun in the northern sky! We now realize that the Earth is a globe, and the Sun does indeed appear as the report claimed, so what Herodotus thought to be the most damaging testimony becomes instead the part of the narrative that makes it most believable.

- On May 28 585 BCE, after five years of warfare, the kingdoms of Media and Lydia met in battle once again near the Halys River in central Turkey. The battle raged all day long with neither side able to gain an advantage or being willing to quit. Then, late in the day, the sun suddenly disappeared! A total solar eclipse so terrified the combatants that they immediately ceased fighting and negotiated a peace treaty. This eclipse also happens to have been predicted by a Greek philosopher, Thales of Miletus.

- By 333 BCE, Alexander the Great, having freed the Greek colonies on the Ionian coast, had driven the forces of the Persian Empire back into what is now modern Iraq. He then set about conquering Phoenicia, Palestine and then Egypt before turning northward to deal with the Persians. Darius, the Persian king, meanwhile had raised an even larger army to fight the Greeks. As the two armies maneuvered towards battle, a total lunar eclipse occurred on the night of September 20, 331 BCE. Alexander chose to interpret this usually ominous sign as a favorable omen and so informed his soldiers that it portended the overshadowing of a mighty empire. Two days later, Alexander and Darius met in battle and the Greeks soundly defeated the Persians.

- In early 14 AD, the long reign of Augustus had ended and Tiberius, his adopted son, sat uneasily on the imperial throne. Some factions in the Senate advocated for the return of the Republic while others vied for the imperial purple for themselves. As Tiberius struggled with the Senate news came that the Legions along the German frontier had revolted. Without the legions, all Rome feared a barbarian onslaught. Tiberius sent his son, Drusus, to bring the legions back under control. The rebels refused all orders, entreaties and threats until the night of April 4, 14 AD. At the height of the rebellion a total lunar eclipse occurred. This terrified the uneducated soldiers. Drusus seized

the moment and convinced them that it was a sign of the gods' disfavor. The rebellion ended, the ringleaders executed and Tiberius went on to become one of the worst emperors in the history of Rome.

- In the spring of 1066 AD, Harold II had just been crowned King of England. He must have been a little nervous because his father had promised the throne to other claimants but left no clear directions upon his death. To make matters worse, that spring a bright comet appeared in the sky. Comets were considered the harbingers of doom for kings. All through the summer the comet hung in the night sky as Harold struggled to raise an army to defend the kingdom. In late summer, the Vikings invaded the north of England and Harold marched to defend his land. At the Battle of Fulford (and it's sub-battle of Stamford Bridge) the English defeated the Vikings and killed the Viking king. Before they had fully recovered news came of a another invasion in the south. Again, Harold and his army marched and met the invaders near the town of Hastings. There, Harold met his death and the rule of England passed to William the Conqueror.

After the lights came back on, Ken answered a few questions. Perhaps in honor of the recently-finished Olympic Games, the meeting ended at a record-breaking 8:39 p.m.

- Steven Morris and Ken Munson

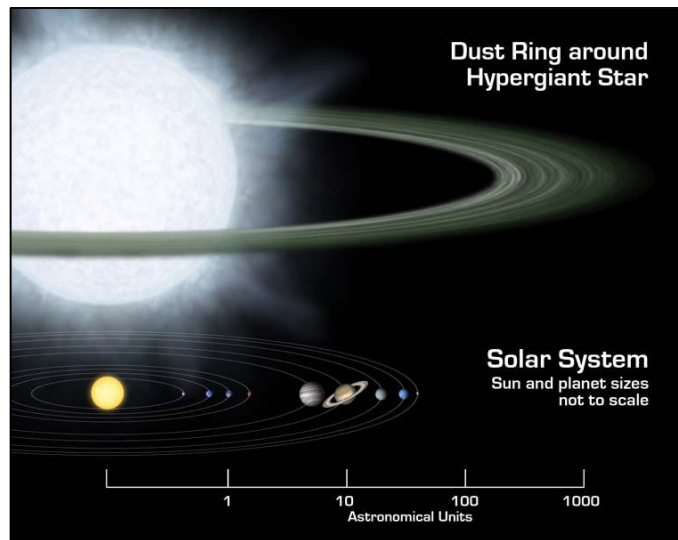
NASA Space Place

Planets in Strange Places

By Trudy E. Bell

Red star, blue star, big star, small star—planets may form around virtually any type or size of star throughout the universe, not just around mid-sized middle-aged yellow stars like the Sun. That's the surprising implication of two recent discoveries from the 0.85-meter-diameter Spitzer Space Telescope, which is exploring the universe from orbit at infrared (heat) wavelengths blocked by the Earth's atmosphere.

