

# Sonoma Skies

Newsletter of the Sonoma County  
A nonprofit scientific and educational organization

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



April 2005

Volume XXVIII No. 3



## Striking Sparks 2005

by Keith Payea

The overcast skies did nothing to dampen the enthusiasm of the 8 young people who won this year's Striking Sparks Contest. The weather even cooperated enough to refrain from dumping rain on us while we set up and cleaned up.

When I arrived around 4:00 PM, Len Nelson had all of the troops organized and readying the multipurpose room at Proctor Terrace Elementary School for the dinner and awards celebration to come. The only hitch during the entire evening was that the security alarm in the room kept beeping at us. Luckily we managed to sort that out before our guests arrived.

The awardees began arriving shortly after 4:30, and spent their time exploring the solar system-themed table decorations that Joan Thornton had created. Several (including me!) got a real kick out of the "Buckle" that was part of the Asteroid Belt. Because the weather precluded any solar viewing, we rang the dinner bell—literally—a few minutes early. There was a very nice assortment of food for the potluck, including a delicious cake with Striking Sparks decorations, and some wonderful little "telescopes" made from Tootsie Rolls by Terry Dye.

Len had arranged a very interesting program with a variety of speakers who talked about the history of Striking Sparks, Bob Ferguson, and the all important technical subjects including warnings about trying to observe the Sun. For the first time, the entire presentation was on Power Point. I think this was a good idea, and helped to keep the speakers on topic and on schedule.

*continued page 4*

**Young Astronomers: See pages 6 & 7**

## In Search of Other Planets

SCAS April 13 Meeting, Proctor Terrace School

I think that nearly everyone who has looked up at a starry night sky has wondered if there are worlds like ours out there. Who knows? Perhaps other beings are looking back at us in their night sky?

Until very recently we understood the stars were simply too far away in the vastness of the cosmos to ever catch a glimpse of another planet around one of those stars. But things



have changed in today's astronomy, as discoveries of planets around other stars are being reported regularly, detected by inferred or indirect means. Recently even mainstream media reported infrared glimmers of putative planets discovered by the Spitzer infrared space telescope. We truly live in a new era for astronomy.

However, most of these inferred planetary bodies are probably gas giants, bigger than Jupiter, and probably hot. If life as we can imagine it is to exist on other planets, most scientists believe it would have to be on planets more like our own—rocky or terrestrial planets whose orbits permit conditions conducive to life. There are a number of ways we may be able to discover these other "earths." This is the aim of one of NASA's newest missions, named "Kepler".

At our next meeting we are pleased to welcome Dr. Gibor Basri of UC Berkeley. Professor Basri is a Co-Investigator on the Kepler mission, which is a dedicated space telescope that should be able to tell us how common terrestrial planets are in our Galaxy. He will explain how the mission will work and provide other insights into the exciting search and discovery of planets around other stars.

Look at your copy of the May issue of *Sky and Telescope*. The cover features an article by Dr. Basri on brown dwarfs entitled "Cooler than Cool." Our timing is perfect.

*continued back cover*

**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@yahoo.com](mailto:scas-subscribe@yahoo.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, [kpayea@bryantlabs.net](mailto:kpayea@bryantlabs.net)

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

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

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

**Striking Sparks Program Coordinator:** Len Nelson, 763-8007, [lennelsn@comcast.net](mailto:lennelsn@comcast.net)

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

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

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

Albert Heppe never grew tired of looking up at the night sky and traveling the world with his wife, Phyllis, in search of open pastures that offered clear views of the stars.

Heppe, who in some ways brought the wonders of astronomy to Sonoma Valley, died March 5 in his Glen Ellen home, with his wife and daughter Barbara of Napa at his side. He had suffered a stroke earlier this year. He was 83.

Heppe, who was the acting president of the Valley of the Moon Astronomical Society, was instrumental in the creation of the Robert Ferguson Observatory, a facility in the hills near Kenwood, inside Sugar Loaf Ridge State Park.

Nate Miron, a friend and astronomy "disciple" of Heppe's, said the former high school and college educator successfully brought together various groups and state officials to get the observatory built. "He was sort of the hub of the astronomical community in the valley," Miron said.

Born in Oakland, Heppe was a World War II veteran, serving in Burma, where he helped set up radio communications systems. After the war, Heppe earned a master's degree in physics.

He taught chemistry and physics at Sonoma Valley High School in the 1950s. In the 1960s and 1970s, Heppe was an astronomy professor and also assistant dean of instruction at the College of Marin in Kentfield.

"He loved to teach," said Phyllis Heppe, his wife of 28 years. "The kids loved him. He was a very witty, fun guy."

