

Sonoma Skies

Newsletter of the Sonoma County

A nonprofit scientific and

www.sonomaskies.org



Astronomical Society

educational organization

March 2004

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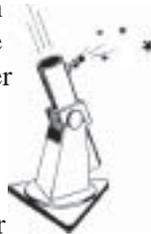
Striking Sparks Dinner and Awards Program

Saturday, March 27, 2004

Setup: 4 PM Dinner: 6 PM

Proctor Terrace School, Bryden Lane, Santa Rosa

Striking Sparks is an exciting and well-known project of SCAS. The Awards Dinner is the highlight of months of mighty preparations for this presentation of ten well-crafted telescopes to student winners of the essay contest. Did you know that our newsletter logo depicts a Striking Sparks telescope?



Members who attend make a difference. Your presence at the Sparks event supports so many workers for a job well done, honors sponsors for their generous donations, strengthens our organization, and makes the evening especially enjoyable. Come join us!

Some assistance is still needed for the event. If you can help, please speak with Len Nelson or Larry McCune at the March 10 SCAS General Meeting.

Members are invited to donate astronomy-related items for the Young Astronomers annual fund-raising raffle. Items may be brought to the SCAS March 10 meeting or the evening of the Sparks Event.

Raffle tickets are sold at the event for \$1 each or \$5 for six tickets. The drawing is held at the end of the dinner. Young Astronomers operate for a year on the funds raised.

The potluck dinner begins at 6 PM. Bring your choice of food. Give your dish an astronomical title and your dish may be recognized by "judges" for its creativity.

History

Once upon a time, the year of Halley's Comet (1986), Bob Ferguson had an idea. An idea to award telescopes to schoolchildren who wrote winning essays describing why they wanted a telescope and how they would use it. SCAS supported the idea and the title "Striking Sparks." Bob began grinding mirrors; Larry McCune designed the bases. Soon

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Magical Tour of the New Universe

with Dave Rodrigues

SCAS March 10 Meeting, Proctor Terrace School

Interested in astronomy since he was a lad, Dave Rodrigues is a member of East Bay Astronomical Society and editor of their newsletter. He lectures at Morrison Planetarium, has done workshops at Pepperwood, is active at Chabot Observatory and will participate in the COSMOS summer school at UC Davis.

Dave is the founder of the "White Mountain Star Party", possibly the highest star party in the world (12,400 feet) and is the author of the "Quarter Trick", a guide for teaching the Astronomical Distance Scale.

He was recently informed that Asteroid 24626—"AstroWizard", has been named after him in honor of

his contributions to astronomical education. In 2002, he was the winner of the Helen Pillans Award for "distinguished meritorious service to the Amateur Astronomical Community." Recognized by AANC for his "outstanding effort and continuous support in distinguishing and fostering amateur astronomy," he was the recipient of the Amateur Award in 1994.

He holds a BA in economics from Stanford and MA in economics from UCLA. He is the creator of the "AstroWizard" character and enjoys sharing his enthusiasm about the cosmos with adults and children of all ages.



Young Astronomers: See page 7

SCAS MEMBERSHIP

MEETINGS AND STAR PARTIES

Membership Meetings take place at 7:30 PM on the second Wednesday of each month, in the Multipurpose Room of Proctor Terrace Elementary School on Bryden Lane near Fourth Street in Santa Rosa, unless otherwise announced in this publication. The public is invited.

Star Parties are held monthly on the Saturday nearest the 1st quarter moon at Youth Community Park in Santa Rosa.

Access to Geysers Observing Site: The site is locked to public access. For use during monthly star parties, SCAS members can obtain the combination to the gate lock to the site by contacting any board member listed to the right.

DUES

Membership dues are \$25, renewable June 1 of each year. New members joining between December 1 and May 31 may pay partial-year dues of \$12.50.

