

ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

VOL. 52, No. 8 – AUGUST 2004

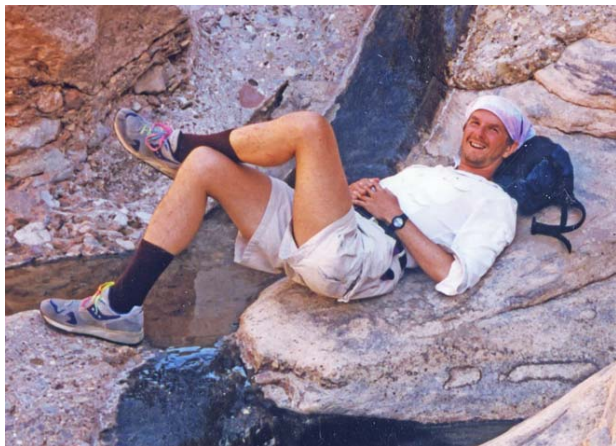
AUGUST 18, 2004 – GENERAL MEETING

RANDALL MUSEUM
199 MUSEUM WAY
SAN FRANCISCO

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

LECTURE SERIES: PART 2 OF 2

HOW STARS WORK: THE DETAILS **STEVE BRYSON**



All stars, including the sun, shine by combining lighter atoms like into heavier ones. The sun, for example, creates most of its sunlight by fusing hydrogen into helium in a complex, multi-step process. Every atom in the universe heavier than lithium, including the carbon and oxygen in your body, was created in a star in this way. This amazing process is the result of the four forces of nature working together: gravity to squeeze gas to high pressures and temperatures, the strong nuclear force which causes hydrogen atoms to fuse, the electromagnetic force which provides the energy which the weak nuclear force to uses to turn the protons in hydrogen into neutrons. How often atoms fuse, which is why the sun shines for 10 billion years,

is determined by the strange world of quantum mechanics. This talk will walk us through the action of these forces in a picturesque way, all the way down to the quarks that make up protons and neutrons. We will see where the heavy elements come from, and learn which stars in the sky will make more.

The talk will end with the story of how heavy elements get back out into space to form new stars, planets and us.

Steve Bryson is an SFAA board member and a research scientist at NASA Ames Research Center. Since 1985 he has enjoyed teaching popular adult education classes in relativity, quantum mechanics, elementary particles and astrophysics at the California Academy of Sciences. Steve has a long-time love of astronomy, and worked for several years at the Adler Planetarium in Chicago. This summer he is completing the Ph.D. program in scientific computation and computational mathematics at Stanford University.

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 Evankoff	
	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

If you attend the Star Parties at Mount Tamalpais State Park, *please read this message!* It is very important.

The supervising ranger at Mount Tamalpais State Park has provided SFAA with a new "Use Permit" for our star parties. It specifies the rules we must follow at the park. A copy of the permit appears in this newsletter. Please read it carefully.

Most of the rules are the same as you are familiar with, but there are some changes. Here are the most important:

- SFAA will no longer provide our own parking placards. They will be provided by the Park, and individually numbered, for SFAA to distribute to members. That means we will have to pass out new parking placards to everyone who already has one this year.
- Everyone must vacate the park by 2 am, unless we get permission from the rangers in advance.
- The gate combination will change for each event. The "designated person" (i.e. the person who signed up for the night) will get the combination from the ranger, and is allowed to share it with two other qualified gatekeepers (those who have taken the Mount Tam training sessions) to share the load in managing the gate.

In exchange for this formalization of rules, the Supervising Ranger is allowing SFAA private use of the Park, without charge, on nights other than the public Mount Tam star parties.

As I write this message, there are no private nights scheduled, but we are looking for date suggestions and

people who would be willing to run the gate for these events. (*You must have completed gate training with Mount Tam State Park in advance*, in order to be a gatekeeper for an event).

We need to provide the Park with the list of dates in advance. The rangers require 24 hours notice as to who will be the designated gatekeeper, or if we are calling the event off (if there are no volunteers to run the gate). The phone number to call is listed in the permit.

Ken Frank has agreed to contact the Park with information about dates and volunteers. If you are interested in running the gate for a private star party, or have suggestions for dates, give him a call at 415-789-0459 or email him: kennethfrank@planitarium.net.

