

★ ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

Vol. 59, No. 3 – March 2011

Wednesday, March 16, 2011 – General Meeting

Randall Museum . 199 Museum Way . San Francisco

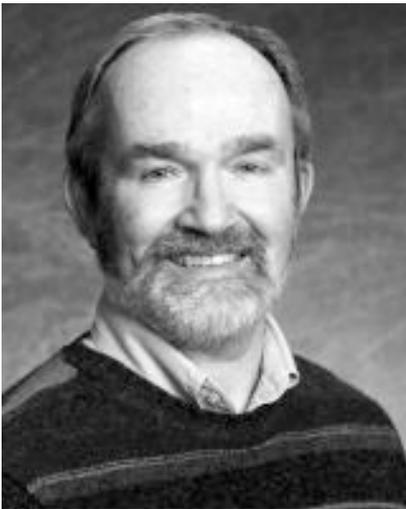
7:00 pm Doors Open . 7:30 pm Announcements . 8:00 pm Speaker

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

DONALD R. LOWE, Ph.D.

School of Earth Sciences, Stanford University

DID THE LATE HEAVY BOMBARDMENT END WITH A WHIMPER? EVIDENCE FROM 3.5-3.2 GA ROCKS IN ARCHEAN BARBERTON REGION OF SOUTH AFRICA



Lunar evidence of Late Heavy Bombardment has been interpreted to suggest that large-body impacting declined rapidly after about 3.8 Ga and that by 3.5 Ga the terrestrial bombardment rate was not much greater than the impact rates of today. In 1986 and 1989 Dr. Lowe and colleagues described four major layers of spherical particles in the 3.22-3.55 Ga Barberton greenstone belt (BGB), South Africa, ranging from 3,472 to 3,243 Ma, and interpreted them to represent the products of large terrestrial impacts of bolides 20-50 km in diameter. Since describing and interpreting these early impact layers, they have identified at least three additional thick layers of spherules in the Barberton belt that likely represent deposits of large impacts, and two new layers that display some geological features associated with impacts. Large impact layers have been identified to date in most of the major sedimentary units in the BGB. Intervening sections are composed largely of volcanic rocks where the record of impact events is unlikely to be preserved: it seems likely that other large

impacts occurred during this period without leaving a record. These layers suggest that Earth continued to be bombarded by large extraterrestrial objects late into the Archean, at least until 3.2 Ga. The large sizes possible for these objects means that, while none was probably a sterilizing impact, many may have severely heated the oceans and atmosphere, boiled off the upper layer of seawater. The 3.8-3.2 Ga development of the Earth's surface environment and life may have been constrained largely by the continuing flux of large impactors. Only as that flux declined in the Late Archean were stable surface systems established within which non-thermophilic organisms and a stable geodynamic system could develop and evolve.

I enjoy the historical aspects of geology and the ability to look back in time and explore past events and the record of ancient life. My research interests are focused in two main areas. I have long sought to use the techniques of sedimentary geology and geochemistry to explore the geologic record of the Earth's earliest surface environments, life, and crustal development, generally before 3 billion years ago. This has taken my students and me to South Africa, Western Australia, and other exotic, and generally out-of-the-way places. Secondly, the other half of my research deals with deep-water sedimentation, especially using outcrops and cores to study the processes by which coarse sediment is transported and deposited in the deep sea, including deep-water sedimentary facies and the evolution of submarine deposystems.

I have published over 130 papers on sedimentary geology, mostly on the early Earth and deep-water sedimentation.

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.

March 16
April 20
May 18

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).

March 5
April 2 **MESSIER
MARATHON**

May 28
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/>



San Francisco Amateur Astronomers

Upcoming Lectures

Randall Museum Theater

Randall Museum . 199 Museum Way . San Francisco

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

April 20

METEORS AND ASTEROIDS

DR. PETER JENNISKENS is a Research Scientist with the Carl Sagan Center at the [SETI Institute](#) and works on mission projects at [NASA/Ames Research Center](#) in Moffett Field, California, and on research topics that relate to interstellar and interplanetary matter.

