

# ★ ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

Volume 50, Number 11 – November 2003

## Morrison Planetarium Farewell Show

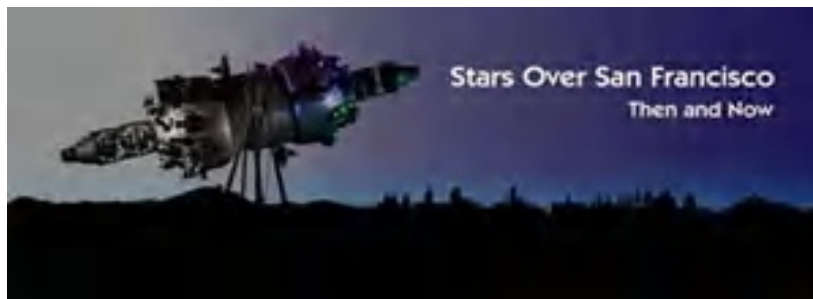
Wednesday, November 19, 7:00 p.m.

Morrison Planetarium, California Academy of Sciences

Golden Gate Park, San Francisco

In conjunction with the San Francisco Amateur Astronomers

Free Admission



On November 8, 1952, Morrison Planetarium at the California Academy of Sciences in Golden Gate Park opened its doors to visitors for the first planetarium show in San Francisco history.

The Morrison Planetarium will be closing its doors forever at the end of this year, as the California Academy of Sciences builds new facilities in Golden Gate Park. The one-of-a-kind, hand built Morrison Planetarium projector will be retired forever.

Help the San Francisco Amateur Astronomers say farewell to this institution of Bay Area astronomy for the past 50 years, by attending a special show sponsored by the Planetarium and the SFAA. Admission is free. Steve Craig, the Planetarium director, will be on-hand to present the show.

We will see the sky show "Stars Over San Francisco." Celebrate 50 years under the stars of Morrison Planetarium and find out how the Planetarium and our knowledge of the Universe itself have changed since the Planetarium opened its doors November 8, 1952.

California Academy of Sciences rebuilding, directions and more <http://www.calacademy.org/> San Francisco Amateur Astronomers events, directions and more: <http://www.sfaa-astronomy.org/sfaa/>

## 2003 Club Officers & Contacts

<i>President</i>	<b>MichaelPortuesi</b>	<b>(415) 550-9366</b>
<i>Vice President</i>	Nancy Cox	(415) 269-8259
<i>Secretary</i>	Morris Jones	(415) 453-2885
<i>Treasurer</i>	Lorrie Boen	
<i>Speaker Chair</i>	Linda Mahan	
<i>City Star Party</i>	Randy Taylor	(415) 255-8670
<i>Membership &amp; Subscriptions</i>	Lorrie Boen	
<i>Bulletin Editor</i>	Phil Estrin	(415) 703-4533
<i>Telescope Loans</i>	Pete Goldie	(415) 206-9867
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<i>Board Members</i>	Cheryl Schudel	
	Bill Stepka	
	Randy Taylor	
	Dennis Tye	
	Jim Webster	
	Dan Christian	
	James Mace	
<i>Alt.Board Members</i>	Bob Naeye	(650) 756-0430
<i>Webmaster</i>	Joe Amato	

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### MEMBERSHIP DUES

The mailing label on the back of this issue shows the month and year through which your membership was paid. If the date has passed, your membership has expired. Members may receive no more than one bulletin after the expiration of membership.

Please renew soon if your membership is expiring.

## CLUB TELESCOPES

The SFAA owns 4 club loaner telescopes, Dobsonian/Newtonian reflectors: 6" f/10, 8" f/7, and 10" f/8 and a Starblast. They are available for extended periods (30 days or more) to SFAA members. These are generally very fine scopes, easy to use and well suited for deep sky, planets, and star parties. The loaner custodians are Pete Goldie & Sarah Szczechowicz, located in San Francisco. If you are interested in borrowing a scope, or if you have items you can donate for the loaner program (eyepieces, star maps/books, collimator, etc.) please contact them via email (<mailto:pg@lbin.com>) or phone (415-206-9867). Email communication is preferred and strongly recommended for a quick and accurate reply.

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### 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. Our librarian is Dan Christian.

For information on the course tapes themselves:

<http://www.teach12.com/ttc/assets/coursedescriptions/180.asp>

## Online services for SFAA members

The SFAA's Secretary's Web Site helps keep SFAA information together and accessible to members. The site URL is <http://www.whiteoaks.com/sfaa/>. At this site you can find such information as minutes from meetings of the Board of Directors, the SFAA official by-laws, and other information. SFAA also offers email lists to supplement the bulletin board offered at the SFAA's official web site. At present there are two email lists -- an unmoderated list for use primarily for business and discussion by the Board of Directors (but open to all members), and a moderated announcement list for all SFAA members. If you would like to be added to the SFAA-announce email list, please contact the secretary ([secretary@sfaa-astronomy.org](mailto:secretary@sfaa-astronomy.org)) and let him know. You can also sign up for the list yourself at this URL:

<http://www.whiteoaks.com/mailman/listinfo/sfaa-announce>

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*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 seventh day of the month.** Send your articles to Phil Estrin at [pestrin@dir.ca.gov](mailto:pestrin@dir.ca.gov).