She said her husband had the chance to work for an oil company after graduating from college, "but he turned it down. He didn't care about the money. All he cared about was his love of astronomy."

The Valley of the Moon Astronomical Society would meet once a month at Heppe's house, where they talked about the stars, built telescopes and ground mirrors.

"He wasn't an everyday person," Phyllis Heppe said. "He was very intelligent. He loved life. He love traveling, meeting different people, and people loved talking to him."

Memorial donations may be made to the Hospice of Marin, Valley of the Moon Team, 190 W. Napa St., Sonoma 95467.

—Martin Espinoza

## CLASSIFIED ADS

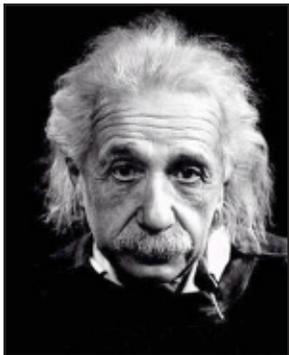
**FORSALE:** Meade LX200 8-inch F/10 with many accessories, i.e.: Solar filter, ocular Televue, reticle eyepiece, focal reducer, Skyglo broadband, Barlow, off-axis guider, EZ finder, reflex sighter, battery, etc. Original value \$3876, asking \$1000 or BAO. Contact Norma Starnier at 526-7439 mornings and evenings.

**WANTED DEAD OR ALIVE:** Celestron C-11 or C-11 OTA. Contact Howard Hansen at 707-575-7484.

# Did Einstein Blunder?

*A Conjecture by Ralph Mansfield*

Einstein's 1905 "annus mirabilis" established his scientific abilities and determination to stay with the toughest problems. He conceived new physics and explored science domains others had not approached. He was regarded publicly and by colleagues as a genius—but on occasion, less than perfect.



The origin of the universe was, and still is, a huge astronomical enigma, and Einstein attacked it with his usual determination. The result? Einstein's most significant error—his own evaluation. To understand why we must recall a few significant facts of late 19<sup>th</sup> century astronomy.

That was an era of the steady-state universe, when astronomers believed in Newton's concept of an

unchanging, eternal universe that existed from the beginning of time. Few dared raise questions about the when, who, and how of creation. Einstein, educated and working in this era, did not question these concepts until he developed his theory of gravity in 1915 and recognized a problem therein. Gravity is an attractive force, so how could the universe remain forever unchanged? He could not accept the concept of a collapsing universe.

Newton had to consider this problem also, but he reconciled the notion of gravitational collapse with his faith in God. Thus he charged God with the task of tinkering with the universe to maintain all its contents in fixed position so that collapse would never occur.

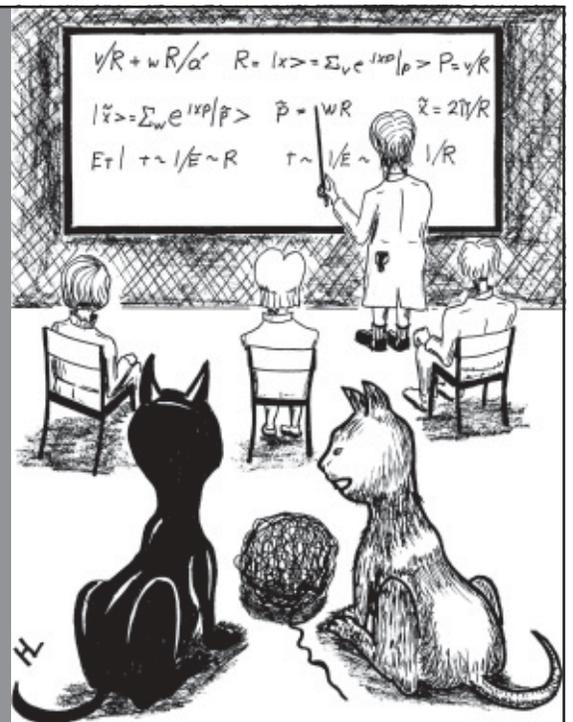
Unlike Newton, Einstein viewed the problem mathematically by adding an antigravity force, which would be repulsive to gravity over distance and maintain the stability of the universe. But no physical evidence for antigravity could be detected, contrary to Einstein's assumption. Then in the 1920s some cosmologists advanced the idea that the universe was neither stable nor eternal, but had its inception in a primeval super Big Bang explosion that created a dynamically expanding universe. The Big Bang was not accepted by all, e.g., Fred Hoyle and his adherents; and George Lemaitre, a cosmologist and ordained priest, cited theology for supporting a theory of a Creator. Though Einstein was tolerant of Lemaitre's religiosity, he regarded his physics "abominable."

