

ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

Vol. 58, No. 10 – October 2010

Wednesday, October 20, 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)

Dr. Jennifer Heldmann
Space Science Division, NASA Ames Research Center

LUNAR IMPACT: NASA'S LCROSS MISSION



Join planetary research scientist Jennifer Heldmann from the Space Sciences Division of NASA Ames Research Center for a presentation on **Lunar Impact: NASA's LCROSS Mission**. Heldmann will give an engaging summary of NASA's current mission to explore the permanently shadowed regions of the lunar poles. With NASA's Lunar Crater Observation and Sensing Satellite (LCROSS), research scientists are able to investigate and analyze data collected from these previously unexplored regions of the Moon.

Dr. Heldmann served on the Science Team, Payload Team, and as the Observation Campaign Coordinator for NASA's Lunar Crater Observation and Sensing Satellite (LCROSS) mission to study the permanently shadowed regions of the lunar poles. The science goals of LCROSS included investigating the presence or absence of water on the Moon as well as furthering our understanding of other species trapped in these regions.

Dr. Heldmann received a Bachelor's degree in Astrogeophysics from Colgate University, a Master's degree in Space Studies and a minor in Geology from the University of North Dakota, and a doctorate degree in Planetary Science from the University of Colorado. Dr. Heldmann is currently a Research Scientist in the

Division of Space Sciences and Astrobiology at NASA Ames Research Center in California.

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.

October 20

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>

October 16/6:30

November 13/5:00

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).

October 2

November 6

December 4

MT TAM PUBLIC STAR PARTIES

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.

OCTOBER 9 - 8:00pm TERRAFORMING THE SECOND HOME FOR HUMANITY

Jim Brown The Mars Society

2010 San Francisco Amateur Astronomers Lecture Series - Free & Open to the Public

sfaa-astronomy.org

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

7:30 p.m.

November 17th

Lynn Cominsky, NASA Fermi & Sonoma State Astrophysics Dept.

Dr. Cominsky has been analyzing data on high energy physics and neutron star binaries from X-ray satellites for over 25 years. She will share the most recent discoveries.

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

2010 General Meeting Snacks Volunteers

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. The Randall supplies a coffee pot to make hot water, instant coffee & tea bags, and paper supplies.

You may request reimbursement or donate your items with SFAA's thanks and appreciation..

Volunteers are needed for **October 20 - November 17 - December 15** general meetings.

Please submit meeting date you are volunteering 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 time and efforts in supporting our organization.

Thank you.





October 2010 Almanac for San Francisco (Pacific Daylight Time)



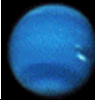
(Source: US Naval Observatory)

Sun and Moon Data:

Date	Astronomical Twilight Begins	Sunrise	Sunset	Astronomical Twilight Ends	Moon	Moonrise	Moonset
2 Oct	5:39 am	7:07 am	6:51 pm	8:18 pm		1:04 am	3:36 pm
9 Oct	5:46 am	7:13 am	6:40 pm	8:07 pm		9:37 am	7:46 pm
16 Oct	5:52 am	7:19 am	6:31 pm	7:58 pm		3:20 pm	1:24 am
23 Oct	5:58 am	7:26 am	6:21 pm	7:49 pm		6:31 pm	8:10 am
30 Oct	6:05 am	7:33 am	6:13 pm	7:42 pm		0:04 am	2:12 pm

Planetary Data:

	Mercury		Venus		Mars		Jupiter	
								
	Vir (1–24) / Lib (25–31)		Lib (1–19) / Vir (20–31)		Lib (1–26) / Sco (27–31)		Psc (1–13) / Aqr (14–31)	
Date	Rise	Set	Rise	Set	Rise	Set	Rise	Set
2 Oct	6:11 am	6:32 pm	10:06 am	7:45 pm	9:50 am	8:14 pm	6:20 pm	6:11 am
9 Oct	6:45 am	6:33 pm	9:43 am	7:17 pm	9:47 am	8:01 pm	5:50 pm	5:39 am
16 Oct	7:18 am	6:33 pm	9:08 am	6:45 pm	9:44 am	7:48 pm	5:21 pm	5:08 am
23 Oct	7:49 am	6:33 pm	8:23 am	6:11 pm	9:41 am	7:36 pm	4:51 pm	4:37 am
30 Oct	8:19 am	6:34 pm	7:32 am	5:37 pm	9:38 am	7:25 pm	4:23 pm	4:07 am

