

# Sonoma Skies

Newsletter of the Sonoma County

A nonprofit scientific and

[www.sonomaskies.org](http://www.sonomaskies.org)



Astronomical Society

educational organization

May 2005

Volume XXVIII No. 4

## Cosmic Eyes, Well Chilled

### SCAS May 11 Meeting, Proctor Terrace School

Our guest speaker this month is Dr. Robert Stokstad from the Institute for Nuclear and Particle Astrophysics at U.C. Berkeley. He is project leader for their part in operation IceCube, an ambitious project to implant an array of neutrino detectors into the pure ice of the South Pole. This senior staff scientist from Lawrence Berkeley Laboratories confesses to being “merely” a neutrino research physicist, and not an astronomer. Yet by explaining how neutrino astrophysics can lead to deeper understanding of the inner workings of the universe we study, I’m sure we can accept him into our fold.

When contemplating the universe to understand our place in it, our mind processes what we perceive through our senses. Aldous Huxley referred to our senses as “The Doors of Perception.” It used to be that astronomy gathered most information as light, through our sight. Now we know there are other ways of “seeing” the universe from different doors of perception. We know of radio waves, infrared, ultraviolet, even x-rays and gamma rays. How about another one: perceiving the universe of neutrinos? And the “eyes” doing the seeing are frozen into a huge block of ice at the South Pole!

Neutrinos are one of the most common, yet elusive particles in the universe. For a while their existence was predicted but not confirmed, and their nature poorly understood. It was not known if they even had a mass, yet they carried a real punch. They carried a lot of energy away from nuclear reactions, and were an essential part of the workings of the subnuclear world. Neutrinos



## It’s Membership Renewal Time!

As you know, membership in the SCAS is renewable June 1 for the 2005-06 membership year. That day is fast approaching, so please use the renewal form on the back cover to update your address, email and telephone information and send your check for \$25 (payable to SCAS) to: SCAS Membership, P.O. Box 183, Santa Rosa, CA 95402-0183. Renew by May 31 to avoid annoying reminders. Thank you!

## NEW COORDINATOR FOR STRIKING SPARKS

by Len Nelson

After two years as coordinator for the Striking Sparks program, I have decided that it is time to pass this worthy duty along to another SCAS member. That individual is none other than Dickson Yeager. Those of you who know him will surely applaud his stepping forward into the SCAS spot light. For those of you that do not know him, let me tell you about this fine gentleman.

He says that for as far back as he can remember that he has always had a fascination with the night sky. But, he never took any active interest in astronomy until he saw an article in the Press Democrat about a December 2001 SCAS meeting where the guest speaker would be Ken Crowell.

*continued page 7*

are everywhere. Trillions of them pass through every cubic centimeter of our world, even our bodies, even our whole planet. Yet they are so small, and so fast, that only rarely do they interact with any other matter.

Being such an essential part of cosmic dynamics, it would seem we could glean some information about what is happening from their many sources. Some come from our atmosphere, some from the sun, some from supernovae in far off galaxies and who knows where else? Welcome to neutrino astronomy.

Dr. Stokstad’s investigations have taken him to some really cool places (literally) in the world. He has an exciting job in an exciting new field, with pictures to prove it! Please come join us at our May 11 meeting. Let’s chill out with Dr. Stokstad at the South Pole, find out why he goes there, and what his little neutrinos may be telling us. —John Whitehouse

*(Ed Note: See links to his U.C. site on P. 4)*

Young Astronomers: See page 6

# Sonoma Skies

*Sonoma Skies* is the monthly newsletter of the **Sonoma County Astronomical Society (SCAS)**. Subscription is included as part of membership. Articles and member announcements are welcome and are published on a first come, first served basis, space permitting, and may be edited. **The deadline for submissions is the last Wednesday of each month.** Mail to: Editor, SCAS, P.O. Box 183, Santa Rosa, CA 95402, or email Editor: Cecelia Yarnell, [ceceliay@sbglobal.net](mailto:ceceliay@sbglobal.net)

## SCAS Membership Information

**MEMBERSHIP MEETINGS:** 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.

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

**SCAS STAR PARTIES:** See the Events section for dates and times. The Geysers observing site is locked to public access. For use during monthly star parties, SCAS members may obtain the combination to the gate lock at the site by contacting any board member listed below.

**RENTAL TELESCOPES:** Members are eligible to borrow telescopes for a \$10 per month donation, or **FREE** each month you participate in a SCAS-related Public Star Party. Five telescopes are available: 8" and 5" Celestron SCTs, 8" and 12.5" Newtonians on Dobsonian mounts; and an 80mm refractor. Contact Joan Thornton at 707-762-0594.

