ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

Vol. 58, No. 4 – April 2010

Wednesday, April 21, 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)

Cosmic Fireworks: The Explosive Deaths of Massive Stars

A Presentation by Dr. Maryam Modjaz
UC Berkeley Astronomy Dept.

Join Dr. Maryam Modjaz, a Miller Postdoctoral Fellow in Astronomy at UC Berkeley, for a presentation on ***Cosmic Fireworks: The Explosive Deaths of Massive Stars.*** Learn about the most powerful explosions in the universe: Supernovae and Gamma-Ray Bursts. Both produce and expel heavy elements and enormous amounts of energy, leaving behind fascinating objects such as black holes and pulsars, and are visible over billions of light years across the vast universe. Dr. Modjaz will discuss how these types of explosions are related and their impact on life on earth.

PRESIDENT'S MESSAGE

Over the years I have had many people ask me what Kind of telescope they should buy.
I think that any decision on what to buy should be based on the following:

How much money you would like to spend.
How much astronomy you will do - for instance will you go to star parties in your area.
Will you use the instrument for other purposes like spying on your neighbors or bird watching etc.

First off, when someone is first getting into astronomy, the single most important thing is to not buy a cheap department store scope -- the shaky mount and terrible optics will do more to discourage the hobby than to foster it. Claims of 450x power are bogus and the most magnification that will ever be required is about 200x max. The standard rule of thumb is that you can achieve about 50x power per inch of aperture. so a very expensive 4 inch reflector scope with the best eyepieces money can buy can only achieve about 200x magnification under perfect conditions and will likely perform best at about 100x power.

Secondly, with telescopes, size really does matter. Aperture opening (or light gathering capability) is much more important than magnification. Many of the objects that one can see are very dim and require a very large aperture to see any meaningful detail because you need to gather a tremendous amount of light for your eyes to detect anything. You can see all of the planets with a very good 4" refractor. If you want to get into deep space objects like the Orion nebulae, Ring nebulae, galaxies or star clusters, you will need a minimum 6" instrument. You can see about 1000 objects with a 10" reflector and about 20,000 or so objects with a 20" reflector.

Portability is a very big concern, so be careful. If you have a small car you don't want to go out and buy a 20" reflector, unless you are planning to buy a trailer to haul it around in.

There are, generally speaking, two types of telescopes. Re***frac***tors that use lenses for magnification (like the ones you look through the back end) and re***flec***tors (like Dobsonians and Schmidt ***Cassegrain***s) that use reflecting mirrors. A very good 4" refractor can cost up to $3000 while a good 10" reflector will cost about $800 to a $1000. You can see that for the money you can get a **ton** more aperture out of a reflector.

I suggest that if someone is getting interested in the hobby that they should first purchase a very good pair of 8x50 or 10x50 binoculars. You can see a lot of objects with this (but not much detail) and if the hobby does not catch on, you will have a good pair of binoculars to use in the future rather than a $2000 telescope gathering dust in the closet.

Other considerations are COOLNESS factors like computerized tracking and CCD imaging. But this can come later (and cost a whole bunch of money). Personally I prefer manual telescopes for the beginner, not having electronic go to capabilities will get you into the thrill of the hunt for objects using star charts, books and your friends. This will enhance your experience and help you learn the sky rather than just pushing a button and looking at random dim grey smudges, which are basically what most deep sky objects look like in all but the largest telescopes.

A good book for the beginner to purchase is Sky Watching by David Levy – this book has a very good short section on telescope selection and has star charts for several hundred objects that most amateur scopes can see. It is very user friendly and I still use my 10 year old, dog-eared, copy when using my 20" reflector at star parties.

Lastly, and most importantly, go to a star party in your area and look at the types of scopes and ask a lot of questions before you buy. The people at these gatherings are very friendly and enthusiastic, and like to entice as many people into the hobby as possible. But always be polite, ask before you touch and bring a flashlight with a red lens on it. This will endear you to most amateurs, and also show that you have some knowledge of star party etiquette (more on that later).

Over and Out,
Dave

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.

April 21	July 21	October 20
May 19	August 18	November 17
June 16	September 15	December 15

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

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

April 3/7:30	July 13/8:30 Tue	October 16/6:30
May 22/8:00	August 21/7:30	November 13/5:00
June 5/8:30	September 18/7:30	December 11/5:00

TELESCOPE CLINIC ONE HOUR BEFORE SUNSET

NOTE: While City Star Parties WILL ALWAYS be held on Saturdays, 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).

April 10	July 10	October 2
May 15	August 7	November 6
June 12	September 4	December 4

MT TAM PUBLIC STAR PARTIES – TO BE ANNOUNCED

MAY THROUGH OCTOBER ANNUALLY

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/

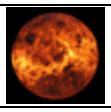
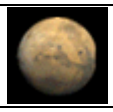
April 2010 Almanac for San Francisco (Pacific Daylight Time)

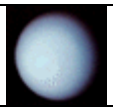
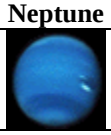
(Source: US Naval Observatory)

Sun and Moon Data:

Date	Astronomical Twilight Begins	Sunrise	Sunset	Astronomical Twilight Ends	Moon	Moonrise	Moonset
3 Apr	5:22 am	6:52 am	7:35 pm	9:05 pm		00:10 am	9:41 am
10 Apr	5:10 am	6:41 am	7:41 pm	9:13 pm		4:37 am	4:24 pm
17 Apr	4:58 am	6:31 am	7:48 pm	9:21 pm		8:16 am	11:36 pm
24 Apr	4:47 am	6:22 am	7:54 pm	9:30 pm		4:02 pm	3:51 am

Planetary Data:

	Mercury		**Venus**		**Mars**		**Jupiter**	
								
	Pisces (1) / Aries (2–30)		Ari (1–19) / Tau (20–30)		Cancer		Aquarius	
Date	**Rise**	**Set**	**Rise**	**Set**	**Rise**	**Set**	**Rise**	**Set**
3 Apr	7:31 am	9:06 pm	7:46 am	9:11 pm	1:31 pm	4:05 am	5:54 am	5:23 pm
10 Apr	7:21 am	9:19 pm	7:42 am	9:27 pm	1:13 pm	3:43 am	5:31 am	5:04 pm
17 Apr	7:01 am	9:05 pm	7:38 am	9:43 pm	12:58 pm	3:21 am	5:07 am	4:44 pm
24 Apr	6:33 am	8:24 pm	7:37 am	21:59 pm	12:43 pm	3:01 am	4:43 am	4:23 pm