	Saturn		Uranus		Neptune	
						
	Virgo		Pisces		Aquarius	
Date	Rise	Set	Rise	Set	Rise	Set
2 Oct	6:58 am	6:55 pm	6:19 pm	6:18 am	4:57 pm	3:41 am
9 Oct	6:35 am	6:30 pm	5:51 pm	5:49 am	4:29 pm	3:13 am
16 Oct	6:12 am	6:04 pm	5:23 pm	5:20 am	4:01 pm	2:45 am
23 Oct	5:48 am	5:39 pm	4:55 pm	4:52 am	3:54 pm	2:17 am
30 Oct	5:25 am	5:13 pm	4:27 pm	4:23 am	3:06 pm	1:50 am

October Phenomena:

7 Oct, 1:00 pm: Venus stationary

8 Oct, 3:00 am: Spica 2.7° N of Moon

8 Oct, 4:00 am: Mercury 0.5° of Saturn

9 Oct, 10:00 am: Venus 3.2° S of Moon

9 Oct, 5:00 pm, Mars 3.5° N of Moon

11 Oct, 8:00 am: Antares 2.3° S of Moon

16 Oct, 6:00 pm: Mercury at superior conjunction

17 Oct, 0:00 am: Mercury 2.9° N of Spica





21-22 Oct: Orionids meteor shower

28 Oct, 6:00 pm: Venus at inferior conjunction





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



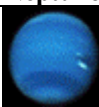
(Source: US Naval Observatory)

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

Lassell's Triple Double from Linda Mahan

SFAA members [Bob Douglas](#) and Steve Gottlieb recently had a good observing night at [Lake Sonoma](#). Bob wants to pass on an asterism that Steve showed him. It is called "Lassell's Triple Double." Bob believes he found it in Urania. Its symbol is LSL1. It is a small [equilateral triangle](#) in Cygnus, each side being about 1.5', in which each star in the triple is a double. Very unusual. After locating it, boost the power to more easily see the doubles.

RA [21:34.8](#) DEC [32:04](#).

Comet Hartley 2 from Ken Lum

Periodic Comet Hartley 2 is now waltzing very close in line of sight to the Double Cluster in Perseus making it fairly easy to star hop to for the next couple of nights. I had a chance to look at it last night from my back yard, and despite being described as being around Mag 5, it is really quite faint and small. Definitely not a binocular object in light polluted skies. Was able to finally locate it with my C8 with the aid of an I3 night vision eyepiece. Had difficulty without that enhancement.

There are some very nice finder charts on the Sky and Telescope web site and an ephemeris can be found at:

http://dawn-aop.astro.umd.edu/ephemerides/103P_201010.txt

The remaining portion of the Deep Impact spacecraft (Now called EPOXI) left over from the Deep Impact mission of July, 2005 to Comet Wild 2 will be doing a close flyby of Hartley 2 on November 4, so should be extremely interesting. The comet is also being observed with the WISE (Wide Field Infrared Survey Explorer) and images are available on the WISE web site.

MOON ROCK

Ken Frank

Congratulations to the SFAA upon receipt of an incentive piece for being one of the first Night Sky Network amateur astronomy clubs to add their International Observe the Moon (InOMN) event to the Public calendar.



The

particulars:

Northwest Africa 4483, Algeria

Find: July 2006, Achondrite (lunar, granulitic breccia)

History: Purchased by Stefan Ralew in July 2006 from a dealer in Erfoud, Morocco.

Physical characteristics: Twelve broken fragments of very fine-grained, pale grey rock with a combined weight of 208 g.

