

★ ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

VOL. 52, No. 11 – NOVEMBER 2004

NOVEMBER 17, 2004 – GENERAL MEETING

RANDALL MUSEUM
199 MUSEUM WAY
SAN FRANCISCO

7:00 PM DOORS OPEN
7:30 PM ANNOUNCEMENTS
8:00 PM SPEAKER

STEVE GOTTLIEB

The NGC and IC Project An Amateur - Professional Collaboration



For the past two decades, I've been involved with a group of amateur and professional astronomers (The NGC/IC Project at <http://www.ngcic.com/>) whose goal is to re-examine the 100 to 200-year old source material used by J.J. Dreyer to compile the NGC and IC. A staggering 15 to 20 percent of all NGC entries have known or potential identification problems — poor positions, misidentifications, duplicate entries, incorrect classifications, and confusion with single or multiple stars. Our catalogue sleuthing has resulted in recovering literally hundreds of mistaken identities, lost objects, and other mysteries that have created a maze of confusion in today's professional astronomical databases and amateur

software. In this talk I'll discuss some examples of our catalogue sleuthing (and background on the early visual astronomers) as well as the current status of our detective work.

*Steve Gottlieb has been an active observer and catalogue junkie for over 25 years and member of SFAA since 1981. He's written a number of deep-sky observing articles for *Sky & Telescope*, *Astronomy*, *Deep Sky Magazine* as well as the SFAA bulletin. Some of his observing challenges can be found at *Adventures in Deep Space* at <http://www.angelfire.com/id/jsredshift/>. His 600 favorite deep-sky objects are featured in the Orion "Deep Map 600" and the results of his catalogue sleuthing can be found in a number of popular digital setting circles which use his corrected databases.*

2003 CLUB OFFICERS & CONTACTS

President	Michael Portuesi	(415) 550-9366
Vice President	Nancy Cox	(415) 269-8259
Secretary	James Mace	
Treasurer	Lorrie Boen	
Speaker Chair	Linda Mahan	
City Star Party	Randy Taylor	(415) 255-8670
Membership & Subscriptions Bulletin	Lorrie Boen	
Editor-in-Chief	Phil Estrin	(415) 703-4533
Associate Editor	Annette Gabrielli	(415) 703-4539
Telescope Loans	Pete Goldie	(415) 206-9867
Honorary Director	John Dobson	
Board Members	Jim Webster	
	Steve Bryson	
	Danny Christian	
	Cheryl Schudel	
	Ken Frank	
	Slava Evaniokoff	
	Randy Taylor	
Alt. Board Members	John Dillon	
	Phil Estrin	
Webmaster	Joe Amato	

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.

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 (<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>

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.

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.



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>

**FROM YOUR PRESIDENT
MICHAEL PORTUESI**

SFAA is still seeking people to run for President, Vice-President, Treasurer, and Secretary as well as Board positions. A handful of members have volunteered to run for Board positions, but we still need people to make the commitment for the crucial officer positions that run the club.

We need your names by November 20 in order to run them in the ballot appearing in the December newsletter.

Thank you for your support of SFAA.

Position Open – Treasurer

The main duties are processing renewals and new memberships, picking up mail from the post office box, banking the checks, and attending the board meetings. Maintaining current and lapsed membership lists and sending an electronic file of address labels to the bulletin editor once a month. There are other occasional checks to be written, such as the post office box fees, insurance premiums and donations.

If you have any interest and want to ask about it, please email treasurer@sfaa-astronomy.org.

Clear skies . Lorrie Boen . Treasurer

IMPORTANT UPCOMING DATES



<p>BOARD MEETING NOVEMBER 10, DECEMBER 8 7:00 P.M. <i>Western Addition Library</i> <i>Scott & Geary Streets, San Francisco</i></p>	<p>SFAA GENERAL MEETING & LECTURE NOVEMBER 17 DECEMBER 15 7:00 P.M. DOORS OPEN – 7:30 P.M. ANNOUNCEMENTS 8:00 P.M. SPEAKER <i>Randall Museum, 199 Museum Way</i> <i>(near 14th Street and Roosevelt)</i> JANUARY 22 – ANNUAL DINNER – 6:00 BASQUE CULTURAL CENTER 599 RAILROAD AVENUE, So. SAN FRANCISCO</p>
<p>CITY STAR PARTY OCTOBER 23 – 6:21 P.M. NOVEMBER 20 – 4:55 P.M. JANUARY 15 – 5:00 P.M.</p>	



ANNUAL AWARDS

Astrophotography

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 (2004) and be of an astronomical theme. Size should be reasonable (11' x 14' or less), mounted or unmounted.

