

ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

Vol. 60, No. 5 - May 2012

Wednesday, May 16, 2012 – 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 occur on the 3rd Wednesday of each month (except January)

MICHAEL KUHLEN

THE MILKY WAY AS A DARK MATTER LABORATORY



Over the next decade, a combination of astronomical observations and particle physics experiments holds great promise to finally shed light on the nature of Dark Matter, the dominant, yet mysterious, matter content of the universe. In this talk I will present an overview of this exciting area of research, touching on astronomical observational evidence for dark matter, theoretical ideas about its identity, and supercomputer simulations of its expected behavior in our own Galaxy.

Dr. Michael Kuhlen was born and raised in Konstanz, Germany. After completing high school, he moved to Pasadena, California to attend college at the California Institute of Technology, where he graduated with a bachelor degree in physics. He then obtained a Ph.D. in Astronomy and Astrophysics from the University of California at Santa Cruz, and moved from there to work as a postdoctoral researcher at the Institute for Advanced Study in Princeton, New Jersey. Dr. Kuhlen is currently a Theoretical Astrophysics Center Fellow at the University of California Berkeley.

President's Message

May is a very exciting month for amateur astronomers! Our road trip to the northern parts of the great state of California to view May 20th's Annular Eclipse is planned and, at last count, we have nearly 55 members (and some non-members and international visitors too!) making the trek to NorCal. Contact Paul Salazar and Jessica Santascoy at roadtrip@sfaa-astronomy.org to let them know you are interested and to get trip tips and planning updates.

Closer to home, the SFAA will be at the Exploratorium event at Chrissy Field - across from the Palace of Fine Arts – from 5pm on May 20th. We are looking for members who are local to attend with scopes to view the annular eclipse. No scope? No problem. We also need members who can work with our great astronomy toolkits, which are interactive physical science kits that help make sense of what people are seeing.

Finally, Yosemite dates of July 20th and 21st have been confirmed! So please email Dave Frey at fiestascope@yahoo.com with the subject line “Yosemite Sign Up” if you'd like to go on the camping road trip.

Our next speaker Dr Michael Kuhlman, plans to talk to us about “The Milky Way as a Dark Matter Laboratory” at the Randall Museum on May 16th. See you there!

Sue-Ellen Speight
President, 2011-2012
San Francisco Amateur Astronomers



San Francisco Amateur Astronomers

Upcoming Lectures for 2012 Lecture Series

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

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

June 20 ADAM MILLER, Graduate Student, UC Berkeley

THE VERY BRIGHTEST SUPERNOVAE: NATURE'S NEW MYSTERIOUS EXPLOSIONS DEFY CONVENTIONAL EXPLANATION

I will review the various sub-types of supernovae, dominant energy sources powering them, methods used to discover new supernovae and describe recent surveys that have led to the discovery of thousands of new supernovae. These surveys have uncovered a new class of super-luminous supernovae that are as much as 100 times brighter than the conventional explosion at the end of the life of a massive star. New theories are being developed to understand these mysterious explosions, and future surveys should provide dozens of new examples to better study them.

Adam Miller is a graduate student in the University of California (UC) Berkeley Department of Astronomy and a member of the Palomar Transient Factory (PTF). His recent work has focused on the discovery and characterization of super-luminous supernovae, outbursts from young stars still in the process of formation, and the discovery of the peculiar R Coronae Borealis stars, which are thought to be the result of the merger of two low mass white dwarfs.

**July 18 JOHN DILLON, Curator (Retired), Randall Museum
Past President, San Francisco Amateur Astronomers**

GALILEO RECONSIDERED

Three years ago the world celebrated the 400th anniversary of Galileo's telescope and the revolutionary observations he made with it. John Dillon will weave the most recent research into a review of the intricate relationship between Galileo, telescopes, the Church and the emergence of "modern" science.

SFAA Annular Eclipse Roadtrip May 2012



The SFAA is planning a roadtrip for the May 20, 2012 annular eclipse that will be visible across the western US. We are going to camp in Northern California at a location to be determined along the eclipse track.