Petrography: (A. Irving and S. Kuehner, UWS) Fine grained recrystallized breccia composed of larger plagioclase grains (converted mainly to maskelynite) poikilitically enclosing very small grains (mostly 30–80 μm) of low-Ca pyroxene (some with very fine augite exsolution lamellae), olivine, Ti-chromite, ilmenite, troilite, and metal.

Geochemistry: Olivine (Fa30.9–60.8, FeO/MnO = 88.1–106), plagioclase (An96.2–98Or<0.1), orthopyroxene (Fs14.3Wo2.0, FeO/MnO = 52.6), pigeonite (Fs36.4–75.1Wo6.3–13.5, FeO/MnO = 62.9–66.5).

Classification: Achondrite (lunar, granulitic breccia). Possibly paired with Northwest Africa 3163 (Irving et al. 2006).

Thanks go to the the generosity of the NASA Lunar Science Institute (NLSI) for this wonderful incentive.

Silicon Valley Astronomy Lectures
Smithwick Theater
Foothill College
El Monte Road and Freeway 280
Los Altos Hills, California

October 20, 2010 . 7:00 p.m.

ASTRONOMER GREGORY LAUGHLIN
University of California, Santa Cruz

**THE ULTIMATE FATE OF THE SOLAR SYSTEM
(AND THE MUSIC OF THE SPHERES)**

Nontechnical, Illustrated Talk
Free and open to the Public

No background in science required for this talk

Parking on campus costs \$2.

Call the series hot-line at 650-949-7888 for more information and driving directions.

The long-term fate of the planets in our Solar System has intrigued astronomers and mathematicians for over 300 years. Although the planetary orbits are often held up as a model of clockwork regularity, the Solar System is in truth an extremely complex and chaotic system. Dr. Laughlin will explain how very recent advances in computing technology have finally given us a solution to the problem. He will also show how the delicate gravitational interplay between the planets can be interpreted as a true "music of the spheres," and will audition for us the profoundly unsettling compositions that can result in the event that the planetary orbits go haywire in the extremely distant future.

Greg Laughlin is a Professor of Astronomy at the University of California at Santa Cruz. He worked from 1999 to 2001 as a planetary scientist at NASA's Ames Research Center. A leader in the field of detecting planets around other stars, he is also an expert on the long-term fate of the Earth, the Solar System, the Galaxy, and the Universe. He is co-author of the popular book "The Five Ages of the Universe: Inside the Physics of Eternity".

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.astro.society.org/education/podcast/index.html>

Andrew Fraknoi, Chair, Astronomy Program
Foothill College
12345 El Monte Road
Los Altos Hills, CA 94022
E-mail: fraknoiandrew@fhda.edu

INTERNATIONAL OBSERVE THE MOON NIGHT – SEPTEMBER 18, 2010



Our SF event forecast was for fog, so we set up telescopes at San Rafael's Arizmendi Bakery on the 4th Street Plaza, for this international, historic happening.

We observed the highlight of the evening, our very own Moon. Many questions were asked about why we were set up on the sidewalk there and how fantastic this was.

Lots of questions were fielded on distance scales: ie, how far is the Moon/Jupiter from us as we observed Jupiter and its easily-observable four moons.

We also demonstrated a Galileo replica refractor, so the public had a better idea of what Galileo observed 400 years ago.

The owners of the local bakery gave us a yummy coffee cake to share!

Oh yes, we were offered hot pizza as well, which we graciously accepted. &-)

Angie & Ken



I wouldn't be writing this article if I hadn't taken John Dobson's telescope making class at the San Francisco Academy of Sciences in October 1988. If I hadn't taken that class, I wouldn't have ever looked through a telescope, joined the SFAA and made so many lifelong friends. I wouldn't have spent cold and foggy nights at 9th and Irving teasing a moon view out of my telescope eyepiece.

And I wouldn't have moved to Pasadena to become a science outreach specialist with NASA's Jet Propulsion Laboratory.