Also, you can check the new "Mount Tam" bulletin board at the SFAA website (<http://www.sfaa-astronomy.org>) preceding a private event to learn event dates, and coordinate sign-ups for gatekeeper duty.

The private star parties are being offered to SFAA in exchange for our continued support of the public events. If people stop going to the public events, and the number of participants drops, the Park may revoke permission for the private events. So please keep that in mind.

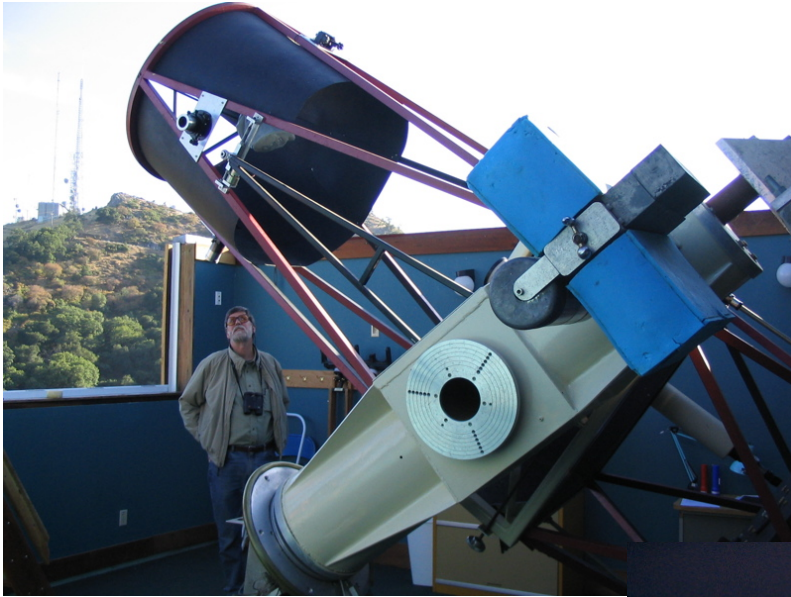
Finally, I'd like to give very special thanks to Board member Steve Bryson for conducting the dialogue with Mount Tamalpais State Park and working out the details of the permit. Also to Ken Frank for coordinating the private events at the park, and our webmaster Joe Amato for putting together a great new bulletin board system on the website we can use for communication and coordination. Check it out!

SAN FRANCISCO AMATEUR ASTRONOMERS SPECIAL USE PERMIT FOR MOUNT TAMALPAIS STATE PARK

This special use permit is granted to the SFAA in recognition for their participation and support of the Mount Tamalpais Astronomy program. The permit allows access to the Rock Springs Parking lot in Mount Tamalpais State Park during the park's normal closure hours. **The permit is subject to the approval of the Mt. Tamalpais Supervising Ranger based on the following conditions:**

1. The SFAA will be allowed to utilize Mt. Tamalpais State Park Rock Springs Parking Lot for the purpose of "Star Gazing" following public Astronomy programs and on nights that have been requested and approved by the Supervising Ranger or their designee.
2. The SFAA are permitted to access the Rock Springs Parking Lot, after park closure, by driving to and from said lot using the Pantoll Road only. All SFAA vehicles shall have a placard clearly displayed on the windshield of each vehicle when parked at the Rock Springs Lot. Placards will be provided by the park and shall be dated by year. In an effort to inform SFAA members of the conditions contained in this permit, a copy of the permit shall be attached to the placard when issued by the SFAA. On Astronomy nights, new membership sign up shall end at Sunset. *All vehicles without the placard will be cited for CCR 4358 parking in violation of posted hours.*
3. The SFAA shall designate an SFAA member for each Astronomy Program. This person shall identify themselves to the Ranger on duty as the contact person for the after hours "Star Parties". If there is no SFAA designee the after hours "Star Party" will be canceled.
4. Only the designated SFAA member (plus two SFAA assistants) shall have the combination to the lock on the Pantoll gate. Only the Pantoll gate shall be open, closed and secured after hours. This person and the additional (2) selected SFAA assistants shall be responsible for the ingress and egress of all SFAA members once the park is closed. The Pantoll gate shall always be closed and locked during "Star Parties". The designated SFAA member(s) will always escort departing members down the mountain to the Pantoll gate to unlock and re-lock the gate. The Pantoll gate shall never be "Dummy" or falsely locked.
5. The SFAA designee shall be present at the Rock Springs Parking Lot for the duration of the event. The designee shall be the last SFAA person to leave the park and shall be responsible to ensure that no SFAA members remain behind.
6. All SFAA members shall vacate the park by 0200 hours (2 AM) and the designated SFAA member shall secure the Pantoll gate. Special arrangements for early morning "star gazing" events can be made on an exception basis. Advance notice is required for hours extending beyond 2AM. At no time will camping be permitted.
7. Fire Season or other inclement weather may cause conditions in which Mt. Tamalpais State Park or a portion thereof that directly affects the Rock Springs Parking Lot will be closed and the event cancelled. The designee should contact the park (415-388-3653) to determine if the park is open or closed.
8. SFAA shall remove all litter generated by the after hours event.
9. All emergencies that occur shall be reported via telephone to Park Dispatch at: 1-866-227-4181 or 911.
If using a cell phone do not dial 911 – Dial 415-472-0911 for fast response.
10. All Park Rules and Regulations apply with the addition: **No dogs will be permitted in the park when the park is closed. No smoking.**

