

# ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

**Vol. 51, No. 8-August 2003**

## Prospects for Life on The Red Planet Chris McKay – August 20, 2003 - General Meeting



With two orbiters circling Mars and four other spacecraft on their way, this is a banner year for Mars studies. The big question remains the possibility of life now or in the past. Chris McKay will review what we're learning new about Mars and the prospects for life.

Chris McKay works as an Astrobiologist at NASA Ames Research Center. His research deals with the relationship between the chemical and physical evolution of the planets and the origin of life. He currently divides his time between Mars and Mars-like extreme environments on Earth.



## SFAA Tours Stanford Linear Accelerator Center – June 21, 2003

On June 21, 2003, SFAA had the privilege of receiving a guided tour of the Stanford Linear Accelerator Center. On this page and page 4 are some photos of our visit.



SLAC, located on 426 acres of Stanford property, specializes in experimental and theoretical research in elementary particle physics and in allied fields using synchrotron radiation. The principle instrument is a two-mile long accelerator that generates high-intensity beams of electrons with the highest energy available in the world, currently at 50GeV, or 50billion watts. Developmental steps should logically advance electron physics towards the TeV energy region.

Stanford operates the accelerator for the United States Department of Energy. Current annual operating budget is \$184,000,000.

Jose Martinez lectures to visitors from SFAA and SMCAS outside the two-mile long accelerator building.

## 2003 Club Officers & Contacts

<i>President</i>	<b>Michael Portuesi</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>	Bob Naeye	
<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
<i>Astronomical League Representative</i>	Lorrie Boen	
<i>Honorary Director</i>	John Dobson	
<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.

### 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>

## CLUB TELESCOPES

The SFAA owns 3 club loaner telescopes, Dobsonian/Newtownian reflectors: 6" f/10, 8" f/7, and 10" f/8. 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 Cristian.

For information on the course tapes themselves:

<http://www.teach12.com/tc/assets/courseDescriptions/180.asp>

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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

There are two club developments I want to share with you this month.

The first development is a proposed change to the club bylaws. The Board felt that SFAA needs a way to recognize club members who have shown extraordinary dedication to the club, as well as members who undertake significant volunteer work such as maintaining the website, or producing this newsletter.

We are proposing to create two new classes of membership, both free of dues. The Honorary Life membership is awarded at most once per year to a club member of distinction. The Service membership is awarded by the Board to club members providing ongoing, significant volunteer work.

Following the requirements of the club bylaws, there will be a vote on these amendments at the next General Meeting this August 20. Please attend and cast your vote! The text of the proposed amendment appears in this newsletter.

The second development concerns the scheduling of our monthly Mount Tam star parties. The events are currently scheduled on the Saturdays nearest New Moon each month. Without the Moon's glare, deep-sky objects such as galaxies and nebulae are much easier to see. However, this makes the Moon unavailable as an object to show the general public - and the Mount Tam star parties are first and foremost public events. Additionally, other area clubs schedule their observing events on the same weekends, and many people go to observe at other dark sky sites.

This leaves many club members, myself included, conflicted between public astronomy and personal observing projects.

The Board started working with the Mount Tamalpais Interpretive Association (MTIA), the official sponsor of the event, to resolve this conflict. MTIA was very agreeable to our request to change the schedule. As a result, MTIA is moving the public star parties to the Saturday nearest First Quarter Moon. We will have a Moon to show the public, when it looks its best. The Moon will set shortly after the public leaves, so observers who stay after the crowd leaves will still have some access to dark-sky observing. This leaves New Moon weekend free for members to pursue their own personal observing programs, or attend other area events.

The dates for next year are: March 27, April 24, May 22, June 26, July 24, August 21, September 18, and October 16.

Some club members may still wish to observe on Mount Tam on New Moon weekends, because it is readily accessible. SFAA can obtain special event permits for those weekends, so we can have private observing events unimpeded by crowds and ranger bullhorns. If you would like to help, please contact Renita Mock at [remock@earthlink.net](mailto:remock@earthlink.net). Renita has offered to coordinate New Moon events on Mount Tam next year. Remember that SFAA is a volunteer organization, and it is through the efforts of people like Renita that this club works. Special thanks to Renita for her dedication and support!