So it shouldn't surprise you to know how thrilled I was to have John, once again, steer my homemade 10-inch f/7.3 reflector towards the moon and share the view with 300 people on International Observe the Moon Night (InOMN) eve, Friday September 17th. There was a big party for John in conjunction with Griffith's celebration on the 18th. I spent that afternoon there with telescope makers, manning a solar telescope for a while, looking at displays from sidewalk astronomers from around the southland and around the country. Sidewalk astronomer friends old and new signed a huge card for John, who was holding court in a shady easy-up.

The night before, when he and some other sidewalk astronomers rolled into Pasadena for our monthly Friday Sidewalk Astronomy night I was thrilled. John walked gingerly over to the telescope, and just like he's been doing for almost half a century, put his eye to the eyepiece of a homemade reflector and exclaimed "Now that's the best view I've had in a while". Then he stepped away so the others in line could ask him questions and have a look at the ten-day moon. This was a night I'll always remember.

Links: short video celebrating John's Birthday: <http://www.sidewalkastronomers.us/>

InOMN moon map

<http://observethemoonnight.org/downloads/>

Jane Houston Jones

My What's Up Podcast: Oct 2010:

NASA <http://solarsystem.nasa.gov/news>

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

Twitter: <http://twitter.com/jhjones> /CassiniSaturn /otastro

Blog: <http://jane.whiteoaks.com/>





**MT TAMALPAIS STATE PARK
MT. TAMALPAIS INTERPRETIVE ASSOCIATION
2010 ASTRONOMY PROGRAMS
*our 22nd season on the Mountain***

OCTOBER 9 . 8:00pm

JIM BROWN, THE MARS SOCIETY

**TERRAFORMING THE SECOND HOME FOR
HUMANITY**

The ultimate development of a planet as a second home for Earth life is terraforming. Why is Mars the most productive next place to settle and how can it be terraformed.

As always the program is FREE and open to the general public. Weather permitting it will be followed by telescope viewing in the Rock Springs parking lot with the San Francisco Amateur Astronomers. Dress appropriately (June was cold!) and bring a flashlight. Please car pool if possible. If the weather is questionable you can check the hotline 415-455-5370 after 3:00pm which is updated IF there is a change.

NASA SCIENCE NEWS - THE YEAR OF THE SOLAR SYSTEM

Oct. 7, 2010: To mark an unprecedented flurry of exploration which is about to begin, NASA announced today that the coming year will be "The Year of the Solar System" (YSS). "During YSS, we'll see triple the [usual] number of launches, flybys and orbital insertions," says Jim Green, Director of Planetary Science at NASA headquarters. "There hasn't been anything quite like it in the history of the Space Age.

Naturally, it's a Martian year. "These events will unfold over the next 23 months, the length of a year on the Red Planet," explains Green. "History will remember the period Oct. 2010 through Aug. 2012 as a golden age of planetary exploration."

The action begins near the end of October 2010 with a visit to Comet Hartley 2. On Oct. 20th, Hartley 2 will have a close encounter with Earth; only 11 million miles away, it will be faintly visible to the naked eye and become a splendid target for backyard telescopes. Amateur astronomers can watch the comet as NASA's Deep Impact/EPOXI spacecraft dives into its vast green atmosphere and plunges toward the icy core. On Nov. 4th EPOXI will fly a mere 435 miles from Hartley's nucleus, mapping the surface and studying outbursts of gas at close-range.

Later in November, NASA astrobiologists will launch O/OREOS, a shoebox-sized satellite designed to test the durability of life in space. Short for "Organism/ORganic Exposure to Orbital Stresses," O/OREOS will expose a collection of organic molecules and microbes to solar and cosmic radiation. Could space be a natural habitat for these "micronauts?" O/OREOS may provide some answers. Bonus: The same rocket that delivers O/OREOS to space will carry an experimental solar sail. NanoSail-D will unfurl in Earth orbit and circle our planet for months. Occasionally, the sail will catch a sunbeam and redirect it harmlessly to the ground below where sky watchers can witness history's first "solar sail flares." On December 7, 2010, Japan's Akatsuki (Venus Climate Orbiter) spacecraft grabs the spotlight when it enters orbit around Venus. The mission aims to understand how a planet so similar to Earth in size and orbit went so terribly wrong. Venus is bone-dry, shrouded by acid clouds, and beset by a case of global warming hot enough to melt lead. Instruments on Akatsuki will probe Venus from the top of its super-cloudy atmosphere all the way to the volcano-pocked surface below, providing the kind of detailed information researchers need for comparative planetary.

