

FIRST LIGHT



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

Monthly General Meeting: Friday, August 1st, 7:30 PM

Guest Speaker: Ms. Nagin Cox (JPL)

"Mars Exploration Rovers"

Observing Reports

June 28 @Mojave - After a full month of "June Gloom" I was itching to get back out to some dark-sky country. Conveniently, it worked out the weekend of June 28 as I wasn't on-call and it was new-moon weekend. Once again, I made the trek out to the Mid Hills Campground in the Mojave National Preserve and found my favorite campsite occupied by the only other people in the entire campground, a boy scout troop from Upland!

I started out the evening doing a mini-Messier marathon that was primarily galaxy hunting through Ursa Major, Canes Venatici, Leo and Virgo. What was interesting was to find the galaxy with the 40mm and then switch to the 10mm or even 6mm eyepieces to see if any structure could be resolved. M51, not surprisingly, was spectacular this way. In the 40mm eyepiece, the bright cores of the primary and companion galaxies were easily visible with a very faint ghosting of the spiral, but the 10mm really seemed to enhance the visibility of the spiral arms. M101 and M109 also both showed nice spiral arms, although it appeared to me that M101's were fainter. After reviewing some pictures, I think I was seeing the brightest portion of M109's spirals.

After midnight, when the boy scouts had finally gone to sleep and turned off their camp lights, I turned to the south and the Scorpio-Sagittarius region. I hopped around among my old favorites again. The Trifid Nebula was much more spectacular in the 10mm eyepiece than it was in the 40mm. About this time, it seemed to be dark-enough and the big searchlight that had been sweeping upwards from the south-eastern horizon had been shut down, so I decided to try a little astrophotography, starting out with some piggy-back shots of the Sagittarius star cloud.

I switched between my normal lens and the wide-angle lens and swung up to Cygnus and did a long-exposure shot, 30 minutes or more of the area (hopefully) of the North American Nebula. I was able to see a faint hint of it the last time I shot that area over a year ago. I switched the camera to prime focus and shot a couple of star clusters, M80 and M11. I'm not sure how good my guiding was. The scope seemed to be more willing to go one way than it was the other. Must have nailed the polar axis pretty good as I didn't have to touch that, except by accident. Hopefully, the pictures will at least show something when I get the film developed.

After that, I moved on to the sampler articles from three issues of Sky and Telescope, starting with the August 2003 issue and went through a few more objects in Sagittarius a little outside of the usual places people look. I was actually able to see Barnard's Galaxy (NGC 6822), barely more than a slight brightening of the general background but it clearly had the same shape as shown in the photograph in the article. I can see why so many people have had trouble finding that one! I had to move the telescope back and forth a few times to pick it out. It's definitely a target for a smaller telescope with a wider field of view. Another little treasure there was planetary nebula 6818. At first, it looked like it was just a star and I thought the sky was getting more perturbed. But the 10mm eyepiece was able to make the stars nearby pinpoint while the little gem became a bright, fuzzy bluish ball.

Switching to the June 2003 issue, I began moving through a few interesting double stars, always one of my favorite tests of sky quality. I was able to split a 1.4" double, Lambda Ophiuchus, which was the tightest double in the list.

Although I could easily discern magnitude differences, I could not readily tell what color each star was, with the notable exception of Albireo and its companion. The July 2003 issue offered some nice objects in Draco to view. Of course, the Cat's Eye Nebula (NGC 6543) was beautiful, even in spite of the slight light pollution visible from Las Vegas. One of the more interesting objects was UX Draconis. It is a carbon star and is consequently very red. As the article said, it really was redder than Antares. I've added it to my Sky Object List in the hand controller so I can return to it again to show others. I don't think it was as red as Hind's Crimson Star in Lupus but it was significantly brighter. Apparently, it's also a variable so that will probably change.