DISCOUNT SUBSCRIPTIONS

SCAS offers discount subscriptions to *Sky & Telescope Magazine*. New subscribers, send a check for \$32.95 payable to "SCAS", along with your complete mailing address, directly to: Larry McCune, 544 Thyme Place, San Rafael, CA 94903. For renewals, send him your check with the completed renewal card and return envelope.

Discount subscriptions to *Astronomy Magazine* occur yearly in October. Check *Sonoma Skies* for details.

RENTAL TELESCOPES

SCAS members are eligible to borrow telescopes for a \$5 per week donation. Five telescopes are available: 8" and 5" Celestron SCTs, each complete with clock drive and inverter; 8" and 12.5" Newtonians on Dobsonian mounts; an 80mm refractor on motorized equatorial mount. Contact Joan Thornton at 707-762-0594.

NEWSLETTER

Sonoma Skies is the newsletter of the **Sonoma County Astronomical Society (SCAS)** and is published each month. Subscription is included as part of membership to the Society.

Articles, news items and member announcements for *Sonoma Skies* are welcome. Submissions must be typed or, if on computer media, in a commonly used word processing and/or graphics format, and may include graphics (pictures, drawings, etc.) They are published on a FCFS basis, space permitting, and may be edited. **The deadline for submissions is the last Wednesday of each month.**

Mail To: SCAS, P.O. Box 183, Santa Rosa, CA 95402
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Visit our new website at: www.sonomaskies.org

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PUBLIC STAR PARTY COORDINATOR

Bruce Lotz 576-7833 ablotz@sonic.net

LIBRARY

SCAS has a library of astronomy books that may be checked out by members at SCAS meetings. Books may be borrowed for a period of one month and returned at the next meeting. Videotaped lectures on astronomy are available for rent at \$3 per month. Requirements are that you be a SCAS member and provide your name and phone number.

For more information, contact Joan Thornton at 762-0594, phonyjoanie@earthlink.net

SCAS EGROUP URL

Any SCAS member is welcome to join. Hosted by Robert Leyland at r.leyland@verizon.net the majority of traffic is about going observing, observing reports and astronomy-related news. We get news items from AANC and Sky & Telescope and chat about astronomy.

To join, either visit <http://groups.yahoo.com/group/scas> and click the "Join" button, or send an email to scas-subscribe@yahoogroups.com

March Observing Notes

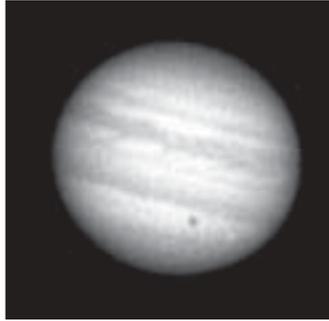
March 9: For two weeks viewers in the northern latitudes may notice a faint glowing column of light above the western horizon after evening twilight. This is known as “Zodiacal Light”—sunlight reflecting off minute dust particles floating in interplanetary space along the plane of our Solar System.

March 22: An alignment of planets will be visible to northern observers for the next two weeks. All five bright planets will be in the sky together, with the moon waxing across the sky passing near each one. Following Mercury in a west-to-east path will be Venus (very bright in Aries), then the fainter red glow of Mars in Taurus, next Saturn and its rings in Gemini, and finally brighter Jupiter in Leo.

March 29: Best evening appearance of **Mercury** in 2004 for northern observers—greatest elongation occurs—21 square arcseconds, while 78 percent sunlit. It can be seen as a dim object just above the western horizon as the sky darkens in the constellation Pisces.

Transits of Jupiter:

Somewhat rare periods of double (and even triple) shadow transits of Jupiter occur March and April. They show up very well against Jupiter’s disc, but require a minimum telescope refractor objective of 60mm in ideal conditions. Larger objectives are often necessary. **RFO’s public night is 3/27, during a triple transit!** Local (Pacific, geocentric) times and details are below, and may vary by a few minutes.



