

★ ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

Vol. 58, No. 11 – November 2010

Wednesday, November 17, 2010 – 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)



Lynn Cominsky
Professor and Chair, Department of
Physics & Astronomy
Director, NASA Education and Public
Outreach, Sonoma State University

EXPLORING THE EXTREME UNIVERSE WITH FERMI

NASA's Fermi Gamma-ray Space Telescope was launched into orbit on June 11, 2008. Fermi's mission is to explore the most energetic and exotic objects in the cosmos: blazing galaxies, intense stellar explosions and super-massive black holes. Fermi probes the Universe on scales from the infinite to the infinitesimal, and future observations may shed light on the

nature of dark matter. Using experimental technologies developed by high energy particle physicists, Fermi's astrophysical observations are being conducted by international and multi-agency teams including hundreds of scientists world-wide.

Unlike visible light, gamma rays detected by Fermi's Large Area Telescope are so energetic that $E = mc^2$ really matters! I will explain how Fermi uses matter and anti-matter pair production to track gamma rays to their cosmic locations, and will showcase exciting results from the mission.

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.

November 17

December 15

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 lands 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>

November 13/5:00

December 11/5:00

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).

December 4

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/>

2010 San Francisco Amateur Astronomers Lecture Series –

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

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

December 15th

John Dillon, Past President of San Francisco Amateur Astronomers

John will continue with another of his insightful talks on the history of science, especially as it relates to astronomical knowledge.

SFAA Welcomes Volunteers for General Meeting Snacks

San Francisco Amateur Astronomers welcomes member volunteers to bring snacks for the general meeting lectures at the Randall Museum.

Plan to arrive to set up by 7:00pm. Plan to bring "munchie" snacks and soft drinks. In addition to paper supplies, the Randall provides a coffee pot for hot water, instant coffee & tea bags.

You may request reimbursement or donate your items with SFAA's thanks and appreciation. Volunteers are needed for **November 17 - December 15** general meetings and into the coming year as well. 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 editor@sfaa-astronomy.org You will be contacted to confirm.

San Francisco Amateur Astronomers is most appreciative of your participation in supporting our organization.

SJAA Fall Swap Meet 2010

Ready for the World Series? Here's something just as close to home:

Hello SJAA Members and Friends, I would like to officially announce the San Jose Astronomical Association's annual Fall Swap Meet. This is a perfect opportunity for you to go through your astro closet, find the things taking up space that you don't use anymore, and make them available to others who may want or need them. It's also a great chance to find some interesting stuff, learn a lot, and mingle with other like minded folks.

WHO: San Jose Astronomical Association, members and community

WHAT: Fall Swap Meet 2010

WHERE: The Hall at [Houge Park, San Jose](#)

WHEN: [Sunday, 21 November 2010](#); Setup starts at noon, selling goes from 1 to 4PM

WHY: Allows members and others in the amateur astronomy community a venue for buying and selling astro gear; it's also one of the two major SJAA fundraisers of the year (the other being the Auction)

HOW: Root through your astro gear, decide what you want to move out, bring it to the Meet; or, come and see what's available, bring cash or items to barter

Here are more details and important points:

- Advance registration is not required, but getting there early will let you pick your spot (this might change, but I doubt it)
- We will have tables positioned around the room with a couple of chairs per table; if you want to bring a table cloth to pretty up your area, feel free
- There will be at least two SJAA board members present to facilitate, and to handle paperwork, including accepting donations.
- We will have a Sellers Registration/Sales Form for sellers to complete to help track what was sold and the sales figures
- Suggested, voluntary donations to the SJAA are 10% of the total amount sold, or a flat donation;

donations are voluntary and are tax deductible for those of you who may benefit; receipts will be available

- Consignments: We will have a consignment table in case you only have one or two items to sell; it will be staffed by the SJAA board members or volunteers; items should be marked with the seller's name and a price; the seller should be available later that day for either picking up or reconciling





- Don't bring illegal stuff or stuff that's not able to be reasonably considered astronomy related; best judgment

Please email me with questions. Rob Jaworski <jaworskirob at [yahoo.com](mailto:jaworskirob@yahoo.com)> San Jose Astronomical Association