## FROM YOUR PRESIDENT

Our 2003 observing season is now winding down, with the final installments of our Mount Tam and City star parties having completed a few weeks ago. It's time to start reflecting on our accomplishments and share them with fellow members.

Is there a club member you feel should be honored in some way, for their accomplishments, contributions, and dedication to SFAA and to amateur astronomy in general? We have three yearly awards - the Observer of the Year Award, the Service Award, and the Herman Fast Award.

Observer of the Year is awarded to the club member who has made the most accomplishments, or who has shown the most enthusiasm as an active observer during 2003.

The Service Award is given to the club member who has provided the most noteworthy support for SFAA, or for amateur astronomy in general.

The Herman Fast Award is given for exceptional long-term support of SFAA and amateur astronomy, both at and away from the telescope.

Each December the Board selects the recipients for these awards, and we are seeking nominations for 2003. If you have a name or two in mind, please let us know!

Do you have something to say to your fellow club members at the December general meeting? Any topic that's astronomically related is fair game, and talks can be any length up to 20 minutes. Perhaps you've completed a particularly interesting observing project, have some photos from a trip, or have done some astronomical research. Whatever your topic, please contact our Speaker Coordinator, Linda Mahan (email: [n.mahan@comcast.net](mailto:n.mahan@comcast.net)) to book your spot on the December meeting agenda.

If you are creative or artistic, the Astronomical Arts competition will also be held at the December Meeting. Any type of astronomical artwork may be submitted for judging by club members present at the meeting. Finally, the Astrophotography competition will allow the imaging crowd to share their beautiful sky photos and win recognition from the membership. Check out the announcements in this issue for full details.

Regardless of whether you will be entering our year-end competitions, you will most certainly want to be on hand to watch the winners receive their prizes at the Annual Awards Dinner Saturday, January 24. Reservations are necessary, so get your confirmation in to our Treasurer, Lorrie Boen, soon. The Awards Dinner takes the place of a general meeting in January, and it's a great time to socialize with the rest of SFAA. Hope to see you there.

**MICHAEL PORTUESI**  
[president@sfaa-astronomy.org](mailto:president@sfaa-astronomy.org)  
415-550-9366

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### ELECTIONS - (No, not the government type) - But You Could Hold Office in the SFAA!



We need a few good astronomers to put down their lovely toys and give a little time to the club as an officer or board member. The roles are: President, Vice President, Secretary, Treasurer and Board Members. It is important to attend as many board meetings as possible. Board Members are required to attend at least nine meetings each year. The meetings are at 7:00 p.m., the second Wednesday each month at the Western Addition Library at Scott and Geary. Please consider running for one of these positions. A little time means a lot to the club, and it is a rewarding experience. Please contact any current officer or board member if you are interested!

# SFAA ANNUAL AWARDS DINNER

Saturday, January 24, 2004

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

Basque Cultural Center . 599 Railroad Ave . South San Francisco . (650) 583-8091



*Prime Rib with Scalloped Potatoes & Vegetables (\$27.00)*  
*Breast of Chicken Chasseur with Vegetables & Rice (\$22.00)*  
*Vegetarian Pasta (\$18.50)*

*Soup, salad, bread & butter, ice cream and coffee included.*  
*Tax and gratuity included.*