	Saturn		**Uranus**		**Neptune**	
						
	Virgo		Pisces		Aquarius	
Date	**Rise**	**Set**	**Rise**	**Set**	**Rise**	**Set**
3 Apr	6:16 pm	6:38 am	6:17 am	6:11 pm	5:01 am	3:45 pm
10 Apr	5:46 pm	6:09 am	5:50 am	5:45 pm	4:34 am	3:18 pm
17 Apr	5:16 pm	5:40 am	5:24 am	5:19 pm	4:06 am	2:52 pm
24 Apr	4:47 pm	5:12 am	4:57 am	4:54 pm	3:39 am	2:25 pm

April Phenomena:

3 Apr, 4:00 am: Antares 1.5° S of Moon
6 Apr, 5:00 pm: Pluto stationary
9 Apr, 2:00 pm: Neptune 3.8° S of Moon
11 Apr, 10:00 am: Jupiter 5.5° S of Moon
12 Apr, 2:00 am: Uranus 5.4° S of Moon
15 Apr, 2:00 pm: Mercury 1.5° S of Moon
16 Apr, 3:00 am: Venus 4.0° S of Moon
18 Apr, 6:00 am: Mercury stationary
21-22 Apr: Lyrids meteor shower
22 Apr, 0:00 am: Mars 4.4° N of Moon
23 Apr, 1:00 pm: Regulus 4.1° N of Moon
27 Apr, 5:00 am: Spica 2.9° N of Moon
28 Apr, 9:00 am: Mercury at inferior conjunction
30 Apr, 2:00 pm: Antares 1.7° S of Moon

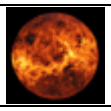
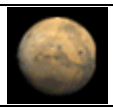
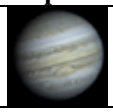
May 2010 Almanac for San Francisco (Pacific Daylight Time)

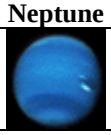
(Source: US Naval Observatory)

Sun and Moon Data:

Date	Astronomical Twilight Begins	Sunrise	Sunset	Astronomical Twilight Ends	Moon	Moonrise	Moonset
1 May	4:35 am	6:14 am	8:00 pm	9:39 pm		11:47 pm	8:23 am
8 May	4:25 am	6:06 am	8:07 pm	9:49 pm		3:02 am	5:11 pm
15 May	4:15 am	6:00 am	8:13 pm	9:58 pm		7:03 am	10:27 pm
22 May	4:07 am	5:55 am	8:19 pm	10:07 pm		3:01 pm	2:23 am
29 May	4:00 am	5:51 am	8:24 pm	10:15 pm		10:25 pm	7:07 am

Planetary Data:

	Mercury		**Venus**		**Mars**		**Jupiter**	
								
	Ari (1–8) / Psc (9–13) / Cet (14–21) / Ari (22–31)		Taurus (1–19) / Gemini (20–31)		Cancer (1–11) / Leo (12–31)		Aquarius (1–2) / Pisces (3–31)	
Date	**Rise**	**Set**	**Rise**	**Set**	**Rise**	**Set**	**Rise**	**Set**
1 May	6:02 am	7:31 pm	7:38 am	10:15 pm	12:30 pm	2:41 am	4:19 am	4:03 pm
8 May	5:33 am	6:45 pm	7:41 am	10:29 pm	12:18 pm	2:21 am	3:55 am	3:42 pm
15 May	5:12 am	6:17 pm	7:46 am	10:42 pm	12:07 pm	2:02 am	3:31 am	3:21 pm
22 May	4:56 am	6:08 pm	7:55 am	10:52 pm	11:56 am	1:43 am	3:07 am	2:59 pm
29 May	4:47 am	6:14 pm	8:05 am	11:00 pm	11:46 am	1:25 am	2:42 am	2:37 pm

	Saturn		**Uranus**		**Neptune**	
						
	Virgo		Pisces		Aquarius	
Date	**Rise**	**Set**	**Rise**	**Set**	**Rise**	**Set**
1 May	4:17 pm	4:43 am	4:30 am	4:28 pm	3:12 am	1:58 pm
8 May	3:48 pm	4:15 am	4:04 am	4:02 pm	2:45 am	1:31 pm
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22 May	2:52 pm	3:19 am	3:10 am	3:09 pm	1:50 am	12:36 pm
29 May	2:24 pm	2:51 am	2:43 am	2:43 pm	1:23 am	12:09 pm

May Phenomena:

6 May, 11:00 pm: Neptune 4.0° S of Moon
9 May, 5:00 am: Jupiter 5.9° S of Moon
9 May, 1:00 pm: Uranus 5.6° of Moon
10 May, 5:00 pm: Mercury stationary
16 May, 3:00 am: Venus 0.1° S of Moon
20 May, 1:00 am: Mars 4.8° N of Moon
24 May, 12:00 pm: Spica 3.0° N of Moon
27 May, 10:00 pm: Antares 1.8° S of Moon
31 May, 11:00 am: Saturn stationary
31 May, 6:00 pm: Neptune stationary

Yuri's night at NASA Ames on April 10th is inviting local astronomers to bring our telescopes to this event on Saturday, April 10th: http://ynba.org/

Let me know at vicepresident@sfaa-astronomy.org by this Friday, the 26th if you would like to bring your telescope to Yuri's night. I'll need your name (you have to bring a photo ID to get into the facility) and let me know the times when you'd like to set up solar or nighttime viewing. Noon 'till midnight, so the day is wide open. The scopes are in a special area so you can take breaks and see things too while others keep an eye on your equipment. Spaces are limited, so please sign up only if you're sure you can attend.

I will confirm on Monday with everyone who RSVPs. Thanks!