In 1929 Einstein learned of Edwin Hubble's work at Mount Wilson Observatory, indicating that all distant galaxies in the universe were expanding away from each other and thus the Big Bang theory was valid. Einstein accepted the validity of the Big Bang and characterized it as the "most beautiful and satisfactory explanation" he had ever heard, and concluded that his repulsive force theory was the greatest blunder of his work.

Later, 1931, Einstein visited Hubble at Mount Wilson and announced support for the Big Bang, renouncing the static universe. Consequently, Einstein seemed an imperfect genius. However, with gravity attracting all objects, the Big Bang expansion should be

The Astronomer  
Seminar

by  
Herb  
Larsen



*I don't know what all the fuss is about. Cats have known about string theory for centuries!*

## SCOPE CITY New Member Bonus!

Scope City at 350 Bay Street, San Francisco, is offering a **\$25 merchandise discount to new members**. Manager Sam Sweiss 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)

## SOCIAL AMENITIES

Thanks to BJ and Dickson Yeager for providing coffee and homemade cookies at the March SCAS meeting. We all appreciate the efforts of our volunteers. September remains open, so if you'd like to volunteer please call or email Cecelia Yarnell.

diminishing. Yet measures of such deceleration in 1988 showed the universe accelerating its expansion over time. This suggested an antigravity force, and cosmologists ascribed this repulsion to "dark energy." This was the kind of force Einstein attempted to formulate earlier and it returns antigravity to essential status in the expanding universe many years after Einstein abandoned it. Thus, even when Einstein thought he was wrong, his intuition had been correct. And therein one beholds true genius.

# Congratulations to the SCAS



David Elder, 3rd grade,  
Bernard Eldridge Elementary  
School. Sponsor: Rose  
Gardner



Marie-Pier Frigon, 5th grade,  
Sonoma Mountain School.  
Sponsor: The Hajtmanek Fund  
In Memory of Frank A.  
Hajtmanek, Jr.



Kelly Kehoe, 6th grade,  
Liberty Elementary School.  
Sponsor: Robert Leyland.



Geoffrey Knoll, 2nd grade,  
Gold Ridge Elementary School  
Sponsor: The Gaynor Family

## Sparks *continued from Front Cover*

Finally, it was time to present the telescopes. If it was possible, the winners' grins got even bigger and some of them even skipped up to the front of the room to accept their awards. The whole room was filled with smiles and flashing cameras. After the pictures, they slowly began taking their new telescopes and heading for home since the sky was so overcast.

The moon teased us a little through gaps in the clouds. I heard that one of the winners managed to get a quick look before it disappeared for good. That's one of the benefits of a Dobsonian mount—plunk it down and start looking!



Dickson Yeager with Reya  
Shah's telescope

Special thanks go to donors of raffle items: The BBB, Laurie O'Hare, Scope City, Dickson Yeager, Bob & Kay Johnston, Ed Megill, George Loyer, and many others.

We want to acknowledge the generous help of our volunteers: Jack Cranston, Al & Rita Stern, Olivia Turnross, Melissa Downey, Gary Jordan, Bob & Kay Johnston, Matt Gardner, Terry Dye & Angelo Parisi. Thanks also to those who spoke to the group: Larry McCune, George

Loyer, Merlin Combs, Gary Jordan, Melissa Downey, Olivia Turnross, Len Nelson and Keith Payea.

All of the volunteers pitched in to clean up the room. We were all done and locking up before 9:30, with a pleasant glow still remaining inside each of us. I can't wait until next year!



Joan Thornton with her solar system table decorations



# Striking Sparks 2005 Winners!



Rachel Loughman, 5th grade, Grant Elementary School. Sponsor: The Young Astronomers in Memory of Bob Ferguson



Reya Shah, 1st Grade, Village Elementary School. Sponsor: Dickson & BJ Yeager



Grant Silverstein, 5th grade, Austin Creek Elementary School. Sponsor: Bob & Kay Johnston



Sean Wayland, 5th grade, Gold Ridge Elementary School. Sponsor: The Big Bang Band



Perusing the raffle prizes



Rose Gardner, David Elder and his teacher, Roberta O'Neill



Merlin Combs, Sparks photographer

The cake



The Big Bang Band:  
Terry Dye, Angelo Parisi and Matt Gardner

# Young Astronomers



## Black Holes

YA April 8 Meeting, 7:30 PM, Apple Blossom School

Come join us for our final meeting of the year on one of the most fascinating subjects in all of astronomy: Black Holes! What exactly is a black hole? How does one form and what would happen if you ever had the misfortune of encountering one? These questions and more will be answered at the April Meeting.