Kemble 2, also known as the 'W' cluster in the Nexstar Asterism list, is an amazing miniature duplicate of the constellation Cassiopeia. This one fits nicely in the field of view of a telescope eyepiece and all the main stars of Cassiopeia have their duplicates in this small, but strange, asterism. NGC 6503 in Draco is a very nice bright spiral galaxy that is slightly tilted towards us. This must be the one I found a couple of years ago with my Nexstar 5 that looked so bright and clearly disk shaped. With the 10mm eyepiece, the disk was bright and showed some subtle markings, although I couldn't distinguish a spiral shape to it.

By this time Mars was well up and I spent a lot of time gazing at it. Using the maps in the June S&T, I believe I was able to identify Syrtis Major, although, strangely, the Hellas plateau did not seem to be visible so I question my identification. Can anyone else check me on this? Was Syrtis Major visible on the night on June 28? The sky was growing more and more unstable and it took a lot of patient observing to catch a few fretful glimpses of the Martian surface. While the dark shading and bright south polar cap were clearly visible (it seems to be slightly smaller than it was last month), very little else was. I took a few pictures of it anyway, in spite of the atmospheric conditions. From there, I went on to check out both Neptune and Uranus, both of which showed small disks but nothing else. Moving on to Aquarius, I visited the Helix and Saturn nebulas. It was my first time seeing the Helix. I hadn't realized it was so big! With the OIII filter in place, I could see a hint of a double ring. The Saturn Nebula clearly showed why it got its name.

One of the last things that I checked for the night was M31, the Andromeda Galaxy. In the 10mm eyepiece, I noticed something I'd never seen before. As viewed in my scope with the star diagonal in place, I could see a dark band stretching from near the core and out to the far edge of the very faint halo. Even in photographs, the spiral arms of this galaxy are very faint so I was surprised to see this. I switched to the 6mm eyepiece and it was still there so it wasn't an artifact of the eyepiece at least. I wonder if what I saw was a dust lane.

Having had a great deal of fun, I decided to try to get some sleep before having to face the long drive back to LA. I set the scope on Venus, which was still below the horizon and went to sleep in my car. Rising well after sunrise, I checked the scope and there was Venus, clear as day (pardon the expression). I swung over to Mars and checked it and sure enough, it was visible too, still showing the south polar cap and the dark region I'd seen earlier. I called one of the boy scout troop leaders over since he and I had talked the night before. He was very impressed to see Mars in broad daylight!

- Ken Munson

June 28 @Joshua Tree - On Saturday, Steve Lindsey, Dan Trimble, Craig Gates and his son-in-law, Mike Rivas and I converged on the Cottonwood Springs Campground in Joshua Tree National Park. The drive is a bit longer than Redrock-Inyokern Road at about 170 miles. It's a nice location. We used the paved campsite parking pads to set up and there are restroom facilities. For me it was a hit and run night. I arrived just after sunset and I was on the road before sunrise in a caravan with Mike. The sky is very dark, certainly the equal of Redrock-Inyokern Road. There is only one significant light dome, greater Los Angeles, to the West. The South is very dark, perfect for finding those low southerly objects. The seeing was not that great, which was a bit of a disappointment as this was to be my first opportunity to see Mars this season. Though unsteady, the view of Mars displayed a very prominent Polar Ice Cap. The weather was shirtsleeve-temperature all night and the wind was calm. All in all, a nice night.