~Vivian

“Be glad of life because it gives you the chance to love, to work, to play, and to look up at the stars.”
Henry Van Dyke

April 15th
Rec and Park Commission hearing on GGP Beach Chalet Soccer Fields
Call and write to Supervisors Mar and Chu

ATTEND THE RECREATION AND PARK COMMISSION HEARING

The Planning Department will finish their EIR determination for the Beach Chalet Soccer Fields in a few days. The project will then be referred to the Recreation and Park Commission for their approval. **This is the last opportunity for you to speak out on this issue at Rec and Park, before they make their decision:**

Thursday, April 15th, 2010
City Hall, Room 416
Time: to be decided (probably 2:00 but it can change) Check our website www.sfoceanedge.org OR email us at sfoceanedge@earthlink.net OR call us to confirm on Monday, April 12th. 415-566-1860. (The day of a meeting, call 415-710-2402)

We need everyone to attend this meeting! We need people of all ages to come to this meeting.
We also need people to help with outreach. Please contact us if you can help.

We will have a **drop-in meeting Thursday, April 8th**, 6:00 p.m. to 9:00 p.m. to discuss strategy, address postcards and answer questions.
Drop-in meeting location: 1243 42nd Avenue, SF, CA 94122.

WRITE TO SUPERVISORS MAR AND CHU

Supervisors Mar and Chu can stop this project. Golden Gate Park adjoins their districts, and the other supervisors will respect this. **Please write and call them today! We need hundreds of letters**! (cc: Mayor Newsom, the Commission and us!)

Eric.L.Mar@sfgov.org 554-7410
Carmen.Chu@sfgov.org 554-7460
Gavin.newsom@sfgov.org
Recpark.commission@sfgov.org
sfoceanedge@earthlink.net

SAMPLE LETTER:
Supervisor Mar (or Supervisor Chu):
Subject: Please demand an EIR for the Beach Chalet Soccer Fields
A few months ago you announced support for this project. Since that time, a great deal of information has come out about the potential negative impacts on Golden Gate Park and Ocean Beach. I urge you to inform the Recreation and Park Commission that you cannot support the Beach Chalet Soccer Fields project until a full Environmental Impact Report has been completed.

Sincerely,

(Your name. If you live in their district, please say so.)

Wednesday, April 21, 2010, 7:00 p.m.

Silicon Valley Astronomy Lectures

Smithwick Theater, Foothill College, El Monte Road and Freeway 280, in Los Altos Hills

Astronomer David Morrison of NASA's Ames Research Center

will give a non-technical, illustrated talk on:

A Scientist Looks at "Doomsday 2012" and the Rise of Cosmophobia

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

Many people have heard the rumors (through the media, on the Internet, seeing the big-budget movie, or from friends) that the world will end in 2012 -- and that some astronomical event or alignment is to blame. According to some versions, this doomsday scenario was predicted by ancient civilizations and we are just waking up to the truth! Is there scientific basis to these rumors?

Dr. David Morrison runs the web site through which the public can ask NASA questions about life in the universe, and for the past two years he has found himself overwhelmed by questions on this topic. He has now tracked down many of the stories that gave rise to a new fear of the heavens (what he calls "cosmophobia"). He will tell us about the scientific perspective on the chances that we won't be around after 2012. There are lessons here about the way a scientifically unsophisticated segment of the public can be manipulated by hoaxers out to make a buck by frightening people.

David Morrison is the Director of NASA's Lunar Science Institute and the Director of the Carl Sagan Center for the Study of Life at the SETI Institute. Dr. Morrison, a world-renowned planetary scientist and expert in the field of asteroid impacts, is the author of more than 155 technical papers and has published a dozen popular books and introductory textbooks. He is the recipient of numerous awards for his scientific and educational work, including the Sagan Medal of the American Astronomical Society for public communication. Dr. Morrison was a founder of the multi-disciplinary field of astrobiology. Asteroid 2410 Morrison is named in his honor, but he assures us that it is not one of those that might hit the Earth.

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

Andrew Fraknoi, Chair, Astronomy Program
Foothill College, 12345 El Monte Rd., Los Altos Hills, CA 94022, USA
Telephone: (650) 949-7288
E-mail: fraknoiandrew@fhda.edu

Golden State Star Party 2010

REGISTER EARLY FOR GSSP 2010!
SATURDAY, JULY 10, TO WEDNESDAY, JULY 14

It's that time again to make your observing plans for 2010. Be sure to include this year's Golden State Star Party!

In 2010, GSSP will carry on its long tradition as California's premier dark sky star party.

This year's event will again be under the ever-friendly skies of the Frosty Acres Ranch near Adin in beautiful Northeastern California and will be held from Saturday, July 10, to Wednesday, July 14.

In addition to exceptional dark sky observing, GSSP offers a wide variety of other fun activities and features, including a door-prize raffle, memorable local community events, an excellent speaker program, kite flying, home-grown barbeques, and countless other great things to do and enjoy in the surrounding area.

The Early Registration Period ran through March 30.

Early registration fee was $60.
After March 30, the fee is increased to $70.
On-site registration will be $75.
Kids under 18 are free.

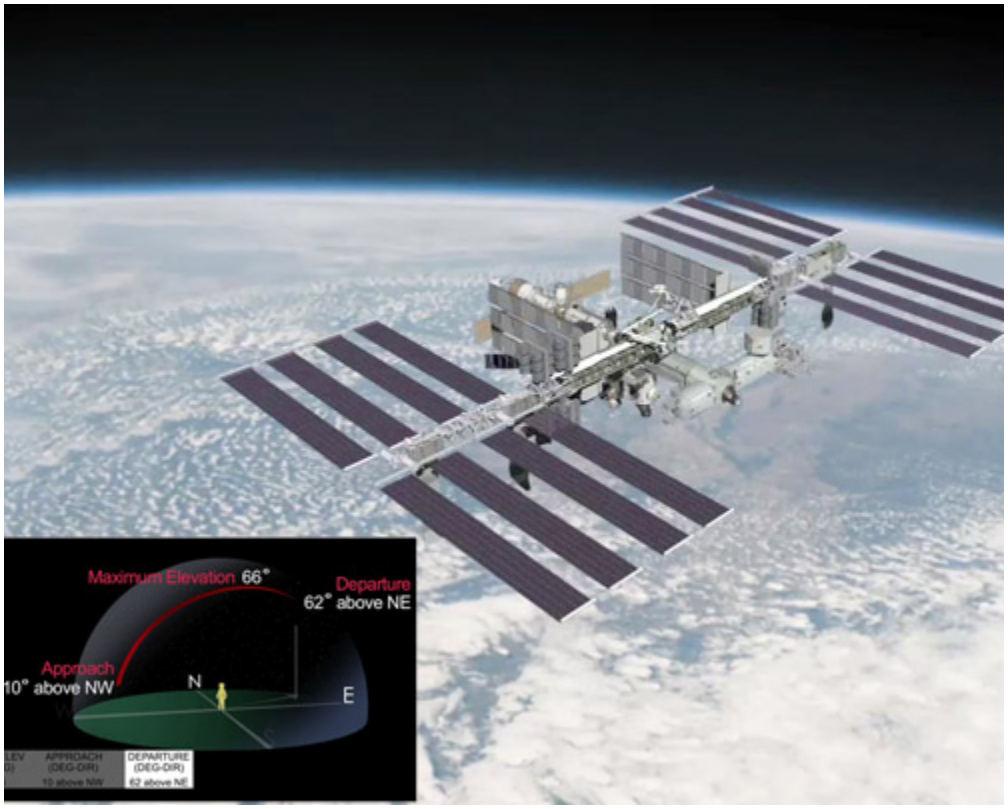
The more people who register early, the better we will be able to plan and provide the best possible star party for the attendees.