At one extreme are two blazing, blue "hypergiant" stars 180,000 light-years away in the Large Magellanic Cloud, one of the two companion galaxies to our Milky Way. The stars, called R 66 and R 126, are respectively 30 and 70 times the mass of the Sun, "about as massive as stars can get," said Joel Kastner, professor of imaging science at the Rochester Institute of Technology in New York. R 126 is so luminous that if it were placed 10 parsecs (32.6 light-years) away—a distance at which the Sun would be one of the dimmest stars visible in the sky—the hypergiant would be as bright as the full moon, "definitely a daytime object," Kastner remarked.



Artist's rendering compares size of a hypothetical hypergiant star and its surrounding dusty disk to that of our solar system.

Such hot stars have fierce solar winds, so Kastner and his team are mystified why any dust in the neighborhood hasn't long since been blown away. But there it is: an unmistakable spectral signature that both hypergiants are surrounded by mammoth disks of what might be planet-forming dust and even sand.

At the other extreme is a tiny brown dwarf star called Cha 110913-773444, relatively nearby (500 light-years) in the Milky Way. One of the smallest brown dwarfs known, it has less than 1 percent the mass of the Sun. It's not even massive enough to kindle thermonuclear reactions for fusing hydrogen into helium. Yet this miniature "failed star," as brown dwarfs are often called, is also surrounded by a flat disk of dust that may eventually clump into planets. (Note:

This brown dwarf discovery was made by a group led by Kevin Luhman of Pennsylvania State University.)

Although actual planets have not been detected (in part because of the stars' great distances), the spectra of the hypergiants show that their dust is composed of forsterite, olivine, aromatic hydrocarbons, and other geological substances found on Earth.

These newfound disks represent "extremes of the environments in which planets might form," Kastner said. "Not what you'd expect if you think our solar system is the rule."

Hypergiants and dwarfs? The Milky Way could be crowded with worlds circling every kind of star imaginable—very strange, indeed.

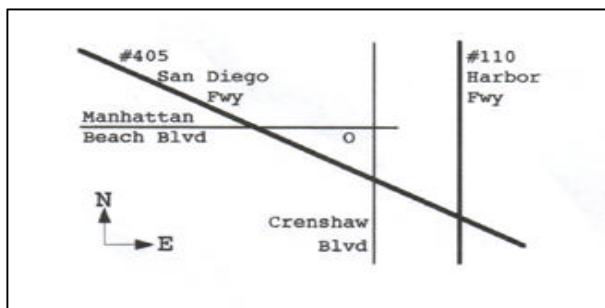
Keep up with the latest findings from the Spitzer at www.spitzer.caltech.edu/ . For kids, the Infrared Photo Album at The Space Place (spaceplace.nasa.gov/en/kids/sirtf1/sirtf_action.shtml) introduces the electromagnetic spectrum and compares the appearance of common scenes in visible versus infrared light.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

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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 **April 10th** planning meeting will be held at 7:30 PM at the home of Greg Benecke. From Crenshaw Blvd., head West on 182nd St. Shortly after going under the 405 overpass you will see a Fire Station on the right. Turn right into the cul-de-sac just after the Fire Station. From Prairie Ave., head East on 182nd St. Go one block past the second traffic light (Yukon Ave.) and make a left into the cul-de-sac just before the Fire Station. You are making the correct turn if you see a sign saying "Park Place" on the white fence on the Northwest corner next to the Fire Station. Greg's house is the first one on the left side of the cul-de-sac 18161 Patronella Ave., Torrance.

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 John Collins for magazine subscriptions at club rates: "Sky & Telescope" \$32.95 and "Astronomy" \$34.00! Make your check payable to SBAS and mail the payment and your subscription / renewal form directly to South Bay Astronomical Society, P.O. Box 1937, 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

Grand Canyon Star Party 2006

This year's edition of the Grand Canyon Star Party will be held on both the North and South Rims on June 17 through the 24th. If spectacular scenery, very dark skies and some public outreach astronomy sounds good to you, join amateur astronomers from all over North America who gather annually at both rims of the Grand Canyon to share the beauties of the night sky with park visitors. For the official website of the GCSP, go here: <http://www.tucsonastronomy.org/gcsp.html>.