Afterwards, new Sparks winners are invited to stay for an orientation session about the “care and feeding” of their telescopes. We’ll merge that into an observing session if the sky is clear that night. Other YA attendees are free to stay for the “telescope lessons,” so bring your telescope and bring a friend.

## THANKS FOR SUPPORTING THE YA RAFFLE ON STRIKING SPARKS NIGHT!

Every year the Young Astronomers group sponsors one of the Striking Sparks telescopes, using funds generated from the YA raffle held at the Striking Sparks awards celebration. The raffle this year was incredibly successful, thanks to the generosity of SCAS members and other attendees on Sparks night. An amazing selection of items had been donated as raffle prizes, leading to over \$300 worth of raffle tickets being sold this year.

The Young Astronomers would like to thank SCAS and all Striking Sparks Night attendees for their support of another successful YA raffle!

## YA INFORMATION

**Meetings:** 7:30 PM the second Friday of each month, 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

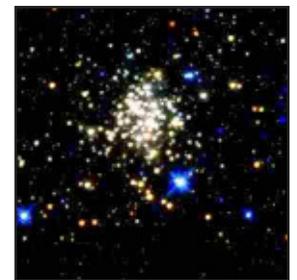


This illustration compares the different masses of stars. The lightest stars are red dwarfs. They can be as small as 1/12 the mass of the sun. The heaviest stars are blue-white supergiants. They may get as large as 150 solar masses. The sun is between the lightweight and heavyweight stars. A red giant may actually be much larger in size than a supergiant, but its weight is much smaller—often just a few solar masses.

## No Fat Stars

There’s a limit to how big most things can get. Some people are really tall, but no one is as tall as a house. Cats can get really fat, but there’s never been a tabby as heavy as a truck. And so on. Now, astronomer Don Figer of the Space Telescope Science Institute in Baltimore has discovered that the size of a star may have a limit, too. No stars in our galaxy, he estimates, can weigh more than 150 times the mass of our sun. This conclusion comes from observations of an area near the center of the Milky Way called the Arches cluster. The cluster is between 2 million and 2.5 million years old, and stars are still forming there. It contains about 2,000 stars.

Figer thought that the Arches cluster would be a good place to search for the galaxy’s biggest stars because it’s still fairly young. Massive stars have short lives, so it wouldn’t make sense to look at a cluster that was much older than Arches. It also wouldn’t make sense to look at much younger ones because stars in young clusters are still hidden behind gas and dust.



The Arches cluster is a crowded collection of about 2,000 stars near the center of the Milky Way.

The Arches cluster was also promising because it’s big. Its total mass is that of about 10,000 suns. In theory, it could hold at least 18 stars weighing more than 130 times the mass of the sun. Using the Hubble Space Telescope to gauge the weight of hundreds of stars in the Arches cluster, Figer found no stars this big. This means, he concluded, that there must be an upper limit to the size of a star—perhaps about 150 times the sun’s mass. Astronomers are just beginning to understand the processes behind star birth. No one yet knows what determines the limits on their growth. Figer plans to study clusters of different ages to find out more.

—E. Sohn, *Science News*

# Utterly Alien

by Dr. Tony Phillips

There's a planet in our solar system so cold that in winter its nitrogen atmosphere freezes and falls to the ground. The empty sky becomes perfectly clear, jet-black even at noontime. You can see thousands of stars. Not one twinkles.

The brightest star in the sky is the Sun, so distant and tiny you could eclipse it with the head of a pin. There's a moon, too, so *big* you couldn't blot it out with your entire hand. Together, moonlight and sunshine cast a twilight glow across the icy landscape revealing...what? Twisted spires, craggy mountains, frozen volcanoes? No one knows, because no one has ever been to Pluto.

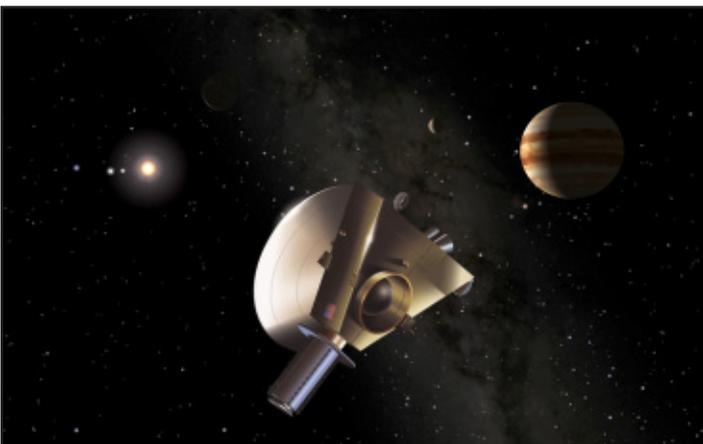
"Pluto is an alien world," says Alan Stern of the Southwest Research Institute in Colorado. "It's the only planet never visited or photographed by NASA space probes."