Transit of Europa across Jupiter

3/12	Fri	Double Shadow: 0116 to 0236
3/20	Sat	Double Shadow: 2138 to 2325
3/27-28	Sat-Sun	Triple Shadow: 0000 to 0019, with Double Shadows on either side: 2332 to 0148
3/29	Mon	Double Shadow: 1816 (twilight) to 2016
4/5	Mon	Double Shadow: 2154 to 2310
4/13	Tues	Double Shadow: 0031 to 0104

The Sun: If you’ve never seen the sun through a hydrogen-alpha filter, it’s not to be missed. Robert Ferguson Observatory (see Page 4) offers public observing every month.

MEMBERSHIP NEWS

The SCAS is pleased to welcome Scott Adams as a new member. We now have 154 dues-paying members plus the ten 2003 Striking Sparks winners.

If you have any address or email changes, contact our Membership Director, Harry Linder, at harry@sonic.net



Sparks painters from right: Mark Hillestad, Larry McCune, Cecelia Yarnell

Telescope Building for Striking Sparks: Progress Report

Mark, Larry and Cecelia painted the telescope bases at Mark’s workshop on February 21.

Larry assembled the ground boards and tube boxes and delivered them to Mark’s on February 29.

Harry Linder and Len Nelson have been assisting Steve Follett with the Sparks mirrors. The task is now done and Steve has the mirror mounts and will have the mirrors coated by the end of next week.

Larry will be painting the telescope tubes, installing the secondary mirrors and focusers prior to delivering them to Mark’s for final assembly on March 20. If you are interested in helping out at the final assembly day, let Len Nelson know at the March 10 general meeting.

The Semi-Sirius Astronomer

Yes, he’s doing his annual Spring telescope tuning.

by Herb Larsen

Events Around the Empire and Beyond

ROBERT H. FERGUSON OBSERVATORY

Public Viewing: Saturday, March 27

Solar Viewing Noon - 4:00 PM

Night viewing 7:00 PM - Midnight

Two scopes are operating: the 8-inch refractor under the dome and the 24-inch Dobsonian in the west wing. Recent water damage may delay use of the 14-inch SCT and CCD camera in the east wing until next month.

There is no admission fee for the solar viewing, but donations are appreciated. The Park charges \$4 per vehicle for entry. A \$2 donation is requested for admission to the observatory during the night viewing sessions. SCAS members are welcome to set up telescopes in the observatory parking lot to assist with public viewing. However, automobile access closes at dusk, so arrivals after dusk need to carry their equipment in from the parking area by the horse stables.

Classes

Mar. 15: Intro. to Astronomy and Observing, 7:00 PM

Mar. 16: Night Sky Winter Series, 7:00PM

Mar. 22: Intro to Astronomy & Observing, 7:00PM

Mar. 23: Night Sky Winter Series, 7:00PM

Apr. 12: Intro to Astronomy & Observing, 7:00PM

Apr. 19: Intro to Astronomy & Observing, 7:00PM

Classes are held at the Observatory. Registration is required.

Contact: (707) 833-6979, or visit <http://www.rfo.org>

SONOMA STATE UNIVERSITY SERIES “WHAT PHYSICISTS DO”

Mondays at 4:00 PM

Darwin Hall Room 108

Mar. 8—The Quest to Detect Gravitational Waves

Dr. Peter Shawhan of the California Institute of Technology will describe the current effort to study distant, massive astrophysical objects by measuring incredibly tiny distortions of the geometry of space-time, using unique Earth-based detectors which make up the Laser Interferometer Gravitational-Wave Observatory (LIGO).

Mar. 22—Galaxies Like to Live Together

Dr. Roy R. Gal of UC Davis will describe how galaxies are distributed throughout the universe and what surveys of galaxy clusters can teach us about cosmology.