To register and learn more about GSSP 2010, visit our Web site at: http://www.goldenstatestarparty.org/

We'll see you there!
The GSSP Organizing Committee

Jane's What's Up Podcast for April 2010 - the ISS

What's Up for April? How and when to view the Space Station and more!



I hope you share this podcast with your friends and family who have always wondered how, where to look, and when. It's good timing for helpful tips, especially when there is a shuttle about to dock and then undock from the ISS. That means both the shuttle and station can be seen together in the sky by some lucky people, maybe you! :-)

There are also links to educational activities including Adventures in Rocket Science and more on this page, and many formats from small 480x270 Quicktime to a 1280x720 HD podcast format.

http://solarsystem.nasa.gov/news/whatsup.cfm

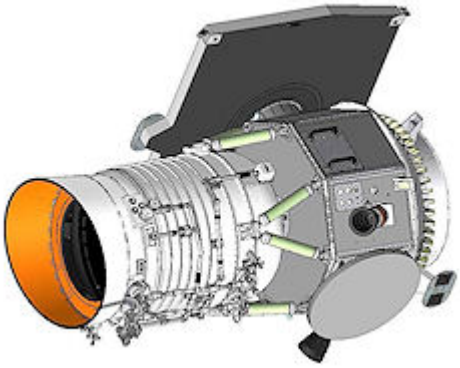
Jane Houston Jones
Senior Outreach Specialist, Cassini Program
JPL - 4800 Oak Grove Drive, MS 230-205
Pasadena, CA 91109 818-393-6435
jane.h.jones@jpl.nasa.gov

What's Up For April - The International Space Station!
http://solarsystem.nasa.gov/news/whatsup-archive.cfm

SCIENCE@NASA

An Avalanche of Asteroids

03.26.2010



March 26, 2010: Imagine you're a Brontosaurus[1] with your face in a prehistoric tree top, munching on fresh leaves. Your relatives have ruled planet Earth for more than 150 million years. Huge and strong, you feel invincible.

You're not.

Fast forward about 65 million years. A creature much smaller and weaker dominates the Earth now, with brains instead of brawn. Its brain is a lot larger relative to its body size – plenty big enough to conceive a way to scan the cosmos for objects like the colossal asteroid that wrought the end of your kind.

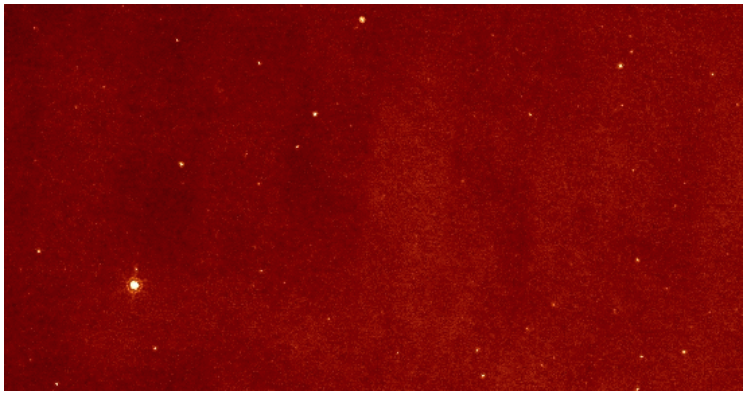
Right: An artist's concept of NASA's Wide-field Infrared Survey Explorer (WISE). [more]

The creature designed and built WISE, NASA's Wide-field Infrared Survey Explorer, to search for "dark" objects in space like brown dwarf stars, vast dust clouds, and Earth-approaching asteroids. WISE finds them by sensing their heat in the form of infrared light most other telescopes can't pick up.

"Our instrument is finding [dozens] of asteroids every day that were never detected before," says Ned Wright, principal investigator for WISE and a physicist at the University of California in Los Angeles. "WISE is very good at this kind of work."

Most of the asteroids WISE is finding are in the main asteroid belt between Mars and Jupiter, but a fraction of them are different—they're the kind of Earth-approaching asteroids that send shivers all the way down a Brontosaurus' spine.

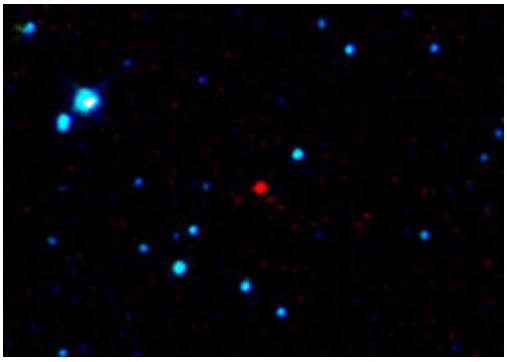
"WISE has only been in orbit for about three months, but we've already found a handful of asteroids classified as 'potentially hazardous,' including one seen in 1996 but lost until re-observed by WISE. To be named 'potentially hazardous,' an asteroid's orbit has to pass within about 5 million miles of Earth's orbit. One of our discoveries' orbit will cross Earth's orbit less than 700,000 miles away."