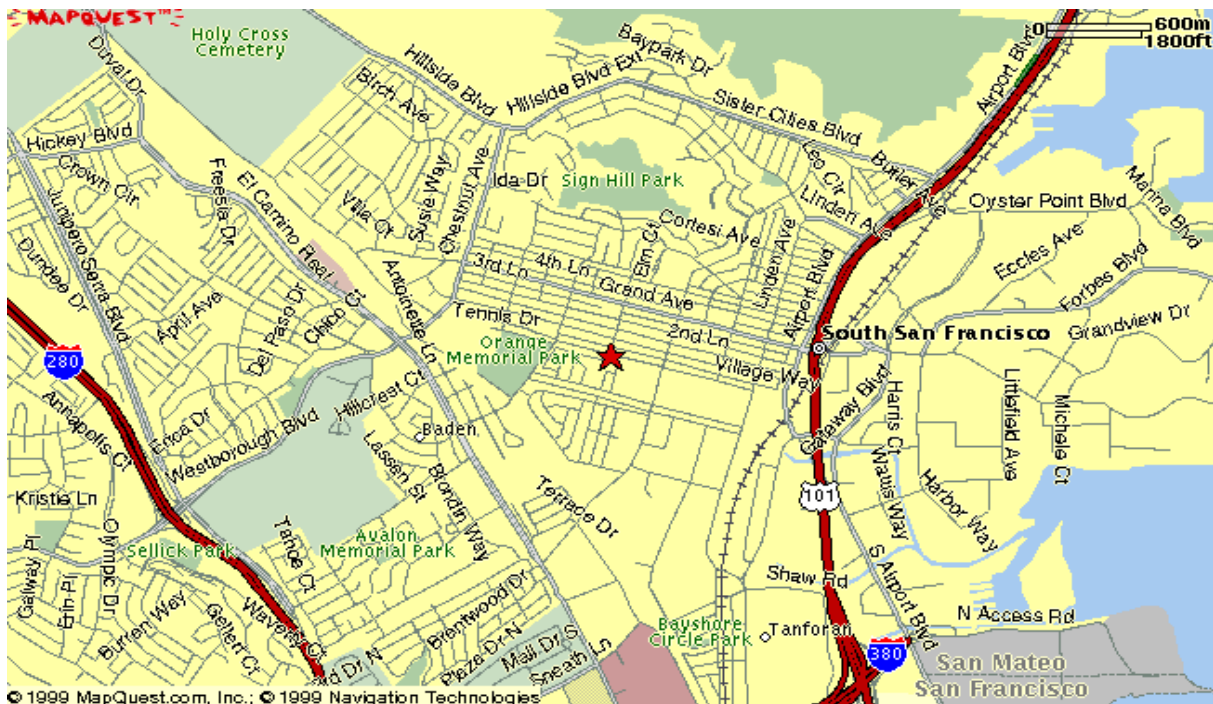
Please send a check or money order, along with your choice of entrée, to Lorrie Boen at 765 Geary Street #302, San Francisco, CA 94109 by **January 9, 2004**. Any requests received after this date cannot be guaranteed.

**Basque Cultural Center From Highway 280:** Take Highway 280 North to the Avalon Drive Exit in South San Francisco. Continue on Junipero Serra Boulevard to Westborough Blvd. Turn right and proceed to El Camino Real. Turn right and proceed to Orange Blvd. Turn left., and proceed to Railroad Ave. Turn right. Continue to 599 and turn right into parking lot.

From San Francisco, take Highway 280 South. From Highway 280, take the Westborough Exit, following the same directions as above after Westborough Blvd.

**Basque Cultural Center From Highway 101:** Take Highway 101 North to South San Francisco Grand Avenue Exit, turn right.. Turn right on East Grand Avenue, then left on Grand Avenue. Turn left on Magnolia and proceed for two blocks. Cross Railroad Avenue into the Basque Cultural Center parking lot.

From San Francisco, take Highway 101 South to the Grand Avenue Exit in South San Francisco. Continue on Grand Avenue. Turn left on Magnolia and proceed two blocks. Cross Railroad Avenue into the Basque Cultural Center parking lot.



### *Astrophotography Award*

Members are encouraged to submit astrophotographs (up to three entries per member) for judging in the astrophotography award. Submissions are accepted October, November or at the December general meeting. All entries will be exhibited at the December meeting and voted upon by the general membership. Entries must have been taken this year (2003) and be of an astronomical theme. Size should be reasonable (11' x 14' or less), mounted or unmounted.

### *The Astronomical Arts Award*

This contest is open to all members and will be judged by the membership at the December General Meeting. We had several fine entries at the inaugural competition last year. Any art related to astronomy is welcome. Your drawings of astronomical objects are worth sharing with other club members, as well as craftwork, sculpture, jewelry, and paintings. There are almost no restrictions here. Size is a consideration since we have to fit all entries, and club members, in the Planetarium, alongside the Astrophotography Award entries. Also, no living critters, please. The Academy may frown on any living, breathing things that are not part of official exhibits. Live acts are restricted to the human kind. Please bring your entries to the Meeting on December 17, 2003. Any questions can be directed to club officers, listed on page two in this bulletin.

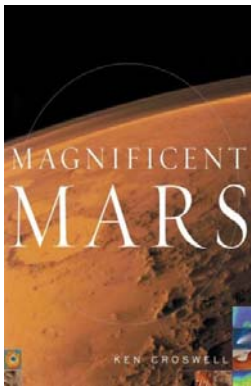
### *Observer of the Year Award*

The Observer of the Year Award is given for noteworthy observing accomplishments during the year, such as qualifying for the Messier Award, the Herschel Club, observing all the planets, getting articles or photographs published, etc. Nominations will be accepted in October and November. Members may submit their own name or the names of anyone they feel is qualified. Candidates should prepare a list of their observing accomplishments in 2002 for judging by the December meeting.

Dr. Ken Croswell - Magnificent Mars

November 6, 2003 . 7:30 p.m.