**Credit: Jim Mahon, Celestial Horizons, Newsletter of the Ventura County
Astronomical Society.**

April – Comets & Asteroids

Comets Visible in April:

Comet	Magnitude	Constellation
McNaught (C/2005 E2)	9.47 – 10.11	Ari-Tau
Pojmanski (C/2006 A1)	9.35 – 11.70	Lac-Cas
Schwassman-Wachman (73P)	12.0 – 4.0	Boo-Ser-CrB-Her

Asteroid Occultations

Event Summary for Los Angeles

Date	Local Time	Durn	Star	Mag	Star	Planet	Alt
d m y	Hr Min	secs	mag	drop	No.	No	Name
11-Apr-06	0 6.6	3.2	8.9	5.6	HIP 25141	303	Josephina
22-Apr-06	22 45.3	5.8	10.3	3.3	TYC 0195-00978-1u	683	Lanzia
24-Apr-06	0 47.8	3.4	9.8	7.6	TYC 5470-01866-1u	4791	Iphidamas
29-Apr-06	0 30.8	13.8	7.6	4	TYC 7848-01774-1	654	Zelinda
30-Apr-06	0 27	3.4	9.6	4.9	TYC 4973-01378-1u	580	Selene
1-May-06	4 35.7	4.3	9.9	4.2	TYC 6889-01419-1u	131	Vala

Sun/Earth Day

Once again the SBAS presented a day-time star party at the Palos Verdes Farmer's Market. On Sunday, March 5th, several club members gathered to set up telescopes and a display to offer visitors a glimpse of everyone's favorite star, the sun. This was also the first time we were able to put to use the new Personal Solar Telescope from Coronado Instruments that the club won for doing public outreach.

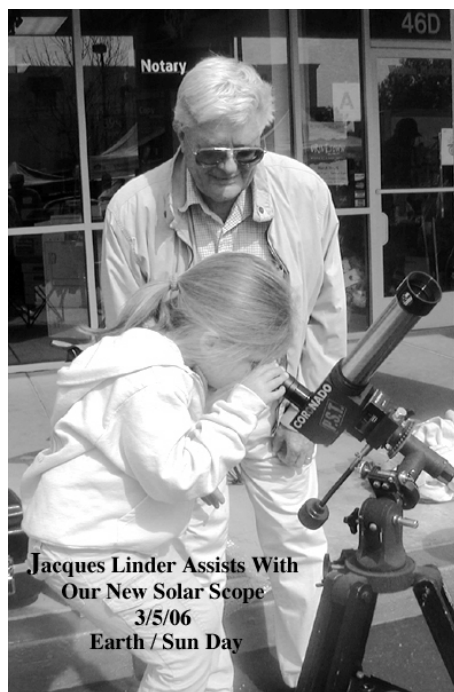
- Joe Fiersein

Hands on the Sun

The 6th Annual Hands on the Sun conference, the ONLY conference for the amateur Solar observer, will be held October 6-8 in Tuscon, Arizona.

For the 6th consecutive year, Coronado is sponsoring a 2 plus day workshop and symposium for the amateur Solar Observer. The only event of its kind, this year's program reflects the interests expressed in the survey taken following the 2005 meeting.

Program will open at ~ 2:00 p.m. Friday October 6th with an optional tour of the Large Mirror Lab at the University of Arizona. Formal opening is at 6:30 p.m. Friday, the 6th. Close 5:00 p.m. Sunday 8th.



Jacques Linder Assists With
Our New Solar Scope
3/5/06
Earth / Sun Day

Topics that will be covered include: Key note Speaker: Dr. Ralph Chou, Professor of Optometry at the University of Waterloo, Canada. Dr. Chou is a leading expert on eye safety and Solar observing and is instrumental in setting safety standards for the ISO. A keen amateur Solar observer, Dr. Chou will speak to the subject of the affects of aging on the eye and visual system & how this effects observing at the eyepiece. He will discuss macular degeneration and cataracts, but also changes in the aberrations of the eye, spectral sensitivity (hence why Ca K is only seen by the young), and corneal transparency.

Other topics of interest are Robotics for both the professional and amateur, technical talk from Coronado, first hand accounts of eclipse 2006, and Astronomy in the Classroom. There will also be a session for Hands-On Imaging and Processing. For this on you'll need to bring your own laptop.