Above: This blink comparison shows why infrared wavelengths are so good for asteroid hunting. It's a patch of sky in the constellation Taurus photographed at two different times by the infrared Spitzer Space Telescope. The two frames are correctly aligned; the objects are moving because they are asteroids. At thermal infrared wavelengths, most of the bright objects in the plane of the solar system are space rocks. [more]

WISE tracks each potentially hazardous near-Earth object (NEO) it finds every three hours for up to 30 hours and then produces a "short track" predicting where it will be for the next few weeks. The WISE team sends all of this information to the NASA-funded Minor Planet Center in Boston. They post it on a publicly available NEO confirmation page, where scientists and amateur astronomers alike can continue to track the asteroid.

The asteroid that is thought to have wiped out the dinosaurs was big--about 6 miles or 10 km in diameter. The chances of a similar hit in modern times are almost non-existent, but that doesn't mean we're out of the woods. Smaller asteroids are fairly common, and they could do damage, too, in the rare event of impacting the Earth. As recently as 1908, for instance, an asteroid some tens of meters across exploded over Tunguska, Russia, wiping out eight hundred square miles of remote forest.



Right: The red dot in this image is the first near-Earth asteroid discovered by WISE. [full story]

"Regional damage from a small asteroid strike can be very serious indeed," says Wright. "We need to keep surveying the skies to find these NEOs and precisely measure their orbits. If we can find the really dangerous asteroids early enough, we might have time to figure out how to deal with them."

Many telescopes on Earth are already searching. Notable programs include LINEAR, the Catalina Sky Survey and others[2]. Working together over the years they have found more than a thousand potentially hazardous asteroids.

WISE's contribution to the total will be impressive. Between now and late October, when the mission is slated to end, Wright estimates the observatory will find a hundred thousand asteroids, mostly in the main belt, and hundreds of near Earth objects.

Those are numbers even a Brontosaurus could appreciate.

Author: Dauna Coulter | Editor: Dr. Tony Phillips | Credit: Science@NASA

APRIL ASTRONOMY EVENTS

Kenneth Lum

EVERY Friday & Saturday 7:30pm - 10:30pm Weather Permitting FREE TELESCOPE VIEWING EVERY Saturday & Sunday 12:00 Noon – 5:00pm Weather Permitting DAYTIME TELESCOPE VIEWING FREE WITH GENERAL ADMISSION Chabot Space and Science Center 10000 Skyline Boulevard Oakland, CA 94619-2450 (510) 336-7300	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! 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
Tuesday, April 6 – June 22 Foothill College 12345 El Monte Road Los Altos Hills, CA (650) 949-7777	There is still time to register for Physics 12: Physics for Poets (Everything You've Wanted to Know about Einstein's Work, But Were Afraid to Ask) This non-mathematical introduction to the ideas of modern physics is designed for those not majoring in the physical sciences. After a brief introduction to the history and ideas of physics in general and atomic theory specifically, the course focuses on three areas of modern physics that have revolutionized our understanding of nature: thermodynamics and the concept of entropy, Einstein's special and general theories of relativity, and quantum mechanics. In the process we will get to know some of the key people involved in these fields, particularly Albert Einstein. We also examine (briefly) the impact these physics ideas have had on other fields, such as poetry, literature, and music. No background in science or math will be assumed. Physics 12 will be offered at Foothill College on Tuesday and Thursday evenings from 6 to 8:30 pm, April 6 to June 22, 2010. For registration information for the Spring Quarter see: http://www.foothill.edu/reg/
Wednesday, April 7 12:00 Noon SETI Institute Aricebo Room 515 N. Whisman Road Mountain View	SETI Institute Colloquium Series ***Starship Life Support*** **Harry Jones, NASA Ames Research Center** Dr. Jones will report on the design and cost of a starship, with emphasis on life support systems. He will describe a multigenerational interstellar voyage to colonize a new planet. Nuclear propulsion is required. The mission is more feasible if a small crew travels slowly and lands with minimal equipment. Growing food is about as expensive as taking dehydrated food. Highly reliable life support can be achieved by providing spare parts and full systems. One small slow multigenerational interstellar voyage to colonize a new planet would cost about as

	much as the Apollo program. We can go to the stars!
Wednesday, April 7 7:00 – 9:00 p.m. La Pena's Café Valparaiso 3105 Shattuck Avenue (three blocks south of Ashby BART) Berkeley 94705	***You Wouldn't Be Here Without Exploding Stars and Other Astronomical Musings*** **Jeffrey M. Silverman** Some of the brightest and most fascinating objects in the Universe are exploding stars known as supernovae. These colossal outbursts result from the deaths of stars and for a time can outshine the entire galaxy in which they are found. Detailed observations of these explosions have raised nearly as many questions as they have helped us answer and astronomers have discovered that supernovae are essential to the existence of the planets in our Solar System and to life itself. In addition, observations of very distant supernovae provided the first evidence that our Universe is dominated by a repulsive and mysterious 'dark energy' that acts as a kind of anti-gravity. Jeffrey M. Silverman is a fifth-year PhD student at the University of California, Berkeley who studies and observes supernovae with Professor Alexei V. Filippenko. He is particularly interested in relatively nearby supernovae and how the subtle differences among them relate to their farther-away brethren. Jeffrey was born and raised in Anaheim CA, just down the street from Disneyland. He received a B.S. in Astrophysics and a B.A. in Mathematics cum laude from Rice University in Houston, TX in 2005, and a M.A. in Astrophysics from UC Berkeley in 2007. In addition to staying up all night to look through telescopes, Jeffrey likes to stay up all night to watch movies, go to concerts (both rock and classical), and hang out in San Francisco. **Cost:** Free
Thursday, April 8 4:00 p.m. Stanford University Physics & Astrophysics Building First Floor Conference Room (102/103)	***Astrophysics Colloquium by Ming Sun (U. of Virginia)*** ***Baryons beyond galaxies and the flip side of galaxy formation*** Only 10% - 15% of baryons in the Universe are accounted by stars, while the other 85% - 90% are distributed outside of galaxies. In order to better explain galaxy formation, we need to understand the properties of baryons not locked into stars and the reasons why they were not. In this talk, I will discuss the properties of the hot diffuse gas in galaxy groups that accounts for the bulk of baryons in these systems. Their properties reveal important information on the formation of galaxies and their central super-massive black holes. The underlying baryon physics needs to be understood to better calibrate the systematics in using X-ray clusters for precision cosmology.
Thursday, April 8 6:00 p.m. Golden Gate Park 55 Music Concourse Dr. San Francisco	**Nightlife: Extremely Cosmic: Yuri's Night, Robots, and the Space Cowboys - 04/08/2010 06:00 PM**