SFAA NIGHT AT FREMONT PEAK OBSERVATORY JULY 9, 2004



John Dillon inspects the 30-inch telescope at Fremont Peak during SFAA Night at Fremont Peak

Slava Evanikoff sets up his brand new Orion ED-80 refractor telescope at Fremont Peak, July 9.



Stefanie Ulrey gets her Orion Starblast ready for a night's observing at Fremont Peak, July 9.

August 14, 2004 "Strait to the Stars" Star Party at San Pablo Bay

Everyone is invited to participate in the second annual "Strait to the Stars" star party and celebration at the San Pablo Bay National Wildlife Refuge on Mare Island (near Vallejo) Saturday night, August 14, 2004.

The event is part of the Carquinez area's "Celebrate the Strait" festivities and is hosted by Wildlife Refuge Director Christie Smith and coordinated by Bart Paugh, EAS member and Chabot volunteer. All are invited to come out and bring their telescopes (and families) for a wonderful observing opportunity from the grounds of the beautiful and unique National Wildlife Refuge on Mare Island.

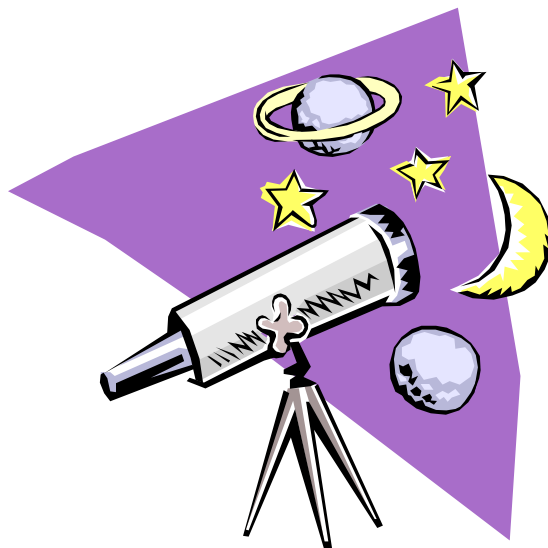
Cookies and treats are provided starting around 8:30 p.m. and a brief presentation on the Refuge's mission and role will be given along with an overview of celestial objects that can be observed that night. Last year's activities included a "Star Gazing Word Search" and "Skywatch Observation Log." Also, an Environmental Education Specialist spoke on "How the Moon Affects the Tides" and "How Tides Affect San Pablo Bay Organisms."

Ken Swaggerty and his granddaughter Lacey Brooke, Bill Singman, Bart Paugh and other EAS and Chabot community members brought telescopes last year and treated the visiting public to spectacular views of Mars and many other astronomical targets. We were invited to stay as long as we liked and were up well past two a.m., locking the gate behind us.

"Telescope set-up arrangements are convenient and we have a good horizon," Swaggerty said. "You can drive right up to where you're going to set up."

Though it can be breezy and there is always the risk of fog, last year's observing was very good and August 14 promises a moonless night.

For more information or directions contact Christy Smith at the San Pablo Bay Wildlife Refuge at 707-562-3000 or Bart Paugh at 510-531-2951 or e-mail to BartPaugh@msn.com.