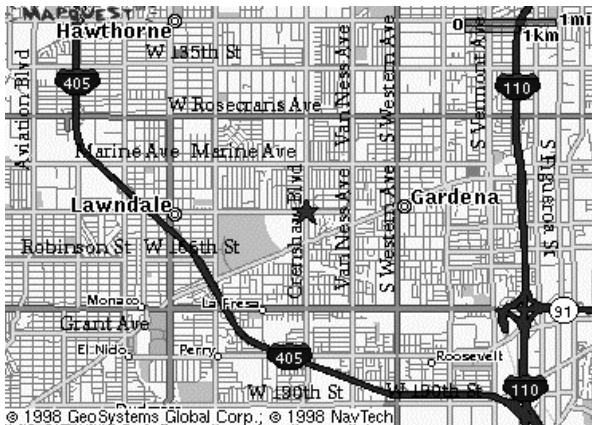
July 19 @Ridgecrest - Mike Rivas, Joe Fierstein, Al Fader, Shawn Belveal, Jim Madison and I spent a couple of hours Saturday at Ridgecrest School waiting in vain for the fog to clear. We gave up, but decided that if the weather looked good the next night we would give it a try. Mike and his daughter, Joe, Jim and I arrived Sunday night to find a promising sky. There was a marine layer, but it looked like it was going to be below us and cover the South Bay. Unfortunately, high hopes appear to bring a higher marine layer and soon we were in the fog. Joe eventually called it a night and packed up. The rest waited it out until about 10:30 when we all agreed to throw in the towel. Within just a couple of minutes of starting to pack an amazing transformation occurred. It cleared completely, unfortunately even the South Bay. Die hards that we are we started to reverse the packing and ended up viewing till about Midnight, just long enough to view Mars rising above the trees in the East.

- Greg Benecke

Your SBAS Committee

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Monthly General Meetings



We normally meet on the first Friday of each month at 7:30 p.m. in the Planetarium at El Camino College. If the first Friday is on or close to a holiday, we usually defer the meeting until the second Friday of the month.

The Planetarium is on the south side of Manhattan Beach Blvd., one block west of Crenshaw Blvd. (near the center of the map at left). Click on the map to get a display that can be zoomed out for a regional view. The zoom display appears in a separate browser window, which can be closed to return to this page.

The domed roof of the planetarium is visible from the street. There is on-street parking, and we can often use campus parking: check inside to see if you need a FREE parking permit for your car. Park in northeast corner lot, temporarily, due to the construction project.

We enjoy the planetarium facilities through the courtesy of the El Camino College Administration, and have several faculty members of the Astronomy Department as members of our Club. Our meetings always include an informal opening, when new attendees are invited to introduce themselves and let us know about their interests in astronomy. Members share their latest news and observations at this time.

The rest of the evening is devoted to guest speakers, who range from amateur astronomers to professional astronomers to representatives from local aerospace companies to college professors. We are fortunate to have all these talented people in our area, 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, August 1st at 7:30 PM at the home of Ray Grace, 2706 Spreckels Lane in Redondo Beach. 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 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 member: Barney Krinsky.

Contact John Collins for magazine subscriptions at club rates: “Sky & Telescope” \$29.95 and “Astronomy” \$29.00! Make your check payable to SBAS and mail the payment and your subscription / renewal form directly to SBAS, c/o Microcosm, Inc. at 401 Coral Circle, El Segundo, CA 90245-4622.

Part of your SBAS membership dues goes toward membership in the Astronomical League. All paid members should be receiving the “Reflector”, the league's newsletter, four times a year. As a member organization, we can participate in a number of award programs they offer. These are based on completing various observing challenges. Check out the Astronomical League website at www.astroleague.org

NexStar 8 Available to SBAS Members

All members in good standing (with at least six months of continuous membership) can borrow the club's Nexstar8 for up to 7 days. The fee of \$5 for a weekend, or \$10 for an entire week, is nonrefundable and will be added to the club's Accessories Fund “Wish List” for future purchases. A fully refundable deposit of \$200 cash or check is required. Loss or damage is the responsibility of the borrower. A copy of the complete South Bay Astronomical Society Nexstar 8 Borrowing Rules and Agreement is available upon request. The **Accessories Fund “Wish List”** – Member contributions of any amount or donations will be appreciated, as will any suggestions for new purchases!



For Sale
10 x 25 Coronado Binoculars With
Built In White Light Filters For Viewing The Sun
Retail Price \$100, Your Price \$75
Call Joe Fierstein (310) 377 9834

SBAS Member Ads “For Sale” & “Wanted” or “Willing to Trade”

Send in your personal advertisements to sell excess equipment that you have not used in eons! There are buyers out there looking for equipment that is in good condition at a reasonable price! Your ads will also appear on our website newsletter.

Is there anything that you are interested in buying? Send in your information to place a “want ad” so that other members can keep an eye out for a good deal on items that interest you!