CODY'S BOOKS, 2454 Telegraph Ave (at Haste) - Three blocks south of UC Berkeley – (510) 845-7852



Description: The planet Mars has long offered the prospect of another living world in the solar system. Tonight, with an armada of spacecraft scrutinizing the red planet as never before, Harvard-trained astronomer and author Ken Croswell shows you the best color images of Mars and describes the planet from pole to pole, exploring Martian geology, the Martian atmosphere, Martian volcanoes, and Martian water, all organized around the four great elements of Mars: Earth, Air, Fire, and Water. Along the way you'll see nearly every image from Dr. Croswell's new book *Magnificent Mars*, including volcanoes over twice as tall as Mount Everest, canyons that could stretch from Ohio to California, and floods of water far greater than any known on Earth. Billions of years ago, on a world warmer and wetter, Mars may have given rise to life whose fossils await discovery today.

Ken Croswell earned his doctorate in astronomy from Harvard University and is the author of several highly acclaimed books, including *The Alchemy of the Heavens*, *Planet Quest*, *Magnificent Universe*, *See the Stars*, and *The Universe at Midnight*.

"Our little neighbor Mars will be the first New World of the century that has just dawned. Ken Croswell has done a superb job in outlining what is known, and what is suspected, about the next home of mankind beyond the Moon." --Sir Arthur C. Clarke

"At last, a work that synthesizes the latest discoveries on the red planet into an accessible yet accurate form. *Magnificent Mars* is a magnificent book."-- Robert Zubrin, author of *The Case for Mars* and president of the Mars Society

More at <http://kencroswell.com/>



Special Lecture Announcement  
Co-presented with the American Astronomical Society  
Silicon Valley Astronomy Lecture Series

"The Mystery of Black Holes"

Wednesday . November 12, 2003 . 7:00 p.m.

Dr. Alan Dressler, of the Carnegie Institution, will give a non-technical illustrated talk on: "The Mystery of Black Holes" in the Smithwick Theater, Foothill College, El Monte Road and Freeway 280, in Los Altos Hills, California.

Free and open to the public. Parking on campus \$2. Call the series hotline at 650-949-7888 for more information.

Co-sponsored by

NASA Ames Research Center . The Foothill College Astronomy Program . The SETI Institute  
The Astronomical Society of the Pacific

Dr. Dressler will discuss what black holes are, how they are formed, and how astronomers have suspected, and then proven, that black holes -- from the relatively small mass of a single star to the colossal size of billion stars -- actually exist. Dr. Dressler is well known for his ability to discuss astronomical topics in non-technical terms. He is one of the leading scientists investigating the birth of galaxies and their evolution through time, and is the author of the popular book "Voyage to the Great Attractor", which describes his work finding the largest structures in the universe.

This talk is also part of the Second Century Lecture Program of the American Astronomical Society, celebrating that Society's 100<sup>th</sup> anniversary.

The second total lunar eclipse of the year!

**November 8 - 5:30 p.m. to about 8:00 p.m.**

This is a Saturday night, it gets dark early. Moon will rise in full eclipse just like it did in June, except earlier in the evening. Educators, this is an outstanding chance for a school event. I have lots of ideas for class activities before and during the eclipse. Such as: estimate where the moon will rise and where. I'll be at St. Anselms School with my Project Astro teacher partner, Anita Piscicotta and her classes.

Benjamin Dean Lecture Series, Morrison Planetarium  
California Academy of Sciences, Golden Gate Park San Francisco, CA 94118  
Series theme is Cosmology.

Details on the series: <http://www.calacademy.org/planetarium/special.html - dean>  
Info (415) 750 7141.

**November 18 - 7:30 p.m.**

**Dr. David Spergel, Princeton University**

**"Taking the Universe's Baby Picture: Results From the Wilkinson Microwave Anisotropy Probe (WMAP)"**

By observing the tiny variations in the microwave background, the leftover heat from the big bang, cosmologists can infer the physical conditions in the early universe. What are the implications of its measurements for the age, composition, and fate of the universe? These observations provide insight into the first moments of the big bang and test the bold speculation that the universe underwent a period of superexpansion called inflation. Tickets are \$3.00 per person per lecture. All lectures begin at 7:30 p.m. Purchase in advance of lecture date recommended. Make checks payable to **Morrison Planetarium**. Send self-addressed stamped envelope and check to:

**December 16 - 7:30 p.m.**

**Dr. Jessica Rosenberg, University of Colorado, Boulder**

**"Galaxies and What Lies Between Them"**

The universe is filled with tenuous filaments of gas and dark matter with galaxies and galaxy clusters residing at the intersections. Is the gas between the galaxies a reservoir of pristine material still in the process of forming galaxies or is it the refuse of star formation in galaxies? What is the connection between galaxies and these intergalactic filaments?

Wow ! The next installment of Stacy's StarGazing Getaways!!!