May 18

BRENDA FRYE, Assistant Professor of Astronomy and Physics, University of San Francisco
Research interests include galaxy formation and evolution, protoclusters, galactic structures, high redshift galaxies, the galaxy-IGM interface, and especially all of the above gravitationally-lensed.

San Francisco Amateur Astronomers welcomes member volunteers to bring snacks for the general meeting lectures. Plan to set up “munchie” snacks and soft drinks by 7:00pm. The Randall provides a coffee pot for hot water, instant coffee & tea bags, in addition to paper supplies. You may request reimbursement or donate your items with SFAA’s thanks and appreciation. Volunteers are needed for this year. SFAA’s General Meetings take place on the 3rd Wednesday of each month (except January). Please submit meeting date you wish to volunteer for with your name, e-mail address and telephone number to doublestar@comcast.net You will be contacted to confirm. San Francisco Amateur Astronomers is most appreciative of your participation in supporting our organization.

GIVE ME FIVE MINUTES, I'LL GIVE YOU SATURN IN MARCH 2011

How to See Saturn in March 2011

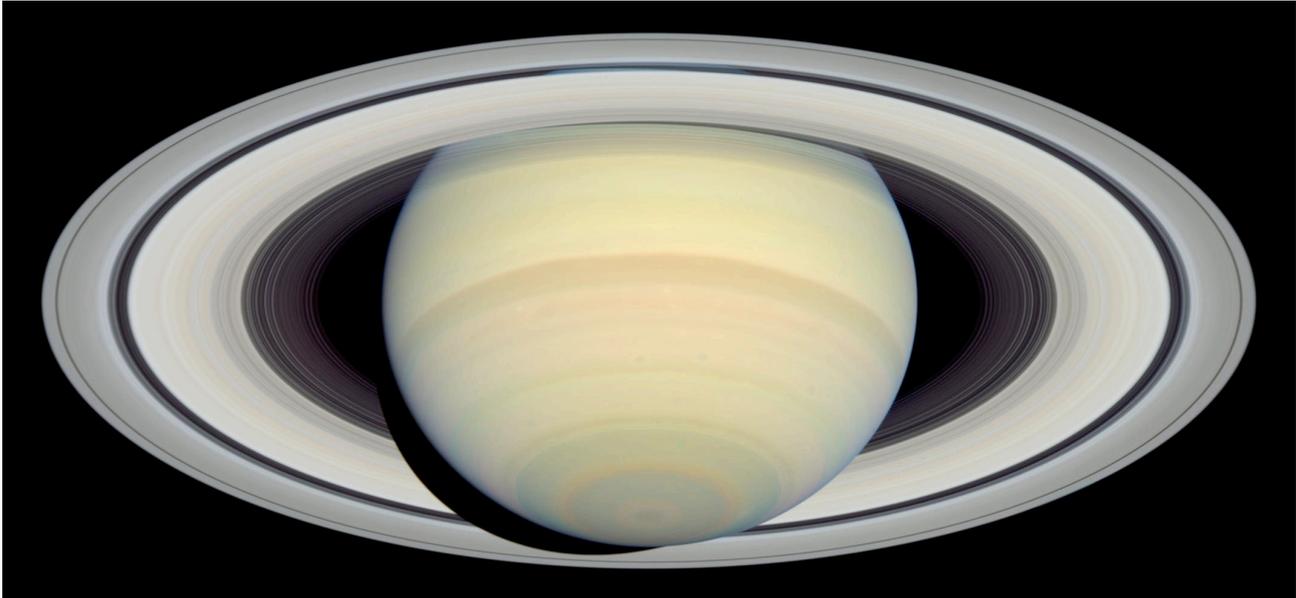


Photo courtesy NASA

March and at its near best for the year. Provides tips on how to identify it – [tials/give-me-five-minutes-ill-give-you-saturn](#) *clipping the sun, as seen by Cassini spacecraft in 2006.* Credit: CICLOPS, JPL, ESA, NASA)

System: March 2011 – Jane Houston Jones

What's Up for March 2011? Messenger achieves orbit insertion around Mercury on March 18. And, stargazers can look near Jupiter in the western sky and see the swift planet Mercury this month too! What a great tie-in to a mission event! Then on the 19th, it's Sun-Earth Day. Those topics and more are covered in this month's 2 minute What's Up video podcast. It's amazing to me that this is the 45th podcast I've done in this series, and I begin the fifth year next month – it'll be about Saturn, naturally!