November 2010 Almanac for San Francisco (Pacific Daylight/Standard Time)



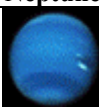
(Source: US Naval Observatory)

Sun and Moon Data:

Date	Astronomical Twilight Begins	Sunrise	Sunset	Astronomical Twilight Ends	Moon	Moonrise	Moonset
6 Nov	6:11 am	7:41 am	6:06 pm	7:35 pm		8:23 am	6:21 pm
*13 Nov	5:18 am	6:48 am	5:00 pm	6:30 pm		12:47 pm	0:10 am next day
20 Nov	5:24 am	6:56 am	4:55 pm	6:27 pm		4:07 pm	6:00 am
27 Nov	5:30 am	7:03 am	4:52 pm	6:25 pm		11:15 pm	11:47 am

Planetary Data:

	Mercury		Venus		Mars		Jupiter	
								
	Lib (1-7) / Sco (8-13, 18) / Oph (14-17, 19-26) / Sgr (27-30)		Virgo		Scorpius (1-7) / Ophiuchus (8-30)		Aquarius	
Date	Rise	Set	Rise	Set	Rise	Set	Rise	Set
6 Nov	8:47 am	6:38 pm	6:42 am	5:07 pm	9:36 am	7:15 pm	3:54 pm	3:38 am
*13 Nov	8:13 am	5:43 pm	4:59 am	3:41 pm	8:33 am	6:07 pm	2:26 pm	2:09 am
20 Nov	8:36 am	5:52 pm	4:27 am	3:20 pm	8:30 am	5:59 pm	1:58 pm	1:42 am
27 Nov	8:52 am	6:03 pm	4:04 am	3:03 pm	8:27 am	5:52 pm	1:31 pm	1:15 am

	Saturn		Uranus		Neptune	
						
	Virgo		Pisces		Aquarius	
Date	Rise	Set	Rise	Set	Rise	Set
6 Nov	5:01 am	4:48 pm	3:59 pm	3:55 am	2:38 pm	1:22 am
*13 Nov	3:37 am	3:22 pm	2:31 pm	2:27 am	13:11 pm	11:51 pm
20 Nov	3:13 am	2:57 pm	2:03 pm	1:59 am	12:44 pm	11:23 pm
27 Nov	2:45 am	2:27 pm	1:35 pm	1:31 am	12:16 pm	10:56 pm

November Phenomena:





4 Nov, 1:00 pm: Spica 2.7° N of Moon
 5 Nov, 1:00 am: Venus 0.1° N of Moon
 6 Nov, 9:00 pm: Mercury 1.7° N of Moon
 7 Nov, 0:00 am: Neptune stationary
 *7 Nov, 2:00 am: Daylight Savings ends
 7 Nov, 1:00 pm: Mars 1.7° N of Moon
 7 Nov, 5:00 pm: Antares 2.4° S of Moon
 9 Nov, 12:00 pm: Pluto 4.7° N of Moon
 10 Nov, 3:00 pm: Mars 3.9° N of Antares
 13 Nov, 6:00 pm: Neptune 4.6° S of Moon

15 Nov, 11:00 am: Mercury 2.5° N of Antares
 16 Nov, 8:00 am: Uranus 5.9° S of Moon
 16 Nov, 8:00 am: Venus stationary
 17-18 Nov: Leonids meteor shower
 18 Nov, 9:00 pm: Jupiter stationary
 20 Nov, 1:00 pm: Mercury 1.7° S of Mars
 28 Nov, 1:00 am: Regulus 4.8° N of M





December 2010 Almanac for San Francisco (Pacific Standard Time)




(Source: US Naval Observatory)

Sun and Moon Data:

Date	Astronomic al Twilight Begins	Sunrise	Sunset	Astronomic al Twilight Ends	Moon	Moonrise	Moonsset
4 Dec	5:36 am	7:09 am	4:51 pm	6:24 pm		6:12 am	4:00 pm
11 Dec	5:41 am	7:15 am	4:51 pm	6:25 pm		11:14 am	10:55 pm
18 Dec	5:46 am	7:20 am	4:53 pm	6:28 pm		2:43 pm	4:47 am
25 Dec	5:49 am	7:23 am	4:57 pm	6:31 pm		10:15 pm	10:22 am