Astronomical Arts

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 15, 2004. Any questions can be directed to club officers, listed on page two in this bulletin.

Observer of the Year

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 2004 for judging by the December meeting.

SFAA ANNUAL AWARDS DINNER

Saturday, January 22, 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

Keynote Speaker

DR. DEBRA FISCHER

San Francisco State University and UC Berkeley

Dr. Debra Fischer is an astronomer at San Francisco State University and the University of California, Berkeley. Since 1997, she has been a member of the planet-hunting team led by Geoff Marcy and Paul Butler. Together, this team has discovered or co-discovered the majority of the over-100 known planets orbiting stars other than the Sun, making it the most prolific planet-hunting team in history. While Marcy and Butler observe primarily at Keck, Dr. Fischer conducts the planet search at nearby Lick Observatory, where she observes 400 stars with the 3-meter Shane Telescope and the 1-meter Coude Auxiliary Telescope.



Menu Choices

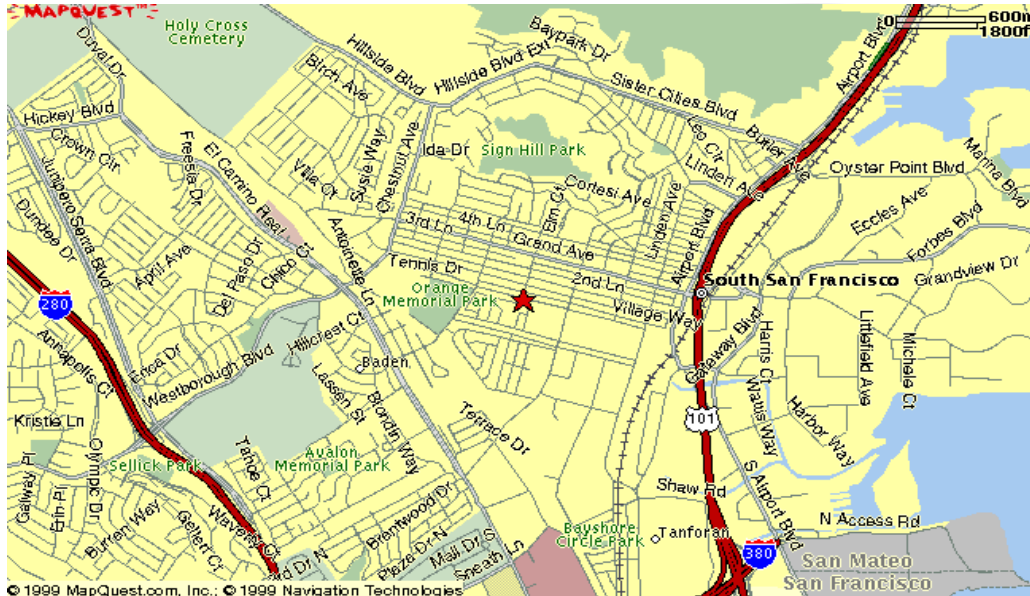
Prime Rib with Scalloped Potatoes & Vegetables (\$32.50)

Breast of Chicken Chasseur with Vegetables & Rice (\$23.50)

Vegetarian Pasta (\$20.50)

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

Please send a check or money order (made out to San Francisco Amateur Astronomers), along with your choice of entrée, to SFAA at P.O. Box 15097, San Francisco CA 94115 by **January 5, 2005**. **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 Blvd. to Westborough Blvd. Turn right and proceed to El Camino Real. Turn right; proceed to Orange Blvd. Turn left and proceed to Railroad Ave. Turn right. Continue to 599; 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 Ave., then left on Grand Ave. Turn left on Magnolia and proceed for two blocks. Cross Railroad Ave. into the Basque Cultural Center parking lot.

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

FIELD TRIP

**SATURDAY
NOVEMBER 6
10:00 A.M**



**Stanford
Linear
Accelerator
Center**

SFAA will host a tour of the Stanford Linear Accelerator Center for members and their invited guests.

Those who wish to attend should sign up at the general meetings or by calling (415) 221-6004. If you leave a voice message you must also leave a phone number and your primary residence, and the names of any other family members or guests who will be attending along with their addresses and full names. All tour participants need to bring photo identification for access to the lab. Please check with the attendant at the front gate on your arrival for information on where to park and learn the tours starting place.