## Lake San Antonio: Or, Let's take a day trip and spend a few nights

Well, dear reader, it has been a while since I last took you on an adventure of astronomical intrigue, creative cooking capers and general trivia, eh?

My bad for being gone for so long. But I hope the following installment of Stacy's Stargazing Getaways provides some giggles, interest and a desire to get out and enjoy the night sky.

Lake San Antonio in Monterey County has been the site for CalStar during the past four years. It is a huge area with many activity opportunities through out the year. Because it has so much room, a decent horizon and is fairly easy to get to, Lake San Antonio has become a destination of choice for many astronomers. My most recent visit there re-emphasized the fact that this is one good place! The sky is very dark with seeing pretty decent and steady. Horizons are quite unobtrusive (at the overflow camping area). Free showers in the main campgrounds provide some luxury and if you are not one to camp, there are decent "cottages" available year round, as well as a park store with the basic essentials. Check out the parks web page for a complete description of Lake San Antonio (including fees for camping): <http://www.lakesanantonio.net/>

CalStar is a three-day event held at the end of the summer star party season, usually in September/October, depending on the new moon - it's always after Labor Day. The SJAA sponsors it and everyone and their auntie is invited to attend. It is very laid back...almost an antithesis of the majority of star parties. There are areas for imagers, areas for visual observers and late arrivals. What's nice about the locations is that many people from the south end of our great state are able to participate - the central driving location is a great boon for everyone.

Darkness started around 8 PM each night of CalStar. Since I was working on hard to find Messier from the summer regions of the sky, I needed all the help with darkness I could get. My main object of challenge was M75. My, my, my....this was one hard item to find, particularly since it was in the middle of nowhere as far as guide stars were concerned. But found I did - after two hours and very sore knees. The next rather tough item was M30 - also a refractor-yoga, down-on-your-knees type of M object. But bagged them I did.

Some suggestions for you, dear reader. Lake San Antonio geographically is high coastal desert. So in essence, the best times to visit are spring and fall. Summer nights are decent, but it gets very, very hot there. Winter is hit-and-miss due to the rainy season (but it's well worth going to participate in eagle watching!) There are RV hook ups, tent camping areas and the above-mentioned cottages. Water sports abound and you can rent kayaks down at the marina.

All in all, Lake San Antonio is a well-rounded observing site...something for everyone.

Darkness 9 stars . Seeing 7 stars . Ease of access 9 stars . Overall 8.5 stars

Clear skies!

Stacy

[M42gal@hotmail.com](mailto:M42gal@hotmail.com)

## Mt Diablo Astronomical Society Annual Swap/Sales meeting

All AANC members and friends,

The Mt. Diablo Astronomical Society has its annual sales meeting on the third Tuesday of November; in 2003; that is November 18<sup>th</sup>. We welcome people to bring items for sale or to come and browse for items to purchase. We only ask that you donate 5% of the sales price to the club. We welcome all items that are related to amateur astronomy which is interpreted to include telescope making, photography, CCD and other related materials.

The sales meeting begins at 7:15 and doors open at 6:45 at the Concord Police Training Center located conveniently near the intersection of Route 4 and Willow Pass Road. For detailed directions, contact me and I will send them.

Jim Scala

e-mail: [jscala2@comcast.net](mailto:jscala2@comcast.net)

web: <http://home.comcast.net/~jscala2>

# Astrobiology Events/Webcasts at Exploratorium in November

LINDA DACKMAN [<mailto:lindad@exploratorium.edu>]

Hello. I thought this information from the Exploratorium should be of particular interest to you in the astronomy community.

**November 15, 22, 2003**

**From the Origins to the Limits of Life**

**Live Webcasts and In-Museum Activities . Phyllis C. Wattis Webcast Studio**

**Live at Exploratorium <http://www.exploratorium.edu/astrobiology>**

***NEW ASTROBIOLOGY WEBSITE LAUNCHES ON NOVEMBER 3***

Is there life elsewhere? How do we look for it? Will it look like life on Earth? And what do we do if we find it? We have all been asking these questions for a long time, and, as NASA scientists prepare to look for liquid water on Mars, the Exploratorium takes a look behind the scenes and talks with leading scientists in one of the newest fields of science, astrobiology. From Saturday, November 15 to Saturday, November 22, come to the Exploratorium or go online at <http://www.exploratorium.edu/astrobiology> and find out what extreme forms of life on our own planet may tell us about life elsewhere, perhaps even in our own solar system. The website launches November 3.

From the Origins to the Limits of Life, a series of in-museum events and live webcasts, explores the challenges, methods and implications of what it means to look for and discover life beyond our planet. Meet leading biologists, chemists, geophysicists and social scientists at the Exploratorium who are currently developing new forms of nano- and other technologies and new ways of doing science as they search for life. This event is made possible by the National Science Foundation and the McBean Family Foundation, and is free with museum admission.

