FIRST LIGHT

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

Monthly General Meeting: Friday, November 7, 7:30 PM

Guest Speaker: Mr. Mike Mayerchak (SBAS)

"20 Years of Amateur Astronomy – My Journey"

SBAS Returns to Mt. Wilson Observatory

It was my great privilege and a wonderful pleasure to serve as the SBAS member to work with Mr. Dave Jurasevich, the Mt. Wilson 60 inch telescope operator, throughout the night. We performed an on going review of our list of target objects to schedule the optimum observing times for each, discussing other available choices to add variety and complexity to the night's observations. Here is the final list of objects for an exciting lineup:

1. Epsilon Lyra – A double star used for alignment and to check the "seeing".
2. M13 a spectacular globular cluster, faintly visible to the naked eye at 25,000 light-years from Earth.
3. NGC6543 The Cat's Eye Nebula with its complicated shells of matter.
4. M57 The shell of the planetary nebula represents the outer quarter of the star's mass.
5. PK64+5.1 Campbell's Hydrogen Star, planetary nebula with a blue central star - the only extended object that appears red to the observer's eye. This object was a special highlight of the night!
6. Uranus surrounded by some of its moons.
7. Mars with a small polar cap visible and one of its moons, Diemos.
8. Pease 1, a planetary nebula in M15, a difficult object using an OIII filter to block light from the globular cluster.
9. NGC7331, a spiral galaxy 50 million light-years away!
10. NGC7662 Blue Snowball, the first planetary nebula observed with a spectroscope established clouds of gas.
11. G156 - A globular cluster in M31, the Andromeda Galaxy, was one of the biggest challenges of the night.
12. M76 Little Dumbbell, the planetary nebula which lies near the boundary of Perseus and Andromeda.
13. Gamma Andromeda – A beautiful Double Star, Gold and Blue.
14. NGC869 the youngest known open cluster, approx. 10 million years old and approx. 70 light-years in diameter.
15. M1 Crab Nebula, a supernova remnant from the star's explosion recorded in 1054 A.D by the Chinese.
16. M42 Trapezium of the Orion Nebula - six of the seven stars were visible!
17. Another part of the Trapezium – showing dark, blue-gray nebulous structure.
18. NGC2392 Eskimo Nebula, a planetary nebula in Gemini.
19. Saturn – such a magnificent sight when the planet cast a shadow on its rings.

