

ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

Vol. 59, No. 6 – June 2011

Wednesday, June 15, 2011 – General Meeting

Randall Museum . 199 Museum Way . San Francisco

7:00 pm Doors Open . 7:30 pm Announcements . 8:00 pm Speaker

SFAA's General Meetings take place on the 3rd Wednesday of each month (except January)



SANDRA FABER, PH.D.

University Professor, UC Santa Cruz

Staff Member, UCO/Lick Observatory

**COSMIC WISDOM: AN ASTRONOMER
LOOKS AT HUMAN HISTORY...AND
OUR FUTURE PROSPECTS**

Join Dr. Sandra Faber, University Professor of Astronomy and Astrophysics at the University of California, Santa Cruz, and staff member of the UCO/Lick Observatory, for a presentation on ***Cosmic Wisdom: An Astronomer Looks at Human History...and Our Future Prospects.*** We now know more about the distant universe in many ways than we do about our own planet. Using breathtaking images and computer simulations, Faber will tell the story of how human beings got here and where we are headed, cosmically speaking. This “cosmic wisdom” is essential knowledge, she says, for persons grappling with challenges facing humanity today.

[Franklin Institute Bower Award for Achievement in Science](#)

[Elected to American Philosophical Society](#) Dr. Faber was one of three scientists who diagnosed a flaw in Hubble's mirror and helped craft the strategy for a successful repair mission. She is a member of Hubble's wide field/planetary camera team, which directs many of the telescope's most striking observations. In addition, for nearly two decades Faber has helped plan and develop the Keck Observatory in Hawaii, home to the world's largest optical and infrared telescopes.



San Francisco Amateur Astronomers

Upcoming Lectures and Lecturers

Randall Museum Theater . Randall Museum. 199 Museum Way . San Francisco

7:30 p.m. . Free & Open to the Public

July 20 -- ASTRO-IMAGING WITHOUT THE CAMERA

Michael Portuesi – Past-President, San Francisco Amateur Astronomers

This talk will show how you can sketch what you see through the eyepiece, for fun and to help you be a better observer. We will explore tools and techniques you can use to create sketches of astronomical objects and wrap up by examining how imaging applications like Photoshop can scan and process your sketches.

August 17 -- To be announced

September 21 -- Pascal Lee, Ph.D. – Researcher

Dr Pascal Lee is co-founder and chairman of the Mars Institute, a planetary scientist at the SETI Institute in Mountain View, CA, and the Principal Investigator of the NASA Haughton-Mars Project (HMP) at NASA Ames Research Center in Moffett Field, CA. Dr. Lee's research interests focus on Mars, asteroids and impact craters. He is particularly interested in the history of water on Mars and in the geologic and physical conditions allowing life to develop on planets.

October 19 -- Dr. Natalie Batalha – Assistant Professor, Physics and Astronomy, San Jose State University

Dr. Batalha has been affiliated with NASA Ames Research Center since 2000 where she conducts research on extrasolar planet detection and stellar astrophysics. She is a co-Investigator for NASA's Kepler Mission whose objective is to identify and characterize habitable, earth-like planets orbiting sun-like stars. As Director of the Systems Teaching Institute at the NASA Research Park (<http://uarc.ucsc.edu/sti>), Dr. Batalha is responsible for creating programs and resources for students pursuing careers in fields relevant to the mission of NASA Ames Research Center.

November 16 -- PSYCHOLOGICAL ISSUES AFFECTING ASTRONAUTS IN SPACE

Dr. Nick Kanas - Emeritus Professor of Psychiatry, University of California, San Francisco

A number of psychiatric and interpersonal issues can affect astronauts in space. Professor Nick Kanas will review important psychosocial issues, describe his research with astronauts and cosmonauts who have flown on the Mir and International Space Stations, and discuss countermeasures that will improve the psychological well-being of future space travelers.



December 21 -- Erick Young, SOFIA Science Mission and Operations Director

Erick Young, a widely recognized authority on infrared astronomy, is Science Mission Operations Director for SOFIA. Most recently, Young was responsible for developing the far-infrared detector arrays on the Spitzer Space Telescope's Multiband Imaging Photometer for Spitzer (MIPS). The instrument provided both imaging and spectroscopic data at far-infrared wavelengths.

PRESIDENT'S MESSAGE

Once again, it's membership renewal time for the club!

I hope all of you have so greatly enjoyed our private viewing events and the fabulous speakers who present at our monthly general meetings that you'll renew (and even invite your friends to join you!)

As you may know, we are entirely volunteer staffed and member funded so we truly value your continued support and all the help you can offer us in growing the club. We have held our membership dues at the same level as last year - \$25 Individual, \$30 Family and \$10 Student. 'Supporting' Memberships are also available for \$75 if you love the club so much you want to give it some extra support!

Look for our renewal notice coming to your email in the next few weeks, with a simple link to pay via PayPal. Renewing online helps our workload immensely (thank you if you are able to renew this way!) but if you prefer to send us a check, please make them payable to the SFAA, mark your member name on them and kindly send to:

San Francisco Amateur Astronomers
PO Box 15097
San Francisco, CA 94115

Here are the notices about some other interesting club events & opportunities

SFAA General Meeting & Lecture Series

June 15th, 7.30pm: Dr Sandra Faber, PhD presents *Cosmic Wisdom: An Astronomer Looks at Human History...and Our Future Prospects*

SFAA Yosemite Star Party at Glacier Point

Friday, July 8 & Saturday, July 9, 2011

List Announced!

The list of campers will be posted to the website by June 1st. Find it at the 'Yosemite' link on the homepage. Camping takes place the weekend of July 8th & 9th 2011. We have a wait list system, so if your name isn't on the current list, don't lose hope! Every year we do have people who are unable to attend as the date approaches, so you may still be able to join the fun up the mountain.

Mount Tam Summer Program

The Mount Tam Summer Program has commenced at the Mount Tam Amphitheater at Rock Springs. If the weather cooperates, we'll have our scopes out in the parking lot and an eager group of people wanting to see the best the sky has to offer.

Upcoming dates to mark in your calendars: June 4th, July 9th, Aug 6th, Sept 3rd & Oct 17th.

Wishing you sparkling clear skies!

