

★ ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

Vol. 59, No. 2 – February 2011

Wednesday, February 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)

R. JAY GaBANY, Bay Area Astrophotographer THE SEARCH FOR GALACTIC FOSSILS



For the past decade an international group of professional astronomers has been searching outside the local group of galaxies for ancient relics to support our understanding about galactic evolution.

The most widely accepted cosmological theory explains that major spiral galaxies, like the Milky Way, formed over the past 10 billion years from less massive clumps in a process described as galactic cannibalism. Current simulations also predict that fossils of these mergers should still be detectable as huge streams of stars and dark matter in the outskirts of spiral galaxies but scant evidence outside the local group has been discovered.

Stellar tidal streams are extremely faint and form an apparent structure that is larger than the galaxy it surrounds. Therefore, star streams are difficult to detect with large professional telescopes due to the instrument's restricted field of view and the need for exposures often exceeding the allocation time available to any one observer. However, today's best off the shelf astronomical cameras are extremely sensitive, rivaling results produced professionally just a few years ago, when they are used under dark, clear sky conditions.

Five years ago, local Bay Area astrophotographer, R. Jay GaBany, was invited to collaborate with this international team using his half meter remotely controlled telescope located under dark skies in the south central Sacramento

Mountains of New Mexico. His instruments offer a wide field of view and their use is not limited by competition among disparate professional or academic researchers. Therefore, exposures spanning days, weeks or months yielding images with over ten or more hours of accumulated time are not only possible, but common.

These deep images offer a front row view of activity that led to the assembly of galaxies like our own. Jay's talk will explain the team's efforts, review its findings and conclude with the release of new deep space image that represents the group's latest evidence.

R. Jay GaBany is a Bay Area astrophotographer whose home is in San Jose. Jay's interest in astronomy began at a very young age when he watched Sputnik pass overhead while perched on his father's shoulders. An

active visual observer for over thirty years, Jay traded his oculars for a CCD camera shortly following the turn of the 21st century. His initial attempts at imaging from his light polluted backyard were abandoned in favor of a remotely controlled observatory situated high in the south central mountains of New Mexico under pristine, clear, dark skies. For the past four years, Jay has been collaborating with an international team of professional astronomers in search of stellar streams around nearby galaxies in addition to producing interesting deep sky images of familiar subjects. To see Jay's pictures, visit his web site at: <http://www.cosmotography.com>

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.

February 16

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).

February 5

March 5

April 2

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

March 16

DID LHB END NOT WITH A BANG BUT A WHIMPER? THE GEOLOGIC EVIDENCE

DONALD R. LOWE, Department of Geological and Environmental Sciences, Stanford University

Lunar evidence of Late Heavy Bombardment suggests that the terrestrial bombardment rate was not much greater than the low impact rate of today. This lecture addresses the geological evidentiary findings supporting this position.

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.

PRESIDENT'S MESSAGE

I'm honored to take on the role of President of the San Francisco Amateur Astronomers and hope to fill adequately, the impressive shoes left by some of our amazing past Presidents. This year I'm truly looking forward to focusing on getting to know as many of you as possible and helping to expand our membership. We have a great mix of new and past Board Members and I have great hopes that this year's team will bring a lot of energy and ideas to the club.

Now...a little about who I am. I was born in Australia, in a small town under the most amazing skies. My first memory of astronomy is from when I was about 5 or 6 helping my Dad rake lawn clippings in the cool of the evening. I remember him pointing out the Southern Cross, Alpha Centauri and the coal sack visible to the naked eye in our rural town. We didn't have a telescope but that didn't stop him teaching me everything he knew and starting my lifetime love for astronomy.

I find a lot of amateur astronomers have stories like this...learning a love of the skies at a very early age, with knowledge and stories passed from person to person. Having a daughter of my own now, I hope to pass on some of my wonder, awe and respect for science. After all...learning by doing and sharing our knowledge is also one of the founding principles of the club.

As those of you who come to our public events know, the SFAA exists to share the wonders of astronomy with our community and to create a place where those more experienced help teach those with less experience. I am struck every month I attend a General Meeting, just how much I learn from this club. Whether it's listening to our phenomenal guest speakers or the patient, skilled advice offered at a Mt Tam viewing night...I treasure the benefits of my membership!

One of my greatest hopes for this year is to build a strong connection with our members and I'd love to hear from you at a meeting, via email or letter... and I promise I'm good at responding! So, as I look forward to a successful 2011, I assure each of you that I'll be a passionate advocate for all that we, the San Francisco Amateur Astronomers offer.