Planetary Data:

	Mercury		Venus		Mars		Jupiter	
								
	Sagittarius (1–20) / Ophiuchus (21–31)		Virgo (1–11) / Libra (12–31)		Ophiuchus (1–2) / Sagittarius (3–31)		Aquarius (1–16) / Pisces (17–31)	
Date	Rise	Set	Rise	Set	Rise	Set	Rise	Set
4 Dec	8:54 am	6:09 pm	3:49 am	2:48 pm	8:24 am	5:47 pm	1:04 pm	0:49 am
11 Dec	8:31 am	5:55 pm	3:41 am	2:36 pm	8:19 am	5:42 pm	12:37 pm	0:24 am
18 Dec	7:30 am	5:09 pm	3:38 am	2:25 pm	8:14 am	5:39 pm	12:11 pm	11:56 pm
25 Dec	6:20 am	4:12 pm	3:39 am	2:17 pm	8:09 am	5:36 pm	11:45 am	11:32 pm

	Saturn		Uranus		Neptune	
						
	Virgo		Pisces		Aquarius	
Date	Rise	Set	Rise	Set	Rise	Set
4 Dec	2:24 am	2:05 pm	1:08 pm	1:03 am	11:49 am	10:29 pm
11 Dec	1:59 am	1:39 pm	12:40 pm	0:36 am	11:22 am	10:02 pm
18 Dec	1:34 am	1:13 pm	12:13 pm	0:08 am	10:55 am	9:35 pm
25 Dec	1:09 am	12:46 pm	11:46 am	11:37 pm	10:28 am	9:09 pm

December Phenomena:

1 Dec, 8:00 pm: Spica 2.8° N of Moon
 5 Dec, 3:00 am: Antares 2.5° S of Moon
 6 Dec, 2:00 am: Uranus stationary
 6 Dec, 1:00 pm: Mars 0.5° S of Moon
 6 Dec, 11:00 pm: Pluto 4.4° N of Moon
 7 Dec, 0:00 am: Mercury 1.7° S of Moon
 9 Dec, 11:00 pm: Mercury stationary
 11 Dec, 3:00 am: Neptune 4.7° S of Moon
 13 Dec, 8:00 am: Mercury 4.5° S of Pluto
 13 Dec, 3:00 pm: Mercury 1.0° N of Mars

13 Dec, 8:00 pm: Mars 5.4° S of Pluto
 13-14 Dec: Geminids meteor shower
 19 Dec, 5:00 pm: Mercury inferior conjunction
 20 Dec, 9:27 pm-21 Dec, 3:06 am: Total lunar eclipse, North America
 21 Dec, 3:28 pm: Winter solstice
 25 Dec, 7:00 am: Regulus 4.8° N of Moon
 26 Dec, 5:00 pm: Pluto at conjunction
 29 Dec, 3:00 am: Spica 2.8° N of Moon
 30 Dec, 4:00 am: Mercury stationar

Silicon Valley Astronomy Lectures
Nontechnical, Illustrated Talk . Open to the Public
Wednesday, November 17, 2010, 7:00 p.m.

Astronomer Natalie Batalha
San Jose State University and the Kepler Mission
Catching Shadows: Kepler's Search for New Worlds

Smithwick Theater, [Foothill College](#), El Monte Road and Freeway 280, in Los Altos Hills, California.

Free and open to the public. Parking on campus costs \$2.
Call the series hot-line at [650-949-7888](tel:650-949-7888) for more information and driving directions.
No background in science will be required for this talk.

Humanity's quest to learn about the existence of other worlds like our own has made a huge step forward with the launch of NASA's Kepler spacecraft in March 2009. The mission is designed to survey a slice of the Milky Way Galaxy to identify planets orbiting other stars. Kepler has the advantage that it can find planets as small as Earth in or near the [habitable zone](#) of each star. It will help us determine if such planets are abundant in our galaxy. Dr. Batalha will describe the techniques used by the Kepler team to identify Earth-size planets and share some of the mission discoveries to date.