How about a good old-fashioned “trade” on items that you see in the listings? Send in your offer and you might be able to swap accessories.

Call me at my home phone number listed on page 3 and I will add your name to my email address list for receiving messages or I'll take you information over the phone, to be published in the next newsletter.

- Laura Lucas

Venus Unveiled

We were honored by the fifth visit of Prof. Gary Peterson for our July General Meeting. This time he treated us to a very interesting discussion about Venus, our nearest planetary neighbor. Contrary to popular belief Venus has more in common with Earth than any other planet in the Solar System. The main difference between the two planets are their atmospheres, which on Venus is composed mainly of carbon dioxide at many times our atmospheric pressure and temperature and is very hostile to any life form. While back here on Earth our nitrogen/oxygen rich atmosphere has encouraged many different life forms to evolve. But under it's veil of clouds, radar imaging shows a planet very similar in size and geology to that of Earth. The topography shows evidence of past mountain building and volcanic activity, with lava flows very similar to those seen on Earth.

- **Ron Rennie**

Hawaiian Telescope Team Makes Debut Discovery

Astronomers have observed a young star ringed by a swirling disc that may spin off planets, marking the first published science observation using two linked 10-meter (33-foot) telescopes in Hawaii. The linked telescopes at the W.M. Keck Observatory on Mauna Kea, known as the Keck Interferometer, comprise the world's largest optical telescope system. The observation was made of DG Tau, a young star that has not yet begun to burn hydrogen in its core. Such stars are called T-Tauri objects. Observations of DG Tau were made on October 23, 2002, and February 13, 2003, and the findings will appear in an upcoming issue of the *Astrophysical Journal Letters*.

"We're trying to measure the size of the hot material in the dust disc around DG Tau, where planets may form," said Dr. Rachel Akeson, leader of the study team and an astronomer at the Michelson Science Center at the California Institute of Technology in Pasadena. "Studies like this teach us more about how stars form, either alone or in pairs, and how planets eventually form in discs around stars." The Keck Interferometer observations revealed a gap of nearly 29 million kilometers (18 million miles) between DG Tau and its orbiting dust disc. Akeson notes that of the extra-solar planets – planets orbiting other stars -- discovered so far, roughly one in four lies within 16 million kilometers (10 million miles) of the parent star. Since planets are believed to form within a dust disc, either DG Tau's disc has a larger-than-usual gap, or the close-in planets form farther from the star and migrate inward.

Since 1995, astronomers have detected more than 100 extra-solar planets, many considered too large and close to their hot, parent stars to sustain life. By measuring the amount of dust around other stars, where planets may form, the Keck Interferometer will pave the way for NASA's Terrestrial Planet Finder mission. Terrestrial Planet Finder will look for smaller, Earth-like planets that may harbor life. The Keck Interferometer and Terrestrial Planet Finder are part of NASA's Origins Program, which seeks to answer the questions: Where did we come from? Are we alone?

"T-Tauri objects had been observed with other instruments, but only the brightest ones were detectable until now," Akeson said. "With the larger telescopes and greater sensitivity of the Keck Interferometer, we can look at fainter T-Tauri objects, like this one." The Keck Interferometer gathers light waves with two telescopes and then combines the waves so they interact, or "interfere" with each other. It's like throwing a rock into a lake and watching the ripples, or waves, and then throwing in a second rock. The second set of waves either bumps against the first set and changes its pattern, or both sets join together to form larger, more powerful waves. With interferometry, the idea is to combine light waves from multiple telescopes to simulate a much larger, more powerful telescope.

In its ability to resolve fine details, the Keck Interferometer is equivalent to an 85-meter (279-foot) telescope. "The system transports the light gathered by the two telescopes to an optical laboratory located in the central building," said Dr. Mark Colavita of NASA's Jet Propulsion Laboratory, Pasadena, interferometer system architect and lead author of the paper. "In the lab, a beam combiner and infrared camera combine and process the collected light to make the science measurement." To make these measurements, the interferometer's optical system adjusts the light paths to a fraction of a wavelength of light, and adaptive optics on the telescopes remove the distortion caused by Earth's atmosphere. "This research represents the first scientific application of an interferometer with telescopes that use adaptive optics," said Dr. Peter Wizinowich, interferometer team lead for the W.M. Keck Observatory and co-author of the paper.

