

# FIRST LIGHT



Journal of the South Bay Astronomical Society - May 2004  
on line at [www.geocities.com/sbas\\_elcamino](http://www.geocities.com/sbas_elcamino)

**Monthly General Meeting: Friday, May 7th, 7:30 PM**

**Guest Speaker : Dr. Alan Rubin (UCLA)**

**“What Heated the Asteroids?”**

## **Lomita Math & Science Magnet School Star Party**

On Saturday, **May 8th**, we can expect several hundred people at this star party so we will need as many scopes as possible there. The Lomita Math & Science Magnet School, at 2211 W. 247th Street, Lomita, 90717, is located near the intersection of Lomita Blvd. and Narbonne Ave.

- **Greg Benecke**

## **Astronomy Day at Palos Verdes Peninsula Center**

On Sunday, **May 9th**, SBAS will be setting up our telescopes at The Farmers Market in the Peninsula Shopping Center from 9 AM to 1 PM, celebrating Astronomy Day with the local community. Scopes must have sun filters. We can use all the help we can get so please come out to support this annual event!

- **Joe Fierstein**

## **Mt. Wilson Observatory Trip**

Saturday, **May 15th** – SBAS returns to the Mt. Wilson Observatory for a full night of observing with the 60-inch telescope. All payments must be received by May 7th at the General Meeting! If you need to cancel, please call Greg Benecke as soon as possible, as we still have people on the waiting list. Sunset will be at about 7:45 PM, so people should plan on being there by **7:15 PM** since Mt. Wilson staff will let us in the entrance gate about a half hour before sunset. Traffic is always unpredictable, so allow plenty of time for the drive. Please make an effort to carpool since parking at the observatory is limited.

**Directions:** Take the 110 North to the 5 North to the 2 North to the 210 East. Take the Angeles Crest Highway (Highway 2) exit and turn left. Continue up Angeles Crest Highway about 14 miles to Mt Wilson Road. You can only go right. Take Mt. Wilson Road about 5 miles to loop at the end. The gate to the Observatory grounds is at the far end of the loop. Park there and wait for the gate to be opened. If you arrive after the main group has entered, use the pay phone (cell phones do not work due to the interference from the radio towers) to call 793-3065. A docent will come to the gate to let you in. It may take a while so be patient. Do not arm your car alarm as the interference from the radio towers can prevent you from turning it off.

Wear shoes appropriate for negotiating the stepladders for viewing. It can be cold overnight so bring warm clothing, preferably layered so you can adjust easily. You may bring a sleeping bag, blankets, air mattress and/or a folding chair. There are very few chairs there, so you should bring your own. Hot water is available for you to make hot coffee, tea, or chocolate that you bring along with snacks to keep your energy levels high through the night. Only **Red** light is allowed in the dome, so bring a red flashlight. Smoking is only permitted immediately outside of the dome entrance, and subject to further restrictions by the Forest Service. Be very careful as dead leaves and pine needles are extremely flammable! No intoxicants are allowed. Do not bring personal scopes to the observatory. You may leave in the middle of the night, but you must be escorted to the gate by Mt. Wilson staff.

- **Greg Benecke**

## **2004 RTMC Astronomy Expo**

The 36th annual RTMC Astronomy Expo will be held Friday through Sunday, **May 28-30**, 2004 (Memorial Day weekend). It will be held at YMCA Camp Oakes, five miles southeast of Big Bear City on State Route 38 at Lake Williams Drive between mileposts 44 and 45. This location is about 50 miles northeast of Riverside in the San Bernardino mountains. For maps and directions <http://www.rtmcastronomyexpo.org>

The Friday 9:00 AM arrival time will be strictly enforced this year. Signs, tents, bedding, and other items placed on the campgrounds in an attempt to reserve space before 9:00 AM Friday will be removed and may be recovered at the Lost and Found. Vendors and individuals now may register as sponsors. Silver and higher level sponsors may enter the campgrounds on Thursday, May 27.

### ***Meadows Elementary School Telescope Night***

**April 1st**, the day of the Manhattan Beach Meadows Elementary School Telescope Night was a most inauspicious day for any stargazing. In spite of the morning forecast for 'low marine layer in the morning, clearing by midday', thick heavy clouds covered the sky nearly all day. As evening approached, Chris Post, the school coordinator for the event sent out emails warning that it might have to be canceled. I checked the Navy MetSat website and found that large patches of clear sky looked to be coming in and decided I'd try for it. I'm glad I did.