**Michael Portuesi**

[president@sfaa-astronomy.org](mailto:president@sfaa-astronomy.org)

415-550-9366

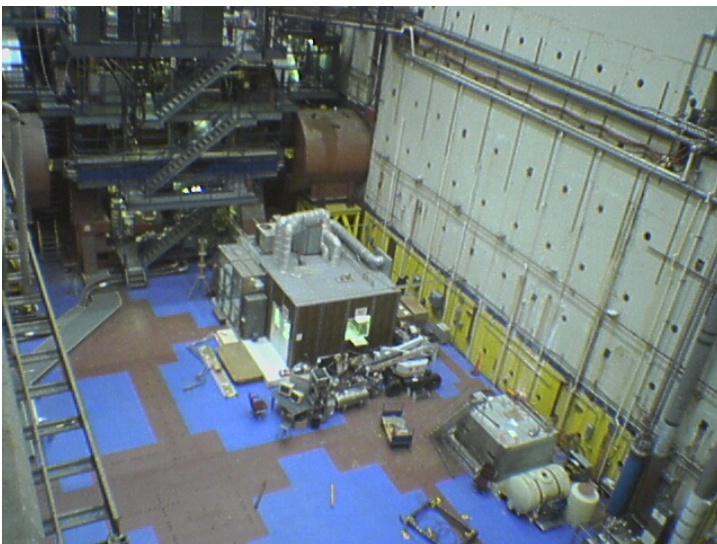
## SFAA Tours Stanford Linear Accelerator Center – June 21, 2003



A view down the accelerator tunnel. The main accelerator is 25 feet underground. The machinery here on the surface are microwave generators that accelerate subatomic particles.



These units generate magnetic fields that can steer subatomic particles and direct them to collide with one another.



View down into the detector pit. The structure at the top of the photo with the stairs is the detector itself. Electrons enter from the left, positrons from the right.

Jose Martinez lectures to guests in the floor of the detector pit. Guests got to climb on the detector itself, and see the giant rollers used to move it into position.





Mt. Tamalpais Interpretive Association  
2003 MOUNT TAM ASTRONOMY PROGRAMS

Upcoming Events

**Saturday - August 30**  
8:00 P.M.

**"THE NEW ERA OF MARS EXPLORATION: FOLLOWING THE WATER"**  
*With two spacecraft orbiting Mars and three more on their way, we have moved into a new era of Mars exploration.*

**Dr. Ginny Gulick • NASA-Ames Research Center**

**Saturday - September 27**  
7:30 pm

**"ART, SCIENCE AND THE HUBBLE HERITAGE PROJECT"**  
*The Hubble Heritage Project is responsible for turning Hubble Space Telescope data into works of art – a delicate balance between aesthetics and preserving scientific data.*  
**Tiffany Borders • Sonoma State University Hubble Heritage Project Intern**



**September 13**  
**Observe Mars with**  
**East Bay Astronomical Society**

Join SFAA the night of Saturday September 13, as we visit the East Bay Astronomical Society at Chabot Space and Science Center. We will attend the EAS monthly meeting, and afterwards view Mars through the Chabot 20-inch refracting telescope.

The EAS meeting will be at Chabot Space and Science Center, 7:30 p.m., in the Spees Building, Physics Lab, 2nd Floor. Mars viewing will follow the meeting and the public observing session. Viewing will be exclusive for SFAA and EAS members from 11:00 p.m. through 2:00 a.m., when Mars will be at its highest, and best placed for viewing. As a bonus, Uranus and Neptune will also be targets for the 20" telescope.

SFAA members only are invited. This is your chance to view Mars as it gets closer to Earth than it ever will at any point in our lifetimes. The 20-inch refracting telescope is very similar to the ones used by late 19th and early 20th-century Mars observers, such as Giovanni Schiaparelli and Percival Lowell.