"Take a deep breath," says Green, "because that was just the first three months of YSS!" The action continues in 2011 as Stardust NExT encounters comet Tempel 1 (February 14), MESSENGER enters orbit around Mercury (March 18), and Dawn begins its approach to asteroid Vesta (May). "For a full month Dawn will be able to see Vesta even more clearly than Hubble can," marvels Green. "The only way to top that would be to go into orbit." And that is exactly what Dawn will do in July 2011: insert itself into orbit for a full-year study of the second-most massive body in the asteroid belt. Although Vesta is not classified as a planet, it is a full-fledged alien world that is expected to mesmerize researchers as it reveals itself to Dawn's cameras. Next comes the launch of the Juno spacecraft to Jupiter (August), the launch of GRAIL to map the gravitational field of the Moon (September), and the launch of a roving science lab named "Curiosity" to Mars (November).

"The second half of 2011 will be as busy as some entire decades of the Space Age," says Green. Even then, YSS has months to go.

2012 opens with Mars rover Opportunity running the first-ever Martian marathon. The dogged rover is trundling toward the heart of Endeavour Crater, a city-sized impact basin almost two dozen miles from Opportunity's original landing site.

"Opportunity is already under the influence of the crater," says Green. "The ground beneath the rover's wheels is sloping gently down toward its destination—a welcome feeling for any marathoner." Sometime in mid-2012, Opportunity will reach Endeavour's lip and look over the edge deeper into the heart of Mars than any previous robotic explorer. The only thing more marvelous than the view will be the rover itself. Originally designed to travel no more than 0.6 miles, Opportunity's rest stop at Endeavour will put it just miles away from finishing the kind of epic Greek run that athletes on Earth can only dream about. Meanwhile, halfway across the solar system, Dawn will fire up its ion engines and prepare to leave Vesta. For the first time in space history, a spacecraft orbiting one alien world will break orbit and take off for another. Dawn's next target is dwarf planet Ceres, nearly spherical, rich in water ice, and totally unexplored.

The Year of the Solar System concludes in August 2012 when Curiosity lands on Mars. The roving nuclear-powered science lab will take off across the red sands sniffing the air for methane (a possible sign of life) and sampling rocks and soil for organic molecules. Curiosity's advanced sensors and unprecedented mobility are expected to open a new chapter in exploration of the Red Planet. "So the end," says Green, "is just the beginning. These missions will keep us busy long after YSS is history."

Author: [Dr. Tony Phillips](#) | Credit: Science@NASA

OCTOBER 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>Friday, October 8 7:30PM</p> <p>Peninsula Astronomical Society Meeting</p> <p>Foothill Community College 12345 Moody Road Los Altos Hills</p>	<p>DR. BRYAN MENDEZ, UC BERKELEY NASA’S WIDE-FIELD INFRARED SURVEY EXPLORER</p> <p>Our next PAS General Meeting will be held at 7:30PM on Friday evening of October 8 in our usual venue of Rm. 5015, Bldg. 5000 near Parking Lot #5 at Foothill Community College in Los Altos Hills. The speaker will be Dr. Bryan Mendez of UC Berkeley who will speak to us about NASA’S Wide-Field Infrared Survey Explore (WISE) Satellite. NASA’s Wide-field Infrared Survey Explorer (WISE) is mapping the sky in infrared light, searching for asteroids, the nearest and coolest stars, the origins of stellar and planetary systems, and the most luminous galaxies in the Universe. WISE is an unmanned satellite carrying an infrared-sensitive telescope that images the entire sky, providing a vast storehouse of knowledge about the Solar System, the Milky Way, and the Universe. During this lecture, Bryan will describe the mission, its history, current status, and some of the discoveries it has already made.</p> <p>WISE is one of several infrared imaging astronomical satellites launched or about to be launched by NASA and the European Space Agency including the Spitzer Space Telescope and the upcoming James Webb Space telescope. This bandwidth has been chosen by astronomers because so much in the way of interesting astronomical phenomena is best accessed in the infrared be it planet formation, star formation, all the way out to red shifted cosmological processes.</p> <p>Bryan hails from Traverse City, Michigan where the dark sky enthralled him from a very early age and inspired him to study astronomy. He graduated from the University of Michigan in 1997 with degrees in Astronomy, Physics, and Saxophone Performance. Bryan continued his education at the University of California at Berkeley, where he researched the large scale flow of galaxies in the nearby Universe by measuring their distances. He received his Ph.D. in Astrophysics from UC Berkeley in 2002. Bryan now works at the Center for</p>