SUE-ELLEN SPEIGHT
President
San Francisco Amateur Astronomers

IMPORTANT DATES

SFAA GENERAL MEETINGS & LECTURES

Randall Museum, 199 Museum Way (Near 14th Street and Roosevelt)

Third Wednesday of each month: 7:00 p.m. Doors open. 7:30 p.m. Announcements. 8:00 p.m. Speaker

SFAA BOARD MEETINGS IMMEDIATELY PRECEDE GENERAL MEETINGS AND BEGIN AT 6:00 P.M.

June 15
July 20

August 17
September 21
October 19

November 16
December 21

CITY STAR PARTIES *Land's End (Point Lobos)*

The parking lot at Lands End is currently under construction and will be inaccessible for a few months. SFAA Public Star Party will be held at the multi-tiered parking lot just past the entrance of land's end on Geary Street. We believe the address for this parking lot is 1 Merry Way.

Directions:

If you are heading west on Geary (toward the Ocean), the entrance will be on your right a few hundred feet after the Lands End turn off. It is located above the Cliff House Restaurant.

Map and directions: <http://www.sfaa-astronomy.org/clubarchive/directions-pointlobos.php>

TELESCOPE CLINIC ONE HOUR BEFORE SUNSET

NOTE: While City Star Parties WILL ALWAYS be held on a Saturday, some will be close to the last quarter phase of the moon; others will be close to first quarter. This is so we can work around dates for Mt. Tam public star parties as well as our Mt. Tam members-only events.

2010 MT TAM SPECIAL USE PERMIT STAR PARTIES - MEMBERS ONLY

GATEKEEPERS NEEDED

Special Use Permit observing nights on Mount Tamalpais are private and open *only* to SFAA members. Please arrive by sunset. A permit is required for each car. We must vacate the mountain by 2:00 a.m. except on specially approved nights (such as Messier Marathon).

June (None)
July 2

August 27
September 24
October 22

November 26
December 24

MT TAM PUBLIC STAR PARTIES (May through October)

Public nights on Mount Tamalpais start with a lecture in the Mountain Theatre, followed by public viewing in the Rock Springs parking lot. SFAA members may view privately after crowd departs from approx. 11 pm-2 am.

For more information: <http://www.sfaa-astronomy.org/starparties/>



2011 Mt Tam Astronomy Programs
Mt. Tamalpais State Park - Cushing Memorial Theatre
(aka the Mountain Theatre)
Explore the Wonders of the Universe

Greeting to all Mt Tam Enthusiasts!

Join us for our 23rd series of lectures + star parties on Mt Tam.

All talks take place in the Cushing Memorial Theatre (usually just called the Mountain Theatre) and are followed by observing in the Rock Spring Parking Lot. These programs are sponsored by your state park and are FREE and open to the public. Bring your neighbors and friends for some great evenings on the Mountain. Encourage young people to come and introduce them to the experience of learning some science in a friendly setting followed by a chance to view through telescopes provided by the San Francisco Amateur Astronomers.

If you know others who may wish to receive notices of our programs send email addresses to tinkaross@comcast.net. Or send a reply to this notice if you wish to be removed from this list. Reminder notices are sent the week prior to each event and emails are not shared with anyone else.

You can learn more about our programs by checking out the web site: www.mttam.net or calling our hot line: 415-455-5370. If you still have questions or comments contact Tinka at 415-244-4715.

The schedule is listed below. MARK YOUR CALENDARS NOW and join us on the Mountain for some exciting Saturday nights!

Dr. Michael Kuhlen, Theoretical Astrophysics Center, UC Berkeley
“The Milky Way as a Dark Matter Laboratory”

June 4
8:30pm
Dr. Kuhlen's research interests lie in cosmology. Using both analytical techniques and large-scale numerical simulations he investigates the physics governing our universe's origin. As a founding member (together with [Jürg Diemand](#) and [Piero Madau](#)) of the [Via Lactea collaboration](#), he studies the formation and evolution of Milky-Way-scale dark matter halos, and especially their clumpy substructure. Utilizing supercomputers [Pleiades \(NAS\)](#) and [Jaguar \(NCCS\)](#), the group has conducted some of the highest-resolution dark matter simulations ever performed. The **Via Lactea II** simulation was featured as one of the ["Top Ten Breakthroughs in Computational Science"](#) in the 2009 DOE's Office of Advanced Scientific Computing Research report.

According to Dr. Kuhlen, over the next decade, a combination of astronomical observations and particle physics experiments hold great promise to finally shed light on the nature of Dark Matter, the dominant contribution to the matter content of the universe.

July 9
8:30pm
Dr. Anja von der Linden, Stanford University
“Nature's Biggest Lenses”

Gravitational lensing allows us to study dark matter, find exoplanets and see the first objects in the universe.

Aug 6
8:30pm
Steve Bryson, NASA-Ames Research Center
“Kepler's Vision: Exoplanets and Songs of the Stars”

Since mid 2009, NASA's Kepler space telescope has been constantly watching about 160,000 stars with the ultimate goal of finding Earth-sized planets in Earth-like orbits around Sun-like stars.

Sept 3
8:00pm
Dr. Kirill Filimonov, UC Berkeley
“Extreme Astronomy: Eyeing the Cosmos through a Cubic Kilometer of Ice”

Why physicists are fishing for elusive cosmic neutrinos using Ice Cube, the world's largest telescope located on the harshest continent on the planet.

Oct 17
7:30pm
Dr. Anne Metevier, UC Santa Cruz/Sonoma State University
“Milky Way Galaxies Across the Universe”

The universe contains many vast galaxies containing stars, gas and dust. What do we know about the formation and evolution of galaxies most like our own Milky Way.

Thank you for sharing this information with others.

Looking for a flashlight for the mountain? Check out Visionaryflashlights.com. Use the code astro for a 15% discount



pan shot courtesy of Mojo

SFAA Yosemite Star Party at Glacier Point - Friday, July 8 & Saturday, July 9, 2011

For those of you unfamiliar with this event, we are given free, reserved admission to Yosemite National Park and shared camping space at Bridalveil Group Campground. The campsite is 8.5 miles away from Glacier Point. In exchange, we give two public star parties at Glacier Point, on Friday and Saturday night. We have the public (about 200 - 300 people) from twilight for a few hours, and then the rest of the night (and all day) to ourselves; this is a mighty good deal, considering how some folks come 12,000 miles to see these rocks. The National Park Service limits astronomy clubs to a maximum of 30 SFAA campers. Please do not ask if your friends can come ... unless they are SFAA members.