The development of the Keck Interferometer is managed by JPL for NASA's Office of Space Science, Washington. The W.M. Keck Observatory is funded by Caltech, the University of California and NASA, and is managed by the California Association for Research in Astronomy, Kamuela, Hawaii. Additional information & images are available at the following websites - http://planetquest.jpl.nasa.gov/Keck/keck_index.html and <http://www.nasa.gov>

- **JPL News Release**

Asteroid Hunters Discover Near-Earth Object with New Camera

NASA astronomers in pursuit of near-Earth asteroids have already made a discovery with the newly installed Quasar Equatorial Survey, or 'Quest,' camera mounted in mid-April on Palomar Mountain's 1.2-meter (48 -inch) Oschin telescope. "The Quest camera is still undergoing commissioning trials," said Dr. Steven Pravdo, project manager for the Near-Earth Asteroid Tracking Project at NASA's Jet Propulsion Laboratory in Pasadena, Calif. "But that doesn't mean we can't do some real science in the meantime. What we found was a near-Earth asteroid, estimated to be about 250 meters (820 feet) in size."

The detection of the near-Earth object, 2003 NL7, occurred on the evening of July 8. It has been confirmed by follow-up measurements from three other observatories and subsequently certified by the official clearinghouse of the solar system's smaller inhabitants, the Minor Planet Center. While 2003 NL7 has been labeled a near-Earth asteroid, it is considered non-hazardous, with a 2.97-year orbit of the Sun in which its closest approach to Earth's orbit is about 25.1 million kilometers (15.6 million miles).

The Quest camera is being developed as a multi-purpose instrument by the Yale and Indiana universities, with Dr. Charles Baltay, chairman of Yale's physics department, as the principal investigator. It is designed for use in detecting and characterizing quasars, near-Earth asteroids, trans-Neptunian objects, supernovas, and a large variety of other astrophysical phenomena, by scientists from Yale, JPL and the California Institute of Technology in Pasadena. The complex camera consists of 112 electronic chips known as charged coupled devices (CCDs) arranged over the Oschin telescope's focal plane. This gives the Quest camera 161-megapixel capability. By comparison, a good store-bought digital camera would probably be in the four-megapixel range.

"When Quest becomes operational, it will be a significant advancement for the Near-Earth Asteroid Tracking team," said Dr. Raymond Bamberg, the Near-Earth Asteroid Tracking Project's principal investigator. "We expect the new camera to increase the efficiency of detection of near-Earth asteroids by some 3 to 4 times that of the camera it replaced. This will make a major contribution to NASA's goal of discovering more than 90 percent of near-Earth objects that are greater than 1 kilometer (.62 mile) in diameter by 2008."

The Near-Earth Asteroid Tracking System is managed by JPL for NASA's Office of Space Science, Washington, D.C. JPL is a division of Caltech. More information on the Near-Earth Asteroid Tracking Program is available at <http://neat.jpl.nasa.gov/>

Atlas V Chosen To Launch New Horizons Mission

NASA has chosen the Atlas V expendable launch vehicle provided by Lockheed Martin Commercial Launch Services, Inc. as the launch system for the proposed Pluto New Horizons mission. The mission is scheduled for launch to Pluto in January 2006. As proposed, the Pluto New Horizons mission is a scientific investigation to obtain the first reconnaissance of Pluto-Charon, a binary planet system.

This will be a firm fixed-price launch service task order awarded under the terms of the current NASA Launch Services contract. The prime contractor will be Lockheed Martin Commercial Launch Services, Inc.; a constituent company of International Launch Services and legal contracting entity for Atlas launch services, located in McLean, Va.