	<p>Science Education at UC Berkeley's Space Sciences Laboratory to educate and inspire others about the wonder and beauty of the Universe. His work in space science education and public outreach involves developing programs for the public through the web and museums, developing classroom materials for students in K-12 classrooms, and conducting professional development for science educators. Bryan has spoken to the PAS before at about the cosmological distance ladder.</p> <p>As usual, I will let everyone know whether we will be having dinner with the speaker at Chef Chu's Chinese Restaurant in Los Altos at 6PM. Don't forget that parking is \$2.00 so bring some cash! Hope to see you all there!</p>
<p>Friday, October 8 9:00 p.m.</p> <p>Foothill Community College 12345 Moody Rd. Los Altos Hills</p>	<p>Foothill Observatory is open for public viewing every clear Friday evening from 9:00 p.m. until 11:00 p.m. Visitors can view the wonders of the universe through the observatory's 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, October 9 10:00 a.m. - 12:00 p.m. If it is clear</p> <p>Foothill College Observatory Foothill Community College 12345 Moody Rd. Los Altos Hills</p> <p>Saturday, October 9 Sunset: 6:42 p.m.</p> <p>San Mateo County Astronomical Society</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>Star Parties At Crestview Park Come out and bring the kids for a mind expanding look at the universe</p> <p>The City of San Carlos Parks and Recreation Department and the San Mateo County Astronomical Society has open Star Parties twice a month. These events are held in</p>

<p>Star Party</p> <p>Crestview Park San Carlos</p>	<p>Crestview Park, San Carlos California.</p> <p>Sunset at 6:52P 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: If you have kids interested in space or planets bring them here for a real life view of planets, nebula, star clusters and galaxies. If you are thinking of buying a telescope or want help using a telescope you own, come here to talk with experienced users. If you think you might have an interest in astronomy come and talk to experienced amateur astronomers.</p> <p><u>Cautions</u> Dress warmly and wear a hat. Visitors should park on the street and walk into the park so your headlights don't affect the observer's dark adaptation. Only park in the parking lot if you are arriving before dark and plan to stay until the end of the event. You shouldn't need lights but if you feel you do, only bring a small flashlight with the lens covered using red cellophane or red balloon. Please respect the telescopes and ask permission from the owner if you wish to touch. Parents, please watch your children. The park is residential, and adjacent to homes and backyards, please keep noise to a minimum.</p> <p>Astronomers arrive to set up at around sunset. Observing starts at about one hour after sunset and continues for two to three hours.</p>
<p>Friday, October 8 Saturday, October 9 7:30 p.m. - 10:30 p.m.</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) 12:00 p.m. – 5:00 p.m.: Observatories Open</p>
<p>Friday, October 8 Saturday, October 9 6:00 p.m.</p> <p>Chabot Space and Science Center 10000 Skyline Boulevard Oakland, CA 94619-2450 (510) 336-7300</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 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.</p>