Contact: (707) 664-2267

<http://www.phys-astro.sonoma.edu/wpd/>

SRJC PLANETARIUM “DISCOVERING PLANETS”

February 27 - April 4

Santa Rosa Campus, Lark Hall, Room 2001

Astronomers have now discovered many planets beyond Pluto, over 100 of them around distant stars. In this program we'll look at the world of planets. Starting with our own solar system we'll learn why planets orbit stars and what types of planets exist. Then, out into interstellar space as we learn how astronomers find extrasolar planets and compare those distant kin to planets found in our solar system.

Shows are Fridays and Saturdays at 7:00 PM and 8:30 PM, Sundays at 1:30 PM and 3:00 PM during the regular Fall and Spring semesters. Admission is \$4 General; \$2 Students and Seniors. Tickets are sold at the door only, beginning 30 minutes before show time. No children under five, please.

A parking permit is now required at SRJC and is included in the Planetarium show admission price. Pick up a parking permit at the planetarium when you pay admission. Please arrive early enough to place your permit on your vehicle's dashboard before the show starts.

Contact: (707) 527-4465 or 527-437

<http://www.santarosa.edu/planetarium/>

MORRISON PLANETARIUM DEAN LECTURE SERIES

April 12 Topic:

“Mars-like Soils in the Atacama Desert (Chile) and the Limits of Life in Dry Environments”

Dr. Chris McKay, NASA/Ames Research Center

The Atacama Desert of Chile is the driest place on Earth. Recent field research shows that this is the only place on our planet where the Viking missions to Mars in 1976 would have failed to find evidence for life. In the Atacama Desert, we can cross the “dry limit” of microbial life.

New Location: During reconstruction of the Academy, the Dean Lectures have moved to the San Francisco Jewish Community Center at 3200 California Street (at Presidio Avenue). Parking is available across the street in the UCSF Laurel Heights campus parking lot for \$1.25 per night. Parking in the JCC garage is \$1.25 per half-hour.

Contact: (415) 750-7141

<http://www.calacademy.org/planetarium/>



Shingletown Star Party

SSP 2004 Registration Now Open

Nights of June 16 through June 20, 2004

Star party closes June 21, 2004

This is the SSP's third year. It offers some of California's darkest skies and convenient easy highway access. The star party is held on the runway of a closed airport, so there's no dirt or tumbleweeds on the setup field.

This year's SSP is adding a shower truck and ice truck to its list of amenities. Just a few miles away is the resort community of Shingletown which provides full services. Beautiful Mount Lassen National Volcanic Park is 17 miles up the mountain.

Registration this year is limited to 300 attendees. Find SSP 2004 at <http://www.shingletownstarparty.org>



Atop Mt. Lassen

CHABOT SPACE & SCIENCE CENTER

Saturday, May 22, 6:30 PM

Teaching Spaceships: Will We Ever Build One?

Dr. Gibor Basri

Dr. Basri will take us into the future and view whether or not our science fiction fantasies can become reality. Contact: (510) 336-737 <http://www.chabotspace.org>

SCAS-Sponsored Star Parties

THE GEYSERS STAR PARTY

Saturday, March 20

Excellent dark sky observing for members and their guests. Dress warmly, and take your Thermos bottles! Almanac data for March 20-21:

Sunset: 6:23 PM PST

Moonset: 6:23 PM PST

End Astronomical Twilight: 7:52 PM PST

Begin Twilight: 4:45 AM PST 3/21

Location: Palmieri Observatory, Mercuryville, CA (on the slopes of Geyser Peak near The Geysers)

Altitude: ~2700 feet

Longitude: 122deg 49min

Latitude: 38deg 46min

If you plan to attend, especially if you are going for the first time, please contact our coordinator, Mario Zelaya, at (707) 539-6423, zelayadesigns@sbcglobal.net

SCHOOL STAR PARTIES

Star parties are given free to any school or organization that requests them. For information and arrangements, contact the SCAS Community Activities Director, Len Nelson, at (707) 763-8007, lennelsn@comcast.net

Mar. 8 (Mon.) 7:30 PM (or alternate date of Tuesday, 3/9)—Meadows Elementary School in Petaluma