Wishing you all dark, clear, still skies.

Sue-Ellen Speight
President

San Francisco Amateur Astronomers

Annual Awards Dinner

Saturday, January 29, 2011

6:00 p.m. - No-host Bar 7:00 p.m. - Dinner

L'OLIVIER, 465 Davis Court, San Francisco



2010 President, Dave Frey, who passes the gavel to Incoming President, Sue-Ellen Speight



(Left) Long-time member and most generous supporter – Sam Sweiss

(Right) Long-time member, past-president and ceaseless supporter – SFAA and AANC's own Ken Frank



(Left) Joe Heavey of our web team; (Right) Ken Frank (Editor: And I was worried about guests having a good time!)

Annette Gabrielli
Board Member Emeritus

Linda Mahan
Outstanding Contribution to the SFAA

Bob Haberman
Extreme Efficiency in Telescope Packing

Matthew Jones
Most Likely to Attend Star Viewings for Free Food

Joe Heavey
Least Likely to Buy a Telescope

Chris Coffin
Most Hard Core Yosemite Camper

Sam Sweiss
Most Astronomy Club Memberships

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



P What's Up for February

February 2011

What's Up for February? Jupiter at sunset, Saturn at midnight and cosmic couples.

[Download Video](#)

What's Up for February? Jupiter at sunset, Saturn at midnight and cosmic couples.

Hello and welcome! I'm Jane Houston Jones at NASA's Jet Propulsion Laboratory in Pasadena, California.

This is the last month to spot Jupiter in the evening skies until next fall. Try to get one more look, especially at the southern equatorial belt, which seemed to disappear last year and has just begun to reemerge.

Watch the crescent moon below, next to and above Jupiter. On the 6th, it's right next to Jupiter and Uranus.

On the 20th, late in the evening, the waning gibbous moon forms a pretty triangle with Saturn and Virgo's brilliant white star Spica. On the next night these 3 objects form a straight line.

Finally, on February 28, in the morning sky before dawn, the moon snuggles up with Venus.

Comet Hartley 2, the comet that NASA's Deep Impact / EPOXI spacecraft flew by in November, is visible in the sky through March. You'll need a telescope to find it near the open cluster M-50 in the constellation Monoceros. But it's worth hunting down.

On Valentine's Day, February 14, the repurposed Stardust-NExT spacecraft flies by comet Tempel 1. This comet was previously visited by Deep Impact.

Saturn shines in the late evening at the beginning of the month. But your best views of the ringed planet this month will be after midnight when it's highest in the sky. Through telescopes, look for the newly-observed storm on Saturn's northern hemisphere.

Asteroids! The first four discovered -- Ceres, Pallas, Juno and Vesta -- all make appearances in our sky later this year. Ceres was the first asteroid to be discovered and one of the first objects to be reclassified as a dwarf planet.

NASA's Dawn spacecraft visits Vesta later this year and will reach Ceres in 2015.

Also this month, look for asteroid Nysa in the constellation Leo.

You can learn more about asteroid and comet classroom activities at solarsystem.nasa.gov/yss, which stands for Year of the Solar System.

And you can learn all about NASA missions at www.nasa.gov.

That's all for this month. I'm Jane Houston Jones.

UPCOMING ASTRONOMY EVENTS – Kenneth Lum

<p>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>Wednesday, February 16 Noon</p> <p>SETI Institute 189 N. Bernardo Ave. Mountain View CA 94043</p>	<p>SETI INSTITUTE COLLOQUIUM SERIES LARISA MIKHAYLOVA, Lomonosov Moscow State University</p> <p>Dr. Mikhaylova will discuss images from science fiction literature and films which have addressed human interaction in space (created by Frederick Pohl, Ivan Yefremov, Arthur C. Clarke, in Star Trek, Avatar, etc.). Is international cooperation essential for humans to move into the Universe – or not? Has the time arrived to build burgers on Mars? Dr. Mikhaylova will discuss the results of recent internet contests of SF about space in Russia and the 'Back to the Future' contest conducted by NASA. Ethical aspects of space exploration are manifold, and there is hope that looking at human conflicts from an extraterrestrial angle still may help to solve pressing problems today and create a livable future.</p>
<p>Wednesday, February 16 Noon – 1:00 p.m.</p> <p>San Jose State University Main Library One Washington Square San Jose, CA 95112</p> <p>Cost: Free</p>	<p>NASA'S KEPLER MISSION - THE SEARCH FOR EXOPLANETS</p> <p>Come hear NATALIE BATALHA speak about her research on the NASA Kepler mission. Natalie Batalha is an associate professor in the physics and astronomy department. She is the Deputy Science Team Lead for the NASA Kepler Mission to find earth-size planets in the galaxy.</p>