Want to [join](#) the SFAA? This is our biggest membership magnet; come join the SFAA! You are expected to have at least one public telescope for every two people.

Q & A- In case you have more questions, thanks to [Jim Van Nuland](#) of the SJAA here's a [link](#) to the San Jose club.

Bear Alert- Please remember we are guests at Yosemite and among those who live there are the resident [bears](#). Please keep all food (including gum, toothpaste, canned food, you-name-it) in the metal bear boxes and not in your car, tent.

Observing site at Glacier Point-

The observing area is mostly open, with incredible views from about NNW to the east, around to due south. The horizon from south around to the west is partly blocked by tall trees. Still, there is a lot of open sky, and typically, the seeing and transparency are excellent. It has warm temperatures of 70 to 90 during the day, and cool to chilly 40's at night, due to the elevation of 7200 feet.

Star Party - One of the rangers does a sunset talk, and then delivers the crowd to us. Following that, a member of the club will give an evening talk, (want to volunteer?) The public will have white flashlights, and we need to be tolerant of that. We will have 3 club members with red brake light tape to politely cover the offending flashlights. Expect many questions from the public. Here is an [object list](#) with corresponding finder charts and some brief information.

The Reward- <http://www.nps.gov/yose/planyourvisit/bears.htm>

By around 9:30 or so, we will have the place to ourselves, and can stay until dawn if you so choose. Scopes must be removed when we quit, then set up again on Saturday. Some of us may set up sun scopes during the afternoon, show Half Dome festooned with rock climbers, and invite people to come back again after sunset.

http://www.yosemiteconservancystore.com/DSN/wwwyosemiteassociationorg/Content/Webcam/Original/Large/ahwahnee_large.jpg

Gastronomic Astronomic-

Early Saturday eve is the traditional potluck meal and is always [tons of fun](#). Please provide enough for ~ say 3 or 4 people. Salads, main courses, pu pu's and desserts are all welcome. Who will have the best astronomical theme of incredible edibles this year? Remember the Brown Dwarfs? Prizes will be awarded! Please remember this repast takes time. It's better to start our own gastronomic party early so there's no need to rush for set up Saturday evening on Glacier Point.

Check the [National Weather Service](#) for up-to-date weather info on Yosemite Park current weather and conditions.

Here is a live cam of Half Dome from [Ahwahnee Meadow](#) and [NPS Air Quality Cam & data](#).

For newbies and oldsters alike please review the [directions and guidelines](#).

See you at the campsite,

Ken & Dave

Updated Wednesday, March 9, 2011

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G_{olden} S_{tate} S_{tar} P_{arty} 2011

Wednesday June 29 through Sunday, July 3, 2011

Registration ** There are 95 spots left (as of 6/3/2011) ** Please review our FAQ
Four nights under California's darkest skies.



Dear Attendees,

GSSP values the input of its attendees and we appreciate all the feedback we received from 2010. As we are always committed to improving the event, we are making some changes in 2011.

First, we are capping GSSP 2011 attendance at 400 people. Last year, we did our planning based on past registrations, and past experience. Some of the issues we encountered were a direct result of an unexpectedly large number of unregistered attendees showing up at the gate. While not every issue can be attributed to unplanned attendance, it certainly overtaxed our facilities. This year we are planning for a total of 400 attendees. This means facilities will be rented and serviced for 400 people. Camping space will also be apportioned for 400 people. For those who do not wish to pre-register, you will be taking your chances. However, you will be able to check the web site before and during GSSP to find information on how many slots are still available. Please understand there will be NO guarantees at the gate for last minute attendees. The easiest way to plan your GSSP trip and to help GSSP plan for your trip, is to pre-register.

Next, we are changing how we handle RV parking. In the past two years, RV's have been able to park all along the west side of the observing field. Last year people got boxed in, particularly in the part of the field near the shower truck. This year we will have the south and south-west area available for RV's, but starting halfway down the field we will have car and tent camping only. We'll be extending the camping area further North beyond the shower truck in order to avoid congestion and crowding. The loss of some of the RV parking on the west side will be compensated by opening the south side of the field (nearer to the entrance gate) to RVs. When RV's arrive, a GSSP volunteer will assist in finding a location and orienting the vehicle. Of course, this is all easier to see than read. So please stay tuned for when we post our 2012 site diagram.

Now here's the part we don't like. Our number one complaint last year was dogs. The complaints were pronounced enough that we nearly chose to ban them from the event. Instead, we will ask all registrants to let us know if they intend to bring dogs. Those attendees who are bringing a dog will receive an email or letter re-stating the rules related to pets (namely leash, cleanup, and noise control). The letter will state the consequences of not following these rules and the document will need to be signed and turned in at the gate. If problems with dogs do not go away in 2011, they will be banned in 2012 just as the Texas Star Party and other similar events have chosen to do.

We all thank you for your continued participation in GSSP and hope you have a great time. Please feel free to contact us with any concerns or questions.

Regards,
Rich Ozer
GSSP Director

Fremont Peak Observers Association Star-B-Que 2011

June 25 is the date of the FPOA's annual barbeque and star party starting at 5 pm. FPOA will supply hamburgers, hot dogs, drinks, paper plates and utensils and visitors can bring something to share such as desserts, salads, snacks, etc. Please RSVP for this event by emailing <info at fpoa.net > or calling the Observatory phone at (831)623-2465.

FPOA members have the duty of voting for 3 Board members at Star-B -Que, participating in Pat Donnelly's Trivia Contest, the Astro-Gasto Contest and enjoying a presentation by a Guest Speaker along with the dark skies of San Benito County for observing. Please Join us!

LAWRENCE HALL OF SCIENCE

**Wednesday, June 29, 2011
1pm-2pm**



A public talk by **Andrew Fraknoi**

THE TOP TOURIST SIGHTS OF THE SOLAR SYSTEM: WHERE BILL GATES' GREAT- GRANDDAUGHTER MIGHT GO ON HER HONEYMOON

Astronomer and popular lecturer Andrew Fraknoi will explore the most intriguing future tourist destinations among the planets and moons in our cosmic neighborhood, including the 4,000 mile lava channel on Venus, the towering Mount Olympus volcano on Mars (three times the height of Mount Everest), and the awesome Verona Cliffs on the moon Miranda (which are the tallest "lover's leap" in the solar system).