Mar. 11 (Thurs.) 7:30 PM (or alternate night of Friday, 3/12)—Miwok Elementary School in Petaluma

Mar. 19 (Fri.) 7:30 PM—Evergreen Elementary in Rohnert Park

Mar. 26 (Fri.) 7:30 PM—Hidden Valley Elementary in Santa Rosa

Mar. 29 (Mon.) 7:30 PM (or alternate date of Tuesday, 3/30)—St. Vincent De Paul Elementary in Petaluma

PUBLIC STAR PARTY

Note: This month's star party at Youth Community Park has been cancelled due to conflict with the Striking Sparks Awards Dinner March 27.

YOSEMITE PUBLIC STAR PARTY

Just in: July 9 & 10 dates confirmed! Reservations limited. Contact Len Nelson at lennelsn@comcast.net



NASA/JPL/Space Science Institute

CASSINI CAPTURES STUNNING VIEW OF SATURN

Four months before its scheduled arrival at Saturn, the Cassini-Huygens spacecraft sent its best color postcard back to Earth of the ringed world. The spacecraft is expected to send weekly postcards, as it gets closer to the ringed giant.

The view from Cassini shows Saturn growing larger and more defined as the spacecraft nears a July 1, 2004, arrival date. On February 9, Cassini's narrow-angle camera, one of two cameras onboard the spacecraft, took a series of exposures through different filters, which were combined to form the color image released today.

"We very much want everyone to enjoy Cassini's tour of this magnificent planetary system," said Dr. Carolyn Porco, leader of the Cassini imaging science team at the Space Science Institute in Boulder, CO. "And I can say right now the views out the window will be stunning."

Cassini was 69.4 million kilometers (43.2 million miles) from Saturn when the images were taken. The smallest features visible in the image are approximately 540 kilometers (336 miles) across. Finer details in the rings and atmosphere than previously seen are beginning to emerge and will grow in sharpness and clarity over the coming months. The thickness of the middle B ring of Saturn, and the comparative translucence of the outer A ring, when seen against the planet, as well as subtle color differences in the finely-banded Saturn atmosphere, are more apparent.

The icy moon Enceladus (520 kilometers or 323 miles across) is faintly visible on the left in the image. Its brightness has been increased seven times relative to the planet. Cassini will make several very close approaches to Enceladus, returning images in which features as small as 50 meters (165 feet) or less will be detectable.

"I feel like a kid on a road trip at the beginning of our tour," said Dr. Dennis Matson, project scientist for the Cassini-Huygens mission to Saturn and its largest moon Titan. "We've been driving this car for nearly 3.5 billion kilometers (2.2 billion miles) and it's time to get off and explore this ringed world and its many moons. I can hardly wait, but in the

meantime, these weekly color images offer a glimpse of our final destination."

In the coming months: Imaging highlights will include almost daily multi-wavelength imaging of Saturn and its rings; imaging of Titan beginning in April; Titan movie sequences starting in late May, when the resolution exceeds that obtainable from Earth; and a flyby of Saturn's distant moon, Phoebe, in June, at a spacecraft altitude of 2,000 kilometers (1,243 miles).

Through Cassini, about 260 scientists from 17 countries hope to gain a better understanding of Saturn, its famous rings, its magnetosphere, Titan, and its other icy moons. "Cassini is probably the most ambitious exploration mission ever launched and is the fruit of an active international collaboration," said Dr. Andre Brahic, imaging team member and professor at Université Paris 7-Denis Diderot, France. "It should be the prelude of our future, the exploration of our surroundings by humanity."

Cassini will begin a four-year prime mission in orbit around Saturn when it arrives July 1. It will release its piggybacked Huygens probe about six months later for descent through Titan's thick atmosphere. The probe could impact in what may be a liquid methane ocean.