Special thanks to the East Bay Astronomical Society for sponsoring this event.



**SFAA Trip October 18, 2003**  
**Mount Wilson Observatory - Pasadena, California**

October 18, 2003 is the tentative date for an SFAA trip to Mount Wilson Observatory in Pasadena, California, to observe through their historic 60-inch telescope.

We need at least 15 people willing to pay approximately \$50 in advance in order to book the telescope for the evening. If bad weather closes the telescope, you will be refunded the \$50. You will be responsible for transportation to and from Pasadena, and for any hotel accommodations, if desired. If you are interested, please send mail to [president@sfaa-astronomy.org](mailto:president@sfaa-astronomy.org).

More details will be available once plans are finalized.

## Mars Observing FAQ

From <http://www.shallowsky.com/mars.html>

### **\*Q. What's an opposition, and why do I care?\***

A. Opposition is when an outer planet is opposite the sun as seen from earth; i.e., when it is closest to us. A planet appears bigger at opposition, and details are easier to see than at other times. In the case of Mars, the difference in size and visible detail is dramatic.

Note that the month or so after the opposition is also a good time to observe; although the planet will be starting to recede, it will be rising earlier in the evening than at opposition, which makes it easier for most people to observe it when it's high in the sky.

### **\*Q. What sort of equipment do I need to look at Mars?\***

A. Just about any telescope will do. A clock drive is convenient, since due to Mars' small size you'll want to be observing at the highest magnifications your sky's steadiness will allow; but if you have a dob, don't let that stop you. Binoculars won't show you any more than you see with the naked eye: just a bright red point.

Steady air and magnification are more important than telescope aperture, ultimately; you'll have the best luck when Mars is high in the sky, and it may help to find a location at high elevation or at least one where you're not looking over houses, cars or asphalt.

### **\*Q. Do I need filters to observe Mars?\***

A. No, but they can sometimes help in bringing out detail.

### **\*Q. What can I see with a small telescope?\***

A. Hellas (a bright impact basin), some dark features like Syrtis Major, Mare Erythraeum, Mare Acidalium, and Niliacus Lacus, more subtle dark features like Margaritifer Sinus, Sinus Sabaeus, Lacus Solis, and Valles Marineris, and polar caps (in 2003, mostly the southern polar cap).

With filters, you can sometimes see clouds and hazes of various types. With exceptional seeing, there are many other light and dark features which become visible, and you can look for details on the edges of the features, and for clouds over the Tharsis volcanos.

### **\*Q: Why can't I see anything at all?\***

A: Mars is small. Really small. The details are smaller still. You really have to practice and have patience. The details will come, but don't expect them to be easy. The more you observe the planet, the more you'll learn how to see the detail on it.

### **\*Q. How can I train my observing skills?\***

A. Observe a lot -- start well before the opposition if you can, even if Mars is small or low in the sky. That way, by opposition you'll be ready to see all the detail which is there.

Also, try sketching the detail that you see -- even if you don't consider yourself an artist, sketching planetary detail really helps you think about what you're seeing, as well as being fun in its own right.

### **\*Q. Why do I see two polar caps when everybody says only one is visible?\***

A. Hellas, a light-colored impact basin (one of the biggest in the solar system) which tends to accumulate frost and haze and consequently appears very bright, looks more like a polar cap when it's near the limb than the real polar cap does. If it looks like you're seeing two polar caps, the other one is almost certainly Hellas. If it looks like you're only seeing one, it may be Hellas rather than the north polar cap -- 1999 is apparently a very warm summer on Mars' northern hemisphere, and the polar cap is unusually small and difficult to see.

### **\*Q. How do I figure out what part of the planet I'm looking at and how it's oriented at the time when I'm looking?\***

A. That's one of the tricky parts of observing Mars, especially during this opposition when the polar cap is expected to be inconspicuous.

One way is to use a Mars globe, or a surface map (we can't fit a globe in the newsletter).