Here is where to find the video in more than half a dozen formats, plus web links to SDO and Messenger: <http://solarsystem.nasa.gov/news/whatsup-view.cfm?WUID=784> And here is the direct link to Sun-Earth Day website <http://sunearthday.nasa.gov/2011/index.php> And the Year of the Solar System website's comprehensive list of hands on/ classroom activities: <http://solarsystem.nasa.gov/yss/display.cfm?Year=2011&Month=3&Tab=Classrooms>



[Month=3&Tab=Classrooms](http://solarsystem.nasa.gov/yss/display.cfm?Year=2011&Month=3&Tab=Classrooms)

Have a great month of winter skies, dusk planets, mission celebrations events and great AANC events! Jane

Jane Houston Jones

Senior Outreach Specialist, Cassini Program

What's Up For March Video: Mercury and the Sun <http://solarsystem.nasa.gov/news/whatsup-archive.cfm>

Youtube: <http://www.youtube.com/profile?user=JPLnews>

Current Blog <http://solarsystem.nasa.gov/news/whatsup-view.cfm?WUID=764>



Randall Museum Teen & Adult Classes, Spring 2011 Dobsonian Telescope Making – March 15 - May 17

To register for classes, [click here](#)

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.

COURSE #/span>	DAY	DATE	TIME	AGE	FEE	MEETINGS
19766	Tu	3/15 - 5/17	7 - 9:30 pm	16 and up	\$170/\$175	10

CELEBRATE SUN-EARTH DAY, MARCH 19, 2011

<http://sunearthday.nasa.gov/2011/about/about.php>

Sun-Earth Day is comprised of a series of programs and events that occur throughout the year culminating with a

celebration on or near the Spring Equinox. Each year we wrap a fresh new thematic approach around Sun-Earth science while highlighting Sun-Earth Connection scientists, their missions, and research. This year's theme, 'Ancient Mysteries-Future Discoveries', opens the door to a much deeper understanding of our Sun and its impact across the ages.

The Sun-Earth Day Strategy:

Over the past eleven years, the Sun-Earth Day Team has coordinated education and public outreach events that highlight NASA Sun-Earth Connection research and discoveries. The team's strategy involves using celestial events, such as total solar eclipses and the Transit of Venus, as well as Sun-Earth Day during the March equinox, to engage K-12 schools and the public in space science activities, demonstrations, and interactions with space scientists.

Live Webcast: On March 19, 2011, join us for a live Sun-Earth Day Webcast.



In partnership with NASA EDGE, the Sun-Earth Day team will produce video and webcast programming that will be shared with formal and informal education audiences worldwide. The programs will highlight several sites including: Chaco Canyon (New Mexico), Hovenweep (Utah), Chichen Itza (Mexico), Cahokia Mounds (Illinois), and Sunspot (New Mexico). Many of these sites present unique opportunities to develop authentic cultural connections to Native Americans, highlighting the importance of the Sun across the ages. We will involve scientists, their missions, and

research programs to share NASA heliophysics research with diverse audiences.

The award winning NASA EDGE team is known for their offbeat, funny and informative look behind the NASA curtain. Their guests include scientists, educators and students who will! If you've ever wanted to learn about NASA but thought you needed to be a rocket scientist, wait no longer!