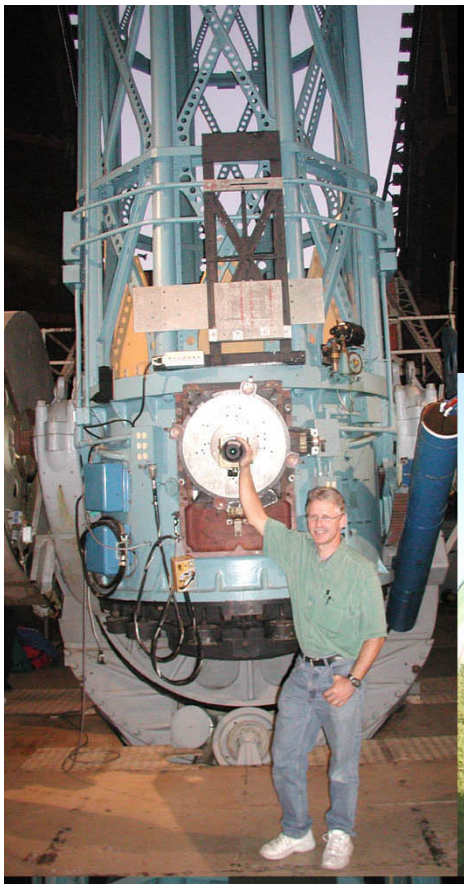
- Laura Lucas

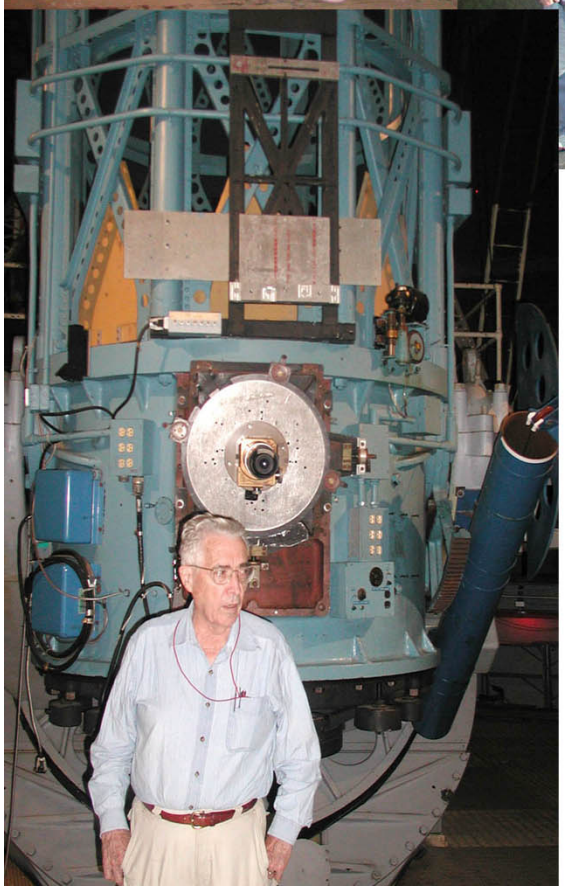
Mt. Wilson Tour

I have created a Mt. Wilson Tour file in the form of a Word 2000 document that has been sent to Alex Athas, our webmaster, to load onto the website. I took pencil notes all night long at Mt. Wilson and drew pictures of everything. Then I searched the Web for photos that were similar to my drawings. So most of the photos were copied from the Web and when I couldn't find a photo on the Web, I used a screen capture from Starry Night Pro. Two of the photos I did take myself - Mars and Saturn. Since we couldn't take any long-time exposures, I could only get pictures of very bright objects. Have fun!

- Ann Koons

Mt. Wilson Photos by Joe Fierstein





Clockwise

Shawn Belveal

Mars

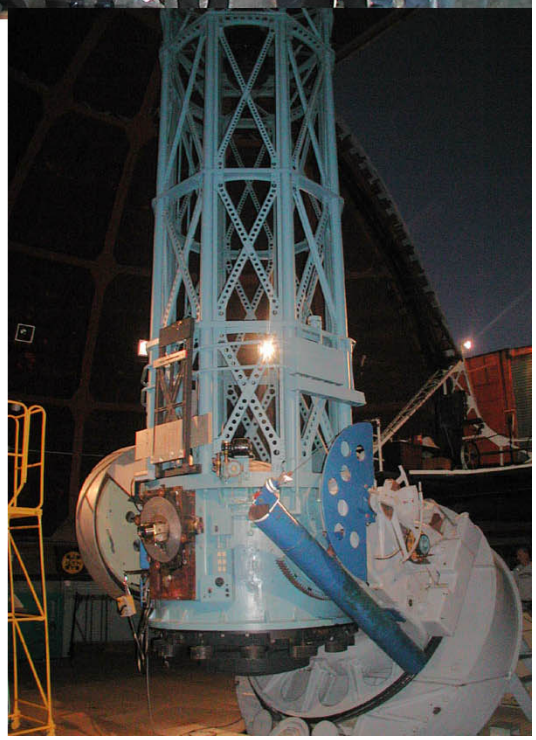
Saturn

The Gang

The 60 inch

Don Nicholson

(Our Host)



Our SBAS Committee

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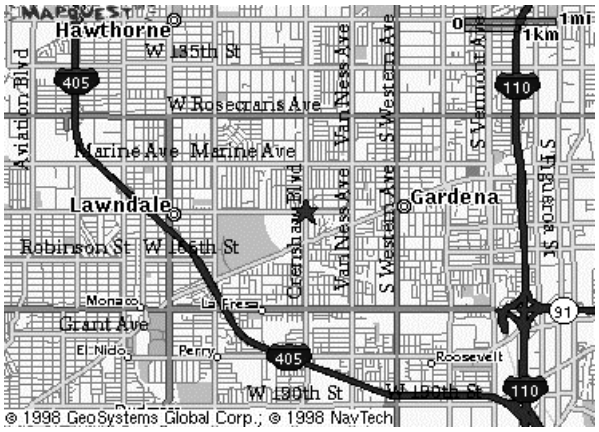
Monthly General Meetings



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, October 6th 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

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 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!

Annual Membership Renewal

Renew your SBAS membership – Keep this amazing newsletter coming plus meetings and observing trips!
Now would be a great time to renew your membership in the group that brings you great monthly programs, the company of fellow observers, and many chances throughout the year to share the excitement of the night sky with students and new friends.