**SCAS EGROUP URL:** Any SCAS member is welcome to join. Hosted by Robert Leyland at [r.leyland@verizon.net](mailto: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@yahogroups.com](mailto:scas-subscribe@yahogroups.com)

**DISCOUNT SUBSCRIPTIONS:** For *Sky & Telescope Magazine*, new subscribers may send a check for \$32.95 payable to "SCAS", 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 annually in October. Check *Sonoma Skies* for details.

**LIBRARY:** SCAS Librarian Joan Thornton hosts a library of astronomy books that may be checked out by members at SCAS meetings, to be returned at the next meeting. Videotaped lectures on astronomy may be rented for \$3 per month.

## SCAS Elected Board

**President:** Keith Payea, 566-8935, [kpaya@bryantlabs.net](mailto:kpaya@bryantlabs.net)

**Vice-President & Program Director:** John Whitehouse, 539-5549, [jnw@sonic.net](mailto:jnw@sonic.net)

**Treasurer:** Larry McCune, (415)492-1426, [llmcune@comcast.net](mailto:llmcune@comcast.net)

**Secretary:** Loren Cooper, 525-8737, [lorenco@sonic.net](mailto:lorenco@sonic.net)

**Membership Director:** Walt Bodley, 823-5268, [wbodley@sonic.net](mailto:wbodley@sonic.net)

**Community Activities Director:** Len Nelson, 763-8007, [lennelsn@comcast.net](mailto:lennelsn@comcast.net)

**Publications Director:** Cecelia Yarnell, 569-9663, [ceceliay@sbglobal.net](mailto:ceceliay@sbglobal.net)

## SCAS Appointed Positions

**Amateur Telescope Making:** Steve Follett, 542-1561, [sfollett@sonic.net](mailto:sfollett@sonic.net)

**Young Astronomers Advisor:** Gary Jordan, 829-5288, [SieraMolly@aol.com](mailto:SieraMolly@aol.com)

**Striking Sparks Program Coordinator:** Dickson Yeager, 539-2385, [deep6@sonic.net](mailto:deep6@sonic.net)

**Librarian:** Joan Thornton, 762-0594, [phonyjoanic@earthlink.net](mailto:phonyjoanic@earthlink.net)

**Public Star Party Coordinator:** Bruce Lotz, 576-7833, [ablotz@sonic.net](mailto:ablotz@sonic.net)

[www.sonomaskies.org](http://www.sonomaskies.org)

## President's Column

# Make the Step from Viewing to Observing

by Keith Payea

What's the difference? Science! Most of us view the heavens through telescopes, but few of us really observe. In my mind, the difference is that a true observer records what they see. This can be as simple as writing down your observations in a notebook, or as complicated as a rigorous program to measure variable stars using a CCD camera and a computer.



At my home, I record seismic activity with a homemade seismometer, and I measure changes in the ionosphere by monitoring the signal from a distant radio station. These observations are done with the aid of a computer which logs the data 24/7. But, even when I look through the telescope, I have a notebook handy to record the conditions and my impressions of the objects I look at.

Many interesting discoveries are made simply through good record keeping. This is how Messier made his list, and how earlier astronomers deduced the movements of the planets around the sun. Today, good observational record keeping is how comets, novae, and supernovae are found.

One of the most famous organizations dedicated to the art of observing is the American Association of Variable Star Observers: [www.aavso.org](http://www.aavso.org). They have many different programs in which we can participate, and their web site is filled with information on how to get involved. Even more important, they provide a way to share observations and coordinate the efforts of their members to get the most from their data. Here's a sample of the types of observing programs AAVSO supports:

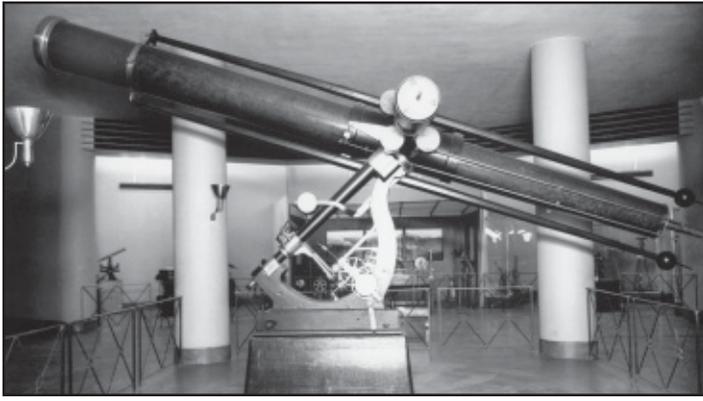
- Visual observations of many types of variable stars
- Photometric measurements of variables with small magnitude changes
- Several types of CCD based observations
- Monitoring of other galaxies to find Novae and Supernovae
- Sunspot and ionosphere measurements

Even if you don't want to make some huge discovery, keeping a notebook can add a wonderful new dimension to your enjoyment of the sky. When the clouds get in the way, and I've read *Sky and Telescope* front to back to front, sometimes I pull out my notebook and look back through it. Then I can relive the joy I felt the first time I found M51 or the night it was so clear and dark I couldn't pick out the constellations because there were so many stars.