<p>Wednesday, February 16 7:00 p.m.</p> <p>San Mateo Astronomical Society Carlmont High School Carlmont Performing Arts Center 1400 Alameda de las Pulgas Belmont CA 94002</p>	<p>LYNN ROTHSCHILD, NASA – AMES RESEARCH CARLMONT SCIENCE DEPT. GUEST LECTURE SERIES</p> <p>The Carlmont Science Department proudly presents a guest lecture series spanning the 2010-2011 school year. Innovative and leading scientists will visit the Carlmont PAC monthly for a free public event.</p>
<p>Thursday, February 17 4:15 – 5:15 p.m.</p> <p>Stanford Linear Accelerator Center Third Floor Kavli Conference Room</p>	<p>Astrophysics Colloquium by Holger Mueller (Berkeley) EQUIVALENCE PRINCIPLE AND THE GRAVITATIONAL REDSHIFT</p> <p>Experimental tests of the gravitational redshift remain fundamental to the underpinning of the Einstein Equivalence Principle (EEP). We discuss tests using atom interferometers that achieve 10,000 fold higher precision than the best atomic clock measurement, a hydrogen maser launched to a height of 10,000 km aboard a Scout rocket. We demonstrate the exact correspondence between our Mach-Zehnder atom interferometer and the clock comparison test. Correspondence, of course, does not prove equivalence. To make rigorous comparisons, we apply a consistent and comprehensive theoretical framework, the Standard Model Extension. The framework predicts the specific experimental consequences of EEP violations for each experiment. We determine the experimental constraints placed by various experiments, thereby obtaining comprehensive limits on all EEP-violating terms for neutral particles. Future EEP tests in moving frames can precisely measure nonlinear effects of general relativity that have never been seen in direct experiments, though they are observed in solar system physics. Atom interferometers are among the very few experiments with sufficient sensitivity.</p>
<p>Thursday, February 17 7:30 p.m.</p> <p>SETI Intitute 189 Bernardo Avenue Mountain View CA 94043</p>	<p>EPOXI and Comet 103P/Hartley 2 Michael A'Hearn, Distinguished Professor, Astronomy Department, University of Maryland</p> <p>The Deep Impact Flyby Spacecraft flew past comet Hartley 2 on 4 November 2010. Yet again a cometary flyby has led to numerous surprises that will yet again change our understanding of the role of comets in the formation of the solar system and our understanding thereof. This talk will highlight the new knowledge gained from the flyby. By the time of this talk, Stardust NExT will have flow past comet 9P/Tempel 1 (on 15 April PST) and the new data on the cometary nucleus onto which Deep Impact delivered its Impactor Spacecraft 5 years ago. Preliminary results from that flyby will also be described.</p>
<p>Friday, February 18 9:00 p.m.</p> <p>Foothill Community College 12345 Moody Road Los Altos Hills CA</p>	<p>Come to Foothill Observatory and join us in the exploration of our Universe!</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>Free</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, February 19 10:00 a.m. – Noon IF IT IS CLEAR</p> <p>Foothill Community College 12345 Moody Road Los Altos Hills CA</p> <p>Admission: Free Parking: \$2.00</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, February 19 11:00 a.m.</p> <p>UC Berkeley Stanley Hall, Room 106 Berkeley CA 94720</p> <p>Cost: Free</p>	<p>HEARTS OF DARKNESS: BLACK HOLES IN SPACE</p> <p>Black holes are regions of space where gravity is so strong that nothing, not even light, can escape! No longer confined to the imaginations of science-fiction writers and theoretical physicists, black holes have recently been discovered in large numbers by observational astronomers. Learn about the remarkable properties of these bizarre objects from one of the finest explainers in the field of astronomy.</p> <p>Speaker: ALEX FILIPPENKO is one of the world's most highly cited astronomers, and the recipient of numerous prizes for his research. He was a member of both teams that discovered the accelerating expansion of the Universe; this was named the "Top Science Breakthrough of 1998" by Science magazine, and the teams received the 2007 Gruber Cosmology Prize for their discovery. Professor Filippenko has won the highest teaching awards at UC Berkeley, where the student body has voted him the "Best Professor" on campus six times, and he was selected as the 2006 Carnegie/CASE National Professor of the Year among doctoral institutions.</p>
<p>Saturday, February 19 8:00 p.m.</p> <p>Houge Park Twilight Park San Jose CA 95124</p>	<p>San Jose Astronomical Association Meeting NASA's SOFIA Mission DR. ERIC YOUNG SOFIA Mission Manager for the NASA, SOFIA Mission</p>