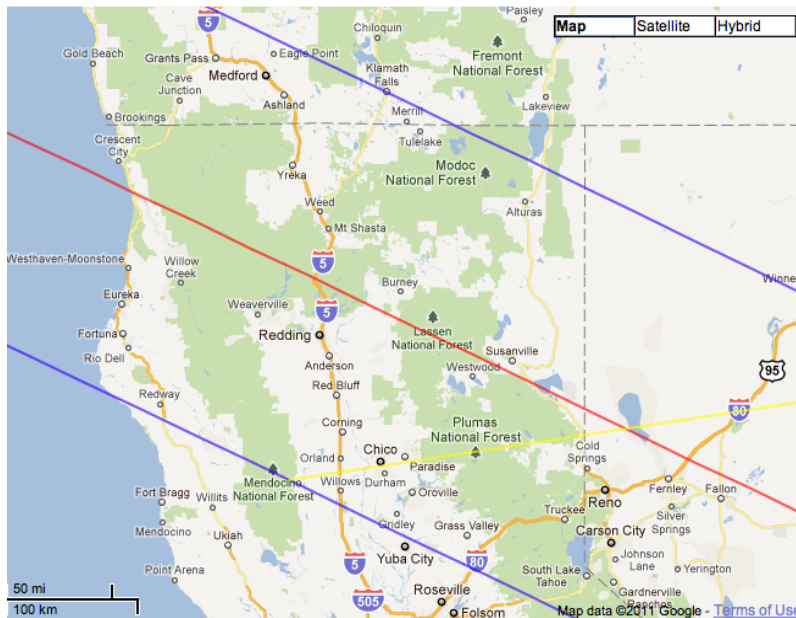
The eclipse takes place near sunset on Sunday 20th. We plan to spend Sunday at the campsite, enjoy the eclipse, and spend the evening having a celebratory star party and overnight camping event. We'll return to the Bay Area on Monday 21st.

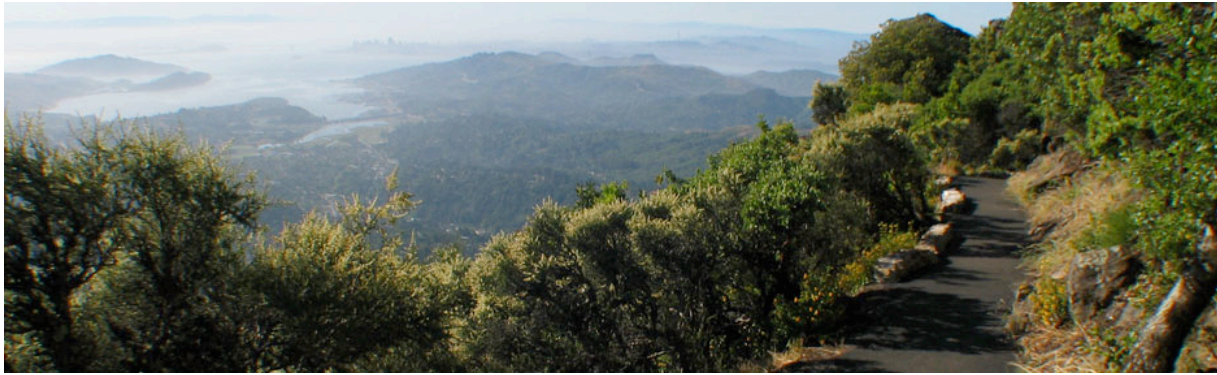
If you'd like to join the roadtrip, or if you have questions or ideas, send an email to:

roadtrip@sfaa-astronomy.org

Hope to see you there!

Paul Salazar and Jessica Santascoy





MT. TAMALPAIS STATE PARK
MT TAMALPAIS INTERPRETIVE ASSOCIATION

2012 ASTRONOMY PROGRAMS --
OUR 24TH SEASON ON THE MOUNTAIN

May 26
8:30pm

Kristina Wilmoth, NASA-Ames Research Center
“Sustainability Base”

NASA is using lessons and innovations from space exploration to build the government’s greenest building on Earth. Sustainability Base will be an evolving exemplar for the future of buildings.

June 23
8:30pm

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

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.

July 21
8:30pm

Dr. David J. Des Marais, NASA-Ames Research Center
“Astrobiology Investigates Life in the Context of Space”

How does life begin and evolve? Does life exist beyond Earth? What is our future, here and beyond? Research and space exploration effectively pursue these questions in inspiring ways.

August 18
8:30pm

Ransom W. Stephens, Ph.D.
“The Reality Interface”

Every emotion, memory, concept-however abstract or concrete, everything you know is derived from your five senses. Learn how the brain processes sensory data and affects your perceptions of reality.