New Horizons would seek to answer key scientific questions regarding the surfaces, atmospheres, interiors, and space environments of Pluto and Charon using imaging, visible and infrared spectral mapping, ultraviolet spectroscopy, radio science, and in-situ plasma sensors. The Principal Investigator is Dr. Alan Stern of the Southwest Research Institute, Boulder, Colo. The implementing institution is the Applied Physics Laboratory of The Johns Hopkins University, Laurel, Md. The proposed mission would use a spacecraft supplied Star 48B based 3rd Stage, manufactured by The Boeing Company of Huntington Beach, Calif., to achieve the required mission performance.

- NASA News Release

2003 Comet Awards Announced

Cambridge, MA - An annual award of several thousand dollars for discoveries of comets by amateur astronomers has just been announced for the fifth consecutive year. The Smithsonian Astrophysical Observatory (SAO), part of the Harvard-Smithsonian Center for Astrophysics in Cambridge, Massachusetts, has announced the recipients of the **2003 Edgar Wilson Award** for the discovery of comets by amateurs during the calendar year ending June 10. The award was set aside as part of the will bequeathed by the late businessman Edgar Wilson of Lexington, Kentucky, and administered by the SAO. The following five discoverers will receive plaques and a cash award:

- ❖ Sebastian F. Hoenig of Dossenheim, Germany, for his visual discovery of comet C/2002 O4 on 22 July 2002.
- ❖ Tetuo Kudo of Kikuchi, Kumamoto, Japan, and Shigehisa Fujikawa of Mitoyo, Kagawa, Japan, for their independent visual discoveries of comet C/2002 X5 on 12 and 13 December 2002.
- ❖ Charles W. Juels of Fountain Hills, Arizona, and Paulo R. C. Holvorcem of Campinas, Brazil, for their joint charge-coupled-device (CCD) electronic-camera discovery of comet C/2002 Y1 on 28 December 2002.

Comet C/2002 X5 is observer Fujikawa's sixth credited comet discovery. His first comet discovery came in 1969, more than three decades ago. He is the only winner this year credited with previous comet discoveries. Co-discoverer Tetuo Kudo is a well-known astrophotographer in Japan who started searching for comets some years ago. He discovered C/2002 X5 while he was waiting to finish an exposure.

Comet C/2002 O4 (Hoenig) is the first visual amateur comet discovery from Germany since C/1946 K1 (Pajdusakova-Rotbart-Weber). Hoenig also has detected nearly 20 comets in images from the Solar and Heliospheric Observatory (SOHO) satellite. More than 600 comets have been found by SOHO over its 8 years of operation.

Comet C/2002 Y1 (Juels-Holvorcem) was discovered in the first night of using a wide-field (2.3 x 2.3 degrees) camera on a 5-inch refractor to search for bright objects. Juels and Holvorcem collaborate over the internet with the help of "fast" ADSL connections, which make it easy to communicate and transfer images in near-real time between their homes in Arizona and Brazil, respectively.

At the beginning of the 17th century, Johannes Kepler thought there were more comets in the skies than there were fish in the seas. Hundreds of comets were observed and recorded before the invention of the telescope in 1609, and the number of discoveries soared when better-quality telescopes came into use in the 18th century. Armed with small instruments that pale in comparison to ones available to amateur astronomers today, the race to discover new comets and gain recognition and fame began. Nicknamed the "Ferret of Comets" by the King of France in the 1760s, Charles Messier became one of the most famous comet hunters of all time. He just missed the recovery of Halley's comet in December 1758 at its first predicted return, but for the next fifteen years, nearly all comet discoveries were made by Messier.

Nearly two hundred years have passed and today, amateur astronomers continue to discover new comets that may bear their names for eternity. Fighting increasing light pollution and competition from sophisticated professional observatories, the challenges and rewards have become even greater. There have been numerous comet awards over the centuries, but the Wilson Award is currently the largest publicly known award.

In 2002, there were seven recipients of the Award. Of the 25 Award recipients in the first five years, 15 have been for visual discoveries, eight for discoveries from CCD images, and one for a discovery from a photograph. In years when there are no eligible comet discoverers, the Award is made instead to amateur astronomers judged by the Central Bureau for Astronomical Telegrams (CBAT) to have made important contributions toward observing comets or promoting an interest in the study of comets.