Manhattan Beach was probably one of the clearest spots in the city! The viewing conditions weren't all that great. Intermittent clouds passed over and temporarily interrupted the star party but it was clear enough for most of the time that the children got to see a lot of different things. There were a surprising number of telescopes there. I had my 11-inch Nexstar and another guy had a 12.5 inch Dobson and a 6 inch Newtonian. Several people brought smaller refractor telescopes. Other club members who made it were Bill Eisele and Ralph Ford.

The big show of the night was the 5 naked eye planets. Mercury was lost early on due to low clouds in the west. By the time they cleared, Mercury was behind the school building. Venus, Mars, Saturn, Jupiter and the moon dominated most of the viewing. At the peak there was about 150 people lined up to look through the different scopes. Although the images of the planets were very watery because of the atmospheric conditions, the kids were thrilled to see Jupiter and its moons, Saturn and its rings and Venus as a half-moon shape. It is always such a thrill to hear the excitement in children's voices when they see a planet for the very first time! This party was limited to just the 3rd Grade and I was pleasantly surprised to find them very knowledgeable about the planets and their enthusiasm was infectious. It was a great night that was made very special by the lucky break in the weather.

**- Ken Munson**

### ***Backyard Observing***

Having missed the triple shadow event last month I was really hoping for clear weather for the night of the double shadow event on **April 5**. Fortunately, the sky cooperated and the viewing was remarkably steady and clear, at least from my backyard. As I was setting up my Nexstar 11 around sunset, I got an unexpected treat. I happened to glance up while checking the alignment of the tripod and saw a very bright object almost straight overhead. At first I thought it was an Iridium flare but when it didn't fade, I figured it was a plane. Then I noticed there were no blinking lights. I watched fascinated as it silently crossed the sky from west to east, finally disappearing and realizing it had to be the space station. A quick check with [www.Heavens-Above.com](http://www.Heavens-Above.com) confirmed it. It's been a long time since I've seen the space station that well.

I decided to be daring and devote this evening entirely to photographic observing. I set up the scope for eyepiece projection photography and attached my Nikon D100. By the time I'd finished, the moon transits were already beginning to occur. I snapped a few shots but wasn't very happy with the focus. Then I remembered Mike Mayerchak's advice and focused on a nearby star. From what I could see through the viewfinder, it didn't look much better but the final results were a lot better after downloading and processing the images to the computer. It's really frustrating to have only one scope available during an event like this. Even with a good scope, the view through a camera's finder isn't very good. I would have loved to have had another scope around so I could view the transits with my own eyes as well as do the photography.

**- Ken Munson**

## Our SBAS Committee

<b>President</b>	Greg Benecke	217-1512	BeneckeRUs@aol.com
<b>Program Chairman</b>	Joe Fierstein	377-9834	Joefiers@aol.com
<b>Treasurer</b> <b>Newsletter Reproduction</b> <b>Astronomical League Rep.</b>	John Collins	- - -	<a href="mailto:jcollins@runbox.com">jcollins@runbox.com</a>
<b>Astronomical League Liaison</b>	Bill Eisele	542-5070	Astronomy131@aol.com
<b>SBAS Website Webmaster</b>	Alex Athas	- - -	sbas_elcamino@yahoo.com
<b>First Light Editor</b>	Laura Lucas	798-7281	Ipsaloquator@aol.com
<b>Observing Committee</b>	Greg Benecke	217-1512	BeneckeRUs@aol.com
	Craig Gates	376-6387	- - -
<b>Executive Committee</b>	Ron Rennie	326-5589	Rkgrennie@yahoo.com
	Mike Mayerchak	831-9188	Mmayerchak@aol.com
	Mark Braden	540-2810	Bradenm@fnic.com

## 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, **May 10th** 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 Street. 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.

## SBAS Membership Benefits

**“Welcome”** to our newest SBAS members: Tony Lissona, Wesley Leckner, Kenneth Rossi and Joe Butryn.

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](http://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!

### \* \* \* A Special Thanks \* \* \*

To **Bill Chater** for donating a Dew Shield and Heater for a Celestron C8, complete with controller to SBAS!