Sept 22
7:30pm

Dr. Seth Shostak, Senior Astronomer SETI Institute
“What Happens if We Find ET?”

Searches for signals from intelligent extraterrestrials are getting better as technology improves. So a signal might be discovered in your lifetime. But then what? Would you be told, and would it be dangerous?

Oct 20
7:00pm

Dr. Chris McKay NASA-Ames Research Center
“MSL and the search for organics on Mars”

NASA’s Mars Science Laboratory will arrive on the red planet in August. How can the mission’s rover, Curiosity, with unprecedented research tools to study the early environmental history of Mars, contribute to the search for evidence of life on Mars

Immediately following each month's lecture, the audience is invited to remain in the Mountain Theater for a brief Night Sky Tour by the Urban Astronomer, highlighting the prominent constellations, stars and planets visible in the night time sky, before enjoying the observing session (star party) conducted by the San Francisco Amateur Astronomers in the Rock Springs parking lot.

JOINT HEARING BEACH CHALET ATHLETIC FIELDS PROJECT (SOCCER COMPLEX)

Thursday, May 24th, 2012

3:00 p.m. to (early evening?)

City Hall, San Francisco

***The Planning Commission will vote on certifying the Environmental Impact Report (EIR).
The Recreation and Park Commission will vote on approving the soccer complex.***

Please attend this hearing to voice your concerns about the proposal to put over 7 acres of artificial turf and 150,000 watts of sports lighting in the western end of Golden Gate Park!

· Sign up here to attend the May 24th Joint Hearing at City Hall !!!!!

Attend this hearing to let the Commissioners know that Golden Gate Park is the wrong place for this project! [Let us know that you will attend this hearing!](#) The hearing may go into the early evening -- let us know what time you will arrive.

· Read the Final Comments and Responses and Environmental Impact Report

You can [download](#) them from the Planning Department website. <http://www.sf-planning.org/index.aspx?page=1828> (Scroll down until you reach Project 2010.0016E.) Look for responses to your own comments and decide if they have been addressed. We will have more background information on our website in a few days.

You have two ways to submit your comments:

1. Submit to the Planning and Rec and Park Commissions before the hearing, so that Commissioners can read your opinions and consider them before the hearing.
2. Submit comments AT the Joint Hearing. **NOTE: *If you want your comments to become an official objection and part of the basis for an administrative appeal or lawsuit, you must submit them in person at the May 24th Joint Hearing.***

· Questions? Write to us, and we will do our best to answer them.

sfoceanedge@earthlink.net



Astronomical Society of the Pacific

Advancing science literacy through astronomy

Project ASTRO: Astronomers and Educators as Partners for Learning



Project ASTRO™ is a national program that improves the teaching of astronomy and physical science by linking professional and amateur astronomers with local educators. Each astronomer is matched with an educator in a one-on-one partnership and commits to visiting the educator's students at least four times during the school year. Over 500 active educator-astronomer partnerships currently bring the excitement of scientific discovery through astronomy to over 20,000 students annually.

GIVE A CLASS THE UNIVERSE: VOLUNTEER FOR PROJECT ASTRO

Project ASTRO is looking for amateur and professional astronomers to work with teachers and students in 3rd - 9th grade classrooms. This is a great opportunity to share your love of astronomy with a receptive audience and help kids learn about science.

Bay Area Project ASTRO, part of a national program at the Astronomical Society of the Pacific, pairs you with a local teacher at a school convenient for you. Together, you and your teacher partner attend a 2-day summer workshop to learn hands-on, inquiry-based astronomy activities and then you "adopt" a class for a year.

Astronomer and teacher partners will receive "The Universe at Your Fingertips 2.0" -- a rich curriculum resource on DVD-ROM featuring a host of materials on teaching astronomy that you can use in many settings.

Astronomer applications are now being accepted for the 2012 - 2013 school year. There is no cost, but space is limited. All participants are required to attend a 2-day workshop held July 27 & 28th, 2012, at the San Mateo County Office of Education in Redwood City.

APPLY ONLINE by MAY 29th:

<http://www.astrosociety.org/education/astro/bayarea/volunteer.html>

MORE INFORMATION:

<http://www.astrosociety.org/baprojectastro.html>

Project ASTRO emphasizes ongoing partnerships that foster a nurturing environment for students to learn. To accomplish this, astronomers make at least four visits to their adopted classroom at mutually convenient times.