Registration is \$175.00 includes all materials. SPEAKER & PROGRAM INFO is subject to change and all changes & additional details will be posted and updated at www.coronadofilters.com and www.meade.com Registration form is also on line at both sites

SCIENCE NIGHT AT CORNERSTONE SCHOOL

Friday, February 24th was Science Night at the Cornerstone School in Rancho Palos Verde. SBAS was invited to participate in the evening's activities. Telescopes were provided by Ken Rossi, Greg Benecke and Arnie Stodolsky. Unfortunately, due to the location we were assigned, it was not possible to use Tim Moore's 14 inch scope but Tim provided much information to the students and parents who came out to view the skies. The night sky was mostly clear and approximately 170 individuals were given views of Saturn, the Orion nebula and other celestial objects. The event organizers expressed their gratitude for our support.

-Arnie Stodolsky

DEEPSKY OBSERVING PROGRAM

One CD version of this popular observing program is available for purchase. The regular price of this program is \$52.99 but is available to SBAS members for \$33.00. Information on this program is available at <http://www.deepskyobserver.com> or see Arnie Stodolsky at the General Meeting.

WANTED: LAPTOP COMPUTER

Do you have an older laptop computer that you're not using? Your SBAS is in need of one to use for observing, astrophotography and telescope control. It should be Windows based and in working condition. Contact Arnie Stodolsky at the next meeting or call him at 937-0220 if you can help.

ASTRONOMICAL LEAGUE

An updated member list will be submitted to the Astronomical League in April. It will only have member names that have paid their annual dues. If you haven't paid your dues for 2006, please see Arnie Stodolsky, SBAS Treasurer, at the General Meeting on April 7th or mail it to SBAS, PO Box 1937, Redondo Beach, CA 90278.

Tripod for Sale

The old tripod for the club's Nexstar 8 telescope is being put up for sale. It makes a good platform for a small telescope. If interested, contact Joe Fierstein (310-377-9834).

Rescheduled: Whalley School Star Party

The star party for Whalley School in Compton has been rescheduled for March 31. Anyone who can support it, please bring your scope!

Directions: Take the 91 eastbound. Switch to the 710 north. Exit Rosecrans and turn LEFT (west). The next block is Gibson; Turn LEFT (south) onto Gibson. The school is there at the southwest corner of Gibson and Rosecrans. Turn right into the parking lot; you can drive to the back of the parking lot and continue left around to the back of the school where the expansive PE fields are located; we'll set up the star party there. The school's address is: 14401 S. Gibson, Compton.

Mt. Wilson

The SBAS will be making a third (fourth?) attempt at observing on the 60 Inch telescope at Mt. Wilson on April 29. The folks that are on the signup list are being contacted to confirm that they still plan on going. There are a few open spaces that will be first filled from the waiting list. By the time of April 7 the meeting there may still be one or more openings. If you want to be added to the waiting list contact Greg Benecke at 217-1512 or e-mail him at beneckerus@aol.com. We usually have last minute cancellations, so if you are willing to be contacted with a few hours notice about an opening, let Greg know. Mt. Wilson has raised the nightly fee to \$1100, so the fee is \$44 per person.

Remember to dress for cold weather as it can reach freezing into May. Bring snacks and drinks to keep you going. There is hot water available but you need to bring your own instant coffee or hot chocolate. Bring a folding chair or cot. Red flashlights only. Carpooling is encouraged as the parking is limited. An adventure pass is required for parking legally. For more visitor information go to: <http://www.chara.gsu.edu/CHARA/MtW/60inVisitorInfo.html>

Sunset on April 29 is about 6:30 P.M., so we should meet at about 6:00 at the entrance to the Mt Wilson compound at the East end of the loop around the TV and radio towers. A map to Mt. Wilson can be found at: <http://www.mtwilson.edu/vis/roadmap.jpg>.

If you are going to be late call Greg to get the phone number of the 60 inch dome. You can call there from the public phone at the gate (cell phones do not work due to all the interference from the transmission towers) and a staff member will eventually come out to let you in.