CHABOT SPACE & SCIENCE CENTER

DRAGON SKIES: ASTRONOMY OF IMPERIAL CHINA



Dragon Skies: Astronomy of Imperial China, a new exhibit plus Planetarium show, has now opened at Chabot Space & Science Center. Featuring several Bronze Armillary Spheres, Stone Sundials, Oracle Bones, Water Clocks and various other scientific instruments from Beijing Observatory and Purple Mountain Observatory in China, this traveling exhibit takes the visitor through the secret world of Imperial Chinese astronomy.

Explore the tools Chinese astronomers used and learn about their early recordings of comets, meteor showers, eclipses, novas and sunspots.

The exhibit, which will run from July 10, 2004 - January 2, 2005, is filled with activities for family members of all ages.

Accompanying the exhibit, which was developed by Chabot Space & Science Center and will be traveling to six other cities during its stay in the United States, is a new planetarium program: "Dragon Skies". This show illustrates the differences between Western and Chinese constellations, takes us back to the court of the Imperial Astronomer and emphasizes the influence of early Chinese observations on modern astronomy.

Center hours are Tuesday – Thursday, 10:00 a.m. - 5:00 p.m.; Friday, 10:00 a.m. - 10:00 p.m.; Saturday, 10:00 a.m.-10:00 p.m.; Sunday 11:00 a.m. -5:00 p.m. Telescope Observing Friday & Saturday evening free of charge (weather permitting).

For ticket prices, show times and directions, go to www.chabotspace.org or call (510) 336-7373.

IMPORTANT UPCOMING DATES

BOARD MEETING
AUGUST 11 – SEPTEMBER 8 – OCTOBER 13
7:00 P.M.

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

SFAA GENERAL MEETING & LECTURE
AUGUST 18 – SEPTEMBER 15 – OCTOBER 20
7:00 P.M. DOORS OPEN – 7:30 P.M. ANNOUNCEMENTS
8:00 P.M. SPEAKER

*Randall Museum, 199 Museum Way
(near 14th Street and Roosevelt)*

CITY STAR PARTY
AUGUST 7 - 7:00 P.M. - Sponsored by the National Park Service
SEPTEMBER 18 – 6:00 P.M. - Sponsored by the National Park Service
OCTOBER 23 – 6:21 P.M. - Sponsored by the SFAA

Solar Viewing for Kids at SF Public Library July 17, 2004

Dear Ms. Schmidt,

A group of us from SFAA came to the library yesterday (July 17) carrying our telescopes and other equipment to present the children's Solar viewing program.

The children (and parents) who were there at the time very much enjoyed the viewing, and we had a good turnout for the talk I presented in the Creative Center. Everyone agreed the event was a success.

At the same time, we did encounter some issues I would like to bring to your attention.

As you and I had spent time in the past discussing the specifics of the event, and since you had invited us, I was disappointed that you weren't there to greet us and to help provide guidance as we set up. The staff working in the Children's section that day were totally unaware of the event, and were caught off-guard by our arrival. In the future, it would be helpful if you would notify the staff and provide instructions to them prior to our arrival, if you cannot be there yourself.

Though the attendance was good, it might have been higher if you had perhaps posted some signs around the NASA exhibit, or maybe left some small flyers around the exhibit tables. The people most interested in attending an event like ours are the visitors you already have. A small investment would likely have made an impact in attendance.

The SFAA volunteers gave their time, and a great deal of effort to transport their astronomical equipment to the event in the hopes that it would reach out to children and stimulate the participants. We hope that you will help support our future outreach events in the Library, and build on yesterday's successful event.

Sincerely,

Michael Portuesi
President, San Francisco Amateur Astronomers



A youngster sees the Sun through Lorrie Boen's telescope at the SF Public Library, July 17.



Mother and daughter see the Sun through James Mace's solar telescope at the SF Public Library, July 17



AUGUST 20-21, 2004

SFAA YOSEMITE STAR PARTY AT GLACIER POINT

The annual Yosemite star party is held at Glacier Point, hosted by the NPS and Ranger Dave Balogh. Camping is at the Bridalveil Creek campground (the group site, rather primitive). There is room for several tents. There is cold water and a deep sink adjoining the toilets but no showers. The camp is 8.5 miles away from Glacier Point. We are given free admission and camping space. In exchange, we provide two public star parties at Glacier Point on Friday and Saturday night. We'll have the public (about 200 - 300 people) from twilight for a few hours, then the rest of the night (and all day) to ourselves. Mighty good deal, seeing how some people come 10,000 miles to see those rocks. We may take a maximum of 30 people, with priority given to SFAA members. We are expected to have at least one public telescope for every two people. If you wish to go, email [Ken Frank](mailto:kenfrank@yosemite.org) with the number of people and telescopes. I'll be at the SFAA meetings and star parties where you can pick up the entrance pass, map and page of rules.