Project ASTRO has been operating since 1993 in the Bay Area. Previous participants often report that it is one of the most satisfying volunteer endeavors they have undertaken.

Graduate students and advanced undergraduate students majoring in astronomy are also encouraged to apply.

If you have questions, please contact Brian Kruse, Project ASTRO Coordinator
Email: bayareaastro@astrosociety.org

NIGHT SKY NETWORK
MAY 2012 - THE EVENING SKY

May Sky Map: <http://skymaps.com/skymaps/tesmn1205.pdf>
May Sky Calendar: <http://skymaps.com/articles/n1205.html>

BAY AREA ASTRONOMY EVENTS

Kenneth Lum

<http://tech.groups.yahoo.com/group/bayastro/?v=1&t=directory&ch=web&pub=groups&sec=dir&slk=94>

<p>Friday, May 11 Saturday, May 12</p> <p>Chabot Space and Science Center 10000 Skyline Boulevard Oakland, CA 94619-2450 (510) 336-7300</p>	<p>EXPLORE THE NIGHT SKIES AT THE CHABOT OBSERVATORIES For more information: http://www.chabot.space.org/</p> <p>Free Telescope Viewing Regular hours are every Friday & Saturday evening, weather permitting: 7:30pm - 10:30pm 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 On Saturday and Sunday afternoons come view the sun, moon, or Venus through Chabot's telescopes. Free with General Admission. (weather permitting) 12pm - 5pm: Observatories Open</p>
<p>Friday, May 11 7:00 PM</p> <p>The Telescope Makers' Workshop</p> <p>Chabot Space and Science Center 10000 Skyline Boulevard Oakland, CA 94619-2450</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. The Workshop meets at Chabot Space & Science Center, 10000 Skyline Blvd., Oakland. Contact us for more specific details:</p> <p>Contact: E-mail Richard Ozer (rozer@pacbell.net) or (510) 406-1914</p>
<p>Friday, May 11 Saturday, May 12</p> <p>Chabot Space and Science Center 10000 Skyline Boulevard Oakland, CA 94619-2450 (510) 336-7300</p>	<p>EXPLORE THE NIGHT SKIES AT THE CHABOT OBSERVATORIES For more information: http://www.chabot.space.org/</p> <p>Free Telescope Viewing Regular hours are every Friday & Saturday evening, weather permitting: 7:30pm - 10:30pm 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 On Saturday and Sunday afternoons come view the sun, moon, or Venus through Chabot's telescopes. Free with General Admission. (weather permitting)</p> <p>12pm - 5pm: Observatories Open</p>
<p>Friday, May 11 9:00 PM</p> <p>Foothill Observatory Foothill Community College 12345 Moody Rd. Los Altos Hills</p>	<p>Foothill Observatory is open for public viewing every clear Friday evening from 9:00 p.m. until 11:00 p.m. Visitors can view the wonders of the universe through the observatory's 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. Deep space objects including star clusters, nebulae, and distant galaxies also provide dramatic demonstrations of the vastness of the cosmos. The choice of targets for any evening's viewing depends on the season and what objects are currently in the sky.</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 \$3.00.</p> <p>Come to Foothill Observatory and join us in the exploration of our Universe!</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 \$3.00.</p>