JPL manages the mission for NASA's Office of Space Science, Washington. Cassini-Huygens is a cooperative mission of NASA, the European Space Agency and the Italian Space Agency. For updates of views and information, see the Cassini home page, <http://saturn.jpl.nasa.gov> and the Cassini imaging team home page at <http://ciclops.org>

School Star Party Report

by Loren Cooper for Len Nelson

The weather service had predicted rain for the night of February 18, but the skies looked good during the day. At 2:00 PM we talked to John Brandeburg, the teacher in charge at Strawberry Elementary School, and decided to go for it. By 6:15 it was obvious the weather was going to be perfect.

We had five telescopes with Merlin Combs, Melissa Bates, Eric Chazankin, Frank Siroky, and Loren Cooper participating. By 7:00 PM we had a large group of around 150 students and parents. The kids, parents, and teachers were very enthusiastic and had a great time. With such a large group, we spent most of the night looking at Saturn, Jupiter, M42 and M31.

School star parties are often the first time kids or parents see the solar system and we heard people say "wow, that's incredible" all evening. We wrapped it up around 9:15, and it was an evening well spent.

Young Astronomers



Radio Astronomy



Goldstone Radio Telescope

MARCH 12 MEETING

Visible light is only one way that astronomers “see” into space. Come to our March meeting and discover another fascinating way scientists study the universe, through the use of radio telescopes. Sonoma County Astronomical Society

president Keith Payea will be our presenter as we explore the differences between optical and radio astronomy.

He’ll discuss subspecialties, from extremely high frequencies down to extremely low, what each one tells us, and how amateurs can be involved.



Very Large Array, Socorro, NM

Join us on Friday March 12th, 7:30 PM at Apple Blossom School in Sebastopol. If the skies are clear, bring your telescope for a viewing session after our general meeting.

Follow this link for information about radio telescopes around the world: http://www.astro.uni-bonn.de/~webrai/world_map.html

Good Turnout for February 13 YA Meeting

Friday the 13th wasn’t unlucky for our February Young Astronomers meeting. It was the beginning of a holiday weekend, but we had a good turnout for our Mars presentation. YA president Melissa Downey invited members to submit articles for publication in the *Young Astronomers* section of the newsletter. She reminded attendees that Striking Sparks Telescope application / nomination packets were available, and that the window for nominations would close by the end of the month. Gary Jordan’s presentation on Mars was fascinating and informative.

Black Holes

BY MELISSA DOWNEY

One of the reasons I find astronomy so interesting is because of all the parallels—you’ve got matter and antimatter, attracting and repelling forces, and a whole range of stuff that has yet to be discovered. For example, did you know of a theory that there might be something called a white hole in the universe? The opposite of black holes, which eat matter and light, a white hole would spit out matter and light.

Let me explain something about stars before I explain about black holes. Stars are so heavy that the pressure crushing towards its center is huge. To keep the star from collapsing onto itself, the burning of hydrogen—the stuff stars use as a fuel—has to balance the crushing pressure of the star’s weight, or gravity. If the star is burning enough fuel, then its gravity and burning of fuel will balance and the star will live fairly peacefully. In very large stars, however, towards the end of their lives the hydrogen they burn is used up. The star falls in on itself and it gets smaller and smaller until it becomes a black hole.



Artist's rendering

A black hole is not really a hole in space. It’s basically a place in space with a lot of gravity. The gravity of the black hole

continued next page

YA CALENDAR

March 12: Topic: **Radio Astronomy**

Presenter: Keith Payea

April: Date to be Announced

Topic: **Hubble Space Telescope**

Presenter: Gary Jordan

Meetings start at 7:30 PM at Apple Blossom School, 700 Water Trough Road, Sebastopol. The multipurpose hall is the large building on the right side of the school that one sees from the main parking lot.

YA OFFICERS

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Librarian: Clayton Alderson 833-6423

Adult Adviser: Gary Jordan 829-5288

Young Astronomers: Newsletter Articles Wanted

Attention young astronomers! Have you come across an interesting article or idea about astronomy that you'd like to share with other young astronomers? If so, please submit it to us for publication in our YA newsletter. Articles are due by the middle of each month. Contact Melissa Downey, Mark Bellingier, or Gary Jordan if you have an article for us. Thanks!