<p>Saturday, February 19 7:30 p.m.</p> <p>Chabot Space and Science Center Dellums Building Physics Lab, 2nd Floor 1000 Skyline Boulevard Oakland CA 94619-2450</p>	<p>East Bay Astronomical Society Lecture Meeting TINY MOONS AROUND SMALL ASTEROIDS DR. FRANCK MARCHIS, SETI Institute & UC-Berkeley</p> <p>5:30 p.m. DINNER WITH THE SPEAKER Hunan Yuan 4100 Redwood Road (Next to Safeway)</p> <p>No need to confirm, just show up!</p>
<p>Monday, February 21 7:30 p.m. – 9:00 p.m.</p> <p>California Academy of Sciences 55 Music Concourse Drive San Francisco CA 94118</p> <p>Cost: \$12 General \$6 Members</p>	<p>BENJAMIN DEAN LECTURE - DISKS OF CREATION DR. AARON BOLEY is a theoretical astrophysicist working in the fields of planet formation, disk evolution, and early star formation. In this lecture, he will discuss the formation of disks around newly-forming stars, look at how these disks evolve, and help us to understand how they give rise to the multitude of planetary systems that we now know to exist.</p> <p>Seating is limited. To reserve, buy a ticket online or over the phone at 800-794-7576.</p>
<p>Tuesday, February 22 7:15 – 9:15 p.m. Doors open at 6:45 p.m.</p> <p>Mt. Diablo Astronomical Society Meeting</p> <p>Concord Police Assn. Facility 5060 Avila Road Concord CA 94520</p>	<p>PORTRAITS OF DISTANT WORLDS: CHARACTERIZING THE ATMOSPHERES OF EXTRASOLAR PLANETS DR. HEATHER KNUTSON, UC Berkeley</p>
<p>Wednesday, February 23, 12:00 Noon</p> <p>SETI Institute 189 Bernardo Avenue Mountain View CA 94043</p>	<p>SETI Institute Colloquium Series THE EVOLUTION OF SATURN'S F RING ROB FRENCH, Carl Sagan Center for Life in the Universe, SETI Institute-A PAS member!</p> <p>Saturn's rings are one of the most spectacular objects in the solar system. Analysis of their origin, evolution, and eventual demise can provide insight into the formation of our solar system as well as planetary formation processes in general. This talk will provide a brief overview of the ring systems of the giant planets, the basic principles of photometry, and how we have applied photometry to Saturn's F ring. The F ring shows a dramatic change in brightness from the Voyager era to the Cassini era, and we attribute this change to perturbations by the nearby moon Prometheus. The talk will conclude by presenting some basic information about these perturbations and how they may have caused this change.</p>
<p>Wednesday, February 23 8:00 p.m.</p>	<p>DR. BRIAN GREENE, Professor of Physics at Columbia University THE HIDDEN REALITY: PARALLEL UNIVERSES AND THE DEEP LAWS OF THE COSMOS</p>