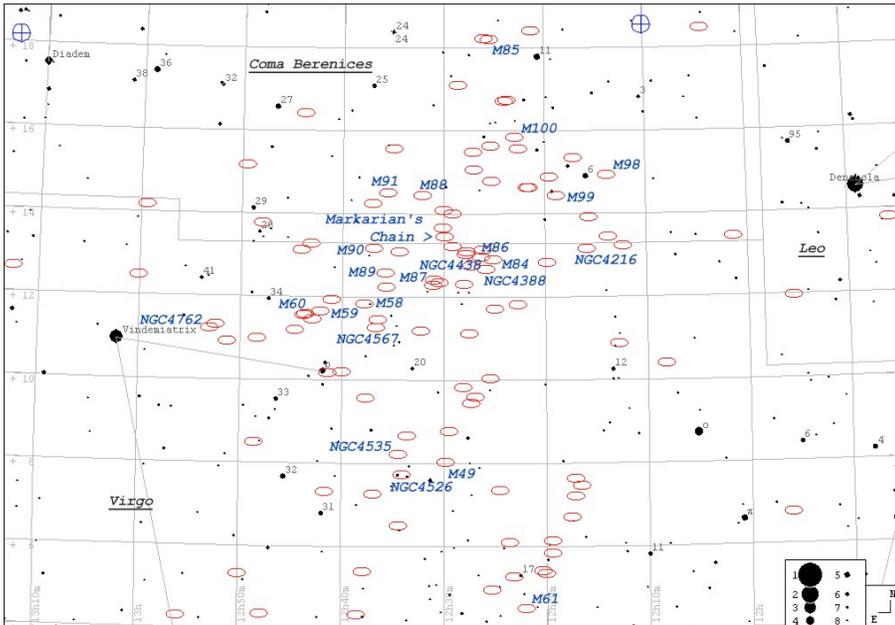
Sun-Earth Day Resources:

In collaboration with partners that include science centers and museums around the world, Sun-Earth Connection missions, NASA Edge, NSTA and others, we produce webcasts, other multi-media, and print resources for use by school and informal educators nation-wide and internationally. We provide training and professional development to K-12 educators, museum personnel, amateur astronomers, Girl Scout leaders, etc., so they can implement their own outreach programs taking advantage of our resources. A coordinated approach promotes multiple programs occurring each year under a common theme.

[Register](#) to receive a monthly update from us about Sun-Earth Day events.

SFAA Messier Marathon

Saturday, April 2-3, 2011
Mt. Tamalpais State Park
Rock Springs



The Famous Virgo Cluster

Check the weather and visibility conditions on Mt. Tam with the [Mt. Tamalpais Clear Sky Chart](#). Here's an aerial view of our [Rock Springs](#) site.

Hello SFAAer's.

Yes, once again Charles Messier will make his apparition on Mt. Tam for the Marathon!

The Conditions are: There must be no perception of camping at the Rock Springs Parking area. Only telescopes, equipment, stools and observing chairs are permitted on the ground. No cots or bedding. Should you need to rest please, do so in your vehicle. Only current dues paying SFAA members are allowed. Not a member? [Want to join?](#) A 1:1 ratio is required for children; and they must be accompanied by their parent.

Our new Superintendent of Mt. Tamalpais State Park is Ryen Goering, and will most likely be our point of contact. Make sure your California State Park SUP permit placards are placed visible on the dash of your vehicle. If you need it updated or don't have one, be sure to see Sue Ellen, Angie Trager or Board Member at Large. Please arrive well before sunset, so you'll be ready, relaxed, set up and not disturbing other fellow M object hunters with your headlights.

Here's hoping you'll be able to say like the plaque on the Dobsonian telescope Edelweiss, at Hume Observatory in Santa Rosa "[I seen M all](#)"

Here are some Peninsula Astronomical Society ([PAS](#)) tips on your first Messier Marathon.

Part of my [Messier Marathon Madness](#) article in the June '03 issue of Above the Fog From the Hawaiian Astronomical Society, here's Jay Wrathall's [Messier Objects](#) list. Some great [finder charts](#) from Stephen Tonkin.

I attended and volunteered at the AstroCon, back in 2004. That's where I met Don Machholz at his Messier Marathon Lunch Talk. This year, Don will be doing his personal Messier Marathon in his backyard in the Sierra foothills. Here are two charts scanned from his lecture. Sorry for the poor reproduction, but you'll get the idea. The first chart is [suggested dates](#). The second is his preferred [search sequence](#).

There is more information on the [SEDS 2011 Marathon](#) page.