## May - Comets & Asteroids

**“Editor's Challenge”** To SBAS.ers: How many of these objects can you spot? Tell us how you did it!

### Comets Visible In May:

Name	Magnitude	Constellation
2001 Q4	2-4	Moving rapidly from CMj to UMa
2002 T7	2.5 – 4.5	Psc-Cet-CMa-Pup-Hya
2003 K4	11-10	Cyg-Lyr
2003 T3 (Tabur)	9	Psc-Tri-And-Per

### Comets at Perihelion:

Date	Identification	Magnitude
9 May	Kowal 2	13.8
15 May	2001 Q4	2
17 May	Hartley 2*	10

### Near-Earth Asteroid Flybys:

Date	Identification	Magnitude	Distance
8 May	2001 US16	15	0.029 AU
24 May	2000 JS66	15	0.100 AU

\*Visible in the early morning before sunrise

Check the JPL Ephemeris Generator page for coordinates of the objects at:

<http://ssd.jpl.nasa.gov/cgi-bin/eph>

- Ken Munson

## Observing Reports

**@Cottonwood Springs - April 17th**, I was questioning if we had made the right decision as I approached the junction of the 60 and the 10 freeways. To the North the mountains were visible and there was snow, lots of it, and it was low. I would estimate maybe down to 4,500 feet. Closer to Palm Springs it rained. The Clear Sky Clock website [www.cleardarksky.com](http://www.cleardarksky.com) indicated that Cottonwood Spring campground in Joshua Tree National Park would be clear. Sure enough, after Palm Springs it cleared up and stayed that way. The campground was full as spring and fall are the prime seasons for the park. Instead, we set up in the parking lot for Cottonwood Springs, at the end of the road past the campground. Craig Gates and Steve Lindsey were already set up when Mike and Leslie Rivas, and I arrived. Shortly after dark Tim Moore arrived. In the early part of the evening a couple from Sweden who had seen us setting up took us up on our offer to share the views. The seeing was not very good as I could barely make out the Cassini Division in Saturn's rings. Jupiter's Red Spot was near the central meridian, but while detectable, it was not clear. I tried the off-axis aperture mask on my Dob to see if the smaller 5 inch aperture would allow a sharper image through the unsteady sky. The image was sharper, but still not really good, and of course dramatically dimmer. So much of the night was spent looking for galaxies, especially those not on Messier's list. One gem was NGC 2403, a magnitude 8.5 spiral in Camelopardalis. It's hard to believe that Messier missed this one. As the night wore on, the seeing improved a bit, although it was never better than moderate. I moved on to planetary nebula and took my first really good look at the Ring Nebula through my 15 inch Dob. Globular clusters occupied much of the night as well. The Omega Centauri cluster reached it's highest elevation about midnight, only about 10 degrees above the horizon. Even through the very unsteady air this brightest of globular clusters was quite a sight. As the Summer Milky Way rose, the rest of the night was spent roaming the many wonderful sights to be found there. As twilight brightened I packed up my gear and was on the road home before sunrise.

- **Greg Benecke**

**@Pacific Crest - Saturday, April 10th**, didn't look very auspicious down in the city with low clouds blanketing the sky all day. I decided not to risk being fogged in at Ridgecrest and headed up to my old observing site on the Pacific Crest along Highway 2, north east of Mt. Wilson. I was joined during the night by a friend Bill Nesmith, who works at JPL. The sky began to clear as I climbed up the road and gradually rose out of the coastal marine layer. As I drew near the site though, scudding clouds seemed to threaten even that location. Deciding to err on the side of optimism, I set up the scope and waited for sunset. As the sun went down, the sky got clearer and clearer and the gentle breeze that had been blowing dropped away to nothing. With the clouds over LA, the site was really dark with only about the lower 10% of the southern sky being polluted by light instead of the usual 30% or more. Early in the evening the viewing wasn't very good as there was a lot of thermal distortion. As the evening progressed the seeing got better and better. At 8:30 I could barely distinguish the equatorial belts on Jupiter. By 10:30, the seeing was so good as to see several belts and bands from top to bottom. Bill was quite excited to see the Galilean moons and mentioned that he's now working on a project to build a spacecraft that will explore at least 3 moons by going into orbit around them (i.e., orbit one moon for a while, then move on to the next).