The program is as follows:

**Saturday, November 15**

**Is There Life Elsewhere?**

**With Special Guest, Dr. Frank Drake, In Person at the Exploratorium**

**Phyllis C. Wattis Webcast Studio . 1:00 p.m. and online at <http://www.exploratorium.edu/astrobiology>**

Find out how a mathematical equation  $N = R^* f_s f_p n_e f_i f_c L$  frames the question of life in the universe. We'll talk with Frank Drake, the author of Drake's Equation, and one of the founders of the SETI Institute (Search for Extra-Terrestrial Intelligence), about his famous equation and how it launched a worldwide search for signs of intelligent life in the universe. Dr. Drake was one of the first radio astronomers who scanned the radio spectrum looking for patterns created by a technological society, a search method that continues to this day. We'll also talk with him about the Fermi Paradox, the strongest argument so far against life elsewhere.

**Sunday, November 16**

**Life's Ingredients**

**With UC Santa Cruz Chemist Dr. David Deamer, In Person at the Exploratorium**

**Phyllis C. Wattis Webcast Studio . 1:00 p.m. and online at <http://www.exploratorium.edu/astrobiology>**

Julia Child and physicist Philip Morrison once cooked up and sampled "primordial soup," a mixture of ingredients said to be the materials from which life sprang on the early Earth. But is the notion of primordial soup accurate? The raw materials needed for life are ubiquitous in the universe, but how they came together is a mystery. Dr. David Deamer is developing an alternative theory for the emergence of life on the early Earth. Deamer suspects that the "houses for life" existed before life itself. He is exploring ways in which nature could have formed self-assembling membranes (in ways similar to the way that soap forms bubbles), and how those membranes protected and nurtured early life forms. Join us as we talk with Dave Deamer, do some hands-on experiments with membranes and soap bubbles, and even watch vintage footage of the famous Julia Child as she samples her elemental consommé.

**Tuesday, November 18**

**With NASA Scientist Jonathan Trent, In Person at the Exploratorium**

**Phyllis C. Wattis Webcast Studio . 11:00 a.m. and online at <http://www.exploratorium.edu/astrobiology>**

Astrobiologist Jonathan Trent of NASA's Ames Research Center in California studies heat-loving microbes, as well as microbes that live in environments that would be extremely toxic to humans and other life forms. He has discovered that



some microbes beat the heat by making a "heat-shock protein" that appears to stabilize cell membranes. He has also found a similar protein in human blood cells. Understanding biological adaptations like heat-shock proteins is expanding the realm of where life might be possible, and even generating new ideas in nanotechnology. We'll talk with Dr. Trent about the emerging field of astrobiology, and learn how his research might inform what kind of life might be found on Jupiter's moons.

**Wednesday, November 19**

**Extreme Conditions: Life Around Deep-Sea Thermal Vents**

**Phyllis C. Wattis Webcast Studio . 11:00 a.m. and online at [www.exploratorium.edu/astrobiology](http://www.exploratorium.edu/astrobiology)**

Join us as we talk live to a biologist on board a research vessel associated with Wood's Hole Oceanographic Institute, to discuss life around deep-sea thermal vents in the Pacific Ocean. A local expert will be live at the Exploratorium to share his thoughts.

**With NASA Scientist, Chris McKay, In Person at the Exploratorium**

**Phyllis C. Wattis Webcast Studio . 1:00 p.m. and online at <http://www.exploratorium.edu/astrobiology>**

Dr. McKay is a geologist who has been actively involved with the NASA Mars expedition planning. He has criss-crossed the globe seeking extreme environments as close as possible to the conditions that may have existed on an earlier, warmer and wetter Mars. These environments include super-dry regions, such as Chile's Atacama Desert, and cold deserts in Siberia and the Canadian Arctic. McKay has also traveled to his favorite Mars analog environment on Earth: the dry valleys of Antarctica. McKay discovered a kind of algae living inside sandstone rocks along the cliff tops of Antarctica's Dry Valleys. The rock is porous to light and water, providing microscopic ecosystems for the photosynthetic microbes. He'll show us some of his rocks and talk about the physical conditions necessary for life to exist. (They're much harsher than scientists once believed.)

**Thursday, November 20**

**NASA scientist Natalie Cabrol, live from the side of a volcano at Licancabur, Chile**

**Phyllis C. Wattis Webcast Studio . 11:00 a.m. and online at <http://www.exploratorium.edu/astrobiology>**

**Time subject to change, depending on weather conditions at the volcano**

Dr. Nathalie Cabrol, who had a hand in selecting a landing site for the NASA Mars Expedition Rover (MER) mission, looks for Mars analogs in extreme environments on earth. She found one at Licancabur volcano, which houses the highest lake on Earth, at 19,409 feet. The lake environment combines low-oxygen, low-atmospheric pressure, and high-UV radiation. It is covered with ice most of the year, but the temperature of the water at the bottom of the lake remains above freezing, making Licancabur a unique analog to ancient Martian lakes. If conditions are right, we'll host a live chat with Dr. Natalie Cabrol, a biologist exploring the life that exists in three lakes at the top of this volcano.