If you just joined us this year, then you can renew your membership on a pro-rated basis to adjust your membership term to the standard calendar-year schedule. What a deal: you renew for less than full price. The renewal cost, as a function of when your membership expires, is as follows:

Membership	**Renewal Fee Due Now**	
Expiration	**Individual/Family**	**Student**
Dec. '03 or later	$ 0.00	$ 0.00
Nov. '03	$ 2.50	$ 2.08
Oct. '03	$ 5.00	$ 4.17
Sept. '03	$ 7.50	$ 6.25
Aug. '03	$10.00	$ 8.33
July. '03	$12.50	$10.42
June '03	$15.00	$12.50
May '03	$17.50	$14.58
Apr. '03	$20.00	$16.67
Mar. '03	$22.50	$18.75
Feb. '03	$25.00	$20.83
Jan. '03	$27.50	$22.92
Dec. '02 or before	$30.00	$25.00

To renew, check your membership expiration date in the upper right corner of the mailing label on the back page of this newsletter. This is what our records show for your membership expiration date. Please renew, according to the schedule above, by check to: South Bay Astronomical Society, c/o Microcosm, Inc., 401 Coral Circle, El Segundo, CA 90245-4622. (Payments will also be accepted at the general meeting on Nov. 7th!)

Observing Reports

@Ridgecrest School - It was another clear night at Ridgecrest School on Oct. 18. There was a bit of a temperature inversion that kept it at shirtsleeve temperature well into the night. There were some new folks there whose names I unfortunately did not record and for which I apologize. In addition, many of the regulars were in attendance: Al Fader, Ken Munson, Mike Rivas, Bea Collu, Jim Madison, and Shawn Belveal. Kurt Stenzel was sporting an impressive binocular rig, including a massive parallelogram mount and tripod. The seeing was pretty good and we had some good views of Mars. The South polar cap has really been shrinking and you are now able to notice that it is less than a full phase. The moisture level in the air was low, so the light pollution backscatter was less than usual. All in all, a very good night.

- Greg Benecke

@Borrego Springs - Here's my latest astrophotographs taken on Oct. 24th. Again, I felt lucky on long exposure shots like these with marginal, thin high cloud conditions to get what I did. We were quite fortunate to avoid the smoke on Sat. night from where we were in So. Calif. Here's a different look at the Orion constellation. The Helix could use more grain reduction but I hate to lose the little bit of detail that I do have. Both could use second shots to stack as well, but weather, horizons and mount didn't permit it in the same night.

http://home.earthlink.net/%7estevelindsey/OrionNebs.html
http://home.earthlink.net/%7estevelindsey/Helix.html
http://home.earthlink.net/%7estevelindsey/NGC7331.html

- Steve Lindsey

@ Redrock-Inyokern Rd. - A lot of people showed up and I had heard that there were about 18 scopes of various sizes. Surprisingly, it was a successful night for me considering that it was almost completely overcast when I arrived. By sunset, the sky magically seemed to clear and viewing was reasonably good. Having been thrilled with the sight of Campbell's Red Hydrogen Star through the 60-inch telescope on Mt. Wilson, I decided to venture off the usual path and look for other less well-known deep sky objects, found on the Saguaro Astronomy Club website.
http://www.saguaroastro.org/content/BEST-OF-DEEP-SKY-OBJECTS-NOT-IN-THE-NGC.htm
Not surprisingly, the Red Hydrogen Star looked considerably less exciting in an 11-inch scope than it did in the 60 inch. Sadly, most of the nebulas turned out to be too faint to see even with an OIII filter. One of the few visible was IC410 in Auriga. It's a faint haze of nebulosity surrounding a nice open star cluster. Several of the star clusters were better seen with binoculars. Several planetary nebulas could be seen but required high magnification, which the intermittent clouds often prevented from giving the best results. Another list they had was a table of red stars. The very first one I turned to, V Aquila, was a very vibrant red against a background of pale white and yellow stars. U Cygnus was another bright red star that clearly stood out from its surroundings, as did RV Cygnus. One red star that I had seen before, I failed to find during this weekend's expedition, R Leporis is also apparently a variable star. It was not visible even though I checked a couple of sources to ensure I was in the right area.

One interesting planetary I found was NGC 2372. It's a small, 12th magnitude planetary nebula in Gemini, oblong in shape and brighter at one end and appears to widen and fade away towards the other end. This one could easily be mistaken for a comet. IC418 in Lepus was listed as an 11th magnitude planetary but I found it to be surprisingly bright, more like 10th magnitude or higher. There may be some variability to it. There were at least three comets that were supposed to be in visual range. Comet 2002 T7, in Auriga, was easy to spot at 11th magnitude as a hazy ball with a bright (well, not very bright) center. Comet 2001 HT50 in Taurus, also about 11th magnitude was a bit more difficult, being a much smaller target. Comet Encke, which was supposed to be near Andromeda and near 10th magnitude, proved to be invisible. Some other folks with larger scopes said they'd finally found it and estimated it to be around 14th magnitude. Well, comets are known for being unpredictable. Two out of three wasn't too bad.