Bill got to go on a grand tour of the universe. Starting with the solar system we were able to see four of the 5 visible planets (Mercury was already behind a ridge to the west). Next on the tour were a series of nice colored double stars. The color differences really showed up well that night. From doubles, we moved on to open star clusters. M44 was especially bright being almost overhead at the time. Next on the list were globular star clusters. M13 was absolutely spectacular. I forgot to check to see if I could see the 12th magnitude galaxy that is right near it. The final items on the tour were the really deep sky objects, galaxies. I took him through a range of different galaxies to show how different they can look even to the eye through a telescope. M51 was spectacular and clearly showed it spiral arms. M65, M66 and NGC 3628, the Leo Triplets, made a nice grouping. M81 and M82 were very bright being in what was about the darkest part of the sky. The final galaxy was NGC 4564, Berenice's Hair Clip. That's usually a hard one to see at this site but that night it glowed beautifully. The central bulge showed clearly and the spiral arms could be seen with a thick black line of dust clouds bisecting them, a very nice edge-on galaxy.

Being an engineer, Bill was very impressed with the ease of operation of the Nexstar 11 telescope. I put him in the driver's seat and told him to go to M84. From there, he used the direction control buttons to scan the length of Markarian's Chain. Markarian's Chain is a series of galaxies stretching from M84 to M88 over 2 degrees of sky. As you scan along the chain, there's almost nowhere you can look that you see less than 3 galaxies at a time. Bill left about midnight and I decided to try a little photography again, and managed to get a nice picture of M13 and M44. I tried to do NGC4565, but found out that it doesn't all fit in the field-of-view of my camera!

- **Ken Munson**

# Why the Night Sky?



**Chris Boyd**

*"We had the sky up there, all speckled with stars, and we used to lay on our backs and look up at them, and discuss about whether they was made or only just happened. Jim he allowed they was made, but I allowed they happened."*

—Mark Twain, "Huckleberry Finn"

It's a strange fascination to some. Co-workers often wonder why I spend so much time thinking about or gazing up at the night sky. Assistant Editor Josh Cohen wonders why I always have my head in the clouds, while Community Editor Carrie Yamato once asked how I could write two astronomy columns in a row. Mars, Saturn, what's the difference? A planet's a planet, right? Hardly. I could write 500 columns about astronomy and still wouldn't scratch the surface. Every day, scientists learn something new about the heavens that have fascinated humankind for thousands of years.

That raw fascination has kept me, like the ancients, looking up every clear night since 1986. As a child, I spent hours making crude drawings of the planets and recall a spring evening when my mother pointed out the Big Dipper, but the astronomy bug didn't bite me until age 13.

clouds blocked the night sky, I marveled at infrared pictures of Venus taken by space probes that survived long enough on the planet's boiling surface to grab a view. The average surface temperature on Venus is about 855 degrees — hot enough to melt lead — so spacecraft there don't last long. It blew my mind. This gem in the sky, named after the Roman goddess of beauty, was actually a seething wasteland of craters and volcanoes. Clouds made of sulfuric acid covered the planet and obscured all surface features, and its heavy atmosphere was pure carbon dioxide. Any human who wanted to explore Venus would be crushed upon entering that atmosphere.

Hungry to uncover more of the heavens' mysteries, I purchased my first copy of *Sky & Telescope* magazine. There was a gold mine of information, including star charts, planetary movements across the sky and plenty of ads for new binoculars and telescopes. Armed with the magazine, beginning star maps and a flashlight, I learned where to find the planets and how to trace the constellations as they marched westward through the night sky. Each new discovery made my spine tingle: the four Galilean moons of Jupiter strung like Christmas lights on either side of the planet; Saturn's mysterious moon Titan; the Andromeda galaxy; and more stars than I could count, all with a little help from binoculars. Even a cheap first telescope unveiled wonders like

It was May 1986, and I was full of hormones and about to graduate from the soon-to-be-closed Jefferson Middle School in my hometown of Torrance. Besides dealing with puppy love, graduation and pimples, I had to write a final term paper for my eighth-grade physical science class. After picking through a pile of Grandma Gigi's *National Geographic* magazines, I came upon one that pondered the size and age of the known universe, figures that scientists have debated and changed many times since. Though I remember nothing else of the class, I never will forget devouring the articles that captured my imagination and gleefully writing the paper. Something clicked, because I got an A+.