A note for non-members and those not making the list: Yosemite is your park, and anyone may come if they arrange their own accommodations. In this case, you would be welcome to join us at Glacier Point for the public star party and the observing afterward. But you would not be obligated to set up for the public; there are some useful spots that would leave you mostly alone. You would have to follow the ranger's rules for driving in to unload, then parking in the regular lot (as do we all).

When you arrive at Yosemite, make your way up to the Bridalveil Creek campground. This is close to Bridalveil Falls, but upriver from it; the driving distance is 18 miles, uphill. Allow at least an hour from the Falls parking lot; make a stop at the Wawona Tunnel overlook, which is *the* classic view of Yosemite Valley. Try to reach the camp by 5 pm. At the campground, look for the group camp, with several regular campsites with "Reserved for SFAA" on the space marker. We won't know exactly what this consists of until we get there, so we'll need to be flexible when we arrive. Pick out a place to sleep, set up tent, as needed and do use the bear box for all food items.

Glacier Point is another 8.5 miles up the road. Allow time to find your way and set up; the summer sunset is late, so there's plenty of time. There is electricity in the observing area, but you may need a long extension cord. We usually are setting up by 7:30, and it's a good idea to be there earlier, as we can bring in only a few vehicles at a time. Drive in, unload your scope stuff, then immediately park your vehicle by the toilets. If we do this quickly, there will be no car line. Then we can leisurely set up after. The observing area is open, with good views from about NNW to the east, around to due south. From south around past west is partially to mostly blocked by tall trees. Still, there's a lot of open sky, and typically, the seeing and transparency are excellent. It is warm (70 to 90) during the day, and cool to chilly (40's) at night, due to the elevation, 7200 feet.

One of the rangers does a sunset talk, and then delivers the crowd to us. Many will have flashlights, (we'll provide red plastic and rubber bands) however and need to be tolerant of that. Pick out an object that you are familiar with, tell about it, etc., just as we do at Lands End and Rock Springs on Mt. Tam. We'll have a list and accompanying chart of suggested objects to show. Expect questions. By 2216 after the Moon sets, we'll have the place to ourselves, and can stay until dawn, or you drop...whichever occurs first. Scopes to be removed when we quit, then set up again on Saturday.

Because of the altitude, I recommend getting plenty of sleep during the day, take a few aspirin and call me later.

KENNETH FRANK

2004 MT TAM ASTRONOMY PROGRAMS

TINKA ROSS

OCTOBER 23 - 5:00PM

2004 MT TAM STORYTELLING

An evening suitable for young and old alike. No telescope viewing.

"WE ARE THE STARS THAT SING: THE STORY OF THE UNIVERSE"

MARY ELLEN HILL

SAN FRANCISCO CITY STAR PARTY . 2004

SATURDAY, AUGUST 7, 7:00 P.M.

SATURDAY, SEPTEMBER 18, 6:00 P.M.

SATURDAY, OCTOBER 23, 6:15 P.M.

SATURDAY, NOVEMBER 20, 5:00 P.M.

SATURDAY, DECEMBER 18, 5:00 P.M.

August, September - Sponsored by National Park Service

October, November and December – Co-sponsored by San Francisco Amateur Astronomers (SFAA)

Join the San Francisco Amateur Astronomers (SFAA) and the National Park Service 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 for the winter and fall events, please call the SFAA Hotline at (415) 289-6636 or visit the SFAA website at www.sfaa-astronomy.org. For more information about the spring and summer programs, call the National Park Service at (415) 239-2366 or visit their website at www.nps.gov/goga/parknews/events.

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.

make checks payable to **San Francisco Amateur Astronomers** and mail to:
Treasurer, SFAA, 765 Geary St., #302, San Francisco CA 94109

- \$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
 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.