Natalie Batalha is a professor of physics and astronomy at [San Jose State University](#) in the heart of [Silicon Valley](#), and the Deputy Science Team Lead for [NASA's Kepler Mission](#). She holds a bachelor's in physics from the [University of California, Berkeley](#), and a doctorate in astrophysics from [UC Santa Cruz](#). After a post-doctoral fellowship in Rio de Janeiro, Brazil, Batalha became inspired by the growing number of planets being discovered around other stars (500 such planets are currently known.) Eleven years later, she stands poised with the Kepler team to learn whether or not Earth-sized planets are abundant in our galaxy.

- The lecture is co-sponsored by:
- * [NASA Ames Research Center](#)
 - * The [Foothill College Astronomy Program](#)
 - * [The SETI Institute](#)
 - * [The Astronomical Society of the Pacific](#).

Past Silicon Valley Astronomy Lectures are now available in MP3 format at:
<http://www.astrosociety.org/education/podcast/index.html>

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How to See the Best Meteor Showers of the Year: Tools, Tips and 'Save the Dates'

A Geminid meteor. Image credit: Jimmy Westlake

[Larger image](#)

August 06, 2010

Originally posted April 21, 2010, and updated Aug. 6, 2010



There are several major meteor showers to enjoy every year at various times, with some more active than others. For example, April's Lyrids are expected to produce about 15 meteors an hour at their peak for observers viewing in good conditions. Now, if you put the same observer in the same good conditions during a higher-rate shower like August's Perseids or December's Geminids, that person could witness up to 80 meteors an hour during peak activity.

Whether you're watching from a downtown area or the dark countryside, here are some tips to help you enjoy these celestial shows of shooting stars. Those streaks of light are really caused by tiny specks of comet-stuff hitting Earth's atmosphere at very high speed and disintegrating in flashes of light.

First a word about the moon - it is not the meteor watcher's friend. Light reflecting off a bright moon can be just as detrimental to good meteor viewing as those bright lights of the big city. There is nothing you can do except howl at the moon, so you'll have to put up with it or wait until the next favorable shower. However, even though the 2010 Perseids and Geminids share the night sky with the moon, they are still expected to produce more visible meteor activity than other major showers that don't have an interfering moon.

The best thing you can do to maximize the number of meteors you'll see is to get as far away from urban light pollution as possible and find a location with a clear, unclouded view of the night sky. If you enjoy camping, try planning a trip that coincides with dates of one of the meteor showers listed below. Once you get to your viewing location, search for the darkest patch of sky you can find, as meteors can appear anywhere overhead. The meteors will always travel in a path away from the constellation for which the shower is named. This apparent point of origin is called the "radiant." For example, meteors during a Leonid meteor shower will appear to originate from the constellation Leo. (Note: the constellation only serves as a helpful guide in the night's sky. The constellation is not the actual source of the meteors. For an overview of what causes meteor showers click on [Meteor Showers: Shooting for Shooting Stars](#))

Whether viewing from your front porch or a mountaintop, be sure to dress for success. This means clothing appropriate for cold overnight temperatures, which might include mittens or gloves, and blankets. This will enable you to settle in without having to abandon the meteor-watching because your fingers are starting to turn colors.

Next, bring something comfortable on which to sit or lie down. While Mother Nature can put on a magnificent celestial display, meteor showers rarely approach anything on the scale of a July 4th fireworks show. Plan to be patient and watch for at least half an hour. A reclining chair or ground pad will make it far more comfortable to keep your gaze on the night sky.

Lastly, put away the telescope or binoculars. Using either reduces the amount of sky you can see at one time, lowering the odds that you'll see anything but darkness. Instead, let your eyes hang loose and don't look in any one specific spot. Relaxed eyes will quickly zone in on any movement up above, and you'll be able to spot more meteors. Avoid looking at your cell phone or any other light. Both destroy night vision. If you have to look at something on Earth, use a red light. Some flashlights have handy interchangeable filters. If you don't have one of those, you can always paint the clear filter with red fingernail polish.