That's about to change. A robot-ship called New Horizons is scheduled to blast off for Pluto in January 2006. It's a long journey: More than 6 billion kilometers (about 3.7 billion miles). New Horizons won't arrive until 2015.

"I hope we get there before the atmosphere collapses," says Stern, the mission's principal investigator. Winter is coming, and while it's warm enough now for Pluto's air to float, it won't be for long. Imagine seeing a planet's atmosphere collapse. New Horizons might!

"This is a flyby mission," notes Stern. "Slowing the spacecraft down to *orbit* Pluto would burn more fuel than we can carry." New Horizons will glide past the planet furiously snapping pictures. "Our best images will resolve features the size of a house," Stern says.

The cameras will also target Pluto's moon, Charon. Charon is more than half the size of Pluto, and the two circle one another only 19,200 kilometers (12,000 miles) apart. (For comparison, the Moon is 382,400 kilometers [239,000 miles] from Earth.) No wonder some astronomers call the pair a "double planet."



*New Horizons spacecraft will get a gravity assist from Jupiter on its long journey to Pluto-Charon. Credit: Southwest Research Institute (Dan Durda)/Johns Hopkins University Applied Physics Laboratory (Ken Moscati).*

Researchers believe that Pluto and Charon were created billions of years ago by some terrific impact, which split a bigger planet into two smaller ones. This idea is supported by the fact that Pluto and Charon spin on their sides like sibling worlds knocked askew. Yet there are some curious differences: Pluto is bright; Charon is darker. Pluto is covered with frozen nitrogen; Charon by frozen water. Pluto has an atmosphere; Charon might not. "These are things we plan to investigate," says Stern.

Two worlds. So alike, yet so different. So utterly alien. Stay tuned for New Horizons.

Find out more about the New Horizons mission at [pluto.jhuapl.edu/](http://pluto.jhuapl.edu/). Kids can learn amazing facts about Pluto at [spaceplace.nasa.gov/en/kids/pluto](http://spaceplace.nasa.gov/en/kids/pluto).

—This article provided by the JPL

# Dark Galaxy

The Milky Way is packed with stars, comets, asteroids, moons, and planets, including our own. Other galaxies in the universe are similarly crammed full of stars and various objects. Astronomers have now spied something very unusual. They've found a patch of space that looks empty but actually appears to be a galaxy that contains no stars. Theorists had proposed that such "dark" galaxies could exist, but no one had ever seen one before.

The mysterious object is in an area of space known as the Virgo cluster of galaxies. This cluster is the closet one to the Milky Way and contains more than 100 galaxies of various types, including spiral and elliptical galaxies. Five years ago, astronomers at Cardiff University in Wales noticed that this vast region has a pair of isolated clouds made up of hydrogen gas. Further observations revealed that one of the clouds is associated with a faintly glowing galaxy. This makes sense because balls of hydrogen gas usually indicate an area where stars are forming.



*The Virgo cluster contains more than 100 galaxies of various types. It's the nearest large cluster to the Milky Way. Astronomers have now found evidence that it may also contain a mysterious "dark" galaxy that appears to have no stars.*

The other hydrogen ball, however, appears to have no glowing galaxy as a partner. Yet, other observations suggest that it's part of a massive object weighing as much as a galaxy of 100 billion suns. The astronomers propose that the object, named VIRGOHI21, is full of a mysterious substance called dark matter. And they say there might be many more galaxies just like it. Astronomers just haven't spotted them yet. For now, there's a lot of explaining to do. "Seeing a dark galaxy—a galaxy without any stars—is like seeing a city without any people," says astronomer Robert Minchin of Cardiff University. "We want to know why nobody lives there." —E. Sohn, *Science News*

# Events

## ROBERT H. FERGUSON OBSERVATORY

**Public Viewing: Saturdays, April 9 and April 16**

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.

### Classes

- Apr. 5 Night Sky Winter/Spring Series, 7:30 PM
- Apr. 26 Night Sky Winter/Spring Series, 7:30 PM
- May 2 Using Your Telescope #1, 7:30 PM
- May 3 Night Sky Winter/Spring Series, 7:30 PM
- May 5 Using Your Telescope #2, 7:30 PM

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

## SRJC PLANETARIUM

**April 8-May 15—“The Sky Tonight”**

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. Discover fascinating facts about many summer stars. See why the glow of the summer Milky Way is so bright at this time of the year, view star forming regions, planetary nebula, and a stellar black hole found in the summer triangle.