For more information: <http://cfa-www.harvard.edu/iau/special/EdgarWilson.html>

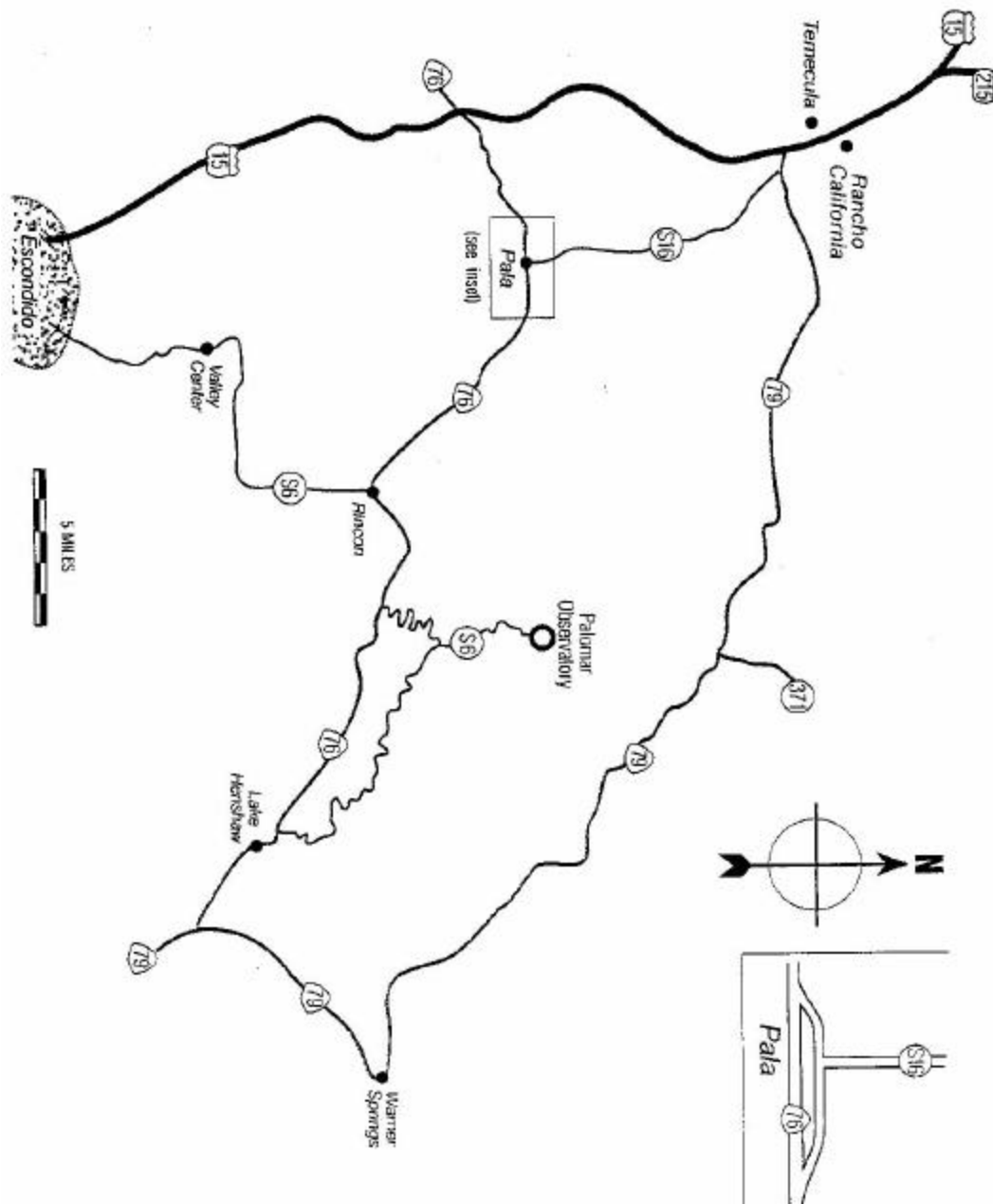
- News Release

Mt. Palomar Observatory Tour Date

The tour of the 200-inch Telescope, scheduled for Saturday, **August 2nd at 12:00 Noon**, can accommodate up to 30 people maximum. There are still 10 openings so you still have time to send me an email to reserve space on the tour or last minute signups can be taken at the Aug. 1st General Meeting. Please Plan on arriving about 11:30 A.M. to allow time to check-in with Steve Lindsey, the acting group leader, and receive your group identification badges before the tour begins. Meet in front of the Museum / Gift Shop near the parking lot. You should plan on about a 3-hour drive from the South Bay area. The road gets windy as you get closer to Mt. Palomar, so if you are prone to car sickness, allow extra time to pull over a few times.

Ken Munson has a van, and is offering to car-pool with others. Send me an email and I'll forward it to Ken!

- **Greg Benecke**



Schedule of Coming Events

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| 1 August Friday 7:30 P.M. | Monthly General Meeting: Our speaker will be Ms. Nagin Cox, Deputy Director of the JPL Rover Project. |
| 2 Aug. Saturday 12:00 Noon | Mt. Palomar Observatory Tour Contact Steve Lindsey or Greg Benecke to reserve space on the tour of the 200 inch Telescope! Trip details and a map are on the previous page. |
| 4 August Monday 7:30 P.M. | Monthly Planning Meeting Refer to page 3 for location. |
| 21 (JPL) 22 (PCC) August 7:00 P.M. | Von Karman Auditorium Lecture Series – FREE “The Mars Exploration Rovers – Robotic Geologists” – Post landing mission plans for the twin spacecraft are presented by Peter Theisinger, JPL Mars Exploration Rover program manager. For more information call: (818) 354-0112. |