The meteor showers listed below will provide casual meteor observers with the most bang for their buck. They are the easiest to observe and most active. All these showers are best enjoyed in the hours after midnight. Be sure to also check the "Related Links" box for additional information, and for tools to help you determine how many meteors may be visible from your part of the world.

Major Meteor Showers (2010-2011)

Delta Aquarids

Comet of Origin: unknown

Radiant: constellation Aquarius

Active: July 14-Aug. 18, 2010

Peak Activity: No definite peak, but nights surrounding July 30 were predicted to be the best

Peak Activity Meteor Count: Approximately 15 meteors per hour (Northern Hemisphere).

Time of Optimal Viewing: An hour or two before dawn.

Meteor watchers in the Southern Hemisphere and in the Northern Hemisphere's tropical latitudes enjoy the best views.

Meteor Velocity: 42 kilometers per second (26 miles per second)

Perseids

Comet of Origin: 109P/Swift-Tuttle

Radiant: constellation Perseus

Active: Perseids begin to rise early August.

Peak Activity: Aug. 12-13, 2010

Peak Activity Meteor Count: Approximately 50 meteors per hour

Time of Optimal Viewing: Crescent moon will set early in the evening, allowing for dark skies all the way up until peak viewing just before dawn

Meteor Velocity: 61 kilometers (38 miles) per second

Note: The Perseid meteor shower is one of the most consistent performers and considered by many as 2010's best shower. The meteors they produce are among the brightest of all meteor showers.

Orionids

Comet of Origin: 1P/Halley

Radiant: Just to the north of constellation Orion's bright star Betelgeuse

Active: Oct. 4-Nov. 14, 2010

Peak Activity: Night of Oct. 22, but the light reflecting off an almost-full moon makes 2010 a less-than-spectacular year for one of Mother Nature's most spectacular showers.

Peak Activity Meteor Count: Approximately 15 meteors per hour, if the sky is dark

Time of Optimal Viewing: An hour or two before dawn

Meteor Velocity: 68 kilometers (42 miles) per second

Note: With the second-fastest entry velocity of the annual meteor showers, meteors from the Orionids produce yellow and green colors and have been known to produce an odd fireball from time to time.

Leonids

Comet of Origin: 55P/Tempel-Tuttle

Radiant: constellation Leo

Active: Nov. 7-28, 2010

Peak Activity: Night of Nov. 17-18, 2010

Peak Activity Meteor Count: Approximately 15 per hour

Time of Optimal Viewing: A half-full moon sets after midnight, allowing for a dark sky. Best viewing time will be just before dawn.

Meteor Velocity: 71 kilometers (44 miles) per second

Note: The Leonids have not only produced some of the best meteor showers in history, but they have sometimes achieved the status of meteor storm. During a Leonid meteor storm, many thousands of meteors per hour can shoot across the sky. Scientists believe these storms recur in cycles of about 33 years, though the reason is unknown. The last documented Leonid meteor storm occurred in 2002.

Geminids

Comet of Origin: 3200 Phaethon

Radiant: constellation Gemini

Active: Dec. 4-16, 2010

Peak Activity: Night of Dec 13-14, 2010

Peak Activity Meteor Count: Approximately 50 meteors per hour

Time of Optimal Viewing: 2 a.m.

Meteor Velocity: 35 kilometers (22 miles) per second

Note: Generally, the Geminids or August's Perseids provide the best meteor shower show of the year. Geminids are usually considered the best opportunity for younger viewers because the show gets going around 9 or 10 p.m. Unfortunately the moon does not set until after midnight this year, making for the possibility of drooping eyelids from the pre-teen set.

Quadrantids

Comet of Origin: 2003 EH1

Radiant: constellation Quadrant Murales

Active: Dec. 28, 2010-Jan. 12, 2011

Peak Activity: Jan. 3-4, 2011

Peak Activity Meteor Count: Approximately 40 meteors per hour

Time of Optimal Viewing: 2:30 a.m. to dawn

Meteor Velocity: 41 kilometers (25.5 miles) per second

Note: The alternate name for the Quadrantids is the Bootids. Constellation Quadrant Murales is now defunct, and the meteors appear to radiate from the modern constellation Bootes. Since the show is usually only a few hours long and often obscured by winter weather, it doesn't have the same celebrated status as the

Geminids or Perseids.