Friday, April 9 9:00 a.m. – 3:00 p.m. NASA Ames Research Center Moffett Field Mountain View	***Yuri's Night Education Day at NASA Ames*** You and your students/kids are invited to Yuri's Night Education Day at the NASA Ames Research Center (see http://www.ynba.org and click on the 'Education Day' tab) on April 9th, 2010. This free event will feature an array of learning experiences in the areas of science, technology, engineering, and mathematics via speakers, exhibits, workshops, hands-on activities, toward youth groups between the 4th grade and high school levels, and will be a chance for students to interact with astronauts, scientists, artists, musicians, engineers, and space-enthusiasts. Tasty, yet nutritious lunches will be available for purchase. Also, in case any students (probably high-schoolers) wish to get more involved, there are opportunities for them to set up their own exhibits or volunteer. Please note that an RSVP is required. Teachers/Group Organizers can RSVP here (the link is also on the website): https://spreadsheets.google.com/viewform?hl=en&formkey=dGY2X1JDYUs1SDZKRHZraWIwajhtOFE6MA Transportation is possibly available for school groups. If your group requires transportation, please RSVP and check the box stating so. If you have any questions, please contact Stacy Simone, Educational Outreach Coordinator, at stacyhsimone@gmail.com, or 415.254.4763.
Friday, April 9 3:00 p.m. – 4:00 p.m. UC Berkeley Silver Space Sciences Lab, Addition Conference Room 105	***Space Sciences Lab Colloquium: The impact and recovery of asteroid 2008 TC3 Colloquium*** Peter Jennikens, SETI Institute Sponsor: Space Sciences Laboratory (SSL) Dave Brain says about this presentation: "Peter has one of the more interesting planetary research stories to tell of the past several years - on the 2008 TC3 asteroid impact in Sudan. It is the first meteorite to be detected in space before it impacted Earth - just 20 hours before impact. It served as a test of NASA's near earth object warning system, and involved rapid international cooperation and observation. It was also expected to vaporize in the atmosphere, so it was surprising when Peter found meteorites (with the help of burqa-clad Sudanese students). Even more, the meteorites turned out to be rare ureilites, now linked to a rare class of asteroids. It is really a great story on many levels." Keywords: Meteorite (Almahata Sitta), Asteroid (2008 TC3), Meteor, Sudan Refreshments: Coffee, tea and various snacks available 20 min before the colloquium in the conference room. Event Contact: barriere@ssl.berkeley.edu, 510-643-4747
Saturday, April 9 10:00 a.m.-12:00 Noon IF IT IS CLEAR Foothill College Observatory Foothill Community College Los Altos Hills	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. 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.

Friday, April 9
7:30 p.m.
Peninsula Astronomical Society
Foothill Community College
Room 8400 – Near Parking Lot 8
12345 El Monte Avenue
Los Altos Hills

LCROSS Mission: Water and more!
Anthony Coleprete - NASA Ames Research Center

The lecture this month will be about the results of the recently completed LCROSS (Lunar Crater Observation and Sensing Satellite). Our speaker on this topic will be none other than the Principle Investigator for the mission, Dr. Anthony Colaprete of NASA Ames. My thanks to fellow PAS member, Brian Day, who is the Education Lead for this mission, for arranging this meeting. It was his job before the completion of the mission, to tell the public about it at as many venues as possible before the October 9-10th, 2008 satellite impact.

LCROSS was a mission that was piggy-backed aboard the Lunar Reconnaissance Orbiter (LRO) mission with the purpose of sending an impactor consisting of the centaur upper stage booster into the Moon's surface at the south pole to eject a plum of soil that could be analyzed by the LRO and the LCROSS shepherding spacecraft to look for evidence of water in the lunar soil. Interest in the possible presence of water ice on the Moon has both scientific and operational foundations. It is thought that a variety of processes could be contributing to the accumulation of water within craters at the poles of the Moon which never receive sunlight, called polar cold traps, including impacts of comets and meteorites, the reaction of solar protons from the solar wind with lunar soil to form water, and outgassing from the moon's interior. One possible process involves the migration of water in the Moon's exosphere through ballistic meteorite impacts and the eventual capture of these molecules in persistently shadowed polar cold traps. Recent discoveries of a veneer of hydroxyl and adsorbed water in sunlit regions of the moon may support this process. The form and amount of water presumably associated with these elevated hydrogen concentrations at the poles, as observed the by Lunar Prospector (LP) and Lunar Reconnaissance Orbiter (LRO) missions may represent one end-state in the chain of processes that involve water on the moon.

The LCROSS mission's goal was to identify the source of the elevated hydrogen at the poles and provide an estimation of the total concentration present in the lunar soil which would possibly give tell us how much water is present. Verification of the form and amount of hydrogen can constrain models of the impact history of the lunar surface and the effects of meteorite gardening, photo-dissociation, and solar wind sputtering. With the combined observations of LCROSS, LRO and others it is possible to evaluate the global water distribution and provide a quantitative basis for studies of the Moon's history and a test of current theories on the form and distribution of lunar hydrogen.

Many of us(including myself) were at NASA Ames on the morning of October 10th, 2008 watching to see images from the cameras of the shepherding spacecraft of the impact of the LCROSS centaur upper stage impactor on the Moon. Much to our disappointment, essentially nothing was seen which greatly surprised me considering that another impactor mission, the Deep Impact mission on Comet Tempel 1 in 2005 produced an enormous flash and a considerable brightening of the comet. Dr. Colaprete will help us understand, to the best of our knowledge, why this happened.