Andrew Fraknoi is the Chair of the Astronomy Department at Foothill College and the former Executive Director of the Astronomical Society of the Pacific. He was selected as the 2007 California Professor of the Year by the Carnegie Endowment. For more about Andrew Fraknoi, see <http://www.foothill.fhda.edu/ast/afraknoi.htm> and <http://www.seti.org/page.aspx?pid=486>

Admission to The Lawrence Hall of Science is \$12.00 Adults (ages 19-61), \$9.00 Student/Senior/Disabled (ages 7-18; 62 plus), \$6.00 Children (ages 3-6; children under 3 are admitted free), Free for Members

NIGHT SKY NETWORK

The Evening Sky Map

June Evening Sky Map: <http://www.skymaps.com/skymaps/tesmn1106.pdf>

BAY AREA ASTRONOMY EVENTS – Kenneth Lum

<p>Friday, 6/3 and Saturday, 6/4</p> <p>Chabot Space and Science Center 10000 Skyline Boulevard Oakland CA 94619-2450 (510) 336-7300</p>	<p>EXPLORE THE NIGHT SKIES AT CHABOT OBSERVATORIES For more information: http://www.chabotspace.org/</p> <p>FREE TELESCOPE VIEWING Regular hours: 7:30pm -10:30pm Every Friday & Saturday evening, <u>weather permitting</u>. Come for spectacular night sky viewing the best kept secret in the Bay Area and see the magnificence of our telescopes in action!</p> <p>DAYTIME TELESCOPE VIEWING Observatories Open 12pm - 5pm, <u>weather permitting</u>. Come view the sun, moon, or Venus through Chabot's telescopes. Free with General Admission.</p>
<p>Friday, 6/3 and Saturday, 6/4</p> <p>Chabot Space and Science Center 10000 Skyline Boulevard Oakland CA 94619-2450 (510) 336-7300</p>	<p>SKIES! 6:00 PM DINNER, A MOVIE, AND THE UNIVERSE Join us for Chabot's unique evening social rendezvous. Start your night off with dinner and drinks, then cozy up in the planetarium as you're whisked to the edge of the universe and cap off the evening with telescope viewing featuring breathtaking views of the cosmos.</p> <p>ADVANCE TICKETS DINNER: Buy advance tickets to ensure your dinner reservation. Purchase dinner separately at the cafe (\$15). A MOVIE AND THE UNIVERSE: Admission to Chabot includes access to all of our interactive exhibitions, a film in the MegaDome theater AND a show in the Digital Planetarium. Purchase your advance tickets online or call the Box Office at (510) 336-7373.</p>
<p>Friday, 6/3 9PM – 11:00PM Open for public viewing every clear Friday evening</p> <p>Foothill Observatory Foothill Community College 12345 Moody Road Los Altos Hills</p>	<p>COME TO FOOTHILL OBSERVATORY AND JOIN US IN THE EXPLORATION OF OUR UNIVERSE!</p> <p>Visitors can view the wonders of the universe through the observatory's new computer-controlled 16- inch Schmidt-Cassegrain telescope. Views of objects in our solar system may include craters and mountains on the moon, the moons and cloud-bands of Jupiter, the rings of Saturn, etc. The choice of targets for any evening's viewing depends on the season and what objects are currently in the sky.</p> <p>On clear, dark, moonless nights, the telescopes give visitors views into the deeper reaches of space. Star clusters, nebulae, and distant galaxies provide dramatic demonstrations of the vastness of the cosmos.</p> <p>The public viewing programs at Foothill are free of charge and are open to guests of all ages. Please note that the observatory is closed when the weather is cloudy. Also note that visitor parking permits are available from the machines in the parking lots for \$2.00.</p> <p>Foothill Observatory is located on the campus of Foothill College in Los Altos Hills, CA. Take Highway 280 to the El Monte Rd exit. The observatory is next to parking lot 4. Parking at the college requires visitor parking permits that are available from the machines in the parking lots for \$2.00.</p>

<p>Saturday, 6/4 10AM-12PM IF IT IS CLEAR</p> <p>Foothill Observatory Foothill Community College 12345 Moody Road Los Altos Hills</p> <p>ADMISSION IS FREE</p>	<p>SOLAR OBSERVING with a Hydrogen alpha solar telescope every clear Saturday morning. This allows spectacular views of solar prominences and unusual surface features on the Sun not otherwise visible with regular white light telescopes.</p> <p>Foothill Observatory is located on the campus of Foothill College in Los Altos Hills, CA. Take Highway 280 to the El Monte Rd. exit. The observatory is next to parking lot 4. Parking at the college requires visitor parking permits that are available from the machines in the parking lots for \$2.00.</p>
<p>Saturday, 6/4 Sunset: 8:24PM</p> <p>San Mateo County Astronomical Society Star Party</p> <p>Crestview Park San Carlos</p>	<p>STAR PARTIES AT CRESTVIEW PARK, SAN CARLOS Come out and bring the kids for a mind expanding look at the universe</p> <p>The City of San Carlos Parks and Recreation Department and the San Mateo County Astronomical Society has open Star Parties twice a month. These events are held in Crestview Park, San Carlos California.</p> <p>Note that inclement weather (clouds, excessive wind and showers) will cause the event to be canceled without notice.</p> <p>For more information call Bob Black, (650)592-2166, or send an email to SMCAS@live.com or call Ed Pieret at (650)862-9602.</p> <p>Reasons to Attend If you have kids interested in space or planets bring them here for a real life view of planets, nebula, star clusters and galaxies. If you are thinking of buying a telescope or want help using a telescope you own, come here to talk with experienced users. If you think you might have an interest in astronomy come and talk to experienced amateur astronomers.</p> <p>Cautions Dress warmly and wear a hat. Visitors should park on the street and walk into the park so your headlights don't affect the observer's dark adaptation. Only park in the parking lot if you are arriving before dark and plan to stay until the end of the event. You shouldn't need lights but if you feel you do, only bring a small flashlight with the lens covered using red cellophane or red balloon. Please respect the telescopes and ask permission from the owner if you wish to touch. Parents, please watch your children. The park is residential, and adjacent to homes and backyards, please keep noise to a minimum. Schedule/Time - Astronomers arrive to set up at around sunset. Observing starts at about one hour after sunset and continues for two to three hours.</p>
<p>Saturday, 6/4 8:30PM – 11:00PM</p> <p>Mountain Theater Mt Tamalpais State Park Mill Valley, CA 94941</p> <p>Cost: FREE</p>	<p>MT TAM ASTRONOMY PROGRAM -- THE MILKY WAY AS A DARK MATTER LABORATORY DR. MICHAEL KUHLEN, Theoretical Astrophysics Center</p> <p>Immerse yourself in the universe! "The Milky Way as a Dark Matter Laboratory" by Dr. Michael Kuhlen of the Theoretical Astrophysics Center in the Mountain Theatre on Mt Tam at 8:30pm followed by telescope viewing in the Rock Spring Parking Lot. Sponsored by the Mount Tamalpais State Park. Organized by the Mt Tamalpais Interpretive Association. Telescope viewing courtesy of the San Francisco Amateur Astronomers. Hotline: 415-455-5370 Web site: www.mttam.net</p>