**Life Elsewhere In Our Solar System**

**with Exploratorium Physicist Paul Doherty, In Person at the Exploratorium**

**Phyllis C. Wattis Webcast Studio . 1:00 p.m. and online at <http://www.exploratorium.edu/astrobiology>**

Join Exploratorium physicist and educator, Paul Doherty, and explore the possibilities of where life might exist elsewhere in our solar system. One of the goals made explicit in NASA's Astrobiology Roadmap is to determine whether there is (or once was) life elsewhere in our solar system, particularly on Europa (one of the moons of Jupiter) and Mars. Paul will discuss the red planet, what scientists will look for in their planetary explorations, and talk about some of the Mars-like places on Earth he's visited, including the Antarctic Dry Valleys.

**Friday, November 21**

**What about Intelligent Life Outside Our Solar System?**

**Listening for Life at Arecibo Observatory with Astronomer Dan Wertheimer**

**In Person at the Exploratorium**

**Phyllis C. Wattis Webcast Studio . 11:00 a.m. and online at <http://www.exploratorium.edu/astrobiology>**

No discussion of life elsewhere would be complete without exploring the tantalizing notion of intelligent beings outside our solar system. SETI, or the Search for Extraterrestrial Intelligence, is a scientific effort seeking to determine whether there is, in fact, intelligent life outside Earth. One research method, radio SETI, listens for artificial radio signals coming from other stars. Dan Wertheimer is chief scientist and principle investigator for Berkeley's SETI efforts, including listening at Arecibo Observatory. SETI@home is a radio SETI project that lets anyone with a computer and an Internet connection participate.

Over 4.5 million people have participated internationally by downloading a screensaver which uses a participant's CPU to process radio signal data from distant stars.

**Saturday, November 22**

**Listening for the Long Term with SETI Director Dr. Jill Tarter**

**Prerecorded Interview . 11:00 a.m. and online at <http://www.exploratorium.edu/astrobiology>**

Jill Tarter is a gifted storyteller when it comes to conveying the challenges of searching for extraterrestrial life and seducing you with the possibility that such life might actually exist. Tarter, director for the Center for SETI Research at the SETI Institute in Mountain View, California, was the inspiration for the character played by Jody Foster in the motion picture Contact. Her field of study was theoretical, high-energy astrophysics. Currently, the Center for SETI Research develops signal-processing technology and uses it to search for signals from advanced technological civilizations in our galaxy. It is a long-term, multigenerational project and actively seeks to capture the interest and imagination of young people.

**Saturday, November 22**

**Talking with ET: The Language and Timescales of Interstellar Communication**

**Prerecorded Interview with Dr. Douglas Avouch. 1:00 p.m. online at <http://www.exploratorium.edu/astrobiology>**

What if we did receive a transmission from another intelligent life form in the universe? What should we say, and who should speak for humanity? For now, SETI scientists solve the problem by listening for transmissions from other civilizations rather than sending out messages of our own. But Dr. Douglas Vakoch holds perhaps the most unique of all jobs on the planet: Director of the Interstellar Message Group at the SETI Institute in Mountain View, California. The only social scientist at SETI, Dr. Vakoch researches ways humans might collectively create messages that could be transmitted across interstellar space, allowing communication between humans and extraterrestrials even without face-to-face contact. He is particularly interested in how we might compose reply messages that would begin to express what it's like to be human. Vakoch feels that it will take many generations to come up with a meaningful message, but he believes it is equally important to start prototyping now. Join us as we talk with Dr. Vakoch about this unique mission, and how he collaborates with scientists, artists, and composers.

**Note - schedule is subject to change.**

The Exploratorium is located inside the Palace of Fine Arts in San Francisco's Marina District. Museum admission is as follows: Museum Members FREE; Adults (18-64) \$12.00; University Students (with ID) \$9.50; Senior Citizens (65+) \$9.50; People with disabilities \$9.50; Youth (13-17) \$9.50; Children (4-12) \$8.00; Children Under 4 FREE. First Wednesdays of the month FREE. Exploratorium hours are TUESDAY THROUGH SUNDAY 10am-5pm, CLOSED MONDAYS, except for Martin Luther King Jr. Day, Presidents' Day, Memorial Day and Labor Day. The Exploratorium is wheelchair accessible. For information, call (415) EXP-LORE.