<p>San Jose Hilton San Jose CA</p> <p>Tickets: \$42. Can be purchased at: http://www.cityboxoffice.com/eventperformances.asp?evt=1600&c=18&pg=</p>	<p>In this multimedia presentation, Dr. Brian Greene, superstring theorist and one of our foremost science writers, takes us on a captivating exploration of parallel worlds and reveals how much of reality's true nature may be deeply hidden. With his unrivaled ability to make the most challenging of material accessible and entertaining, Greene tackles the core questions: Is ours the only universe? How can fundamental science progress if great swaths of reality lie beyond our reach? Sparked with Greene's trademark wit and precision he takes us on a remarkable journey to the very edge of reality — a journey grounded firmly in science and limited only by our imagination. — Dr. Greene is the best-selling author of The Elegant Universe and The Fabric of the Cosmos.</p>
<p>Thursday, February 24</p> <p>DISCOVERY SPACE SHUTTLE LAUNCH NASA Ames</p>	<p>DISCOVERY SPACE SHUTTLE LAUNCH</p> <p>Well, hopefully, this launch, delayed from 11/1/2010, will finally get off safely. Will let everyone know if it will be broadcast from NASA Ames. Launch time is 4:50 p.m. EST or 1:50PM PST</p> <p>Last Shuttle launch is for 4/19/2011 of Endeavor.</p>
<p>Friday, February 25 9:00 p.m. – 11:00 p.m.</p> <p>Foothill Community College 12345 Moody Road Los Altos Hills</p> <p>Parking: \$2.00</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, February 26 Sunset: 6:52 p.m. <i>Inclement weather (clouds, excessive wind and showers) will cause the event to be canceled without notice.</i></p> <p>Crestview Park San Carlos</p>	<p>San Mateo County Astronomical Society Star Party 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. 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</p> <p>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</p>

	<p>Dress warmly and wear a hat.</p> <p>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.</p> <p>Please respect the telescopes and ask permission from the owner if you wish to touch.</p> <p>Parents, please watch your children. The park is residential, and adjacent to homes and backyards, please keep noise to a minimum. 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, February 26 10:00 a.m. – 12:00 Noon IF IT IS CLEAR</p> <p>Foothill College Observatory 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>Monday, February 28 1:00 p.m.</p> <p>UC Berkeley 544 Campbell Hall</p> <p>NOTE TIME CHANGE FROM USUAL 4:00 P.M.!</p>	<p>ASTRONOMY COLLOQUIA: EARLY STAR FORMING GALAXIES AND THE REIONIZATION OF THE UNIVERSE DANIEL STARK, Cambridge Sponsor: Department of Astronomy</p> <p>The events of the first billion years of cosmic history are one of the final frontiers in the quest to trace the history of the Universe from its origins to the present day. Exploration of this uncharted era is driven by the desire to locate and understand the nature of the first stars and galaxies and to characterize their contribution to the reionization of hydrogen. With the installation of the Wide Field Camera 3 (WFC3) on the Hubble Space Telescope, the cosmic frontier has been pushed back to just 500 Myr after the Big Bang, delivering the first census of star formation activity in the reionization era. Deep Keck spectroscopy of these early systems is now providing insight into the properties of primitive galaxies while simultaneously constraining the progress of reionization. I will summarize the results from these studies, providing possible evidence that reionization is coming to an end in the ~200 Myr between $z=6$ and $z=7$, while revealing some tension in the ability of star-forming galaxies to achieve reionization in the required time frame. I will emphasize that in order to properly address the nature of the sources which were responsible for reionization, we must obtain an improved understanding of the physics of the low mass galaxies which dominate the reionization era. To this end, efforts are now underway to characterize the mechanical and radiative feedback of high redshift dwarf galaxies which have been identified via gravitational lensing. I will describe the first results from this program and discuss implications for reionization. I will conclude with a look to the future, discussing how deep surveys with JWST and TMT will transform our understanding of the first galaxies.</p> <p>Event Contact: rayna_helgens@berkeley.edu, 510-642-5275</p>

2010 Club Officers & Contacts

<i>President</i>	DAVE FREY	davef@SFAA-Astronomy.org
<i>Vice President</i>	Vivian White	vicepresident@sfaa-astronomy.org
<i>Secretary</i>	Douglas Smith	
<i>Treasurer</i>	Dave Wilton	treasurer1@sfaa-astronomy.org
<i>Speaker Chair</i>	Linda Mahan	speakerchair@sfaa-astronomy.org
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<i>2nd Alternate</i>	Dave Goggin	daveg@SFAA-Astronomy.org
<i>Webmaster</i>	Joe Amato	wbmstr@sfaa-astronomy.org

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

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.



San Francisco Amateur Astronomers
P.O. Box 15097
San Francisco, CA 94115

MEMBERSHIP APPLICATION

Membership is billed for each upcoming year on June 30. Between January 1 and June 30, new members pay one half the amount listed below

Membership Categories (*Check one*): \$10 Youth/Student \$40 Institutional
 \$25 Individual \$75 Supporting
 \$30 Family

Information: Name(s) _____
Address _____
City _____
State _____ Zip _____
Home Phone _____
E-Mail _____

You can choose E-Mail (Recommended) or hard copy delivery for *Above the Fog* (*Check one*)

E-Mail Hard Copy

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

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