Sure beats reruns on the TV, even if it is Nova on PBS!

## SOCIAL AMENITIES

Thanks to Matt Gardner for providing delicious coffee and cookies at the April SCAS meeting. Everyone appreciates the efforts of our volunteers. September remains open, so if you'd like to volunteer please call or email Cecelia Yarnell.



# Kenwood Observatory

by *Ralph Mansfield*

In the late 1800s Kenwood Observatory was the private observatory of George Ellery Hale and was attached to his father's home in the Chicago neighborhood of Kenwood. Hale, an astrophysicist, had a Midas-like personality, capable of coaxing wealthy individuals to contribute huge sums of money for large telescopes. That was how the Yerkes 40-inch refractor, the Mt. Wilson 60- and 100-inch reflectors, and the 200-inch Hale reflector on Mt. Palomar came to be funded and built.

Hale's astronomy interest began at an early age when he met S. W. Burnham, a Chicago law courts stenographer by day and a double-star observer at night. Burnham helped Hale purchase a used 4-inch Clark refractor to mount on his father's roof for observations. Later, interested in spectroscopy, he persuaded his father to purchase a 12-inch Warner and Swasey equatorial refractor for his solar observatory.

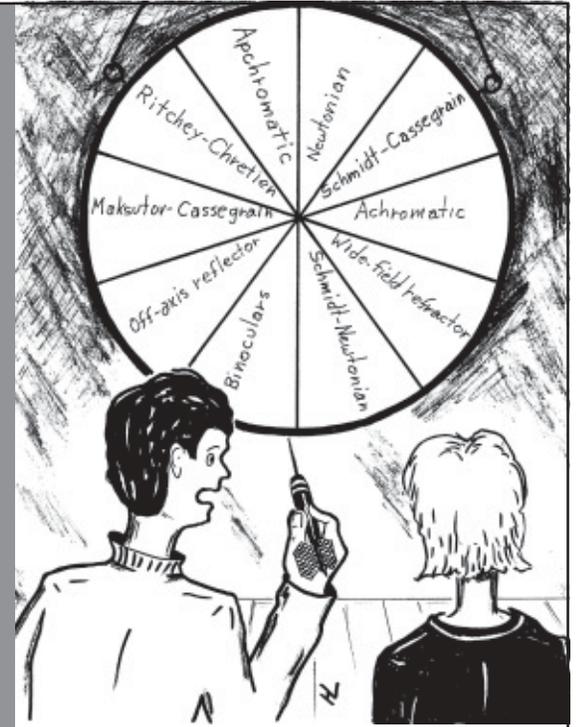
The University of Chicago campus near Kenwood housed the 18½-inch Dearborn refractor. Prof. G. W. Hough studied Jupiter and double stars. He developed a friendship with Hale and allowed him to observe through the large telescope. In return, Hale worked the feeble gas engine that turned the observatory dome. This observatory was demolished as the University moved to Midway and the telescope was transferred to Northwestern University in 1889 and housed in the Dearborn Observatory overlooking Lake Michigan.

During the 1920-30s era, a metal tube replaced the Dearborn wooden telescope tube and a new mounting was fitted to it. Dr. Philip Fox was the observatory director then, but had prepared to resign and take up new duties as the first director of the Adler Planetarium, the first planetarium in the western hemisphere. Through his dual connection, Fox arranged for the old Dearborn wood telescope tube and mounting assembly, sans objective lens, to be sent to the Adler Planetarium for exhibition. I was given the task of reassembling the assorted parts into a workable telescope exhibit, with an equatorial mount and pier, and a large circular piece of plate glass where the original lens had once been mounted. No longer a usable telescope, it was an impressive exhibit with its long polished wood tube.

An interesting history surrounds the Dearborn refractor. In 1860, Dr. F. A. P. Barnard, at the University of Mississippi, ordered an 18½-inch refractor from Alvan Clark & Sons in Cambridge, Mass. It was larger than any previous lens the Clarks had ever ground. Clark sold his house and invested the proceeds to build the first American telescope factory. Under the factory, he constructed a 250-foot tunnel to test lenses with artificial stars, with vibration and temperature variations reduced to a minimum.