### **\*Q. Can I see Mars' moons?\***

A. The moons should, in theory, be visible in large amateur telescopes (say, a 12" or so), but they're quite difficult due to their closeness to the high surface brightness image of Mars. Phobos is brighter, but Deimos is farther from Mars. It's a challenge, but by all means try it!

The Western Hemisphere of Mars  
Where Can You View Mars in August?

SFAA Events

<p><b>See Mt. Tam Star Party information in this issue for dates</b></p>	<p><b>Rock Springs Parking lot * Mount Tamalpais</b></p>
<p><b>September 6 MARS ASTRONOMY DAY</b></p>	<p><b>Randall Museum</b>  <i>Featured speaker - Dr. Chris McKay (NASA Ames)</i>  <i>Jane Houston Jones and Akkana Peck of Shallow Sky web site will talk about observing Mars</i>  <i>Other SFAA members will rotate giving 15 minute talks</i>  <i>Randall will serve a chili dinner for some unspecified cost.</i>  <i>The Planetary Society Bay Area Volunteer Network will be present</i>  <i>Mars maps and Mars icosahedrons (that's a 20 sided polyhedron) free</i>  <i>Art, writing, and hands on activities for families in the afternoon.</i>  <i>Observing at night through SFAA and Randall employee telescopes</i>  <i>Rain/cloud preparations will include some webcasts and movies.</i>  <i>Scope City will co sponsor the event..</i>  <i>Safeway donated 200 Mars bars 😊</i>  <a href="http://www.randallmuseum.org/events.cfm">http://www.randallmuseum.org/events.cfm</a></p>

Other Local Events

<p><b>August 30</b></p>	<p><b>Fremont Peak Observatory •</b> <a href="http://www.fpoa.net/schedule-2003.html">http://www.fpoa.net/schedule-2003.html</a>          Public night closest to opposition</p>
<p><b>August 16 and 23</b></p>	<p><b>Robert Ferguson Observatory</b> <a href="http://www.rfo.org/">http://www.rfo.org/</a>          Public nights closest to opposition!</p>
<p><b>July thru September Every Clear Friday and Saturday Night</b></p>	<p><b>Chabot Space and Science Center</b>  <a href="http://www.chabotspace.org/visit/observatories.asp">http://www.chabotspace.org/visit/observatories.asp</a></p>
<p><b>Chabot Calendar of Events</b></p>	<p>“Summer of Mars” Lecture Series <a href="http://www.chabotspace.org/visit/calendar/">http://www.chabotspace.org/visit/calendar/</a></p>

All of these events and their web links can be found here. <http://www.whiteoaks.com/jane/Mars/>  
 Check the SFAA web page for frequent updates! <http://www.sfaa-astronomy.org/sfaa/>

**Jane Houston Jones**  
 San Rafael, CA  
 jane@whiteoaks.com  
<http://www.whiteoaks.com>





## Mars Opposition Events Sponsored by the SFAA

<ul style="list-style-type: none"> <li>• Mt. Tam Star Party and City Star Party •</li> </ul>	<p style="text-align: center;"><i>See "Important Upcoming Dates" in the newsletter</i></p>
<ul style="list-style-type: none"> <li>• Mount Tamalpais •</li> </ul>	<p style="text-align: center;"><i>See "Important Upcoming Dates" in the newsletter</i></p>
<ul style="list-style-type: none"> <li>• Randall Museum •</li> </ul>	<p style="text-align: center;"> <i>September 6th - Mars Astronomy Day</i>  <i>Starts 2:00 p.m. until Mars viewing is over</i>  <a href="http://www.randallmuseum.org/events.cfm">http://www.randallmuseum.org/events.cfm</a>  <i>Featured speaker - Dr. Chris McKay (NASA Ames)</i> </p>

[AANC Editors] [AANC Contacts] [AANC Mars Opposition Page](#)

Hi everybody,

I created an AANC Mars Opposition resource page and it is available on the AANC website here. <http://www.aanc-astronomy.org/> As clubs (or science centers) let me know about their plans, I'll be adding these events to it. So send your newsletter articles (or links to your website), public viewing plans, images, or anything Martian. ☺ Feel free to link to this on your own websites if you want to.