<p>Saturday, 6/4 9:00PM 09:00 PM - 11:00 PM</p> <p>Lawrence Hall of Science 1 Centennial Drive Berkeley, CA 94720 USA</p> <p>Cost: FREE</p>	<p>SATURDAY NIGHT STARGAZING - See the Moon, Planets, Stars, Galaxies and More</p> <ul style="list-style-type: none"> * Stargaze through astronomical telescopes * Ask questions and talk with amateur astronomers * Learn how to use a star map to find constellations * Share in the wonder of the universe with your friends <p>Stargazing is always weather permitting-be sure to dress warmly. Foggy and overcast skies can cancel stargazing at the last minute.</p>
<p>Monday, 6/6 7:30PM</p> <p>California Academy of Sciences Planetarium 55 Music Concourse Drive Golden Gate Park San Francisco CA 94118</p> <p>Reservations – Adults \$12 Seniors \$10 Academy members \$6 Seating is limited. Reserve Online or by phone at 800-794-7576</p>	<p>Benjamin Dean Lecture GALAXY ZOO: CITIZEN SCIENCE M. JORDAN RADDICK EDUCATION DIRECTOR, INSTITUTE FOR DATA-INTENSIVE ENGINEERING AND SCIENCE JOHNS HOPKINS UNIVERSITY</p> <p>Anyone can help discover new stuff in Galaxy Zoo- but why do people bother in the first place? Dr. Raddick responds with some unexpected insight into why people donate their time for open science and what they have discovered through the process. More than 250,000 people have taken part in Galaxy Zoo so far, producing a wealth of valuable data and sending telescopes on Earth and in space chasing after their discoveries. The images used in Galaxy Zoo, from NASA's Hubble Space Telescope, are more detailed and beautiful than ever, and allow us to look deeper into the Universe than ever before.</p>
<p>Tuesday, 6/7 7PM</p> <p>Randall Museum 199 Museum Way San Francisco, CA 94114</p>	<p>DOBSONIAN TELESCOPE MAKING</p> <p>Build a telescope the Dobson way. You will learn about John Dobson and his reflector telescopes, as well as how these telescopes work. You'll learn the step-by-step method for grinding and polishing the mirror, building the mount, and assembling a complete telescope. Seeing the rings of Saturn, the moons of Jupiter or the Orion Nebulae through a telescope you built yourself is a fantastic experience. Material fees, including mirror glass and plywood, will run approximately \$300 to \$400, depending on the size of the scope you make and are payable to the instructor.</p>
<p>Wednesday, 6/8 NOON</p> <p>SETI Institute 189 Bernardo Ave Mountain View, CA 94043</p>	<p>COLLOQUIUM SERIES ANALYZING THE ATMOSPHERE OF SUPER EARTH GJ1214B ELIZA KEMPTON, DEPT OF ASTRONOMY AND ASTROPHYSICS, UC SANTA CRUZ</p> <p>Astronomers currently know of over 500 planets orbiting distant stars beyond the confines of our solar system. Of these 500 "extrasolar" planets, most are large gas-rich planets, similar to Jupiter or Saturn. However, more recently, due to improvements in discovery techniques and instrumentation, astronomers have started to discover much smaller extrasolar planets, which are only slightly larger (or more massive) than the Earth. This new class of planets, which have masses of 1-10 times that of the Earth, have come to be known as super-Earths. Super-Earths are particularly interesting because planets in this mass range are not present in our solar system, and they therefore represent a fundamentally new class of planets for astronomers to study. Recently, the first observations of a super-Earth's atmosphere were obtained. They reveal a unique planetary atmosphere that may bear some similarities to objects in our solar system but requires further study.</p> <p>In this talk Dr. Kempton will begin by presenting an overview of extrasolar planet research, focusing in on what we know about super-Earths. She will then move on to describing what we know about extrasolar planet atmospheres. She will finish by revealing the first observations of the atmosphere of a super-Earth, and she will explain some of the challenges to interpreting these observations.</p>