# The Astronomer's Seminar

by  
Herb  
Larsen



*I've determined that this is the only way to decide which telescope to buy!*

## SCOPE CITY New Member Bonus!

- Scope City at 350 Bay Street, San Francisco, is offering a **\$25 merchandise discount to new members**. Manager Sam
- Weiss has supported SCAS and the Striking Sparks project by donating merchandise for the awards. He offers a huge selection of telescopes, accessories and more.
- Obtain a receipt from Walt Bodley, Membership Director, showing you have paid the \$25 SCAS membership dues. To arrange for your merchandise discount, contact Sam at 415/421-8800 or at [sanfrancisco@scopecity.com](mailto:sanfrancisco@scopecity.com)

The 18½-inch glass disks, cast in England by Chance Bros., were delivered to the Clarks in 1861. On January 31, 1862, Alvan Clark began testing the finished lens on certain bright stars and when he focused on Sirius, he saw a faint companion star, the Pup. This observation was confirmed by other observers and Clark was later awarded the Lalande prize of the French Academy of Sciences for his discovery.

The telescope was ready for delivery but the Civil War forced the University of Mississippi to pay for it in Union currency. Somehow, the matter came to the attention of the Chicago Astronomical Society and the telescope was purchased and installed in the Dearborn Observatory on the old University of Chicago campus. There it was used by Hough and Burnham, as well as George Hale and other university students. It was named for Henry Dearborn, a founding pioneer of Chicago's Fort Dearborn, and the park was named for Abraham Lincoln's political opponent, Stephen Douglas. Thus was American history embedded in the Dearborn telescope.

# Events

## THE GEYSERS STAR PARTIES

Excellent dark sky observing at ~2700' for members and guests.  
**Location:** Palmieri Observatory, Mercuryville (near The Geysers). Longitude: 122deg 49min., Latitude: 38deg 46min.

**SATURDAY, MAY 7**

**Sunset:** 8:08 PM PDT

**End Astronomical Twilight:** 9:52 PM PDT

**Moonset:** 7:53 PM PDT

Dress warm. If it's your first time to the Geyser site, go with someone who has gone before, or contact Mario Zelaya at (707) 539-6423, [zelayadesigns@sbcglobal.net](mailto:zelayadesigns@sbcglobal.net)

## MT. TAMALPAIS ASTRONOMY

**Saturday, May 14, 8:30 PM**

**"Ancient Astronomy, the First Science,"** John Dillon, The Randall Museum-San Francisco. The pinnacle of ancient Greek science was the amazingly sophisticated astronomy developed more than 2000 years ago at the legendary Museum of Alexandria.

Presentations held in the Mountain Theatre. Viewing afterwards in Rock Springs Parking Area, provided by San Francisco Amateur Astronomers. The Madrone Picnic Area (next to the Mt. Theater) is reserved 1-1/2 hours before each program for informal gathering. Bring your picnic supper and meet the speakers before the talk. Information: <http://www.mttam.net/>

## UC BERKELEY

**Institute for Particle Astrophysics Journal Club Seminars**

The following Journal Club schedule for the Institute for Nuclear and Particle Astrophysics is tentative. The seminar becomes final usually a few days before the Friday of the talk!

**May 13—Steve Boggs** (UCB/SSL) speaking on last year's massive solar flare.

**June 10—John Bradley** (LLNL) speaking on a dust extinction feature

About the Club: All seminars are on Fridays (unless otherwise noted) and start at 12:00 (noon) with a brief presentation of the weekly scientific news. Typically the talks end by 13:00. The seminars take place in Bldg. 50, room 5026 (the INPA common room), Lawrence Berkeley National Laboratory, 1 Cyclotron Rd., Berkeley. If you have questions, comments, or suggestions please contact, preferably via e-mail, Vitaliy Fadeyev [VAFadeyev@lbl.gov](mailto:VAFadeyev@lbl.gov). Visit: <http://stokstad.lbl.gov/INPA/journalclub.html#aboutclub>

## SHINGLETOWN STAR PARTY

Come join the fun under great skies, July 6-11, 2005! Prices range from \$20 for a one-day pass to \$60 for five days. After June 15, registration at the gate is the only option. Registration closes at 300 attendees. See all the info at [www.shingletownstarparty.org](http://www.shingletownstarparty.org)

## SCAS PUBLIC STAR PARTY

These are public events—all are invited. Members with scopes are encouraged to attend.\* Great for planetary astronomy with fellow observers at an easily accessible site.