| 23 August Saturday Evening | In-Town Dark Sky Observing at Ridgecrest School – Weather Permitting: If the weather conditions are marginal, contact Greg Benecke to confirm that he will be opening the gate! Take Hawthorne Blvd. south across Pacific Coast Hwy.; continue up the hill past Silver Spur and turn left at Highridge. Go one mile and turn left on Whitley Collins, up one block and turn left on Northbay Rd., the new parking lot is at the end on the left. Enter parking lot and turn left, the gate is at the east end (it should be open about 15 minutes before sunset) and a paved road leading into the playground where we have traditionally set up. If at all possible, drop your equipment off and park your car in the new parking lot (less than 200 feet away). If you are absolutely certain that your vehicle does <u>not</u> drip anything you can park with your equipment. Drive with care to avoid steel pillars supporting basketball nets... |
| 30 Aug. Saturday Evening | Out-of-Town Dark Sky Observing – New Moon August 27th Contact Greg Benecke to arrange site location. |
| 5 Sept. Friday 7:30 P.M. | Monthly General Meeting: The speaker for the evening will be announced in the next newsletter. |
| 8 Sept. Monday 7:30 P.M. | Monthly Planning Meeting Location will be announced in the September newsletter. |
| 20 Sept. Saturday Evening | In-Town Dark Sky Observing at Ridgecrest School – Weather Permitting. Refer to August 23rd entry for directions to the site & instructions on weather conditions. |
| 25 Sept. Thursday Evening | Mt. Wilson Observatory Trip Keep your fingers crossed that the “June Gloom” goes away and the weather stays mild! The Roster is full with 7 names still on the waiting list. |
| 27 Sept. Saturday Evening | Out-of-Town Dark Sky Observing – New Moon Sept. 26 Contact Greg Benecke to arrange site location. |

South Bay Astronomical Society

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***General Meeting at El Camino College Planetarium:
Friday, August 1st at 7:30 P.M.***

Guest Speaker: Ms. Nagin Cox (JPL)

“Mars Exploration Rovers”

* * * * *

**South Bay Astronomical Society
c/o Microcosm, Inc.
401 Coral Circle
El Segundo, CA 90245-4622**