See you in the dark,

Charles

UPCOMING ASTRONOMY EVENTS – Kenneth Lum

<p>Wednesday, March 16 12:00 Noon</p> <p>SETI Institute 189 Bernardo Avenue Mountain View, CA 94043</p> <p>Cost: Free</p>	<p>Colloquium Series RAMAKRISHNA NEMANI, NASA Ames Earth Science Division EARTH SCIENCE COLLABORATIVE FOR ECOLOGICAL FORECASTING</p> <p>There is increasing pressure on the science community not only to understand how recent and projected changes in climate are likely to impact our global environment and the natural resources on which we depend, but also to design solutions to mitigate or cope with the likely impacts. Responding to this multi-dimensional challenge requires new tools and research frameworks that assist scientists in collaborating to rapidly investigate complex, interdisciplinary science questions of critical societal importance. Dr. Nemani will describe one such collaborative research framework, funded through the American Recovery and Reinvestment Act, within the National Aeronautics and Space Administration Earth sciences program called NASA Earth Exchange (NEX). NEX combines state-of-the-art supercomputing, Earth system modeling, remote sensing data from NASA and other agencies, and a scientific social networking platform to deliver a complete work environment in which users can explore and analyze large Earth science data sets, run modeling codes, collaborate on new or existing projects, and share results within and/or among communities. Dr. Nemani will show that through NEX his group hopes to lower the barrier of entry to data/compute intensive science and provide a mechanism for continuous engagement among members of the global change science community.</p>
<p>Thursday, March 11 4:15-5:45 p.m.</p> <p>Lockheed Martin Colloquia 3251 Hanover Street ATC Auditorium, Bldg 202 Palo Alto CA 94304</p> <p>Cost: Free</p>	<p>THE PHYSICS OF SOLAR INTERFACE REGION</p> <p>The Sun's outer atmosphere or corona is heated to millions of degrees, considerably hotter than its cool surface or photosphere. Explanations for this long-standing enigma typically invoke the deposition in the corona of non-thermal energy generated by the interplay of convection and magnetic fields. However, the exact physical mechanism driving coronal heating remains unknown. During the past few years, recently built instruments like the Japanese Hinode satellite, the Swedish Solar Telescope in Spain and NASA's Solar Dynamics Observatory (SDO) combined with advanced numerical simulations have revealed a new window into how the Sun's atmosphere is energized. These results directly challenge current theories and highlight the importance of the interface region between the photosphere and corona for understanding how the solar atmosphere is heated. I will present some of these results and describe how NASA's recently selected Interface Region Imaging Spectrograph (IRIS), which is being built by Lockheed Martin's Solar and Astrophysics Laboratory in Palo Alto, in collaboration with NASA Ames, Smithsonian Astrophysical Observatory (SAO), Montana State University, Stanford University and the University of Oslo, will be able to address many of the outstanding issues and problems.</p> <p>Dr. Bart De Pontieu is a solar physicist at LMATC's Solar & Astrophysics Laboratory. He received a Masters degree in physics and electrical engineering from the University of Ghent, Belgium in 1992, and a Ph D in astrophysics from the Max Planck Institute for extraterrestrial physics (Germany) in 1996. He has been at LMSAL since 1998 and has been part of the science teams of the TRACE satellite, and the Hinode/SOT and SDO/AIA instruments, and is the science coordinator for the Interface Region Imaging Spectrograph small explorer that LMATC is currently building for NASA.</p>
<p>Friday, March 18 6:00 - 9:00 p.m.</p> <p>Chabot Space and Science Center 10000 Skyline Blvd Oakland, CA 94619</p> <p>Cost: \$7.00</p>	<p>FULL MOON HIKE</p> <p>Join us for a full moon hike through the redwoods. As you explore the forest, your guide will discuss planetary orbits, seasonal changes in the sky, and the importance of the "Hunters' Moon." You will also learn how to predict which planets will be visible in the night sky. After the hike, stay and view the night sky through Chabot's telescopes. (Weather Permitting)</p> <p>Meet at the Center at 6 pm. The hike departs from Chabot's front entrance lobby. This is 4 - 5 mile hike with some hills, at a moderate pace. The hike returns to the Center at 9 pm.</p>
<p>Friday, 03/18/11 06:00 PM - 10:00 AM</p> <p>Chabot Space & Science Center 10000 Skyline Blvd Oakland CA 94619</p> <p>Email: info@chabot.space</p> <p>Phone: (510) 336-7300</p>	<p>A FAMILY/GROUP OVERNIGHT</p> <p>Spend a night under the stars or with some really cool exhibits. Join us for Slumber with the Stars, Chabot's newest family night out. An overnight in our Center that includes games, exhibit exploration, hike in the Redwoods, a live planetarium show and viewing through our renowned, large telescopes.* An experience your family will remember for a lifetime.</p>