Black Holes *continued from page 7*

is so powerful that not even light can escape it. This makes black holes very difficult to see. One way we see black holes is if a black hole is near another star. A black hole will suck light and gas off its neighbor star and into itself. As this matter and light starts to spin around the black hole it makes something known as the accretion disk. As the matter starts to spin faster the particles of dust and other matter bump into each other. These collisions heat up the matter until they put off X-rays, which can be seen with X-ray telescopes. All matter and light that comes within a certain distance of the black hole will be sucked in forever. This distance is known as the event horizon. Black holes get larger as they eat more and more matter. If a black hole swallows a rock in space, it will get larger by about the mass of that rock.

Your friendly black hole comes in three sizes—stellar, mid-mass, and super-massive. Stellar are the smallest. They have a mass of about 5-100 suns. They are often found in binary systems—two stars orbiting around each other. If one star collapses and becomes a black hole, the black hole and star will continue to orbit each other, the black hole pulling off and eating the gas from its neighbor. A mid-mass black hole has a mass of between 500-1000 suns and is sometimes a stellar black hole that's just gotten bigger. Super-massive black holes have a mass of a million or more suns, and are found in the center of galaxies, where scientists think they've eaten huge amounts of matter over millions of years to get so large.

Scientists also believe that a black hole has something to do with the formation of galaxies like ours. Super-massive black holes seem to exist in the center of many galaxies. These black holes have a mass that is a million to a billion times the mass of our sun.

Much about black holes remains uncertain. Could black holes be a doorway to another universe? Is that where all this matter and light go? Or just a different part of our universe? We've yet to discover all the answers, but I'm sure we'll find them someday!

Links: <http://spacelink.nasa.gov/>
http://chandra.harvard.edu/xray_sources/blackholes.html
<http://www.pbs.org/wgbh/nova/gamma/resources.html>
http://science.nasa.gov/headlines/y2001/ast23oct_1.htm?list79629



Attend A Conjunction!
AstroCon 2004
July 20-24, 2004
San Francisco Bay Area

Here's a conjunction you can actually attend—not just observe: a truly once-in-a-lifetime conjunction of the Astronomical League, the American Association of Variable Star Observers, the Association of Lunar and Planetary Observers, and the Astronomical Society of the Pacific.

Highlights :

- AAVSO and ALPO member sessions open to all attendees
- Top professional astronomers
- Great new public outreach tips and techniques
- Field trip to the world-famous Lick Observatory

AstroCon 2004—the Astronomical League's annual convention—is co-hosted by the Astronomical Association of Northern California, the Eastbay Astronomical Society, and the San Jose Astronomical Association.

www.astrocon2004.org visit the website for complete details, including secure on-line registration and payment	1-415-337-1100 x 109 leave us a message to request a printed registration form, or to ask a question
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Striking Sparks History *continued from page 1*

members joined the action. They learned to grind and polish mirrors; they refined woodworking and painting skills on the bases; they experienced the joy of accomplishment.

Like silver and gold, newcomers and longtime members in SCAS continue the work. Sponsors give funds that cover costs and purchase of quality accessories.

The SCAS Board evaluates all letters received by the March 6 deadline. Important elements are sincerity and how the young writer would use and share the use of a telescope. The idea is that by using a telescope, a spark may be struck within the student to pursue one of the scientific disciplines related to astronomy.

Come together as SCAS to encourage students and make it a special day.

Sonoma Skies Has Hot Links!

The links you see throughout the newsletter are clickable when you receive *Sonoma Skies* online. An email with a link to the Acrobat file is sent to members each month. Printing and mailing costs are rising. If you agree to receive the online version only, email our Membership Director, Harry Linder, harry@sonic.net Help us avoid raising dues. Thanks.