One of the real treasures of the night was finally spotting the Rosette Nebula in Monoceros. Star cluster NGC2244 plays host to this large diffuse nebula, that could only be seen with the help of an OIII filter. Steve Rivas let me borrow his OIII and nebular filters and that gave me a good demonstration of what quality filters can do. My OIII is admittedly towards the low end in price but it works pretty nicely. Steve's higher quality OIII filter brought out more subtle shadings in the nebula. I suspect this nebula is the remnant of the giant gas cloud that cluster NGC2244 formed out of. Could the dark lanes we saw be areas where star formation is still going on? Interesting to think that someday, even the Great Nebula in Orion may look similar to this when the gas dissipates and the hidden cluster behind blazes forth in all its glory. It's for sights like this that we brave the 40 degree winters in Southern California!

- Ken Munson

The 2003 Leonid Meteor Shower

An unusual double Leonid meteor shower is going to peak next month over parts of Asia and North America. The Leonid meteor shower is coming. Twice. Bill Cooke of the Space Environments Group at the NASA Marshall Space Flight Center explains: "Normally there's just one Leonid meteor shower each year, but this year we're going to have two: one on Nov. 13th and another on Nov. 19th." Both are caused by comet Tempel-Tuttle, which swings through the inner solar system every 33 years. With each visit the comet leaves behind a trail of dusty debris--the stuff of meteor showers. Lots of the comet's old dusty trails litter the mid-November part of Earth's orbit.

"Our planet glides through the debris zone every year," says Cooke. "It's like a minefield. Sometimes we hit a dust trail, sometimes we don't." Direct hits can spark a meteor storm, which is defined as more than 1000 shooting stars per hour. "That's what happened in, for example, 1966 and 2001," says Cooke. "Those were great years for Leonids. This year we're going to brush past two of the trails--no direct hits," he says. Even so, "we might have a nice display."

The first shower is expected on Nov. 13th around 17:17 UT. For about three hours centered on that time Earth will be close to some dust shed by Tempel-Tuttle in the year 1499. Sky watchers in Alaska, Hawaii and along the Pacific rim of Asia are favored. They'll see anywhere from a few to 40 meteors per hour--"if they can avoid the glare from that night's gibbous Moon," cautions Cooke. A good strategy for moonlit meteor observing: travel to high altitudes where the air is clear or stand in the shade of a tall building or hillside.

Leonid meteor rates for selected cities: Nov. 13-14, 2003

City	***Local Time***	**Max. Number Leonids / 15 min.**
Los Angeles, CA	5:15 A.M. (Nov. 13)	< 3
Seattle, WA	5:45 A.M. (Nov. 13)	3
Fairbanks, AK	7:00 A.M. (Nov. 13)	10
Honolulu, HI	5:30 A.M. (Nov. 13)	9
Tahiti	5:00 A.M. (Nov. 13)	6
Tokyo, Japan	2:30 A.M. (Nov. 14)	18
Christchurch, New Zealand	3:30 A.M. (Nov. 14)	1
Sydney, Australia	3:30 A.M. (Nov. 14)	9
Hong Kong	2:00 A.M. (Nov. 14)	8
Beijing, China	1:45 A.M. (Nov. 14)	10
Manila, Philippines	1:45 A.M. (Nov. 14)	9

Table notes: Values listed in the 3rd column are the maximum number of meteors an observer with perfectly clear dark skies might see in a 15-min. interval.

Curiously the Moon will be much closer to the 1499 trail than Earth will be. "If the Moon had an atmosphere to catch the comet dust, there would be about 1400 meteors per hour in lunar skies--a real storm," notes Cooke. Instead, the Leonids will simply hit the ground. Most Leonid meteoroids are microscopic, and when they hit the Moon they do little more than raise a puff of moon dust, but a few will be bigger: the size of golf balls or grapefruits. Traveling about 160,000 mph, these impactors can cause explosions visible from Earth. (For more information about this, read the Science@NASA story Explosions on the Moon.) "This year we won't be able to see any lunar impacts," notes Cooke, "because most of the Leonids will strike the far side of the Moon. Some will hit the Earth-facing side, but the ground where they hit will be sunlit. That makes it very hard to see the explosions."