<p>Cost: \$85 General \$75 Members</p>	
<p>March 18 & 19 (Every Weekend) Friday & Saturday 7:30pm - 10:30pm Weather Permitting FREE TELESCOPE VIEWING</p> <p>Every Weekend Saturday & Sunday 12:00 Noon – 5:00pm Weather Permitting DAYTIME TELESCOPE VIEWING FREE WITH GENERAL ADMISSION</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.chabotspace.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>6:00 P.M. DINNER, A MOVIE, AND THE UNIVERSE AT CHABOT SPACE CENTER 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. Dinner: Buy advance tickets to ensure your dinner reservation. Purchase dinner separately at the cafe (\$15).</p> <p>ADVANCE TICKETS A Movie and the Universe: Admission to Chabot includes all access to our interactive exhibitions, a film in the MegaDome theater AND a show in the Digital Planetarium. Purchase your advanced tickets online or call the Box Office at (510) 336-7373.</p>
<p>Saturday, March 19 11:00 - 3:00 p.m.</p> <p>Lawrence Hall of Science 1 Centennial Drive Berkeley, CA 94720 Phone: 510-642-5132</p> <p>Cost: Free with admission</p>	<p>SUN EARTH DAY Celebrate the spring equinox at the Hall! Visit our Planetarium for demonstrations and activities about the Sun, the Earth, and their magnetism. Learn what makes the equinox so special and why the days get longer and shorter throughout the year. Understand seasonal changes in the shadows cast by the Hall's outdoor Sunstone sculpture (weather permitting).</p>
<p>Saturday, March 19 08:00 PM - 10:00 PM</p> <p>Lawrence Hall of Science 1 Centennial Drive Berkeley, CA 94720</p> <p>Cost: Free</p>	<p>SATURDAY NIGHT STARGAZING</p> <p>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>Friday, March 18 9:00 p.m.</p> <p>Foothill Community College 12345 Moody Road 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 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>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 \$2. 00.</p>
<p>Saturday, March 19 Foothill College Observatory 10AM-12 p.m. IF IT IS CLEAR</p> <p>Foothill Community College 12345 Moody Road 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 \$2.00.</p>
<p>Saturday, March 19 8:00 p.m.</p> <p>San Jose Astronomical Association Houge Park Twilight Drive San Jose, CA 95124</p> <p>Cost: Free</p>	<p>The New Moon. Discoveries from The latest generation of robotic lunar missions</p> <p>Speaker: Brian Day, NASA Ames</p>
<p>Wednesday, March 16 12:00 Noon</p> <p>SETI Institute 189 Bernardo Avenue Mountain View, CA 94043</p> <p>Cost: Free</p>	<p>Colloquium Series RAMAKRISHNA NEMANI, NASA Ames Earth Science Division EARTH SCIENCE COLLABORATIVE FOR ECOLOGICAL FORECASTING</p> <p>There is increasing pressure on the science community not only to understand how recent and projected changes in climate are likely to impact our global environment and the natural resources on which we depend, but also to design solutions to mitigate or cope with the likely impacts. Responding to this multi-dimensional challenge requires new tools and research frameworks that assist scientists in collaborating to rapidly investigate complex, interdisciplinary science questions of critical societal importance. Dr. Nemani will describe one such collaborative research framework, funded through the American Recovery and Reinvestment Act, within the National Aeronautics and Space Administration Earth sciences program called NASA Earth Exchange (NEX). NEX combines state-of-the-art supercomputing, Earth system modeling, remote sensing data from NASA and other agencies, and a scientific social networking platform to deliver a complete work environment in which users can explore and analyze large Earth science data sets, run modeling codes, collaborate on new or existing projects, and share results within and/or among communities. Dr. Nemani will show that through NEX his group hopes to lower the barrier of entry to data/compute intensive science and provide a mechanism for continuous engagement among members of the global change science community.</p>
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<p>Friday, March 18 6:00 - 10:00 a.m.</p> <p>Chabot Space & Science Center 10000 Skyline Blvd Oakland CA 94619</p> <p>Email: info@chabot.space.org</p> <p>Phone: (510) 336-7300</p> <p>Cost: \$85 General \$75 Members</p>	<p>A FAMILY/GROUP OVERNIGHT</p> <p>Spend a night under the stars or with some really cool exhibits. Join us for Slumber with the Stars, Chabot's newest family night out. An overnight in our Center that includes games, exhibit exploration, hike in the Redwoods, a live planetarium show and viewing through our renowned, large telescopes.* An experience your family will remember for a lifetime.</p>
<p>March 18 & 19 (Every Weekend) Friday & Saturday 7:30pm - 10:30pm Weather Permitting FREE TELESCOPE VIEWING</p> <p>Every Weekend Saturday & Sunday 12:00 Noon – 5:00pm Weather Permitting DAYTIME TELESCOPE VIEWING FREE WITH GENERAL ADMISSION</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>6:00 P.M. DINNER, A MOVIE, AND THE UNIVERSE AT CHABOT SPACE CENTER 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. Dinner: Buy advance tickets to ensure your dinner reservation. Purchase dinner separately at the cafe (\$15).</p> <p>ADVANCE TICKETS A Movie and the Universe: Admission to Chabot includes all access to our interactive exhibitions, a film in the MegaDome theater AND a show in the Digital Planetarium. Purchase your advanced tickets online or call the Box Office at (510) 336-7373.</p>
<p>Saturday, March 19 11:00 - 3:00 p.m.</p> <p>Lawrence Hall of Science 1 Centennial Drive Berkeley, CA 94720 Phone: 510-642-5132</p> <p>Cost: Free with admission</p>	<p>SUN EARTH DAY</p> <p>Celebrate the spring equinox at the Hall! Visit our Planetarium for demonstrations and activities about the Sun, the Earth, and their magnetism. Learn what makes the equinox so special and why the days get longer and shorter throughout the year. Understand seasonal changes in the shadows cast by the Hall's outdoor Sunstone sculpture (weather permitting).</p>