Dr. Colaprete received his BA, MS and Ph.D. from the University of Colorado. He has worked on a variety of space projects ranging from sounding rocket and space shuttle flights, to micro and small satellites. In addition to his project and instrumentation work, Dr. Colaprete is internationally recognized for his work on the nature of the martian climate system. He has developed state-of-the-art cloud microphysical schemes and incorporated them into the NASA/Ames Mars General Circulation Model. These findings have had a significant impact on the field, and have motivated follow-up studies by other groups of researchers. In addition to his scientific research, Dr. Colaprete has also contributed to various projects at NASA Ames including the Pascal Scout Mission for which he is the deputy principal investigator, the Mars Polar Drill Scout mission for which he is leading the effort on the meteorology package, and the

	Lunar Robotic program for which he is the science / payload lead on one of the Ames proposals. Dr. Colaprete has also formed an instrument working group at NASA Ames whose purpose is to facilitate new business and maximize the use of Ames facilities. Don't forget that parking is $2.00 at Foothill. I will let everyone know later if there will be our usual dinner with the speaker at 6PM at Chef Chu's Chinese restaurant at the corner of El Camino and San Antonio Rd. in Los Altos. Hope to see you all there for what should be a most illuminating lecture!
Friday, April 9 9:00 p.m. Foothill Community College 12345 Moody Road Los Altos Hills	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. 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. 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. Come to Foothill Observatory and join us in the exploration of our Universe! 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.
Friday & Saturday April 9 & 10 6:00 p.m. Weather Permitting Chabot Space and Science Center 10000 Skyline Boulevard Oakland, CA 94619-2450 (510) 336-7300	***Dinner, a Movie, and the Universe at Chabot Space Center*** 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). 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.

Friday & Saturday April 9 & 10 7:30 p.m. – 10:30 p.m. Weather Permitting Chabot Space and Science Center 10000 Skyline Boulevard Oakland, CA 94619-2450 (510) 336-7300	***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! 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
Friday & Saturday April 10 & 17 Sunset 7:39 p.m. Telescope Setup at around sunset. Observing starts at about one hour after sunset and continues for two to three hours. Weather Permitting	***Star Parties At Crestview Park*** 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 in Crestview Park. Inclement weather (clouds, excessive wind and showers) will cause the event to be canceled without notice. 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. Reasons to Attend If you have kids interested in space or planets bring them here for a real life view of planets, nebulae, 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. Cautions Dress warmly and wear a hat. Visitors should park on the street and walk into the park so your headlights don't affect the observer's dark adaptation. Only park in the parking lot if you are arriving before dark and plan to stay until the end of the event. You shouldn't need lights but if you feel you do, only bring a small flashlight with the lens covered using red cellophane or red balloon. Please respect the telescopes and ask permission from the owner if you wish to touch. Parents, please watch your children. The park is residential, and adjacent to homes and backyards, please keep noise to a minimum. Astronomers arrive to set up at around sunset. Observing starts at about one hour after sunset and continues for two to three hours.

Saturday, April 10 11:00 a.m. Hillsdale Mall 60 31st Avenue San Mateo	***National Robotics Week - RoboGames Preview - 04/10/2010 11:00 AM*** **Hillsdale Mall, San Mateo** RoboGames is the world's largest robot competition. Apr 23-25th, people from all over the world come to San Mateo to compete in the Olympics of Robots! This preview give you the chance to check out some of the many types of competition robots that will be coming to the Bay Area to compete for gold, silver, and bronze medals. Meet famous robot builders and get their autographs! Displays of: Walking soccer bots, Lego Robots Combat Robots, Mars/Lunar Rover, Sumo robots, Talking Robots, and Kung Fu humanoids.
Saturday, April 10 12:00 p.m. NASA Ames Research Center Moffett Field Mountain View	***Yuri's Night Bay Area - 04/10/2010 12:00 PM*** ***NASA Ames Research Center*, Mountain View** Yuri's Night is an international celebration of the orbital flight of cosmonaut Yuri Gagarin, the first human in space, on April 12, 1961. It also marks the first space shuttle flight in April 1981. An annual event, Yuri's Night is celebrated at more than 90 events in 30 countries. It is a global celebration of human space achievement, designed to raise awareness and support for space exploration. More than 100 high school students from around the country will showcase their inventions to business leaders with the event culminating in the presentation of the Pete Conrad Innovation Award on Saturday night. A full day of creativity, featuring large and small art installations, groundbreaking technology exhibits and speakers from NASA Ames Research Center. Significant aircraft from the history of aeronautics will be on hand as both static displays with tours and flying demonstrations.
Monday, April 12 7:30 p.m. California Academy of Sciences 55 Music Concourse Drive Golden Gate Park San Francisco	***The Brightest, Dimmest, Soonest, and Longest: Fascinating New Phenomena in the World of Supernovae*** Dr. David Pooley, Eureka Scientific Supernovae, the explosions of massive stars, have been recorded and studied for thousands of years, but they remained mysterious until the era of modern astronomy in the past century. New search techniques have led to the discovery of the brightest supernovae ever seen, including one that has stayed bright longer than any other known supernova and which may be indicative of a never-before-seen type of explosion that only the most massive stars experience. Dr. Pooley will briefly review the general phenomena of supernovae and then discuss these new, state-of-the-art observations. **Reservations:** Adults $12, Seniors $10, Academy members $6. Seating is limited. Purchase advanced tickets online or call 800-794-7576.
Monday, April 12 8:00 p.m. Stanford University SLAC National Accelerator Laboratory Geology Corner, Rm. 105	***The Hofstadter Memorial Lectures*** ***Director, Linac Coherent Light Source, Evening Public Lecture*** ***The Light Fantastic: Birth of the X-Ray Laser and a New Era of Science*** Professor Joachim Stohr Throughout history, observation with sunlight has been the basis for understanding the world around us. In 1895, W. C. Röntgen discovered a new type of "light", X-rays, which have allowed us to see the previously invisible. Today, x-rays play a key role in medical imaging and collimated x-ray beams produced at synchrotron radiation facilities constitute a powerful