My journey into space had begun. Later that May, the planet Venus made one of its better evening appearances, as it is now in the western sky at dusk. As the sun's glow subsides and night falls, Venus looks much like a plane heading straight for the observer or a brilliantly white star. Its pearly radiance caught my 13-year-old eyes. What was that? I imagined it was a UFO or perhaps the famed star of Bethlehem, but a little research confirmed it was a planet. This was one of my earliest experiences with the saying, "fact is stranger than fiction."

As luck would have it, one of those trusty *National Geographic* magazines featured an article about Venus. During evenings when low

Jupiter's candy-striped, cloud-covered surface and Saturn's rings.

Occasionally I considered doing scientific research, but for the most part I enjoyed being Huckleberry Finn. There is nothing as uplifting as stargazing with a friend or loved one and contemplating our place in this vast universe.

A few months ago, when things were going badly at work, I took a one-night trip with my wife, Betsy, to the desert north of Mojave in search of dark skies. I wasn't disappointed. As I stared into my telescope's eyepiece and the 1,500-year-old warm, green glow of the Orion nebula filled my eyes, I began to relax. Gas and dust in the nebula, a stellar birthplace located in the constellation after which it is named, glow because of energy from the young stars. Betsy and I shared in that warmth, even though the temperature around us was about 35 degrees. As meteors colored the black winter sky with their white trails, thoughts of work melted away and both of us found peace in our corner of the heavens. That, my dear friends and readers, is why I stargaze.

*National Astronomy Week begins Monday, April 19 and runs through Sunday, April 25. Saturday, April 24 is Astronomy Day. Visit the South Bay Astronomical Society's web site at [www.geocities.com/sbas\\_elcamino](http://www.geocities.com/sbas_elcamino) for more information about astronomy.*

# Kudos for the Minor Stars

**M**ars, Venus, Saturn, Mercury and Jupiter have been visible to the unaided eye just after twilight for the last few days. Such poor man's celestial feasts are regarded as increasingly uncommon. When Caltech astronomers announced the discovery of a planet-ish body far beyond Pluto last month, for instance, some predicted a waning of amateur astronomy. No backyard stargazer, it was said, could possibly compete with the high-tech equipment that professionals used to detect the farthest-known object in the solar system, a dark-red chunk of ice and rock named Sedna, now 8 billion miles from the sun.

However, amateur astronomers still have a thing or two to teach us. The most avid of them gathered two weeks ago for stargazing "marathons" named for amateur astronomer Charles Messier, who helped identify 110 celestial objects in the 18th century. Most of the stargazers used digital cameras, computers, software and broadband communications — sophisticated technology that gives them the leg up they need to compete with the pros.

Amateurs are every bit as vital to astronomy today as in 1781, when William Herschel, the son of a German army musician, discovered Uranus with telescopic mirrors that he had ground out of copper, tin and antimony. Consider, for example, the two hours of photographic exposures that 32-year-old Jay McNeil made in January on a cold and windy night in his backyard in the Bluegrass Country of Paducah, Ky.

McNeil's day job as a TV satellite dish installer kept him from scanning the images for days, but when he found time to peruse them on his laptop he noticed "a funky-looking, tiny, elongated object." The conical plume of gas, astronomers recently confirmed, was the birth of a star 1,500 light-years away: an object, now known as McNeil's Nebula, that is believed to be the first nebula discovered by an amateur astronomer in 65 years.

As any schoolchild who asks "Why is Pluto considered a planet?" will discover, some astronomical secrets are still a long way from being unraveled. Pluto may be too small and elliptical in its orbit to be a planet, and Sedna orbits the sun but otherwise defies planetary behavior. As Brian Marsden at the Harvard-Smithsonian Center for Astrophysics put it last week, "There is a lot more evidence now that it really was a mistake to call Pluto a planet."

Astute, self-driven observers such as Herschel and McNeil are not at all amateurs in the sense of one dictionary definition of the word: "A person who is somewhat unskillful." Rather, they are amateurs in the best sense of the word: its now-forgotten Latin root *amator*, meaning "lover, devoted friend, enthusiastic pursuer of an objective."