<p>Friday, 6/10 7:00PM</p> <p>Chabot Space and Science Center 10000 Skyline Boulevard Oakland CA 94619-2450</p>	<p>TELESCOPE MAKERS' WORKSHOP</p> <p>The Telescope Makers' Workshop is held every Friday night from 7pm - 10pm, excluding major holidays (e.g. Christmas Day and New Year's Day) that fall on Fridays. The Workshop is always closed on Memorial Day Weekend. Attendance every Friday night is not mandatory, and members work at their own pace.</p> <p>For more specific details, contact: E-mail Richard Ozer (rozer@pacbell.net) or (510) 406-1914.</p>
<p>Friday, 6/10 9:30PM – 12:00AM</p> <p>San Jose Astronomical Association Houge Park Twilight Drive San Jose CA 95124</p> <p>Cost: FREE</p>	<p>JUNE STAR PARTY</p>
<p>Saturday, 6/11 9:00AM – 5:00PM</p> <p>Hiller Aviation Museum 601 Skyway Road San Carlos CA 94070</p> <p>Cost: Adult: \$23 Senior & Youth: \$13 Under 4: Free</p>	<p>VERTICAL CHALLENGE 2011</p> <p>"Vertical Challenge" Helicopter Air Show is a unique event that allows visitors to see helicopter operations first hand. The show is devoted to demonstrating to the public how helicopters affect our daily lives from traffic and news reports to their unique life saving abilities, to the National Defense of our Country.</p>
<p>Friday, 6/10 and Saturday, 6/11</p> <p>Chabot Space and Science Center 10000 Skyline Boulevard Oakland CA 94619-2450 (510) 336-7300</p>	<p>EXPLORE THE NIGHT SKIES AT CHABOT OBSERVATORIES For more information: http://www.chabotspace.org/</p> <p>FREE TELESCOPE VIEWING Regular hours: 7:30pm -10:30pm Every Friday & Saturday evening, <u>weather permitting</u>. Come for spectacular night sky viewing the best kept secret in the Bay Area and see the magnificence of our telescopes in action!</p> <p>DAYTIME TELESCOPE VIEWING Observatories Open 12pm - 5pm, <u>weather permitting</u>. Come view the sun, moon, or Venus through Chabot's telescopes. Free with General Admission.</p>
<p>Friday, 6/10 and Saturday, 6/11</p> <p>Chabot Space and Science Center 10000 Skyline Boulevard Oakland CA 94619-2450 (510) 336-7300</p>	<p>SKIES! 6:00 PM DINNER, A MOVIE, AND THE UNIVERSE</p> <p>Join us for Chabot's unique evening social rendezvous. Start your night off with dinner and drinks, then cozy up in the planetarium as you're whisked to the edge of the universe and cap off the evening with telescope viewing featuring breathtaking views of the cosmos.</p> <p>ADVANCE TICKETS DINNER: Buy advance tickets to ensure your dinner reservation. Purchase dinner separately at the cafe (\$15). A MOVIE AND THE UNIVERSE: Admission to Chabot includes access to all of our interactive exhibitions, a film in the MegaDome theater AND a show in the Digital Planetarium. Purchase your advance tickets online or call the Box Office at (510) 336-7373.</p>

<p>Friday, 6/10 9PM – 11:00PM Open for public viewing every clear Friday evening</p> <p>Foothill Observatory Foothill Community College 12345 Moody Road Los Altos Hills</p>	<p>COME TO Foothill Observatory and join us in the exploration of our universe!</p> <p>Visitors can view the wonders of the universe through the observatory's new computer-controlled 16- inch Schmidt-Cassegrain telescope. Views of objects in our solar system may include craters and mountains on the moon, the moons and cloud-bands of Jupiter, the rings of Saturn, etc. The choice of targets for any evening's viewing depends on the season and what objects are currently in the sky.</p> <p>On clear, dark, moonless nights, the telescopes give visitors views into the deeper reaches of space. Star clusters, nebulae, and distant galaxies provide dramatic demonstrations of the vastness of the cosmos.</p> <p>The public viewing programs at Foothill are free of charge and are open to guests of all ages. Please note that the observatory is closed when the weather is cloudy. Also note that visitor parking permits are available from the machines in the parking lots for \$2.00.</p> <p>Foothill Observatory is located on the campus of Foothill College in Los Altos Hills, CA. Take Highway 280 to the El Monte Rd exit. The observatory is next to parking lot 4. Parking at the college requires visitor parking permits that are available from the machines in the parking lots for \$2.00.</p>
<p>Saturday, 6/11 10AM-12PM IF IT IS CLEAR</p> <p>Foothill Observatory Foothill Community College 12345 Moody Road Los Altos Hills</p> <p>ADMISSION IS FREE</p>	<p>SOLAR OBSERVING with a Hydrogen alpha solar telescope every clear Saturday morning. This allows spectacular views of solar prominences and unusual surface features on the Sun not otherwise visible with regular white light telescopes.</p> <p>Foothill Observatory is located on the campus of Foothill College in Los Altos Hills, CA. Take Highway 280 to the El Monte Rd. exit. The observatory is next to parking lot 4. Parking at the college requires visitor parking permits that are available from the machines in the parking lots for \$2.00.</p>
<p>Monday, 6/13 4:15PM</p> <p>Stanford Linear Accelerator Center National Accelerator Laboratory Panofsky Auditorium 2575 Sand Hill Road Menlo Park, CA 94025</p> <p>OPEN TO THE PUBLIC</p>	<p>FERMI UPDATE ERIC CHARLES, STANFORD LINEAR ACCELERATOR CENTER</p>
<p>Wednesday, 6/29 1:00PM</p> <p>Lawrence Hall of Science 1 Centennial Drive Berkeley CA 94720-5200</p>	<p>"The Top Tourist Sights of the Solar System: Where Bill Gates' Great-Granddaughter Might Go on Her Honeymoon"</p> <p>Date: Wednesday, June 29, 2011 Time: 1pm-2pm Place: The Lawrence Hall of Science, University of California, Berkeley</p> <p>Astronomer and popular lecturer Andrew Fraknoi will explore the most intriguing future tourist destinations among the planets and moons in our cosmic neighborhood, including the 4,000 mile lava channel on Venus, the towering Mount Olympus volcano on Mars (three times the height of Mount Everest), and the awesome Verona Cliffs on the moon Miranda (which are the tallest "lover's leap" in the solar system).</p> <p>Andrew Fraknoi is the Chair of the Astronomy Department at Foothill College and the former</p>

Executive Director of the Astronomical Society of the Pacific. He was selected as the 2007 California Professor of the Year by the Carnegie Endowment. For more about Andrew Fraknoi, see <http://www.foothill.fhda.edu/ast/afraknoi.htm> and <http://www.seti.org/page.aspx?pid=486>

For the daytime talk (6/29) with Fraknoi, attendees would have to pay admission to LHS: \$12.00 Adults (ages 19–61), \$9.00 Student/Senior/Disabled (ages 7–18; 62 plus), \$6.00 Children (ages 3-6; children under 3 are admitted free), Free for Members

**Thursday, 6/30
7:00PM**

**Lawrence Hall of Science
1 Centennial Drive
Berkeley CA 94720-5200**

ADMISSION IS FREE

YOU ARE INVITED TO A FREE PUBLIC SEMINAR: ARE WE ALONE?