Lyrids

Comet of Origin: C/1861 G1 Thatcher

Radiant: constellation Lyra

Active: April 16-25, 2011

Peak Activity: April 21-22, 2011

Peak Activity Meteor Count: 18-20 meteors per hour

Time of Optimal Viewing: 11 p.m.-dawn

Meteor Velocity: Lyrid meteors hit the atmosphere at a moderate speed of 48 kilometers (30 miles) per second.

They often produce luminous dust trains observable for several seconds.

Note: Light from the waning gibbous moon will degrade viewing

Eta Aquarids

Comet of Origin: 1P Halley

Radiant: constellation Aquarius

Active: April 19-May 28, 2011

Peak Activity: Early morning May 5-7, 2011

Peak Activity Meteor Count: Approximately 20 meteors per hour

Time of Optimal Viewing: 3:30-5 a.m.

Meteor Velocity: 66 kilometers (44 miles) per second

NOVEMBER ASTRONOMY EVENTS – Kenneth Lum

<p>EVERY Friday & Saturday 7:30pm - 10:30pm Weather Permitting FREE TELESCOPE VIEWING</p> <p>EVERY 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>Tuesday November 16 4:15 PM</p> <p>Stanford University Hewlett Teaching Center Room 201 Palo Alto, CA 94305</p> <p>Cost: Free</p>	<p>EXPLORING THE TEV ENERGY STATES AT THE LARGE HARDON COLLIDER</p> <p>Professor Jeffrey Richman of the University of California at Santa Barbara will give a Physics/Applied Physics colloquium entitled, "Exploring the TeV Energy States at the Large Hadron Collider."</p>
<p>Wednesday November 17 Noon</p> <p>SETI Headquarters at 189 N. Bernardo Ave. Mountain View</p>	<p>SETI Institute Colloquium Series STATUS OF THE JAMES WEBB TELESCOPE AND ITS CAPABILITIES FOR EXOPLANET SCIENCE</p> <p>Mark Clampin, Goddard</p>

<p>Wednesday November 17 7:00 p.m. – 10:00 p.m.</p> <p>Lawrence Hall of Science 1 Centennial Drive Berkeley, CA 94720</p> <p>Cost: \$10 General \$8 LHS Members & Students</p>	<p>LIGHT SPEED: ULTRAFUN WITH THE ULTRAFAST</p> <p>You think Superman is fast? Well, can he do what Dr. Roger Falcone can do in a femtosecond? That's one millionth of a billionth of a second, and the timescale on which chemical bonds are formed (or broken). Dr. Falcone's current work focuses on the use of ultrafast pulses of x-ray and laser light to study phenomena in condensed matter, molecular, and atomic physics. Much of his recent work has been conducted at the Advanced Light Source (ALS) synchrotron at Lawrence Berkeley National Lab.</p> <p>Doing hands-on activities with prisms, refracting gratings, and lasers not only helps you understand what Dr. Falcone is talking about, it's also a great way to have fun!</p> <p>This event will be the 5th Annual Warren William Chupp Distinguished Lecture, presented by Lawrence Hall of Science and the Department of Physics at UC Berkeley.</p>
<p>Friday November 19 9:00 – 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>http://www.pastro.org/dnn/Observatory/FoothillObservatory.aspx</p>
<p>Friday November 19 and Saturday November 20 6:00 PM</p> <p>Chabot Space and Science Center Skies! 10000 Skyline Boulevard</p>	<p>DINNER, A MOVIE, AND THE UNIVERSE AT CHABOT SPACE CENTER</p> <p>Join us for Chabot's unique evening social rendezvous. Start your night off with dinner and drinks, then cozy up in the planetarium as you're whisked to the edge of the universe and cap off the evening with telescope viewing featuring breathtaking views of the cosmos. Dinner: Buy advance tickets to ensure your dinner reservation. Purchase dinner separately at the cafe (\$15).</p> <p>ADVANCED TICKETS</p>