## Important Upcoming Dates

**Board Meeting**      November 12 – 7:00 p.m.  
December 10 – 7:00 p.m.  
January 14 – 7:00 p.m.

*Western Addition Library  
Scott & Geary Streets, San Francisco*

**SFAA General Meeting & Lecture**

November 19  
December 17 - Elections & Member's Night  
January 24 - Awards Dinner  
(6:00 p.m. Open Bar – 7:00 p.m.  
Dinner)

*Morrison Planetarium, Golden Gate Park  
Refreshments at 7:00 p.m. . Speakers begin at  
7:30 p.m.*

**City Star Party**

January 31 – Sunset, 5:32 p.m.

*Telescope Clinic starts one hour before Star Party*

# SFAA 2004 CALENDAR

## JANUARY

- 14 - 7PM Board Meeting
- 24 - Awards Dinner  
6PM Open Bar  
7PM Dinner
- 31 - 4:30 PM Telescope Clinic
- 31 – Sunset 5:32 PM City Star  
Party (CSP)

## FEBRUARY

- 11 – 7PM Board Meeting
- 18 – 7PM General Meeting
- 28 – 5PM Telescope Clinic  
(CSP)
- 28 – Sunset 6:02 pm City Star  
Party

## MARCH

- 10 – 7PM Board Meeting
- 17 – 7PM General Meeting
- 27 – Sunset 6:29 PM City Star  
Party
- 27 – Mount Tam Telescope  
Clinic
- 27 – Mount Tam Public Star  
Party

## APRIL

- 14 – 7PM Board Meeting
- 17 – Sunset 6:48 PM Mount  
Tam  
SFAA-only Star Party
- 21 - General Meeting 7 pm
- 24 - Mount Tam Telescope  
Clinic
- 24 - Mount Tam Public Star  
Party

## MAY

- 12 – 7PM Board Meeting
- 15 - Sunset 8:13 PM Mount  
Tam SFAA-only Star Party
- 19 – 7PM General Meeting
- 22 - Mount Tam Telescope  
Clinic
- 22 - Mount Tam Public Star  
Party

## JUNE

- 9 – 7PM Board Meeting
- 16 – 7PM General Meeting
- 19 - Sunset 8:35 PM Mount Tam  
SFAA-only Star Party
- 26 - Mount Tam Telescope  
Clinic
- 26 - Mount Tam Public Star  
Party

## JULY

- 14 - 7PM Board Meeting
- 17 - Sunset 8:30 pm Mount Tam  
SFAA-only Star Party
- 21 - 7PM General Meeting
- 24 - Mount Tam Telescope  
Clinic
- 24 - Mount Tam Public Star  
Party

## AUGUST

- 11 - 7 PM Board Meeting
- 14 - Sunset 8:03 PM Mount Tam  
SFAA-only Star Party
- 18 –7PM General Meeting
- 21 - Mount Tam Telescope  
Clinic
- 21 - Mount Tam Public Star  
Party

## SEPTEMBER

- 8 – 7PM Board Meeting
- 11 - Sunset 7:23 PM Mount Tam  
SFAA-only Star Party
- 15 – 7PM General Meeting
- 18 - Mount Tam Telescope  
Clinic
- 18 - Mount Tam Public Star  
Party

## OCTOBER

- 9 - Sunset 6:40 PM Mount '  
Tam  
SFAA-only Star Party
- 13 - 7PM Board Meeting
- 16 - Mount Tam Telescope  
Clinic
- 16 - Mount Tam Public Star  
Party
- 20 – 7PM General Meeting
- 23 - Sunset 6:21 PM City Star  
Party

## NOVEMBER

- 10 – 7PM Board Meeting
- 17 – 7PM General Meeting
- 20 – 4PM Telescope Clinic  
(CSP)
- 20 - Sunset 4:55 PM City Star  
Party

## DECEMBER

- 8 – 7PM Board Meeting
- 15 – 7PM General  
Meeting/Member's  
Night
- 18 – 4PM Telescope Clinic  
(CSP)
- 18 - Sunset 4:53 PM City Star  
Party

Founded in September 1952, the San Francisco Amateur Astronomers (SFAA) is an association of people who share a common interest in astronomy and other related sciences. Our membership consists of people from all walks of life, educational backgrounds and ages. Many SFAA members own their own telescopes; some have been made by hand in local telescope-making classes and vary in size from 6 to 25 inches.

**Treasurer, SFAA, 765 Geary St., #302, San Francisco CA 94109**

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

- \$10 enclosed, youth/student membership
- \$25 enclosed, individual membership
- \$30 enclosed, family or foreign membership
- \$40 enclosed, institutional membership
- \$75 enclosed, supporting membership

**Select one category:**

Name: \_\_\_\_\_ Telephone: \_\_\_\_\_

Address: \_\_\_\_\_

Email address: \_\_\_\_\_

## San Francisco Amateur Astronomers Membership Application

**San Francisco Amateur Astronomers**  
 c/ Morrison Planetarium  
 California Academy of Sciences  
 Golden Gate Park, San Francisco, CA 94118



Information Hotline: (415) 289-6636

Web Page: [www.sfaa-astronomy.org](http://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.