Such amateurs will not grow irrelevant. Science advances with passion as well as craft. And as any university astronomer — snowed under by the reams of data that space probes have beamed to Earth in recent years — can attest, the universe is simply too vast to leave to professionals alone.

LA Times April 5 2004

## ***Issue 2 - April/May 2004 of "Photon"***

A PDF astronomy eZine is now available for download. This issue's main contents are: "Cape Newise 200mm Reflector Review" by Stephen Tonkin, "Astronomy Anecdotes, Eclipsed Down Under" by John O'Neill, "An Inexpensive Roll-Off Roof Observatory" by Jeff Hopkins, "Outback Observing" by Kevin Berwick, "Observing the Moon" by Gary Nugent, "It Started With a Dandelion" by Remy Bosio, "Cosmos - The Collectors' Edition Review" by Gary Nugent, "Binocular Tours: A Crawl Around the Crab" by John Flannery, "Building Your Own Observatory - Pt 2" by Gary Nugent and "The Great Astronomers" by Tim Carr.

The 44-page eZine is presented as a single 4.5Mb download and has been broken into five downloadable sections for those with slow internet connections. The PDF file(s) can be printed out by those who prefer to read off paper instead of a monitor. Photon costs \$3.00 per issue (\$15.00 annual subscription with one issue free per year). The first issue (Feb/Mar 2004) is free to download so you can get an idea of what the magazine is like. Sample pages for both issues are available for viewing online. Information about submitting articles/photos is included. Both issues are available at <http://www.nightskyobserver.com/Photon>

- Gary Nugent, Editor

## ***Pluto's Planet Status could be Jeopardized by Sedna Discovery***

***By Robert Roy Britt, Senior Science Writer @Space.com***

The discovery of a nearly Pluto-sized object way out beyond the known worlds could jeopardize the status of Pluto as a planet, adding fresh fuel to an argument among astronomers that is likely to last years. In the end, our solar system will shrink to eight planets, grow to more than a dozen, or contain a glaring asterisk born of an emotional attachment to the diminutive Pluto. The object, called Sedna, adds impetus to an effort by the International Astronomical Union (IAU) to define just what is and is not a planet.

"Whether or not one needs to do anything about Pluto will depend on what the definition of a planet will be," Iwan Williams, president of the IAU's Planetary Systems Sciences division, told SPACE.com. The process could fester into 2006, when the group holds its next General Assembly in Prague. Until now, scientists have not had a set definition for the term "planet." In recent years, many potential parameters have been kicked about, from an object's roundness to its distance from the Sun and the shape of its orbit. Even where it formed is a consideration. "If the answer was obvious, there would be no need for a working group," Williams said. The IAU decides on names and classification systems for all solar system bodies.

Many astronomers have since been content to let the IAU and the public call Pluto a planet, while most of them think of it as a Kuiper Belt Object, one of many frozen worlds beyond Neptune. Some fight actively for Pluto's demotion while others think Sedna and its like should join the cast of planets. In the meantime, scientists still have not defined planethood and Sedna, the strange new world, has only increased the need for sorting out the terms of the solar system. Sedna is about three-fourths Pluto's size and is presently about three times as far from the Sun. It ranges much farther into space on a long, elliptical orbit around the Sun that takes 10,000 years to complete. It is frigid and almost surely lifeless, but it is round, like the other planets. It's probably made of rock and ice, though astronomers don't know its exact composition. Classification systems will work themselves out only after more objects are found and astronomers glean a better understanding of the suddenly more mysterious outer solar system.

"When Pluto was given planet status, its diameter was thought to be nearly 15,000 kilometers [9,320 miles], 12 percent larger than the Earth," points out Williams. For decades after Pluto's discovery, no other objects were discovered beyond Neptune, however in recent years, other round objects about half Pluto's size have been detected in the Kuiper Belt, much closer than Sedna. Michael Brown, a Caltech astronomer who led the discovery of Sedna and two other good-sized worlds, expects there are more. In fact, there's even the chance of an Earth-sized planet lurking out there, he and others say. Pluto's plight involves many factors. It is about 1,413 miles (2,274 kilometers) wide -- smaller than Earth's Moon, but most astronomers don't see that as a disqualifying factor. More significant, Pluto is inclined 17 degrees to the main plane of the solar system in which the larger planets orbit. Other planets have inclined orbits, too, but none compare to the leanings of Pluto. It's orbital path is also very non-circular; it ranges between 30 and 50 astronomical units (AU) from the Sun. Sedna's travels are even stranger in one sense. It roams from 76 to 1,000 AU. Sedna's inclination is 12 degrees, less than that of Pluto.