SLAC is located on about 430 acres of Stanford property. It is a government-owned facility operated by Stanford University for the Department of Energy Office of Science. The main entrance is located on Sand Hill Road, just east of highway 280, on the South side of the road. If you need additional driving directions these can be found at www.slac.stanford.edu/welcome/location.html.

The number of people attending will be limited to the first thirty. Tours take about two hours. Feel free to bring cameras. The tour guide will meet you at the tour meeting room, where the group will be given a presentation on SLAC, followed by a bus tour of the site. There is no fee.

Sunday . November 21, 2004 . Starting at Noon SJAA Fall Astronomical Swap Meet . Houge Park . San Jose

Telescopes, eyepieces, mountings, mirrors, lenses, clock drives, books, camera equipment, star charts, finders, tubes, diagonals, photographs, space art - everything you need to make your hobby more enjoyable. You name it, it's likely to be there. Check your garage and closets for anything astronomical you would like to sell. Anyone can buy and sell, it's fun and easy!

This is the fourth year for the swap, which is a follow on to the spring auction that has been run for twenty-four years. There is no auction, just the swap sale. Get your holiday shopping done early this year!

Doors open at 12:00 p.m. to set up tables and bring in material for sale. Selling will begin at 1 p.m., and will run as long as needed (probably 3 p.m.). Each buyer pays the seller. Sellers are to keep track of their sales and pay 10% commission for items (new or used) with a cap of \$50 for any one item, \$500 maximum per seller. The commission is fully tax deductible. There are no table fees. Please bring items that would interest the astronomical audience such as astronomical, science, or tech items. The SJAA reserves the right to turn away inappropriate items for the swap.

Do you have a large item to sell such as a telescope? Please email swap@sjaa.net with a description and a photo of the item or a link to your own website for some pre-swap publicity. Do you have only one item to sell, such as a book or eyepiece? A consignment table for people to drop off up to 3 items will be available so that they can shop at the swap and not be hindered by selling an item.

For more information and directions, visit our web site at <http://www.sjaa.net>.

Extend Your Observing Time

by Bob Berta (SFAA remote reporter in Michigan)

I just had a good observing run...saw the Moon, Rigel, Betelgeuse, Sirius, Procyon, Pollux, Castor, Aldebaran, Polaris, and Saturn and its rings. While you might be thinking...big deal...those are just "everyday" objects. What if I told you I observed these at 10:00....AM in broad daylight!

The computerized telescopes like Meades and my Celestron 11" GPS have the ability to go into "HIBERNATE" mode. Last night I did a normal observing run but instead of turning off everything and putting the scope away....I put my scope in Hibernate mode. On the Celestron (and Meades) when you do this the telescope shuts down but remembers all of its alignment. So the next morning you just turn the scope back on and it is back in action without any star alignment. To find any object you just enter the object you want and the scope goes right to it.

The stars were quite easy to see and I even saw the doubles on some of them that have doubles. Saturn's rings were very obvious although of course the white background sky lessened contrast. Even so I was surprised at how well the rings stood out.

While my 11" telescope showed these stars and Saturn clearly...you may be thinking that a smaller scope won't show them. You can see them with a small scope too...in fact many of the stars were also evident in my 8x50 finder scope!

For those without a GOTO scope use of digital setting circles...or a set of accurate RA/DEC engraved rings on your scope mount will work also.Caution!! Since you are observing during the daylight hours you have to be VERY careful that your telescope doesn't aim into the sun. For this reason (and because my house was in the way) I avoided the planets near the sun this time of year. About the only other caution I would offer is that you need to pay attention to the dangers of leaving your scope out over night. While I live in a very safe area and have no problem leaving my gear out over night...you may want to be a bit more cautious. And of course there is always the threat of night time rain. I got a large BBQ cover from my local hardware store that will completely cover my scope and mount and is waterproof.

While these objects wouldn't normally excite me, I thought this was a particularly memorable observing session as this opens up a whole new area of observing challenges.

OBSERVING COMETS (AND A FEW OTHER THINGS) AT JOSHUA TREE

JANE HOUSTON JONES

With cooler temperatures in the desert at long last, we brought our two reflector telescopes to an Octoberfest star party at a friend's house near the entrance to Joshua Tree National Park in Southern California October 9th, 2004. When we arrived, piles of saucer-shaped lenticular clouds hung in the air over the undulating hills and a jumble of craggy rounded rock formations formed our southern observing horizon.