Thanks to Lawrence Hall of Science's Alan Gould for linking the Mars Opposition page to the AANC web page, and to LHS for their support of our website.

**Jane Houston Jones • San Rafael, CA**

[jane@whiteoaks.com](mailto:jane@whiteoaks.com) • <http://www.whiteoaks.com>

### Chabot Space & Science Center

#### "SUMMER OF MARS" Lecture Series

With Mars approaching its best view from Earth in over 10,000 years leading scientists in the field of Martian exploration will take us on journeys to the Red Planet through the latest in research.

<p style="text-align: center;"><b>Saturday</b> <b>August 9, 2003</b> <b>7:00 pm</b></p>	<p style="text-align: center;"><i>Sponsored by the Eastbay Astronomical Society</i></p> <p style="text-align: center;"><b><i>Mars: the Search for Life on the Red Planet • Dr. Chris McKay • NASA</i></b></p> <p>Dr. McKay is part of the team that announced the possibility that fossilized microbes exist inside Martian Meteorite ALH84001. He will tell us about the experience and what it means to our understanding of the history of the solar system.</p>
<p style="text-align: center;"><b>Thursday</b> <b>August 21, 2003</b> <b>7:30 pm</b></p>	<p style="text-align: center;"><b><i>Mars, Astrobiology and Planetary Protection • Dr. Margaret Race • SETI</i></b></p> <p>Hear one of the most renowned experts in planetary protection, the discipline of keeping Earth microbes from contaminating other bodies we visit. Dr. Race will tell us why such protocols are important in our plans to explore our nearest neighbors in the quest to find life.</p>
<p style="text-align: center;"><b>Thursday</b> <b>August 28, 2003</b> <b>7:30 pm</b></p>	<p style="text-align: center;"><b><i>Martian Meteorites: What They Tell Us About Mars &amp; Life</i></b></p> <p style="text-align: center;"><b>Dr. Tim McCoy &amp; Dr. Cari Corrigan • Smithsonian Institution</b></p> <p>Take a look through the eyes of a geo-biologist and a meteorite expert at what rocks from Mars can tell us about the formation of our solar system and the life that may have existed in those early formative periods. View Martian Meteorite ALH84001 during special public workshops Aug. 26, 27 &amp; 28 free of charge</p>
<p style="text-align: center;"><b>Saturday</b> <b>August 30, 6:30 pm</b></p>	<p style="text-align: center;"><b><i>Travelers Guide to Mars • William Hartman</i></b></p> <p>Internationally known astronomer and artist William Hartman takes us on travelogue to Red Planet in this look at what a tourist to Mars would discover.</p>

**SFAA Annual Picnic**  
**Saturday, August 23, 2003, 4:00 p.m.**  
**Bootjack Picnic Area, Mount Tamalpais State Park (\$4 parking fee for each vehicle)**



Come to the 2003 SFAA Annual Picnic! Hamburgers and hot dogs will be provided. Any contributions of other food items will be most welcome, and gratefully devoured!

After the picnic, stay for a private SFAA-only star party at the Rock Springs parking lot, the site of our regular Mount Tamalpais Star Parties. Bring your telescope along and join in the fun!

You can do your own observing, or you can take part in a special group observing session we will be sponsoring for those interested. We will have a list of suggested targets for you to observe and the opportunity to share the views of these objects through each other's telescopes.

For directions and a map to the event, see our website at:

<http://www.sfaa-astronomy.org/sfaa/starparties/tammap.shtml>.

Also see <http://www.mttam.net/map.html> for a map that shows the Bootjack picnic area.

If you plan to attend, please send email to [president@sfaa-astronomy.org](mailto:president@sfaa-astronomy.org).

We need to keep a count for the Mount Tam rangers

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**SFAA GLACIER POINT STAR PARTY • AUGUST 15-16**

**Morris Jones • Glacier Point star party coordinator**



The San Francisco Amateur Astronomers are invited again this year to spend a weekend at Yosemite National Park and provide a public star party at Glacier Point on Friday and Saturday evenings, **August 15 and 16**.