See and hear from three pivotal planet-hunters of the NASA Kepler Mission to find planets around Sun-like stars---especially Earth-size planets that could be inhabited.

Date: 2011 June 30

Time: 7:00-9:30 pm

Place: Lawrence Hall of Science, University of California, Berkeley

Once you realize that every star is a whole sun unto itself, the question naturally arises: "Do stars have planets that could be homes to more or less intelligent beings like ourselves?" It has been only in the last 15 years that we even knew for sure that other stars had planets and now it's the NASA Kepler mission that is unfolding riches of data that now allow us to begin cataloging planets orbiting stars other than the Sun and take some of the very first steps to answer that question, "Are we alone?" This seminar features a panel of key investigators in the NASA Kepler Mission Science Team who will share their insights, inspirations, late-breaking findings, and hints about what new discoveries we might be hearing from the mission in the future.

"Astronomers have cracked the Milky Way like a piñata, and planets are now pouring out so fast that they do not know what to do with them all."

— Dennis Overbye, NewYorkTimes, Feb 2, 2011

Panelists:



• Bill Borucki, Principal Investigator, NASA Kepler Mission, Ames Research Center, Mountain View, CA



• Natalie Batalha, Co-Investigator and Deputy Science Team Lead for the NASA Kepler Mission, Professor of Physics and Astronomy at San Jose State University, and lead author of the published article about the discovery of the first nearly Earth-size rocky planet.

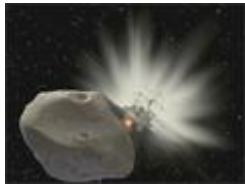


• Gibor Basri, Co-Investigator for NASA Kepler Mission and professor in the Department of Astronomy at University of California, Berkeley



• Moderator: Andrew Fraknoi, Astronomical Society of the Pacific, and Chair of Astronomy Department at Foothill College, Los Altos Hills, CA

NASA WHAT'S UP PODCAST FOR APRIL – BY JANE HOUSTON JONES



P What's Up for June

June 2011

The early solar system was a messy place and asteroids, moons and planets frequently collided. These collisions and impacts left scars we can see.

[Download Video](#)

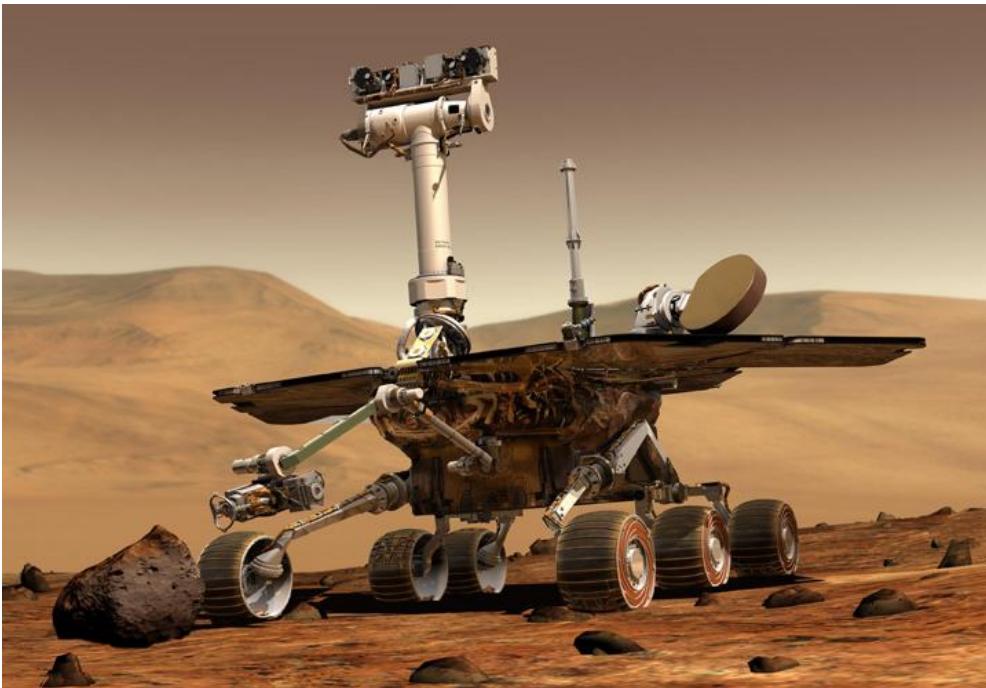
NASA SCIENCE NEWS

The Science@NASA team is pleased to announce a new product: the ScienceCast. Every week, we produce a short video highlighting a topic in NASA science news. This week's episode is about the night sky. Check out "Spring is Fireball Season" on Youtube: <http://www.youtube.com/watch?v=ssMdlTbvHjk>

A complete list of ScienceCast episodes may be found on Science@NASA's Youtube channel: <http://www.youtube.com/user/ScienceAtNASA> . Enjoy!

A Heartfelt Goodbye to a Spirited Mars Rover

25 May 2011 (Source: [NASA/JPL](#))



This artist concept features NASA's Mars Science Laboratory Curiosity rover, a mobile robot for investigating Mars' past or present ability to sustain microbial life. Image credit: NASA/JPL-Caltech.

Mars Exploration Rover Project Manager John Callas sent this letter to his team shortly after the final command was sent to the Mars rover Spirit, which operated on the surface of Mars for more than six years and made numerous scientific discoveries.

Dear Team,

Last night, just after midnight, the last recovery command was sent to Spirit. It would be an understatement to say that this was a significant moment. Since the last communication from Spirit on March 22, 2010 (Sol 2210), as she entered her fourth Martian winter, nothing has been heard from her. There is a continued silence from the Gusev site on Mars.

We must remember that we are at this point because we did what we said we would do, to wear the rovers out exploring. For Spirit, we have done that, and then some.

Spirit was designed as a 3-month mission with a kilometer of traverse capability. The rover lasted over 6 years and drove over 7.7 kilometers [4.8 miles] and returned over 124,000 images. Importantly, it is not how long the rover lasted, but how much exploration and discovery Spirit has done.