The rocks themselves were worth the drive. Molten liquid, heated by the movement of earth's crust, oozed upward and cooled while still below the surface millions of years ago. These intrusions of granitic rock developed a system of rectangular joints. Some oriented horizontally, some oriented vertically, and some overlaid the others at high angles. This system of joints developed rectangular blocks, and over millions of years water percolated down through the joint fractures, loosened mineral grains and rectangular stones weathered to spheres. Ancient flash floods washed away the ground surface and the huge boulders settled one on top of another creating the rockpiles we see today.

After an Octoberfest's-worth of beer and six varieties of sausages, red cabbage, onion bread and potato salad were consumed, we watched the shadow of the earth darken the valleys and eastern horizon, and prepared for a night of observing. First we held an old fashioned star party for about 20 friends and neighbors of our hosts. It was windy and the high clouds offered tantalizing sucker holes, which didn't dampen the enjoyment of the crowd, at least the crowd at our two sturdy Litebox reflectors. We offered views of Pluto, Uranus, some Milky Way wonders, and selections from the observing lists below for several hours until the guests drifted off homeward or conversation bound.

Hoping for an after midnight comet viewing clear sky, I took a disco nap and woke up at midnight to a clear windless night. The seeing wasn't great, but the sickly greenish glow of a neighbors mercury vapor spotlight had mercifully timed out. It was almost comet time!

While waiting for prime comet time, and continuing while Mojo was finding the comets in his 14.5 inch Litebox reflector, I hunted hopelessly for several fall Hickson galaxy clusters in my 17.5-inch reflector. The

seeing wouldn't support the 200x magnification I needed for confirmation of these faint galaxies, although I may have seen a few galaxy blobs in amongst the star blobs. I'll try Hickson galaxy clusters 3, 4, 6, 9, 15 and 16 again next week at another Joshua Tree location - a location we discovered while completing a Messier Marathon with comet discover Don Machholz this past March 2004.

We first aimed our telescope at SN2004et, a type II supernova in mag. 8.9 NGC6946, a spiral galaxy in Cepheus, near the border with Cygnus. R.A. = 20h 35m 25.4s, Decl. = +60o 07' 17.6". The time of our observation was 1:45 a.m. 10/10/04 (08:45 UT) 10/10/04. NGC6946 was discovered in 1798 by William Herschel and eight supernovae have now been detected in this galaxy since 1917. It is leading the supernova statistics, with more supernovae more than follow-up galaxy M83 <<http://www.seds.org/messier/m/m083.html>>.

SN2004et was discovered September 27, 2004 by Italian observer Stefano Moretti during a full moon. We used the AAVSO chart to find the supernova and also to estimate the magnitude. The chart, with its hand drawn galaxy spiral arms, also shows the location of SN1980. The supernova is located 4.1' E and 1.9' S of the galaxy nucleus, just west of a pair of mag 13.9 and 13.6 stars. Mojo estimated the magnitude to be 12.6 and I estimated it to be 12.9, using a nearby mag. 12.7 star and the fainter mag 13 stars for comparison. Try it for yourselves!

Then we settled in for some morning comet hunting.

First up Comet 88P/Howell. This comet was supposed to be mag. 13.37, coma diameter 1.5' R.A. = 02h 20m 48.3s, Decl. = +10o 06' 22" at 01:49 a.m. We looked for it at 1:55 a.m. (08:55 UT) and detected a small glow, more of a lumpy darkness kind of glow with averted vision. This was on the limit of the night's conditions.

2:10 a.m. (09:10 UT) Comet C/2004 Q2 (Machholz) Don's comet was a beauty! Congratulation to local California comet discoverer Don Machholz for his 10th comet! It should brighten over the next month or two! Right now, it's mag 9.14, and located in Eridanus. Coma diameter 3.7" R.A. = 05h 03m 26.1s, Decl. = -27o 34' 03" . We saw the bright nucleus and halo, but not much of a discernable tail. I tried it in my 17.5-incher, after Mojo

located it in his 14.5 incher and I could at least see the direction of the tail with the additional aperture.

2:24 a.m. (09:24 UT) Comet 78/P Gehrels mag 11.67, coma diameter 2.8' near the Pleiades and Aldebaran in the morning sky. Smaller than Q2 Machholz, this comet had a more visible tail.