**SATURDAY, MAY 14**

**Sunset:** 8:15 PM PDT

**End Astronomical Twilight:** 10:01 PM PDT

**Moonset:** 1:28 AM PDT 5/15

Youth Community Park in Santa Rosa, on the west side of Fulton Road, between Guerneville Road and Piner Road, just opposite Piner High School. Contact: Bruce Lotz, Coordinator (707) 576-7833, [ablotz@sonic.net](mailto:ablotz@sonic.net) \***Note!** Rental telescopes listed on Page 2 are **free** each month you participate in a SCAS-related Public Star Party.

## SILICON VALLEY ASTRONOMY LECTURE SERIES

**Wednesday, May 18, 7:00 PM**

Dr. Nathalie Cabrol of NASA Ames Research Center (SETI Institute) in Mountain View will give an illustrated, non-technical talk entitled "What Are We Finding on Mars." Dr. Cabrol was the champion in the process that selected Gusev Crater as the landing spot for the Spirit rover. She is also working on a project to use robotics that look for signs of life in the Atacama Desert of Chile. A native of Paris, France, she is a planetary geologist and specializes in Mars hydrology. For more information on Dr. Cabrol see <http://www.earthsky.com/shows/profiles/cabrol.php>.

This talk winds up the 2004-2005 Silicon Valley Astronomy Lecture Series—another great season for the "Fraknoi Talks."

Please come early as seating is first come, first served. Held in the Smithwick Theater, Foothill College, Los Altos Hills. Free and open to the public. Parking on campus costs \$2. Call the series hot-line at 650/949-7888 for more information.

## LAWRENCE HALL OF SCIENCE

**"Real Astronomy" Exhibit**

Measure a planet. Track an asteroid. This new exhibit, Real Astronomy Experience, let's you "lean" into the eyepiece of a professional astronomer. Join us for the excitement of developing an exhibit on the mysteries of space. Try out these debut activities and tell us what you think. Weekdays from 2:30-4:00 PM, weekends from 10:30-12:00 and 2:30-4:00.

LHS is on Centennial Drive below Grizzly Peak in the Berkeley Hills. General information: (510) 642-5132. \$8.50/adults; \$6.50/youth (5-18), full-time students, senior citizens, and the disabled; \$4.50/children 3-4; and free for children two and under. For more information visit [www.lawrencehallofscience.org](http://www.lawrencehallofscience.org)

## WELCOME, NEW MEMBER!

SCAS welcomes our newest member, Rusty England of American Canyon, CA.

Sonoma Skies, May 2005

# Events

## ROBERT H. FERGUSON OBSERVATORY

**Public Viewing: Saturdays, May 7, June 4**

Solar Viewing: 12:00 AM - 4:00 PM

Night Viewing: Begins 9:00 PM

Three scopes are operating: The 14-inch SCT with CCD camera in the east wing, the 8-inch refractor under the dome and the 24-inch Dobsonian in the west wing. There is no admission fee for the solar viewing, but donations are appreciated. The Park charges \$6 per vehicle for entry. A \$2 donation is requested from adults 18 and over for admission to the observatory during the night viewing sessions.

SCAS members may set up telescopes in the observatory parking lot to assist with public viewing. Auto access closes at dusk, late arrivals must carry equipment from the horse stable parking area.

### **Special Event: Mon. May 23, Antares Occultation**

Public is welcome, but main focus is for persons bringing their own observing equipment. Binoculars recommended for persons without scopes. Docents will provide technical details for observers and general explanation for public. The occultation is from about 11:50 PM to 1:06 AM. **Note:** Attendees with scopes must arrive before 9:00 PM to access setup area with their vehicles.

### **Classes**

May 3 Night Sky Winter/Spring Series, 7:30 PM

June 7 Night Sky Summer Series Begins, 7:30 PM

Classes are held at the Observatory. Reservations recommended. Info: (707) 833-6979, <http://www.rfo.org> or email [nightsky@rfo.org](mailto:nightsky@rfo.org)

## SRJC PLANETARIUM

**“The Sky Tonight”—Ends May 13**

What’s up? Come aboard our detailed guided tour of this summer’s bright stars, constellations, planets, and interesting deep space objects. Learn about the planets that are visible this summer.

Shows are held at Santa Rosa Campus, Lark Hall, Room 2001, on Fridays and Saturdays at 7:00 PM and 8:30 PM, Sundays at 1:30 PM and 3:00 PM during the 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. A parking permit is required and is included in the Planetarium admission price. Pick it up at the planetarium when you pay admission. Please arrive early enough to place your permit on

## SCAS YOSEMITE PUBLIC STAR PARTY

**July 15 and 16**

Come join SCAS and RFO members for the 15th Annual Public Star Party at Glacier Point overlooking Yosemite Valley. In return for this public service, the park district allows us free entry to Yosemite and free camping at Bridalveil Campground which is about nine miles from Glacier Point. It’s a fun experience and, of course, the views are out of this world. Please contact Len Nelson at 763-8007 if you are interested or have questions.