This is a rover that faced continuous challenges and had to fight for every discovery. Nothing came easy for Spirit. When she landed, she had the Sol 18 flash memory anomaly that threatened her survival. Scientifically, Mars threw a curveball. What was to be a site for lakebed sediments at Gusev, turned out to be a plain of volcanic material as far as the rover eye could see. So Spirit dashed across the plains in an attempt to reach the distant Columbia Hills, believed to be more ancient than the plains.

Exceeding her prime mission duration and odometry, Spirit scrambled up the Columbia Hills, performing Martian mountaineering, something she was never designed to do. There Spirit found her first evidence of water-altered rocks, and later, carbonates.

The environment for Spirit was always harsher than for Opportunity. The winters are deeper and darker. And Gusev is much dustier than Meridiani. Spirit had an ever-increasing accumulation of dust on her arrays. Each winter became harder than the last.

It was after her second Earth year on Mars when Spirit descended down the other side of the Columbia Hills that she experienced the first major failure of the mission, her right-front wheel failed. Spirit had to re-learn to drive with just five wheels, driving mostly backwards dragging her failed wheel. It is out of this failure that Spirit made one of the most significant discoveries of the mission. Out of lemons, Spirit made lemonade.

Each winter was hard for Spirit. But with ever-accumulating dust and the failed wheel that limited the maximum achievable slope, Spirit had no options for surviving the looming fourth winter. So we made a hard push toward some high-value science to the south. But the first path there, up onto Home Plate, was not passable. So we went for Plan B, around to the northeast of Home Plate. That too was not passable and the clock was ticking. We were left with our last choice, the longest and most risky, to head around Home Plate to the west.

It was along this path that Spirit, with her degraded 5-wheel driving, broke through an unseen hazard and became embedded in unconsolidated fine material that trapped the rover. Even this unfortunate event turned into another exciting scientific discovery. We conducted a very ambitious extrication effort, but the extrication on Mars ran out of time with the fourth winter and was further complicated by another wheel failure.

With no favorable tilt and more dust on the arrays, Spirit likely ran out of energy and succumbed to the cold temperatures during the fourth winter. There was a plausible expectation that the rover might survive the cold and wake up in the spring, but a lack of response from the rover after more than 1,200 recovery commands were sent to rouse her indicates that Spirit will sleep forever.

But let's remember the adventure we have had. Spirit has climbed mountains, survived rover-killing dust storms, rode out three cold, dark winters and made some of the most spectacular discoveries on Mars. She has told us that Mars was once like Earth. There was water and hot springs, the conditions that could have supported life. She has given us a foundation to further explore the Red Planet and to understand ourselves and our place in the universe.

But in addition to all the scientific discoveries Spirit has given us in her long, productive rover life, she has also given us a great intangible. Mars is no longer a strange, distant and unknown place. Mars is now our neighborhood. And we all go to work on Mars every day. Thank you, Spirit. Well done, little rover.

And to all of you, well done, too.

Sincerely,
John

2011 CLUB OFFICERS & CONTACTS

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CLUB TELESCOPES

The SFAA owns eight very fine, easy to use, loaner telescopes well-suited for deep sky, planets, and star parties. All scopes are available to any SFAA member. The loaner custodians for the majority of our fleet are Pete & Sarah Goldie. Please contact them at telescopes@sfaa-astronomy.org for details if you are interested in borrowing a scope or if you have items you can donate for the loaner program (eyepieces, star maps/books, red flashlights, collimator, etc.). Please contact the appropriate member indicated below if you are interested in borrowing one of the telescopes.

- 1) 6" f/10.3 Dobsonian/Ken Frank
- 2) 8" f/7 Dobsonian/Pete Goldie
- 3) 8.5" f/6 Dobsonian/Pete Goldie
- 4) 10" f/8 Dobsonian/Pete Goldie
- 5) 114mm f/4 Newtonian StarBlast/Pete Goldie
- 6) 8" f/10 Celestron SCT/Annette Gabrielli/
- 7) 8" f/10 Meade SCT/Stefanie Ulrey/
- 8) 9.5" f/5.6 Celestron Newtonian/Ken Frank/

CLUB ASTRONOMY VIDEOS

The SFAA owns a series of astronomy videotapes featuring Alex Filippenko, a world-renowned professor of astronomy at UC Berkeley. The videotapes provide an introduction to astronomy and cover topics such as the Solar System, the lifecycles of stars, the nature of galaxies, and the birth of the Universe. The SFAA loans the tapes free to all members. If you are interested in viewing these tapes, you may check them out at any of the SFAA General Meetings. These tapes were kindly donated to the SFAA by Bert Katzung. For information on the course tapes themselves:

<http://www.teach12.com/ttc/assets/coursedescriptions/180.asp>

MEMBERSHIP DUES

Membership is billed for each upcoming year on June 30. Members may receive no more than one bulletin after the expiration of membership.

SFAA WEBSITE AND ONLINE SERVICES

The SFAA web site at sfaa-astronomy.org is provided to our members and the general public for the sharing of club information and services. The web site contains links for club [star parties](#), [events](#), [newsletters](#), [lectures](#) and [meetings](#). If you wish to interact with other people who are interested in astronomy. If you wish to remain up-to-date on club activities, then we encourage you to subscribe to one or both of our public [mailing lists](#), which will allow you to receive our newsletter and/or club announcements via email. Other useful and interesting information and services are available on the site such as [observing location reviews](#), member [astronomy photos](#), and [members only telescope loans](#). Information about SFAA's membership, organization and by-laws are available at the club's online public document [archive](#). If you need to contact a representative of the SFAA, then please visit our [contacts](#) page to help in finding the right person to answer your questions.

Above the Fog is the official bulletin of the San Francisco Amateur Astronomers. It is the forum in which club members may share their experiences, ideas, and observations. We encourage you to participate by submitting your articles, announcements, letters, photos and drawings. We would also like to hear from our new members. Tell us about yourself – what you have done in the past and what other clubs you have joined. **The deadline for the next issue is the 25th day of the month.** Send your articles to Editor@sfaa-astronomy.org

San Francisco Amateur Astronomers
POB 15097
San Francisco CA 94115

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Sharing the Wonders of the Universe

Has your membership expired? Your mailing label includes the month and year through which your membership is paid. If it is past, your membership has expired and this may be your last issue.