Our fourth and last comet was the most fun observation of the evening, following on the celebratory nature of observing Q2 Machholz. C/2004 Q1(Tucker) is a mag 11.5 comet we observed at 2:33 a.m. (09:33), coma diameter 1.7' comet located R.A. = 01h 48m 52.5s, Decl. = +21° 55' 09". The comet was easily seen, but the additional treat was spotting two galaxies in the same field of view. NGC678 and NGC680, a pair of nearly edge-on spiral and elliptical galaxies that were an interesting find themselves! NGC 678 was a sliver of light which glows at 12.2 magnitude. Nearby NGC 680 is slightly brighter, 11.9 mag. and being elliptical, was nearly the same size (but a little larger) than the comet. A small nudge of the eyepiece would have revealed 5 additional galaxies in the 13-14 magnitude range had the seeing been better.

The wind had picked up, and the temperature was decreasing. Moonrise was at 3:12 a.m. but it took an additional 10 minutes for the 26 day old waning crescent to rise over the nearby Copper Mountain. First we saw the two "horns" appear, and soon the earthshine was cradled in a sliver of moon like a smile. We packed up the telescopes, and enjoyed sleeping in our friend's trailer for a few hours before heading for home two hours away.

Scary Halloween observing list:
<http://ephemeris.sjaa.net/0110/b.html>

Caroline Herschel objects:
<http://www.seds.org/messier/xtra/similar/cher.html>

Supernova 2004et
<http://www.astrosurf.com/snweb2/2004/04et/04etHome.htm>

AAVSO chart for SN2004et: http://www.aavso.org/cgi-bin/shrinkwrap.pl?path=/charts/CEP/NGC_6946/NGC6946-E.GIF

Limiting magnitude charts:
<http://nineplanets.org/lm/rjm.html>

Don Machholz's 8/27/2004 comet discovery:
<http://ephemeris.sjaa.net/0410/b.html>

Date October 9 p.m. to October 10 a.m., 2004

Location: near Joshua Tree, CA

Altitude: 3,500 feet

Latitude: 34° N

Longitude: 116° W

Temperature 86° at sunset, 56° at 2:30 a.m.

Humidity 23% at sunset, 47% at 2:30 a.m.

Seeing: soft to poor 2/5, Limiting magnitude using area 8 alpha-beta-zeta Tau Comet location, size, magnitude and finder charts: SkyTools v2.2 Equipment: two LITEBOX reflectors: 14.5-inch f/4.8 at 94X and 17.5-inch f/4.5 at 125 to 222X with 80mm short tube finder running from 16x to 30x.

JANE HOUSTON JONES
34.2048N 118.1732W, 637.0 FEET
JANE@WHITEOAKS.COM
HTTP://WWW.WHITEOAKS.COM

WEDNESDAY . NOVEMBER 10 . 7:00 PM
SILICON VALLEY ASTRONOMY LECTURE SERIES

ASTRONOMER ELIOT QUATAERT OF U.C. BERKELEY
NON-TECHNICAL, ILLUSTRATED TALK

BLACK HOLES: THE SCIENCE BEHIND THE SCIENCE FICTION

Dr. Quataert will begin by describing what black holes are (and what they are not!). He will then discuss how black holes are discovered and how they give rise to some of the most remarkable and bizarre phenomena in the universe.

Dr. Quataert is a professor in the Astronomy Department at UC Berkeley where he is a highly regarded teacher and public lecturer. He is one of the leading scientists studying how black holes are formed, the effects of black holes on their surroundings, and how black holes reveal themselves when hot gas from the neighborhood falls into them. He has received a number of national awards for young scientists including the Alfred P. Sloan Fellowship and the Packard Fellowship for Science and Engineering.

No background in science will be required for this talk, which will interest everyone with a love of the frontier between science and science fiction.

SMITHWICK THEATER
FOOTHILL COLLEGE
EL MONTE ROAD AND FREEWAY 280
LOS ALTOS HILLS

Smithwick Theater, Foothill College, El Monte Road and Freeway 280, Los Altos Hills, California
Parking on campus: \$2.00 (eight quarters) Parking lots 1, 5, 6 and 7 provide easy access to the theater.
Free and open to the public - 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

SAN FRANCISCO CITY STAR PARTIES
SATURDAY
NOVEMBER 20, 5:00 P.M.
DECEMBER 18, 5:00 P.M.

Join the San Francisco Amateur Astronomers (SFAA) in sharing the wonders of the night sky in San Francisco. Ask about your favorite constellation or astronomical phenomenon. Telescopes will be provided, or you may bring your own. The star parties will be held in the parking lot next to the *USS San Francisco* Memorial at Lands End on El Camino del Mar, just north of 48th and Pt. Lobos avenues, off of Geary Blvd. For more information about the program and weather conditions, please call the SFAA hotline at (415) 289-6636 or visit the SFAA website at www.sfaa-astronomy.org.