"It blurs the line between what is a planet and what is not," said Alan Boss, a planet-formation theorist at the Carnegie Institution in Washington DC. It also blurs the line between the Kuiper Belt, where Pluto resides, and the more distant Oort Cloud, a reservoir of comets that stretches halfway to the next star. Scientists have not known what, if anything exists in a possible void between the two regions, but at the least there is Sedna, named for the Inuit goddess of the ocean and officially catalogued as 2003 VB12. They can't even be sure where it formed, and they're very unsure as to how it got such an odd trajectory. Gibor Basri of the University of California, Berkeley, has previously proposed simply setting a lower diameter limit for planet status, including all objects orbiting the Sun that are about 435 miles (700 kilometers) wide or more. That's roughly the bulk needed to allow gravity to shape an object into a sphere, depending on density. Smaller objects -- both asteroids and comets -- tend to take on odd shapes like that of a potato. Basri's simple definition would boost the tally of planets in our solar system to more than a dozen based on presently known objects, including Sedna, and it would leave Pluto as a planet.

## ***Venus Event and Planet Hunting***

On **June 8, 2004**, Venus will cross in front of the Sun's disc for about seven hours, an event not seen since 1882. The transit will demonstrate a key technique being used to detect planets orbiting stars outside our solar system. Just as Venus crossing over will temporarily dim the light of our star, the Sun, a distant planet may cross over and block the light of its parent star.

## **Schedule of Coming Events**

<b>7 May Friday 7:30 P.M.</b>	<b>Monthly General Meeting:</b> Dr. Alan Rubin, UCLA Professor of Geology & Geo. Physics, presents "What Heated the Asteroids".
<b>8 May Saturday 6:00 P.M.</b>	<b>Lomita Math &amp; Science Magnet School Star Party</b> One single night of observing has been scheduled. See page 1 for directions to the school.
<b>9 May Sunday Morning</b>	<b>Astronomy Day at Palos Verdes Peninsula Center</b> Share our enthusiasm for Astronomy with the local community at this annual SBAS event.
<b>10 May Monday 7:30 P.M.</b>	<b>Monthly Planning Meeting</b> Refer to page 3 for directions to Greg's house. The Mt. Wilson Object List will be our main topic, so we hope you will attend and bring us your suggestions!
<b>15 May Saturday Evening</b>	<b>In-Town Dark Sky Observing at Ridgecrest School – Weather Permitting:</b> 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. <b>Drive with care</b> to avoid steel pillars supporting basketball nets...
<b>15 May Saturday Evening</b>	<b>Mt. Wilson Observatory Trip</b> See page 1 for detailed instructions.
<b>22 May Saturday Evening</b>	<b>Out-of-Town Dark Sky Observing – New Moon May 19th</b> Contact Greg Benecke to confirm site location.
<b>28-30 May Fri.-Sun.</b>	<b>36th Annual RTMC Astronomy Expo</b> See page 2 for details (just in case you need them again....)
<b>4 June Friday 7:30 P.M.</b>	<b>Monthly General Meeting:</b> John Hoot, JPL Solar System Ambassador, returns for his 3rd visit with SBAS.
<b>7 June Monday 7:30 P.M.</b>	<b>Monthly Planning Meeting</b> The location of this meeting will be announced in the June Newsletter.
<b>12 June Saturday Evening</b>	<b>In-Town Dark Sky Observing at Ridgecrest School – Weather Permitting.</b> Refer to May 15th entry for directions to the site & instructions on weather conditions.
<b>19 June Saturday Evening</b>	<b>Out-of-Town Dark Sky Observing – New Moon June 17th</b> Contact Greg Benecke to confirm site location.

# South Bay Astronomical Society

\* \* \* \* \*

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

*Guest Speaker: Dr. Alan Rubin (UCLA)*

*“What Heated the Asteroids?”*

\* \* \* \* \*

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