	research tool for exploring the invisible world of atoms and electrons inside materials. Around 1960, a new kind of visible light source, the LASER, was invented. Lasers have led to a revolution in science and technology. Laser beams have amazing properties; they are very intense, tightly bundled, and can be created as ultrashort pulses. The ordered nature of laser light has verified the concept that light itself consists of quantum objects called photons. The long wavelength of conventional laser photons, however, makes them blind to the important nanoworld. This deficiency is overcome in the X-ray LASER which can reveal details of matter down to the size of atoms. We have now created the first X-ray laser at SLAC National Accelerator Laboratory at Stanford University and my talk tells the story of this facility, the Linac Coherent Light Source or LCLS. I will describe how this 20 year project succeeded in 2009, creating x-ray beams of unprecedented brilliance and ultrashort pulse lengths. LCLS is now available for scientists from around the world to explore scientific dreams in many fields, such as recording movies of molecular machines, taking snap shots of chemical reactions, revealing the details of how information bits are switched in computers, or capturing the signature of matter in extreme conditions that can only be created for an instance of time. Through its ability of probing matter on the fundamental length and time scales of their atomic and electronic building blocks, LCLS opens a new era of scientific discovery.
Tuesday, April 13 6:00 p.m. – 7:30 p.m. Doors Open 5:15 p.m. Doors will be closed when capacity is reached Cafe Scientifique Silicon Valley 333 Ravenswood Avenue SRI International Menlo Park, CA 94025 USA	***Where do Stars and Galaxies Come From?*** Dr. Tom Abel Kavli Institute for Astroparticle Physics and Cosmology Associate Professor, Physics at Stanford At the beginning of spacetime following the Big Bang, the universe expanded rapidly. At the end of this period of rapid expansion, the universe was emitting the cosmic microwave background which marks the farthest point our telescopes can see. After cooling and becoming transparent, the universe entered an extended dark age before the formation of the first stars and galaxies. At our April Café, Dr. Tom Abel will lead a wide ranging discussion on the universe and provide visualizations of the first structures to emerge following the dark ages. He will also address questions like: • How do stars form and die? • How many stars helped in making the atoms in your body? • How about black holes? • What will happen to the Milky Way? Dr. Abel is Associate Professor of Physics in the Kavli Institute for Particle Astrophysics and Cosmology at both the Stanford University Physics Department and the Stanford Linear Accelerator Center (SLAC). His research focuses on supercomputer calculations in cosmological and astrophysical systems. His visualizations and simulations of dark ages events have been featured on PBS and The Discovery Channel and in numerous newspapers and magazines, including the covers of Discover in December 2002 and of National Geographic in February 2003. Sponsored by ROXRO PHARMA and SRI, Café Scientifique is a place where anyone can come to explore the latest ideas in science and technology and debate science issues outside a traditional academic context. We meet monthly to discuss a variety of science topics. Feel free to forward this message to anyone you think could be interested. **Join us at SRI in Menlo Park** We are delighted that SRI International is the host location for Cafe Scientifique. SRI is an excellent partner, providing us with a beautiful, large, flexible meeting space, supporting us with highly professional staff and making expert researchers available as guest speakers. Coffee, tea and biscotti will be complimentary, provided by SRI

	Bring your own mug if you wish to avoid using disposable cups Courtesy of Kepler's there will be a drawing for a $30 gift card for books or merchandise at Kepler's on El Camino Real in Menlo Park. Those who choose to enter the drawing will have their names added to the Kepler's mailing list. Special thanks to Kepler's for supporting Cafe Sci. **Cost:** Free
Wednesday, April 14 12:00 Noon SETI Institute Colloquium Series 515 N. Whisman Road Mountain View The SETI Institute Arecibo Rm.	***Marine Biodiversity and Pretty Pictures: A Report from Indonesia's Raja Ampat*** **Mark Showalter**, SETI Institute When SETI astronomer Mark Showalter is not looking up at Saturn and its rings, he prefers to spend his time looking down, preferably through the viewfinder of his underwater camera. Mark will present a slide show from his recent visit to Raja Ampat, a remote dive site in Indonesia recognized as having the highest marine biodiversity of any place on Earth.
Friday April 16, 9:00 p.m. Foothill Community College 12345 Moody Road Los Altos Hills	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. 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. 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. Come to Foothill Observatory and join us in the exploration of our Universe! 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.
Friday & Saturday April 16 & 17 6:00 p.m. Weather Permitting Chabot Space and Science Center 10000 Skyline Boulevard	***Dinner, a Movie, and the Universe at Chabot Space Center*** 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). ADVANCED TICKETS A Movie and the Universe: Admission to Chabot includes all access to our interactive

Oakland, CA 94619-2450 (510) 336-7300	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.
Friday & Saturday April 16 & 17 7:30 p.m. – 10:30 p.m. Weather Permitting Chabot Space and Science Center 10000 Skyline Boulevard Oakland, CA 94619-2450 (510) 336-7300	***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! 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
Saturday, April 17 10:00 a.m. -12:00 Noon IF IT IS CLEAR Foothill College Observatory Foothill Community College 12345 Moody Road Los Altos Hills	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. 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.

2010 Club Officers & Contacts

President	*DAVE FREY*	davef@SFAA-Astronomy.org
Vice President	Vivian White	vicepresident@sfaa-astronomy.org
Secretary		
Treasurer	Dave Wilton	treasurer1@sfaa-astronomy.org
Speaker Chair	Linda Mahan	speakerchair@sfaa-astronomy.org
City Star Party	Stephanie Ulrey	csp@sfaa-astronomy.org
Bulletin Editor	Annette Gabrielli	editor@sfaa-astronomy.org
Telescope Loans	Pete Goldie	telescopes@sfaa-astronomy.org
Honorary Director and Board Member Emeritus	John Dobson	
Board Members	Jim Cottle	jimc@sfaa-astronomy.org
	John Dillon	johnd@sfaa-astronomy.org
	Kenneth Frank	ken@sfaa-astronomy.org
	Annette Gabrielli	editor@sfaa-astronomy.org
	Elan Morpurgo	elan@sfaa-astronomy.org 415 383-2247
	Doug Smith	
	Stephanie Ulrey	csp@sfaa-astronomy.org
1st Alternate	Joe Amato	wbmstr@sfaa-astronomy.org
2nd Alternate	Dave Goggin	daveg@SFAA-Astronomy.org
Webmaster	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/Paul Salazar
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
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.

MEMBERSHIP APPLICATION

Membership is billed for each upcoming year on June 30. Between January 1 and June30, new members pay one half the amount listed below

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_____ $30 Family
_____ $40 Institutional
_____ $75 Supporting

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

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