SFAA 2005 CALENDAR

JANUARY

- 15 CSP TELESCOPE CLINIC 4 PM
- 15 CITY STAR PARTY 5 PM
- 22 SFAA ANNUAL DINNER 7 PM

FEBRUARY

- 9 BOARD MEETING 7 PM
- 16 GENERAL MEETING –
ANNOUNCEMENTS 7:30 PM
SPEAKER 8 PM
- 19 CSP TELESCOPE CLINIC 4:30 PM
- 19 CITY STAR PARTY 5:30 PM

MARCH

- 9 BOARD MEETING 7 PM
- 16 GENERAL MEETING –
ANNOUNCEMENTS 7:30 PM
SPEAKER 8 PM
- 19 CSP TELESCOPE CLINIC 5 PM
- 19 CITY STAR PARTY 6 PM
- 19 MOUNT TAM PUBLIC STAR PARTY

APRIL

- 13 BOARD MEETING 7 PM
- 16 MOUNT TAM TELESCOPE CLINIC
- 16 MOUNT TAM PUBLIC STAR PARTY
- 20 GENERAL MEETING –
ANNOUNCEMENTS 7:30 PM
SPEAKER 8 PM

MAY

- 11 BOARD MEETING 7 PM
- 14 MOUNT TAM TELESCOPE CLINIC
- 14 MOUNT TAM PUBLIC STAR PARTY
- 18 GENERAL MEETING –
ANNOUNCEMENTS 7:30 PM
SPEAKER 8 PM

JUNE

- 8 BOARD MEETING 7 PM
- 11 MOUNT TAM TELESCOPE CLINIC
- 11 MOUNT TAM PUBLIC STAR PARTY
- 15 GENERAL MEETING –
ANNOUNCEMENTS 7:30 PM
SPEAKER 8 PM

JULY

- 9 MOUNT TAM TELESCOPE CLINIC
- 9 MOUNT TAM PUBLIC STAR PARTY
- 13 BOARD MEETING 7 PM
- 20 GENERAL MEETING –
ANNOUNCEMENTS 7:30 PM
SPEAKER 8 PM

AUGUST

- 10 BOARD MEETING 7 PM
- 13 MOUNT TAM TELESCOPE CLINIC
- 13 MOUNT TAM PUBLIC STAR PARTY
- 17 GENERAL MEETING –
ANNOUNCEMENTS 7:30 PM
SPEAKER 8 PM

SEPTEMBER

- 14 BOARD MEETING 7 PM
- 10 MOUNT TAM TELESCOPE CLINIC
- 10 MOUNT TAM PUBLIC STAR PARTY
- 21 GENERAL MEETING –
ANNOUNCEMENTS 7:30 PM
SPEAKER 8 PM

OCTOBER

- 8 MOUNT TAM TELESCOPE CLINIC
- 8 MOUNT TAM PUBLIC STAR PARTY
- 12 BOARD MEETING 7 PM
- 15 CSP TELESCOPE CLINIC 5:30 PM
- 15 CITY STAR PARTY 6:30 PM
- 19 GENERAL MEETING –
ANNOUNCEMENTS 7:30 PM
SPEAKER 8 PM

NOVEMBER

- 9 BOARD MEETING 7 PM
- 12 CSP TELESCOPE CLINIC 4 PM
- 12 CITY STAR PARTY 5 PM
- 16 GENERAL MEETING –
ANNOUNCEMENTS 7:30 PM
SPEAKER 8 PM

DECEMBER

- 10 CSP TELESCOPE CLINIC 4 PM
- 10 CITY STAR PARTY 5 PM
- 14 BOARD MEETING 7 PM
- 21 GENERAL MEETING –
ANNOUNCEMENTS 7:30 PM
SPEAKER 8 PM

CURRENTLY UNSCHEDULED:
YOSEMITE TRIP
ANNUAL PICNIC

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, POB 15097, San Francisco CA 94115

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:

Email address:

Address:

Name: Telephone:

San Francisco Amateur Astronomers Membership Application

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



Information Hotline: (415) 289-6636

Web Page: www.sfaa-astronomy.org

Sharing the Wonders of the Universe

Has your membership expired? Your mailing label includes the month and year through which your membership is paid. If it is past, your membership has expired and this may be your last issue.