<p>Saturday, May 12 10:00 AM – 12PM IF IT IS CLEAR</p> <p>Foothill College Observatory Foothill Community College 12345 Moody Rd. Los Altos Hills, CA</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. Admission is free.</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 \$ 3.00.</p>
<p>Wednesday, May 16 12:00 NOON</p> <p>SETI Institute Colloquium Series 189 Bernardo Ave Mountain View, CA 94043</p>	<p>THE CLIMATES OF THE PLANET MARS FRANCOIS FORGET, Laboratoire de Meteorologit Dynamique</p> <p>At the present time, Mars is a dry and cold planet. Surface ice is unstable for more than one season outside the polar regions, and the atmosphere is so cold or so dry that the presence of liquid water, never detected, is unlikely anywhere on the surface.</p> <p>Things may have been different in the past. On one hand, the surface of Mars is characterized by multiple geological evidence suggesting various kinds of glaciers and ice sheets formed not that long ago at low and mid-latitudes. On the other hand, the observations of the geology and mineralogy of the oldest surface on Mars (dating back to more than 3.8 billion years ago) provide evidence that the Martian climate was then completely different, with abundant liquid water on the surface.</p> <p>To help understand what have happened, we have developed global climate models design to simulate the possible past Martian environment. These simulations unveil parts of Mars history, but also raise new questions.</p>
<p>Thursday, May 17 4:15 PM</p> <p>Lockheed Martin Colloquia 3251 Hanover St ATC Auditorium - Building 202 Palo Alto CA 94304</p> <p>4:00 PM Refreshments Visitors Welcome</p>	<p>LOCKHEED MARTIN PALO ALTO COLLOQUIA SERIES DR. BETHANY CORCORAN, STANFORD: OPTIMIZING GRID AGGREGATION</p> <p>May 24 – Tom Passell [former ATC employee and recently retired from SRI and EPRI] on “Low Energy Nuclear Reactions” May 31 -- Ron Clark [former LM SSC Director] CEO of Space Orbital Services on the “Future of Space Servicing</p> <p>The Colloquia presentations are available on your desktop through Microsoft Office Live Meeting. For instructions, please visit the external ATC website, http://www.lockheedmartin.com/ssc/AdvancedTechnologyCtr/colloquia/index.html</p>
<p>Thursday, May 31 4:15 PM</p> <p>Lockheed Martin Colloquia 3251 Hanover St ATC Auditorium - Building 202 Palo Alto CA 94304</p> <p>4:00 PM Refreshments Visitors Welcome</p>	<p>LOCKHEED MARTIN PALO ALTO COLLOQUIA SERIES RON CLARK [FORMER LM SSC DIRECTOR] CEO OF SPACE ORBITAL SERVICES “THE FUTURE OF SPACE SERVICING”</p> <p>The Colloquia presentations are available on your desktop through Microsoft Office Live Meeting. For instructions, please visit the external ATC website, http://www.lockheedmartin.com/ssc/AdvancedTechnologyCtr/colloquia/index.html</p>
<p>Friday, May 18 7:00 PM</p> <p>Chabot Space and Science Center 10000 Skyline Boulevard Oakland, CA 94619-2450</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. The Workshop meets at Chabot Space & Science Center, 10000 Skyline Blvd., Oakland. Contact us for more specific details:</p> <p>Contact: E-mail Richard Ozer (rozer@pacbell.net) or (510) 406-1914</p>
<p>Friday, May 18 Saturday, May 19</p> <p>Chabot Space and Science Center 10000 Skyline Boulevard Oakland, CA 94619-2450 (510) 336-7300</p>	<p>EXPLORE THE NIGHT SKIES AT THE CHABOT OBSERVATORIES For more information: http://www.chabot.space.org/</p> <p>Free Telescope Viewing Regular hours are every Friday & Saturday evening, weather permitting: 7:30pm -10:30pm Come for spectacular night sky viewing the best kept secret in the Bay Area and see the magnificence of our telescopes in action! Daytime Telescope Viewing On Saturday and Sunday afternoons come view the sun, moon, or Venus through Chabot's telescopes. Free with General Admission. (weather permitting) 12pm - 5pm: Observatories Open</p>

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<p>Saturday, May 19 10:00 AM – 12:00 Noon IF IT IS CLEAR</p> <p>Foothill College Observatory Foothill Community College 12345 Moody Rd. Los Altos Hills, CA</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. Admission is free.</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 \$ 3.00.</p>
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<p>Saturday, May 19 10:00 AM – 8:00 PM</p> <p>San Mateo County Event Center 1346 Saratoga Drive San Mateo CA 94403</p>	<p>MAKER FAIRE</p> <p>Come celebrate MAKE magazine's 13th Maker Faire and seventh anniversary in the Bay Area, showcasing creative and resourceful people in the areas of science and technology, engineering, food, and arts and crafts.</p> <p>Register at: http://makerfaire.com/</p>