Shattered Comet Coming Soon

Coming soon to a neighborhood near you, shattered comet 73P/Schwassman-Wachman! This comet unexpectedly broke apart in 1995. In May of 2006, the remnants will pass by earth closer than any comet has in 80 years. Closest approach is estimated at about 60 million miles. For those interested in an early look, the comet(s) are already visible in the eastern evening sky in Bootes, shining at about 12th magnitude. It is expected that the fragments may rise to as much as 4th magnitude by the time of closest approach during May 12-14. Originally shattered into 3 fragments the comet has broken up into even more pieces, now numbering about 8 big fragments. By the time of closest approach, the comets will be passing through Cygnus and Pegasus.

Observing Report

Ridgecrest School – March 17

After a day full of promise, the clouds began moving in just as the sun began to set. Still, that didn't deter some indomitable observers from attending the in-town observing session at Ridgecrest School. The turnout was quite good with at least 8 telescopes set up in spite of the cold, wind and clouds. While the clouds prevented viewing in the early evening club members talked and made plans for the next session as well as helping out newcomers. After the sun set, the wind died down and the temperature was much more bearable.

Patience was eventually rewarded with some clearing of the skies which allowed us to do some observing. Saturn was high in the sky and at times the seeing conditions were really excellent. The Cassini Division was clearly visible and at times, even the Encke Minima could be detected. A few deep sky objects were observed, particularly the Great Nebula of Orion as well as M45, M41 and NGC 457 (the E.T. Cluster). Even a few asteroids were observed.

It ended up being an early end to the evening as the clouds came back after 10 PM and began to thicken. People began shutting down and going home. As I was heading home, I got caught in a small rain shower. Lucky we shut down when we did!

- **Ken Munson**

MRO Camera Works!

For the first time since successfully entering orbit around Mars, the Mars Reconnaissance Orbiter (MRO) turned on its high-powered camera and took a few pictures of Mars. The High Resolution Imaging Experiment (HiRISE) is the most powerful camera ever sent to the red planet. The first image, even though taken from an altitude higher than the nominal mission altitude showed exceptional detail. Taken at an altitude of nearly 2500 kilometers, the first images had a resolution of 98 centimeters per pixel. It is expected that once the craft is in its operational orbit, the image resolution will be about 30 centimeters per pixel.

Other instruments, including the Mars Climate Sounder, will be turned on briefly for checkouts and then shutdown for the next six months. Over the next six months, the spacecraft will perform a series of aerobraking maneuvers to lower the orbit down to its operational altitude of about 150 miles above the surface. From there it will spend a year taking high resolution photos of the Martian surface, investigating the Martian atmosphere and looking for traces of water.

Astronomy Video Course

Shawn Belveal has donated a video course on astronomy to the club. The course is titled "Understanding the Universe: An Introduction to Astronomy" and contains 15 VHS tapes divided into 5 3-tape volumes. The course is available for loan to SBAS members. Contact a club officer (Joe Fierstein or Arnie Stodolsky) to make arrangements.

Schedule of Coming Events

31 March Friday Evening	Re-scheduled Whalley School Star Party See directions on page 6.
7 April Friday Evening 7:30 PM	Monthly General Meeting Guest Speaker: Dr. David Dunham Topic: Asteroid Occultation Observing
10 April Monday Evening 7:30	Monthly Planning Meeting See directions on Page 4.
13 April Thursday Evening 7:00 PM	Von Kármán Auditorium (Thursday) & Vosloh Forum at Pasadena City College (Friday) “MARSIS Instrument on the Mars Express Spacecraft” For the first time in the history of Mars exploration, a radar sounder has been used to probe below the surface of the planet. The Mars Advanced Radar for Subsurface and Ionospheric Sounding (MARSIS), aboard the European Space Agency's Mars Express orbiter, is being used to map the interior of the thick polar ice caps to depths as great as 3 km (2 miles), and has discovered large hidden craters below the surface.
22 April	Lyrid Meteor Shower Peak In reasonably dark skies, expect to see about 8 to 15 meteors per hour. This shower appears to originate from an area near the star Vega.
22 April Saturday Evening	In Town Dark Sky Observing Session – 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. <i>Drive with care</i> 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.
29 April Saturday Evening	Out-of-Town Dark Sky Observing Session Contact Greg Benecke for directions.
5 May Friday Evening	Monthly General Meeting Guest Speaker: Glen Rosenthal

South Bay Astronomical Society

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

Guest Speaker: Dr. David Dunham

“Asteroid Occultation Observing”

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**South Bay Astronomical Society
P.O. Box 1937
Redondo Beach, CA 90278**