	<p>Purchase your advanced tickets online or call the Box Office at (510) 336-7373.</p>
<p>Tuesday, October 12 12:00 Noon</p> <p><u>NOTE: This is Tuesday rather than the usual Wednesday!</u></p> <p>New SETI Headquarters 189 North Bernardo Ave. Mountain View</p>	<p>SETI Institute Colloquium Series</p> <p>10/12/2010 (special Tuesday)</p> <p>ARECIBO RADAR OBSERVATIONS OF NEAR-EARTH ASTEROIDS</p> <p>Ellen Howell, NAIC Arecibo/Cornell University</p> <p>Radar observations are one of the only ground-based techniques to spatially resolve near-Earth asteroids. Images with up to 7.5-m resolution reveal a wide variety of shapes, surface features and helped to discover many binary objects. Our understanding of the nature and evolution of NEAs has changed radically in recent years, in a large part due to the information from radar images, and shape models derived from them. I will discuss current results and upcoming improved capabilities of the Arecibo planetary radar system.</p>
<p>Wednesday, October 13 Noon</p> <p><u>Back to the usual Wednesday talk!</u></p> <p>SETI Institute Colloquium Series SETI Headquarters 189 North Bernardo Ave. Mountain View</p>	<p>NICK WOOLF, UNIVERSITY OF ARIZONA</p> <p>A NEW LOOK AT WHAT LIFE IS AND HOW IT BEGAN</p> <p>Life has two unique processes. The first is precision assembly, in which the shape of a molecule is selected, and it is “glued” to another precisely selected molecule. The second is when the assembler-glue-selector device exactly copies itself. The first item produced must be a structure so as to be survival-selected. In turn this selection needs to have the eventual effect of selecting the assembler-glue-selector. The system requires the development of two different polymers, one for structures, the other for information transfer. During the development of this precision, the proto-life is sustained by a dissipative process. It is explored why the assembler-glue-selector becomes RNA and ATP. Nitrogen provides the key NH bonds that are broken for “gluing” in both nucleic acids and amino acids. The requirements for the process, abundant availability of the nitrogenous organic materials from space, freshwater for the origin of membranes, and high temperatures and pressures for natural condensation reactions seem to uniquely select terrestrial geyser regions about 4.4 Gy ago as the site of the origin of terrestrial life.</p>
<p>Thursday, October 14 4:00 p.m. to 5:00 p.m.</p> <p>Stanford Linear Accelerator Center Third Floor Kavli Conference Room</p> <p>Contact: Neelima Sehgal</p>	<p>ASTROPHYSICS COLLOQUIUM BY SUDEEP DAS (UC BERKELEY)</p> <p>THE ATACAMA COSMOLOGY TELESCOPE: THE PRESENT AND THE FUTURE</p> <p>Arcminute resolution observations of the mm-wave sky are changing our view of the cosmic microwave background (CMB) in a fundamental way. Together with mapping out the acoustic features on the Silk damping tail of CMB, data from the Atacama Cosmology Telescope (ACT) are providing new insights into secondary CMB anisotropies and extragalactic point source populations that dominate the scene at small angular scales. A set of recent and upcoming papers showcases the broad spectrum of science coming out of the ACT project: ranging from power spectra, to new constraints on cosmological parameters, to a successful survey of galaxy clusters using the Sunyaev-Zel'dovich effect. In the first part of the talk, I will review these recent developments and give a status report on ACT. Then, I will describe future projects involving the gravitational lensing of the CMB, and the cross-correlation with external datasets. Finally, I will touch upon the prospects for</p>