<p>Saturday, 03/19/11 08:00 PM - 10:00 PM</p> <p>Lawrence Hall of Science 1 Centennial Drive Berkeley, CA 94720</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>Friday, March 18 9:00 – 11:00 p.m.</p> <p>Foothill Community College 12345 Moody Road 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 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>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 \$2. 00.</p>
<p>Saturday, March 19 10:00 – 12:00 Noon IF IT IS CLEAR</p> <p>Foothill College Observatory Foothill Community College 12345 Moody Rd. Los Altos Hills, CA</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>

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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 ken@sfaa-astronomy.org
- 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/ annette@sfaa-astronomy.org
- 7) 8" f/10 Meade SCT/Stefanie Ulrey/treasurer@sfaa-astronomy.org
- 8) 9.5" f/5.6 Celestron Newtonian/Ken Frank/ ken@sfaa-astronomy.org

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, the SFAA web site offers public and members only [bulletin board forums](#). 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

Please make checks payable to San Francisco Amateur Astronomers and mail to:

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\$30 Family _____
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\$75 Supporting _____
Members pay one half the amount listed below
Membership is billed for each upcoming year on June 30. Between January 1 and June 30, new

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San Francisco Amateur Astronomers
P.O. Box 15097
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Information Hotline: (415) 289-6636

Web Page: www.sfaa-astronomy.org

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.