## NASA AMES RESEARCH CENTER

**May 4—“Space Exploration: Can Gravity Reverse Aging?”—Dr. Joan Vernikos**

Dr. Vernikos, author and former director of life sciences at NASA Ames, will discuss how to live a vital, healthy life, as outlined in her latest book, *The G-Connection: Harness Gravity and Reverse Aging*. The free public lecture begins at 7PM in Bldg. 943’s Eagle Room, just outside the main gate. To reach NASA Ames, take the Moffett Field exit off Highway 101.

Vernikos is the second guest speaker in a series of lectures focused on three main themes: ‘explore, discover and understand.’ Topics will include everything from new technologies that support human missions to the Moon and Mars, to autonomous robots and Earth analog research. <http://researchpark.arc.nasa.gov>

## SONOMA STATE UNIVERSITY SERIES “WHAT PHYSICISTS DO”

**Tuesdays at 4:00 PM**

*Stevenson Hall Room 2006 (Coffee at 3:30 PM)*

**May 10—Digging for the Fossils of Galaxy Formation**

Dr. Katherine Rhode (’89) of Wesleyan and Yale Universities will describe the properties of the globular cluster systems of massive galaxies and explain what they tell us about the galaxies’ origins. Contact <http://phys-astro.sonoma.edu/wp/>

## SSU OBSERVATORY PUBLIC VIEWING

**May 13—9PM-11PM: Moon, Comet Tempel 1, Jupiter**

Observatory located inside the football field at the SE corner of campus (E. Cotati Ave. and Petaluma Hill Rd., two miles east of US 101 at Cotati). Follow signs to campus. Call 707/664-2267 before coming if it appears weather may force cancellation. <http://www.phys-astro.sonoma.edu/observatory/pvn.html>

## MORRISON PLANETARIUM DEAN LECTURE SERIES

**June 6—“Sun-Earth Connections—Scientific, Cultural, and Historical Perspectives”—Dr. Isabel Hawkins, University of California, Berkeley**

The Sun, a sacred symbol in many cultures, serves as the topic of fascinating research by scientists who investigate the effects of our nearest star on Earth and other planets. Learn from cutting-edge research about how the interaction of the solar wind and other dynamic space weather phenomena affect our technology-dependent society today.

**New Location:** During reconstruction, lectures are held at the Jewish Community Center, 3200 California Street (at Presidio). Parking in the UCSF Laurel Heights campus parking lot is \$1.25/night. Parking in the JCC garage is \$1.25 per half-hour. All programs begin at 7:30 PM in Kanbar Hall at the JCC. Contact: 415/750-7141, <http://www.calacademy.org/planetarium/>

# Young Astronomers



## YA STRIKING SPARKS WINNERS INVITED TO HELP AT THE RFO

Attention Young Astronomer Striking Sparks Winners from any year! You are invited to share your telescope and your enthusiasm with the public! If you bring your telescope to the Robert H. Ferguson Observatory (RFO) on any of the public night events, you and your family will receive FREE admission to the Observatory for the night viewing session. (Families will still need to pay the \$6.00 per vehicle admission that the state parks system charges, but admission fees to the RFO will be waived). Check out the RFO public viewing schedule in your copy of *Sonoma Skies* to find a session that fits your schedule. Then, bring your telescope and your family for a great night of exploring the heavens. We hope to see you there!

## YA MEETINGS TO RESUME IN THE FALL. MEANWHILE...

Although the monthly YA meetings are finished for this school year, there are still plenty of SCAS activities to keep your interest during the summer. Read your monthly SCAS newsletter for announcements of public and SCAS events that you are always welcome to attend. We will be sending you email reminders of some of these events. Mark them on your calendar so you don't miss out! Also, expect an email announcement in mid-August to remind you of the Fall YA schedule as the new school year resumes.

## YA APRIL MEETING UPDATE

At the April meeting, our own president Melissa Downey gave an excellent presentation on Black Holes. Everyone who attended had a great time learning about and discussing this fascinating subject. Afterwards, new Striking Sparks winners were given a presentation on the "care and feeding" of their telescopes where they were taught skills to get the most out of their summertime viewing.

## YA INFORMATION

**Meetings:** 7:30 PM the second Friday of each month of the school year, at Apple Blossom School, 700 Water Trough Road, Sebastopol, in the Multipurpose Hall. Open to all Sonoma County students. **Telescope viewing** is held in the upper parking lot after the meeting. For directions, contact any of the officers listed below.