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 your vehicle's dashboard before the show. Contact: (707) 527-4465 or 527-4372 <http://www.santarosa.edu/planetarium/>

## SCAS SCHOOL STAR PARTIES

- Apr. 8** Grant Elementary in Petaluma
- Apr. 11** Cub Scouts in Petaluma
- Apr. 15** Wilson Elementary in Petaluma
- Apr. 16** **Astronomy Day** in Petaluma at McDowell Elementary, in Santa Rosa at the Youth Community Park and at the Robert Ferguson Observatory

Star parties are given free to any school or organization that requests them. To make arrangements, contact SCAS Community Activities Director, Len Nelson, at 707/763-8007, [lennelsn@comcast.net](mailto:lennelsn@comcast.net). Get on his volunteer list if you are interested in being notified of upcoming school star parties.

## SONOMA STATE UNIVERSITY SERIES “WHAT PHYSICISTS DO”

**Tuesdays at 4:00 PM**

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

### **Apr. 12—Physics and National Defense**

Tom Ramos of the Lawrence Livermore National Laboratory will discuss some research he has been involved in as a physicist at LLNL—from design of the x-ray laser that was part of Star Wars in the 1980s to developing technologies for fighting nuclear proliferation today.

### **Apr. 19—High Resolution Surface Microscopy of Chemical Reactions and Phase Transitions**

Dr. Shirley Chiang of the University of California, Davis will discuss scanning tunneling microscopy imaging of molecular scale chemical reactions and low energy electron microscopy measurements of phase transitions in a metal-on-semiconductor system.

### **Apr. 26—New Developments in Fiber and Ultraviolet Lasers**

Dr. Laura Smoliar of Lightwave Electronics will describe the growing space of applications opened up by new laser technology, including such developments as a 10-Watt fiber laser source with high repetition rate and extremely narrow pulse width.

### **May 3—Catching Gamma Ray Bursts on the Fly**

Dr. Lynn Cominsky of Sonoma State University will present the latest results from NASA's Swift mission and describe the Education/Public Outreach program conducted at SSU.

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

## SSU OBSERVATORY PUBLIC VIEWING

### **April 8—9PM-11PM: Galaxies! (also Saturn and 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>

# 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, APRIL 9**

**Sunset:** 7:14 PM PDT

**End Astronomical Twilight:** 9:15 PM PDT

**Moonset:** 9:01 PM PDT

Note: **Alternate date February 12** if weather prohibits. 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)

## MORRISON PLANETARIUM DEAN LECTURE SERIES

**Apr. 18—“From Mars Rovers to Exo-Planets: The Lure of Liquid Water”**—Nagin Cox, NASA Jet Propulsion Laboratory

The search for liquid water is the cornerstone of NASA's robotic exploration of space. The Mars Rovers landed in January 2004 and found strong evidence of past liquid water on Mars. In 2007, the Kepler mission will continue this tradition of water-seeking by searching for earth-like planets that may orbit other stars in a region where liquid water can exist.

**May 2—“The Genesis Mission: An Overview and Report of Work in Progress”**—Dr. Amy Jurewicz, Arizona State University & California Institute of Technology, Former JPL Project Scientist for Genesis Mission

Genesis launched Aug. 2001, collected solar wind outside of the Earth's magnetosphere for ~28 months, and landed at the Dugway Proving Ground, Utah September 8, 2004. From the analysis of the pristine solar wind, scientists expect to answer a myriad of questions about how our solar system formed.

**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/>

## UC BERKELEY LECTURE

**“The Mars Exploration Rover Mission”**

**April 6, 5:45 PM**—Steven Squyres, Professor of Astronomy, Cornell University. Lecture at 1 Pimentel Hall, UC Berkeley. Information: 510-643-5040, <http://astron.berkeley.edu/sackler.shtml>

## 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, APRIL 16**

**Sunset:** 7:49 PM PDT

**End Astronomical Twilight:** 9:23 PM PDT

**Moonset:** 2:54 AM PDT 4/17

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. Join us in introducing the night sky to eager participants.

## ASTRONOMY DAY APRIL 16

SCAS will have Public Star Parties (bring your telescope or come share ours!) at two locations: McDowell Elementary, one block south of Washington St. and McDowell Blvd., Petaluma, and Youth Community Park- Fulton Rd across from Piner High School, Santa Rosa.

For more info, call Len Nelson at 763-8007

## SCAS YOSEMITE PUBLIC STAR PARTY

**July 15 and 16**

Each year for about 15 years or so, the SCAS and a number of other California astronomy clubs have gone to Yosemite to do public astronomy at Glacier Point. 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.