This year's star party has a special treat of being very close to the opposition of Mars. With Glacier Point's excellent atmospheric conditions, it could be a spectacular show. Mars will rise shortly after 8 p.m., and transit the meridian at about 2:00 a.m. during our visit.

Only SFAA members in good standing and one member of their immediate family are eligible to take advantage of this offer. Each member who wishes to attend must agree to bring a telescope to set up at the star party and show objects to the public until at least moonrise. In exchange for providing the star party, Yosemite National Park will provide us with free entrance to the park, and free use of the group campsite at Bridal Veil campground, on the road to Glacier Point.

A sign-up form will be on the SFAA secretary's web site: <http://www.whiteoaks.com/sfaa/yosemite/>

If you want to avoid issues with bear box space, tent room, and parking, and are willing to pay the \$7/night camp fee, you are strongly advised to arrive early and secure a standard campsite at the campground. It's possible but not assured that the park will waive the campground fee for star party participants not using the group campsite.

Jane and I plan to arrive around noon on Thursday the 14th to secure a private campsite and not use space in the group camp.

Hope to see you all at Glacier Point, August 15-16!

**Morris Jones • [mojo@whiteoaks.com](mailto:mojo@whiteoaks.com)**

## Important Upcoming Dates

**Board Meeting** August 13 – 7:00 p.m.  
September 10 – 7:00 p.m.  
October 8 – 7:00 p.m.

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

**Mt. Tam Star Party**  
August 30 – 8:00 p.m.  
September 27 – 7:30 p.m.

**SFAA General Meeting & Lecture** August 20  
September 17  
October 15

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

**City Star Party** August 2 – 8:00 p.m.  
September 6 – 7:30 p.m.  
October 4 – 6:30 p.m.

*Telescope Clinic starts ½ hour before Star  
Party*



### Telescope Clinics from Sidewalk Astronomers and SFAA

The Sidewalk Astronomers and SFAA are pleased to offer free personal assistance to new telescope owners at the monthly City Star Party, hosted by the Golden Gate National Recreation Area at Land's End in San Francisco. Experienced amateur astronomers from the SFAA and Sidewalk Astronomers will help new telescope users with setup, optical alignment, and operation of their telescopes and mounts.

The telescope clinics are held Saturday evening, an hour before the City Star Party at Land's End, San Francisco. Future events are scheduled on **August 2 and October 4**.

New (or "new again") telescope owners who would like to attend the clinic are encouraged to give advance notice by sending email to <http://www.clinic@sfsidewalkastronomers.org/>, or by leaving a telephone message on the Sidewalk Astronomers' hotline, (415) 289-2007. Questions are welcome at the email address.

### Gatekeepers Needed at Mt. Tam Star Parties

Attention all SFAA members who attend the Mt. Tam star parties! You too can be an official gatekeeper. Help out with the park gate and traffic control and you can stay on the mountain as long as you like after the public has left. All you need to do is attend a brief (1.5 to 2 hour) orientation session with the Mount Tam Interpretive Association and the park rangers to learn about the park and fill out a few forms. These sessions usually happen infrequently, but the rangers are willing to schedule a special session for SFAA if we get enough people to volunteer. Several members have already expressed an interest, but we could use a few more! If you would like more information or to sign up to attend, contact **Mike Portuesi** ([president@sfaa-astronomy.org](mailto:president@sfaa-astronomy.org)) or **Jim Mace** ([jamesmace@mac.com](mailto:jamesmace@mac.com))

### Speakers Needed for City Star Parties

Do you have some knowledge you'd like to share with other SFAA members and the general public? Do you enjoy informal public speaking? If so, perhaps you'd like to be a speaker at one of our City Star Parties. You can speak about any topic that's astronomically related. Each talk is about 15-20 minutes in length. If interested, please contact **Randy Taylor**, our City Star Party coordinator, at (415) 255-8670 for scheduling.

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:**

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

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Address:

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Name: Telephone:

## 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.