<p>Saturday, May 19 Sunset: 8:14pm</p> <p>San Mateo County Astronomical Society Star Party</p> <p>Star Parties At Crestview Park, San Carlos</p>	<p>STAR PARTIES AT CRESTVIEW PARK, SAN CARLOS</p> <p>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.</p> <p>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, 05/19/12 10:00 AM - 04:00 PM</p> <p>US Geological Survey 345 Middlefield Road Menlo Park, CA 94025</p>	<p>USGS 10th Triennial Open House U.S. Geological Survey Open House Menlo Park, May 19 & 20, 2012</p> <p>Please join us May 19th or 20th between 10AM & 4PM for our 10th Triennial Open House. Scientists at the USGS Menlo Park campus are leaders in research on earthquakes, water quality, volcanoes, coastal and marine geology, mineral and energy resources, geography, and the San Francisco Bay ecosystem.</p> <p>The exhibits and presentations at our 2012 Open House illustrate the diversity of projects in which USGS employees are engaged.</p> <p>We hope that you and your family will take advantage of this unique opportunity to interact with USGS scientists, enjoy hands-on exhibits, and gain a greater appreciation of our connection to the natural systems of our dynamic planet – Earth.</p> <p>There is no admission charge. Although nearby parking lots are expected to be adequate, local residents are encouraged to walk or bicycle to the event.</p>
<p>Saturday, 05/19/12 07:30 PM - 11:00 PM</p> <p>Mt. Diablo State Park Lower Summit parking lot Walnut Creek, CA 94598</p>	<p>SEE THE RINGS OF SATURN Here's your chance to see Saturn through a telescope. Make a Pocket Solar System and then explore the rest of the universe as you tour the telescopes</p>
<p>Saturday, 05/19/12 08:30 PM - 11:00 PM</p> <p>Joseph D. Grant Ranch 18405 Mt. Hamilton Rd San Jose, CA 95140</p>	<p>Star Party Join the Halls Valley Astronomical Group for a night of star gazing fun. Knowledgeable volunteers will provide you with a chance to look through high-powered telescopes and ask questions about the night sky. Meet at Halley Hill, across from campsite 22. Park entrance gate closes at 10pm. (408) 274-6121</p>
<p>Sunday, 05/20/12 01:00 PM - 08:00 PM</p> <p>Lawrence Hall of Science 1 Centennial Drive Berkeley, CA 94720</p>	<p>Partial Solar Eclipse Witness the first partial solar eclipse since 2002. Learn about the phenomenon and: -View the eclipse through specially designed solar telescopes. -Discover how eclipses work through free demonstrations in the Planetarium from 1:00-4:00 p.m. -Talk with our friendly astronomy staff.</p>

<p>Sunday, 05/20/12 05:00 PM - 08:00 PM</p> <p>Chabot Space and Science Center 10000 Skyline Blvd Oakland, CA 94619</p>	<p>Solar Eclipse Viewing Party</p> <p>Join us as we observe the Solar Eclipse 2012. Watch as the Moon passes in front of the Sun, a beautifully rare sight in the Bay Area. Get a view from the rooftop of the East Bay hills on our Observatory Deck, with maximum eclipse at 6:32pm. Engage in hands-on solar projects, make a pin-hole camera, solar viewing, and converse with experienced astronomers. Special extended hours on our deck until 8pm!</p>
<p>Thursday, May 24 4:15 PM</p> <p>Lockheed Martin Colloquia 3251 Hanover St ATC Auditorium - Building 202 Palo Alto CA 94304</p> <p>4:00 PM Refreshments Visitors Welcome</p>	<p>LOCKHEED MARTIN PALO ALTO COLLOQUIA SERIES TOM PASSELL [FORMER ATC EMPLOYEE AND RECENTLY RETIRED FROM SRI AND EPRI] "LOW ENERGY NUCLEAR REACTIONS"</p> <p>The Colloquia presentations are available on your desktop through Microsoft Office Live Meeting. For instructions, please visit the external ATC website, http://www.lockheedmartin.com/ssc/AdvancedTechnologyCtr/colloquia/index.html</p>

NASA SCIENCE CAST

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

<http://science.nasa.gov/science-news/>



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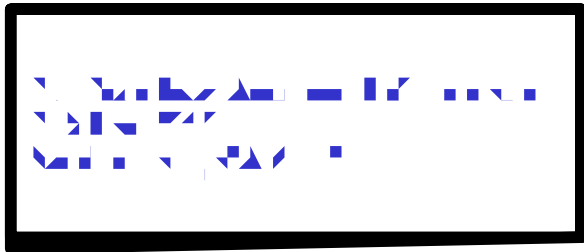
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