	<p>ACTPOL, the version of ACT with polarization capabilities, which is scheduled to see first light in 2012.</p>
<p>Friday, October 15 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, October 16 10AM-12PM If it is clear</p> <p>Foothill College Observatory Foothill Community College 12345 Moody Road Los Altos Hills</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, October 16 4:00 p.m. -11:00 p.m.</p> <p>College of San Mateo 1700 W Hillsdale Blvd Science Bldg, San Mateo, CA 94402</p>	<p>ASTRONOMY DAY AT COLLEGE OF SAN MATEO AND JAZZ UNDER THE STARS Get your kids interested in Astronomy and spark a lifelong interest in science</p> <ul style="list-style-type: none"> • Learn how to choose a first telescope • Get started in Astronomy as a hobby • See Planetarium Shows • View Astronomy Videos • Participate in hands-on demonstrations • Kids can construct Astronomy related Crafts • Purchase and assemble a good quality Astronomical Telescope for \$30. • Learn how to get information about Astronomy events in San Mateo County • View the sky through telescopes from 8:00 to 11:00 PM <p>Sponsored by San Mateo County Astronomical Society Cost: Free</p>
<p>Friday, October 15 Saturday, October 16 7:30pm - 10:30pm</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 (weather permitting) On Saturday and Sunday afternoons come view the sun, moon, or Venus through Chabot's telescopes. Free with General Admission. 12pm - 5pm: Observatories Open</p>
<p>Friday, October 15 Saturday, October 16 6:00 p.m.</p> <p>Chabot Space and Science Center 10000 Skyline Boulevard Oakland, CA 94619-2450 (510) 336-7300</p>	<p>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).</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>Saturday, October 16 8:00 p.m. – 10:00 p.m.</p> <p>Main Plaza Lawrence Hall of Science UC Berkeley</p>	<p><u>SATURDAY NIGHT STARGAZING: 1ST AND 3RD SATURDAY ON THE LHS PLAZA</u> Special Event September 18 – October 16, 2010 <i>every other Saturday</i> 8-10 p.m. Lawrence Hall of Science, Main Plaza</p> <p>Sponsor: Lawrence Hall of Science (LHS) 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 Saturday Night Stargazing is a free public viewing program sponsored by LHS and Bay Area amateur astronomers. Stargazing is always weather permitting—be sure to dress warmly. Foggy and overcast skies can cancel stargazing at the last minute.</p> <p>For more information, join the LHS Stargazing Google Group or follow us on Twitter@LHSstargazing.</p> <p>Target audience: All Audiences Open to audience: All Audiences Attendance restrictions: Stargazing is always weather permitting—be sure to dress warmly. Foggy and overcast skies can cancel stargazing at the last minute.</p> <p>Event Contact: lhw@berkeley.edu, 510-642-5132</p>
<p>Monday, October 18 5:30 p.m.</p> <p>UC Berkeley Sibley Auditorium Bechtel Engineering Center Berkeley, CA 94720</p> <p>Cost: Free</p>	<p>SPEAKER: ARTHUR B. MCDONALD, QUEEN'S UNIVERSITY UNDERSTANDING NEUTRINOS USING DEEP DARK SCIENCE</p> <p>Neutrinos are extremely difficult to detect. However, in recent years large detectors located in deep laboratories to avoid cosmic background radiation have helped to define the properties of neutrinos and their role in the most basic laws of physics. Neutrinos have also become a valuable cosmic messenger, providing unique information from the core of the Sun and from the deepest reaches of the Universe. The lecture will discuss the current status of neutrino experiments, the role of neutrinos in basic physics and astrophysics and future measurements made possible by the low radioactivity experimental environment.</p>

2010 Club Officers & Contacts

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Club Telescopes

The SFAA owns eight very fine, easy to use, loaner telescopes well-suited for deep sky, planets, and star parties. All scopes are available to any SFAA member. The loaner custodians for the majority of our fleet are Pete & Sarah Goldie. Please contact them at telescopes@sfaa-astronomy.org for details if you are interested in borrowing a scope or if you have items you can donate for the loaner program (eyepieces, star maps/books, red flashlights, collimator, etc.). Please contact the appropriate member indicated below if you are interested in borrowing one of the telescopes.

- 1) 6" f/10.3 Dobsonian/Ken Frank ken@sfaa-astronomy.org
- 2) 8" f/7 Dobsonian/Pete Goldie
- 3) 8.5" f/6 Dobsonian/Pete Goldie
- 4) 10" f/8 Dobsonian/Pete Goldie
- 5) 114mm f/4 Newtonian StarBlast/Pete Goldie
- 6) 8" f/10 Celestron SCT/Annette Gabrielli/ annette@sfaa-astronomy.org
- 7) 8" f/10 Meade SCT/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](http://www.sfaa-astronomy.org) at [sfaa-astronomy.org](http://www.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

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San Francisco Amateur Astronomers

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 \$75 Supporting _____

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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.