### YA ELECTED OFFICERS

**PRESIDENT:** Melissa Downey 632-5661

**VP/PROGRAM DIRECTOR:** Olivia Turnross [jtec@sonic.net](mailto:jtec@sonic.net)

**RECORDER:** Open

**NEWSLETTER EDITOR:** Scott Grubb [fivegees@sonic.net](mailto:fivegees@sonic.net)

**LIBRARIAN:** Jacob Gaynor

**ADULT ADVISER:** Gary Jordan 829-5288



# Asian Tsunami Seen from Space

by Patrick L. Barry

When JPL research scientist Michael Garay first heard the news that a tsunami had struck southern Asia, he felt the same shock and sadness over the tremendous loss of life that most people certainly felt. Later, though, he began to wonder: were these waves big enough to see from space? So he decided to check. At JPL, Garay analyzes data from MISR—the Multi-angle Imaging SpectroRadiometer instrument aboard NASA's Terra satellite. He scoured MISR images from the day of the tsunami, looking for signs of the waves near the coasts of India, Sri Lanka, Indonesia, and Thailand.

Looking at an image of the southern tip of Sri Lanka taken by one of MISR's angled cameras, he spotted the distinct shape of waves made visible by the glint of reflected sunlight. They look a bit like normal waves, except for their scale: These waves were more than a kilometer wide!

Most satellites have cameras that point straight down. From that angle, waves are hard to see. But MISR is unique in having nine cameras, each viewing Earth at a different angle. "We could see the waves because MISR's forward-looking camera caught the reflected sunlight just right," Garay explains.

In another set of images, MISR's cameras caught the white foam of tsunami waves breaking off the coast of India.

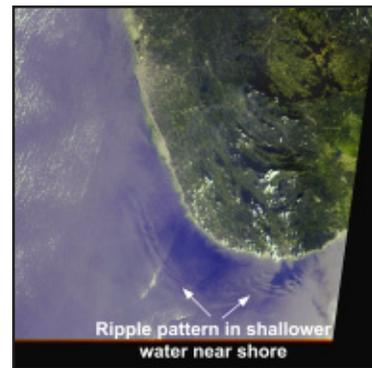
By looking at various angles as the Terra satellite passed over the area, MISR's cameras snapped seven shots of the breaking waves, each about a minute apart. This gave scientists a unique time-lapse view of the motion of the waves, providing valuable data such as the location, speed, and direction of the breaking waves.

Realizing the importance of the find, Garay contacted Vasily Titov at the National Oceanic and Atmospheric Administration's Pacific Marine Environmental Laboratory in Seattle, WA. Titov is a tsunami expert who had made a computer simulation of the Asian tsunami.

Because the Indian Ocean doesn't have a tsunami warning system, hardly any scientific measurements of the tsunami's propagation exist, making it hard for Dr. Titov to check his simulations against reality," Garay explains. "Our images provide important data points to help make his simulations more accurate. By predicting where a tsunami will hit hardest, the simulations may someday help authorities issue more effective warnings next time a tsunami strikes."

Find out more about MISR and see the latest images at [www-misr.jpl.nasa.gov/](http://www-misr.jpl.nasa.gov/) Kids can read their own version of the MISR tsunami story at [http://spaceplace.nasa.gov/en/kids/misr\\_tsunami](http://spaceplace.nasa.gov/en/kids/misr_tsunami)

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with NASA.*



*This December 26, 2004, MISR image of the southern tip of Sri Lanka was taken several hours after the first tsunami wave hit the island. It was taken with MISR's 46° forward-looking camera.*

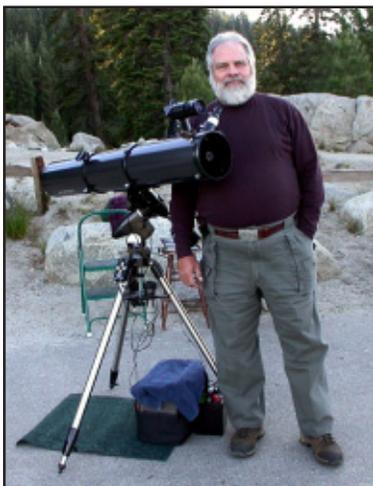
## New Coordinator for Striking Sparks from Page 1

Dickson came to that meeting, bought Ken's new book *The Universe at Midnight* and has been hooked since then. Eighteen months after that, he had purchased a reflecting telescope to personally witness Mars at opposition in September of 2003. Now he is in docent training at the RFO.

Many years before reaching his current pinnacle in life, Dickson graduated from California State University, Long Beach with a B.A. in Psychology and a minor in Philosophy. After six months' active duty in the Coast Guard he went to work for Wells Fargo and was in branch banking until 1972, when he accepted a position with the mortgage banking division in Santa Rosa.