This year, the SCAS/RFO will be going the weekend of July 15 and 16. This means you'd need to arrive at Bridalveil Campground on Friday, July 15 early enough to set up your tent and then head off to Glacier Point for public astronomy until at least 10PM. The next day you can do whatever you want but are obligated to then do public astronomy again Saturday evening at Glacier Point. It's a real 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.

The campground can only accept 30 people so this offer is available first come first served. You are required to bring a good scope to wow the public with. If you do not have one, the SCAS has loaners that are available to qualified individuals.

# Events

## SILICON VALLEY ASTRONOMY LECTURE SERIES

Wednesday, April 20, 7:00 PM

### “Estimating the Chances of Life Out There”

In 1960, Dr. Frank Drake performed the first experimental search for radio signals from possible civilizations around other stars. In 1961, he proposed an intriguing method of estimating the number of intelligent life-forms out there that we might communicate with. Dr. Drake's ideas have become cornerstones of a full-fledged branch of astronomy, commonly called SETI.

Dr. Drake will provide a modern update on estimates for the existence of “E.T.” He will draw on new ideas and new observations (including the discovery of surprising planets around other stars), which have helped astronomers refine both the targets where they search for life and the methods they use.

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.

## MT. TAMALPAIS ASTRONOMY

Saturday, April 16, 8:30 PM

“Einstein's Magic Year,” Professor Lewis Epstein, San Francisco City College. In one year, 100 years ago, Einstein published monumental papers on Special Relativity, the Photoelectric Effect and Brownian Motion, forever changing our view of the physical universe.

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/>

## SHINGLETOWN STAR PARTY

Come join the fun under great skies, July 6-11, 2005! This is SSP's fourth year. It's a fun and unique event, drawing hundreds of amateur astronomers from around the western US. SSP has a family atmosphere. Amenities are minutes away in Shingletown. Excellent hiking and trout fishing in the area, and Mount Lassen Volcanic National Park is only 17 miles away!

Remember, registration cost increases on April 16! 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)

## CALLING ALL STARGAZERS

Pueblos to Planets, Oct. 8-15, 2005

Experience the beauty of the American Southwest with other astronomy enthusiasts at University of Wisconsin-Madison's Astronomical Crossroads Tour: Pueblos to Planets. Highlights include:

Albuquerque's Lodestar Astronomy Center and International Balloon Fiesta. You'll experience a planetarium presentation featuring a digital, star-field projector and full-dome video system, and attend the largest hot air ballooning event in the world with more than 1,000 pilots!

A stop at Los Alamos, home of the Manhattan Project. Learn about the lab's history at the Bradbury Science Museum. We'll visit ancestral Pueblo dwellings at Bandelier National Monument.

Access to Socorro's Very Large Array (VLA) Radio Observatory. A premier facility, the VLA includes 81-foot dishes in a Y-shaped configuration, as seen in the Carl Sagan movie, “Contact.” Visits to the White Sands Missile Range, Apache Point and Sacramento Peak Observatories, Roswell's UFO Museum and more!

An expert local guide and the Director of the University of Wisconsin-Madison Space Place Dr. Jim Lattis will be hosts.

After viewing the full itinerary at [www.uwalumni.com/travel/2005/nmastro05.html](http://www.uwalumni.com/travel/2005/nmastro05.html), reserve your spot by calling WAA Travel at (888) 922-8728.

## SJAA ASTRONOMY AUCTION

Sunday, April 25, Registration at Noon, Auction 1PM

Sponsored by the San Jose Astronomical Association. Find all kinds of equipment, from telescopes to OIII filters to finders to star charts. The swap meet will follow to allow additional selling.

**Directions:** From Hwy. 17, take the Camden Avenue exit. Go east .4 mile, turn right at the light onto Bascom Avenue. At the next light, turn left onto Woodard Road. At the first stop sign, turn right onto Twilight Drive. Go three blocks, cross Sunrise Drive, then turn left into Houge Park.

For more info, visit [auction@sjaa.net](mailto:auction@sjaa.net), <http://www.sjaa.net> or email Jim Van Nuland at [jvn@svpal.org](mailto:jvn@svpal.org)

## 2005 DESERT SUNSET STAR PARTY

**AANC Notice:** Pat and Arleen Heimann will again be hosting the Desert Sunset Star Party May 4-8, 2005, at the Caballo Loco RV Ranch southwest of Tucson. Check their website for details: <http://www.chartmarker.com/sunset.htm>

# 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 them 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 new and interesting people who share your interest in many aspects of astronomy and science.