<p>Oakland (510) 336-7300</p>	<p>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 November 20</p> <p>Lawrence Hall of Science 1 Centennial Drive Berkeley</p>	<p>SATURDAY NIGHT STARGAZING – ON THE LHS PLAZA</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>1st and 3rd CLEAR Saturday of every month throughout the year, weather permitting</p> <ul style="list-style-type: none"> • 8:00–10:00 p.m. September 15–March 31 • 9:00–11:00 p.m. April 1–September 14 <p>Saturday Night Stargazing is a free public viewing program sponsored by LHS and Bay Area amateur astronomers. Stargazing is always weather permitting, so dress warmly. Foggy and overcast skies can cancel stargazing at the last minute. For more information, join the LHS Stargazing Google Group or follow us on Twitter@lhsstargazing.</p>
<p>Saturday November 20 10:00 a.m. – 12:00 Noon IF IT IS CLEAR</p> <p>Foothill Community College 12345 Moody Road Los Altos Hills</p> <p>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 November 20 8:00 p.m. and Sunday November 21 12:00 Noon</p> <p>Hogue Park San Jose</p>	<p>Saturday, November 20</p> <p>General Meeting. Our speaker is Dr. Thomas Lowe of Lick Observatory, who will speak about extra-solar planet discoveries and the new Automated Planet Finder telescope. In the hall at Hogue Park, 8:00 pm.</p> <p>Sunday, November 21</p> <p>It's the annual Fall Swap at Hogue Park. Starting at noon, astronomical and related stuff may be bought and sold. Sellers are asked to donate a fraction of sales.</p>

<p>Friday November 26</p> <p>Saturday November 27</p> <p>7:30pm - 10:30pm</p> <p>Chabot Space and Science Center Skies! 10000 Skyline Boulevard Oakland, CA 94619-2450 (510) 336-7300</p>	<p>Check web site to see if open on day after Thanksgiving. It appears that it will be.</p> <p>EXPLORE THE NIGHT SKIES AT THE CHABOT OBSERVATORIES for more information: http://www.chabotspace.org/ 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) 12:00 p.m. – 5:00 p.m.: Observatories Open =====</p> <p>Dinner, a Movie, and the Universe at Chabot Space Center 06:00 PM Chabot Space and Science Center, Oakland Join us for Chabot's unique evening social rendezvous. Start your night off with dinner and drinks, then cozy up in the planetarium as you're whisked to the edge of the universe and cap off the evening with telescope viewing featuring breathtaking views of the cosmos. Dinner: Buy advance tickets to ensure your dinner reservation. Purchase dinner separately at the cafe (\$15).</p> <p>ADVANCED 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>Friday November 26 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>http://www.pastro.org/dnn/Observatory/FoothillObservatory.aspx</p>

<p>Saturday November 27 10:00 a.m. – 12:00 Noon IF IT IS CLEAR</p> <p>Foothill Community College 12345 Moody Road Los Altos Hills</p>	<p>Foothill College Observatory 10AM-12PM if it is clear 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 November 27</p> <p>San Mateo County Astronomical Society Star Party</p> <p>Sunset: 4:52 p.m.</p>	<p>STAR PARTIES AT CRESTVIEW PARK</p> <p>Come out and bring the kids for a mind expanding look at the universe. 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>Sunset at 4:52P 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</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.</p> <p>If you are thinking of buying a telescope or want help using a telescope you own, come here to talk with experienced users.</p> <p>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.</p> <p>Only park in the parking lot if you are arriving before dark and plan to stay until the end of the event.</p> <p>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.</p> <p>The park is residential, and adjacent to homes and backyards, please keep noise to a minimum.</p> <p>Astronomers arrive to set up at around sunset. Observing starts at about one hour after sunset and continues for two to three hours.</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	
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<i>Telescope Loans</i>	Pete Goldie	telescopes@sfaa-astronomy.org
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<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/Stephanie 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 CA 94115

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San Francisco Amateur Astronomers

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 \$75 Supporting _____

Members pay one half the amount listed below
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MEMBERSHIP APPLICATION

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



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.