He is now happily retired with his delightful wife, BJ. Other than astronomy, his interests are nature photography, fly fishing, hiking and camping, road trips and reading.

Welcome aboard, Dickson! The SCAS looks for exciting and positive changes in the Striking Sparks program with you at the helm!



## ACCEPTANCE OF POSITION

by Dickson Yeager

I am honored to have been invited to become the next Striking Sparks Program Coordinator. I have accepted and look forward to a rewarding, exciting and fun year. Len Nelson set the bar high with two very successful years. I will do my best to follow in his footsteps. With the support of the SCAS membership I know we can have a successful 21<sup>st</sup> year. I will be calling on many of you for assistance this next year. I look forward to hearing your thoughts, ideas and beneficial suggestions. My phone number and email address appear in the newsletter at the bottom of Page 2 under "SCAS Appointed Positions." I will keep you posted during the year and inform you of volunteer opportunities.

## Super Star Cluster in the Neighborhood

Imagine cramming hundreds of thousands of bright, young stars into a space no bigger than our solar system. Talk about a traffic jam! Astronomers have observed such "super" star clusters, but only in galaxies far, far away—until now. It turns out there's a massive, superdense star cluster right in our own galaxy, the Milky Way. It was spotted by a team of European astronomers using several telescopes at the European Southern Observatory's La Silla site in Chile. Just 10,000 light-years from Earth (a mere jog across town in space terms), the cluster measures 6 light-years across. Its weight, the astronomers estimate, is at least as heavy as 100,000 suns. The cluster's name is Westerlund 1.

The fact that the cluster exists isn't a total surprise. Since 1961, astronomers have known that some sort of grouping of young stars lies in the constellation Ara. Because the cluster hides behind a large cloud of gas and dust, though, they had no idea how packed with stars it is.

Sensitive detectors on telescopes at La Silla helped the researchers identify more than 200 massive stars in Westerlund 1. Each of these stars, they found, weighs 30 to 40 times as much as the sun. Some of the stars are a million times brighter. A few are so big that they would reach all the way to Saturn if you could put them where our sun is.



The densest cluster of stars (center) that's been detected in the Milky Way.

The telescopes in Chile were not sensitive enough to detect smaller stars in the cluster, but scientists are sure they must be there. There are probably at least a half-million more stars in Westerlund 1, they say. The astronomers estimate that the cluster is just 5 million years old. That's young in star years.

The discovery could help illuminate what the universe was like in its early days. Back then, studies suggest, star formation tended to happen within clusters. Collisions among stars in the super cluster could also lead to the formation of a medium-sized black hole. Right here in our own backyard.—E. Sohn

## May Observing Notes

- May 6** Eta Aquarid Meteors peak in morning
- May 8** New Moon 1:45 AM PDT
- May 13** Saturn 5° S of Moon
- May 16** First Quarter Moon 1:57 AM PDT
- May 23** Full Moon 1:18 PM PDT  
Moon occults Antares beginning 11:50 PM PDT
- May 29** Double shadow transit on Jupiter 11:37 PM PDT
- May 30** Last Quarter Moon 1:18 PM PDT
- May 31** Saturn 7° S of Pollux

### Links featured this issue:

CFHT (Canada-France-Hawaii) Mauna Kea Telescope. Spectacular images, like the Iris Nebula shown at right. <http://www.cfht.hawaii.edu/HawaiianStarlight/>

European Space Agency: Fun to explore and very interesting: <http://www.esa.int/esaSC/index.html>

More fun observing challenges from Angelfire: <http://www.angelfire.com/id/jsredshift/>

NASA-Ames Research Park <http://researchpark.arc.nasa.gov/>



# Sonoma County Astronomical Society Membership Application/Renewal

**The \$25.00 Annual Membership fee for 2005-2006 is due June 1.**

Please complete this form and give it to Walt Bodley with your check, payable to "SCAS," at the next meeting, or mail to: **SCAS, P.O. Box 183, Santa Rosa, CA 95402**

**New**     **Renewal** (If renewing, provide name only, plus any information that has changed).

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Telephone: \_\_\_\_\_

Email Address: \_\_\_\_\_

Your renewal dues include membership in the Astronomical League, our monthly newsletter *Sonoma Skies*, access to the Palmieri Observing site at the New Moon, discounted subscriptions for *Sky and Telescope* and *Astronomy* magazines, great guest speakers at our monthly meetings, and opportunities to meet interesting people who share your interest in many aspects of astronomy and science.

**Sonoma County  
Astronomical Society**

P.O. Box 183  
Santa Rosa, CA 95402



***Sonoma Skies***  
**May 2005**

MAY 11

**Robert Stokstad  
Cosmic Eyes,  
Well Chilled**