## OCTOBER SKY LIVE WEBCAST

April 14, 8:30 to 9:30 AM

The NASA Glenn Research Center in partnership with the Cleveland Area Metropolitan Library System will be conducting a live 60-minute discussion with Homer Hickam, author of the #1 New York Times bestseller *Rocket Boys* and inspiration for the hit movie *October Sky*.

*Rocket Boys*, by Homer Hickam, is the true story of the author's life growing up in the mining town of Coalwood, West Virginia. In October 1957, Sputnik raced across the Appalachian sky, leaving in its wake 14-year old Homer's dream to build rockets. With the help of his friends, a dedicated teacher, his mother, and others in his small company town, Homer's rockets would carry him, and his town, farther than he ever expected.

The free live broadcast, webcast, and videoconference will feature Homer Hickam discussing his inspirational life story and the key people who helped him along the way. The program will feature numerous opportunities for students and the public to interact with the author through email.

For additional information, related activities and connection details, visit: [http://www.nasa.gov/centers/glenn/education/Hickam\\_Event.html](http://www.nasa.gov/centers/glenn/education/Hickam_Event.html)

## DAY UNDER THE OAKS

Sunday, May 1 at Santa Rosa Junior College

Come on over and enjoy a Day Under The Oaks, an open house at the Santa Rosa campus. The Planetarium will have half-hour demonstration shows from 10:30 AM to 3:00 PM. The SCAS and the Robert Ferguson Observatory will offer solar viewing, telescope making demonstrations, and displays.

Consider volunteering to represent the SCAS. Ed Megill has reserved tables for us. Jack Cranston is organizing the RFO part of the contingent. Volunteers should arrive around 9 AM. Hope to see you there!

## LAWRENCE HALL OF SCIENCE

"Alien Earths" Exhibit

Young visitors and adults will enjoy planetary ring toss, walking the orbits, sorting the solar system, and dressing like an astronaut. On a rotating basis, two of these activities will be available. Participation is on a drop-in basis. Daily Programs: 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)

# April Observing Notes

- Apr. 3** **Jupiter** at opposition, rising at sunset, visible all night—closest to us for this year
- Apr. 9** **Jupiter's** moons Io, Europa and Callisto form tight line E of planet 9:53 PM PDT
- Apr. 8** **New Moon**; Solar eclipse viewable from southern hemisphere—the very edge of the eclipse will touch San Diego
- Apr. 11** **Moon** 0.9° S of Pleiades
- Apr. 15** Excellent SF Bay Area graze of Upsilon Geminorum just after 9:35 PM PDT. Viewable with binoculars.
- Apr. 15** **Moon** near Saturn 8:00 PM
- Apr. 16** **First Quarter Moon** 7:37 AM PDT
- Apr. 21** **Jupiter** 0.6° N of Moon
- Apr. 24** **Full Moon** 3:20 AM PDT, penumbral lunar eclipse 3:00 AM
- Apr. 30** **Last Quarter Moon** 11:36 PM PDT
- May 5** **Eta Aquarid** meteor shower—good viewing for us this year.

## *Links featured this issue:*

**NASA TV Schedule:** Now you can find out what will be shown and when, as well as when it will be repeated, at: <ftp://ftp.hq.nasa.gov/pub/pao/tv-advisory/nasa-tv.txt>

## Sonoma County Astronomical Society

P.O. Box 183  
Santa Rosa, CA 95402



## *Sonoma Skies*

**April 2005**

APRIL 13  
Gibor Basri  
In Search of  
Other Planets

## April Speaker: Gibor Basri from Page 1

Dr. Basri's resume is a firmament of stellar achievements. He is truly an astronomer's astronomer, as he has spent a lifetime studying and measuring stars. He is a world-renowned expert on brown dwarves and other substellar objects ("failed stars"). He has asked us to rethink our definition of what a star is among the strange zoo of "creatures" we're now discovering.

Additionally, Dr. Basri is very involved in public outreach in science education, as exemplified by his work with Chabot Science Center. He is also active in programs encouraging minority high school students to pursue careers or interest in math and science. And now, he comes to us!

Please join us Wednesday, April 13, and meet Gibor Basri, as we explore other worlds with him.

—John Whitehouse

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**Proving or disproving Einstein's theory of relativity—  
Get the latest on Gravity Probe B:** [http://science.nasa.gov/headlines/y2005/28mar\\_gamma.htm?friend](http://science.nasa.gov/headlines/y2005/28mar_gamma.htm?friend)

**NASA's Saturn Observation Campaign:** <http://soc.jpl.nasa.gov/index.cfm>

**Latest images and information about the Cassini-Huygens mission:** <http://saturn.jpl.nasa.gov> and <http://www.nasa.gov/cassini>