The second and more impressive shower arrives almost a week later on Nov. 19th when Earth approaches a trail shed in 1533. "Sky watchers up and down the US east coast will have the best view," says Cooke. "For a while around 07:28 UT (2:28 a.m. EST), they could see more than one meteor per minute." The Moon, a thin crescent on Nov. 19th, won't be bright enough to interfere with the display. (Nor will it be close to the cometary dust stream, so once again there will be no visible lunar explosions.)

Leonid meteor rates for selected cities: Nov. 19, 2003

City	***Local Time***	**Max. Number Leonids / 15 min.**
New York, NY	2:30 A.M. (Nov. 19)	17
Miami, FL	2:30 A.M. (Nov. 19)	14
Chicago, IL	1:30 A.M. (Nov. 19)	13
Dallas, TX	1:45 A.M. (Nov. 19)	9
Denver, CO	0:45 A.M. (Nov. 19)	7
Los Angeles, CA	0:00 A.M. (Nov. 19)	3
Caracas, Venezuela	3:30 A.M. (Nov. 19)	17
San Juan, Puerto Rico	3:30 A.M. (Nov. 19)	18
Bermuda	3:30 A.M. (Nov. 19)	19
London, England	5:45 A.M. (Nov. 19)	7
Paris, France	6:30 A.M. (Nov. 19)	6

Cooke assembled these forecasts using data from several researchers who have done a good job predicting Leonid storms in recent years: Peter Jenniskens at NASA's Ames Research Center, Jeremy Vaubaillon of the Institut de Mecanique Celeste et de Calcul des Ephemerides in France, and Esko Lyytinen. They mostly agree that Earth will encounter dust streams on Nov. 13th and 19th, but there is less consensus about how intense the resulting showers will be. Lyytinen, for instance, predicts a maximum of just 30 meteors per hour on Nov. 19th. Vaubaillon says 100. Who's right? See for yourself. Be outside when the time comes, looking up.

- NASA Science News

New Star Party Requests

We have had a few requests from local schools for star parties:

The **Lomita Math and Science Magnet School** would like to have as many as three star parties for the other three "tracks" of students who were unable to participate the last time. Word has gotten around and the students are very enthusiastic about getting a turn. The dates are to be negotiated.

In addition, **Montemalaga School** has asked us to return for another star party on Wednesday, **Feb. 25, 2004**. Setup time would be 4:30 P.M., they would feed us at 5:30 and the party would start at 6:00.

- Greg Benecke

Schedule of Coming Events

7 November Friday 7:30 P.M.	**Monthly General Meeting:** Mike Mayerchak of SBAS is our speaker "20 Years of Amateur Astronomy – My Journey".
10 November Monday 7:30 P.M.	**Monthly Planning Meeting** Refer to page 3 for directions to Ray Grace's home.
15 November 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…
20 (JPL) 21 (PCC) November 7:00 P.M.	**Von Karman Auditorium Lecture Series** – FREE "Deep Space Network Challenge for 2003-2004: Tracking Dozens of Mission Critical Spacecraft Events". How the DSN plans to get through its approaching challenge to support more concurrent events of crucial magnitude than ever in its history. For more information call: (818) 354-0112. Current and archived webcasts can be viewed at **http://www.jpl.nasa.gov**
22 November Saturday Evening	**Out-of-Town Dark Sky Observing** – New Moon Contact Greg Benecke to arrange site location.
5 December Friday 7:30 P.M.	**Monthly General Meeting:** The speaker for the evening is Mr. Dave Jurasevich, operator of the Mt. Wilson 60inch telescope, on "The Mt. Wilson Observatory Outreach Program".
8 December Monday 7:30 P.M.	**Monthly Planning Meeting** This meeting will be held at the home of Laura Lucas.
11 (JPL) 12 (PCC) November 7:00 P.M.	**Von Karman Auditorium Lecture Series** – FREE "Pointing the Way to Exoplanetary Systems: New Initiatives in Space Astronomy and the Legacy of the Hubble Space Telescope". Dr. John Trauger, JPL senior research scientist: How soon will we see planetary systems orbiting the stars in our nearby galactic neighborhood? For more information call: (818) 354-0112.
13 December Saturday Evening	**In-Town Dark Sky Observing at Ridgecrest School** – Weather Permitting. Refer to November 15th entry for directions to the site & instructions on weather conditions.
23 November Saturday Evening	**Out-of-Town Dark Sky Observing** – New Moon Contact Greg Benecke to arrange site location.

South Bay Astronomical Society

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

Guest Speaker: Mr. Mike Mayerchak (SBAS)

"20 Years of Amateur Astronomy – My Journey"

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South Bay Astronomical Society
c/o John Collins
1904 Clark Lane, #4
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**** Annual Membership Renewal Schedule Included ****