



Vol. 51, No. 9 -September 2003

From Your President

I'm writing this message on the heels of our annual trip to Yosemite National Park. Besides putting on a great star show for the park guests, we were treated to fantastic views of Mars. I hope you've had some opportunities to view the planet during this especially favorable opposition. If you haven't, don't fret! The view is still excellent, and you still have viewing opportunities with SFAA. Our Mars Day at the Randall Museum September 6, and especially our Mars Observing night at Chabot Space and Science Center September 13 are both good choices. Details are elsewhere in this issue.

As you may be aware, the California Academy of Sciences, whose Morrison Planetarium hosts our monthly meetings, is closing down at the end of this year as they build a new facility in Golden Gate Park. For SFAA, this means we must find a new location for our monthly General Meetings for 2004.

The Board and I have been looking into this issue since the beginning of the year, and we have considered our options. We ultimately decided to move our meetings to the Randall Museum. The Randall has an auditorium plenty large to accommodate our monthly crowd, along with audio/video

facilities. There is also ample free parking available for those who drive to the meetings.

Those who take MUNI to the meetings might find getting there a bit difficult; the 37 Corbett line runs within a block of the museum, but runs on an infrequent schedule. My favorite trick is to start from Castro Street Station, go up to States Street, walk to the end, then up the staircase. Museum Way is to the right, then walk forward one block to the Randall entrance.

I personally will miss the Morrison Planetarium, and the many meetings we enjoyed there. Do consider attending our November General Meeting at the Planetarium, which will be a special planetarium show entitled "Stars over San Francisco." It will be a fine way to say farewell to an old friend.

One last note. Bob Naeye, our Speaker Coordinator, is leaving town to pursue career opportunities elsewhere. Linda Mahan has graciously volunteered to be our Speaker Coordinator for 2004. Let's all give Linda a big round of thanks, for her observing list at the August Annual Picnic, as well as her efforts planning our meetings for next year.

Michael Portuesi
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MARS WATCH ON MT. TAMALPAIS Saturday – August 30

Mt Tam Enthusiasts:

This August's "perihelic opposition" is bringing Mars closer to Earth than it has been in about 60,000 years. Join The Planetary Society and the Mt Tam regulars by participating in MarsWatch 2003 Saturday, August 30 at 8:00pm in the Mt Theater. Dr. Ginny Gulick of NASA-Ames Research Center will discuss the "*New Ear of Mars Exploration*" which will culminate with the unprecedented confluence of spacecraft encountering their targets in January. The Mars Exploration Rover will touch down on Mars; Nozomi will examine the outer atmosphere of Mars; Beagle 2 will explore the Martian surface; and Mars Express will join Mars Global Surveyor and Mars Odyssey already circling the red planet. Wow! What an invasion this will be! Come and hear what scientists are hoping to learn from this intense encounter.

Following Dr. Gulick's talk, telescopes provided by the San Francisco Amateur Astronomers in the Rock Spring Parking Lot will be turned on Mars. The planet will be spectacular to the naked eye and reveal some surface features in even modest telescopes. Bring the youngsters, as this may be the best observing opportunity of their lifetimes.

Our programs are sponsored by the Mt Tamalpais State Park and are FREE and open to all. Parking is limited, so please try to car pool. Bring a flashlight, and dress in layers. It can get cold.

Looking ahead: Saturday, September 13, 6:30-7:30pm in the Mt Theater "Harvest Moon Stories" with storyteller Mary Ellen Hill (no telescopes) Saturday, September 27, 7:30pm in the Mt Theater "Art, Science and the Hubble Heritage Project" by Tiffany Borders of SSU (telescopes)

Tinka Ross

2003 Club Officers & Contacts

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	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	

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) 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 4 club loaner telescopes, Dobsonian/Newtownian reflectors: 6" f/10, 8" f/7, and 10" f/8 and a Starblaster. 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/tc/assets/courseDescriptions/180.asp>

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.

City Star Party, Land's End, San Francisco
Saturday • September 6 • 7:30 pm
Speaker: Nancy Cox, Vice-President, SFAA
"Seasonal Observing"

If you are a beginning stargazer, learning the sky can be a daunting task - where to begin?

This talk will give you some hints: Start by learning the constellations by season, then when you are ready for some deep sky objects, knowing something about R.A. and Dec (Right Ascension and Declination) can be helpful. Right Ascension and Declination are the celestial equivalents of Latitude and Longitude on the Earth. They provide clues as to where in the sky an object is located, and what time of year it is visible.

Nancy Cox is current Vice-President, and past President of the San Francisco Amateur Astronomers. She is one of a select group of amateur astronomers to have ever done research with the Hubble Space Telescope.



Saturday • August 30 • 6:30 p.m.
"SUMMER OF MARS" Lecture Series



Travelers Guide to Mars • William Hartman

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. 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.

September 13
Observe Mars with East Bay Astronomical Society
Nick Kanas - Featured Speaker

The Decline and Rebirth of Astronomy in Medieval and Renaissance Europe

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 where Nick Kanas will be presenting his wonderful talk, "The Decline and Rebirth of Astronomy in Medieval and Renaissance Europe," 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.



Mt. Tamalpais Interpretive Association
 2003 MOUNT TAM ASTRONOMY PROGRAMS
 Saturday • September 27 • 7:30 p.m.

"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



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.

More details will be available once plans are finalized.

Mars Opposition Events Sponsored by the SFAA

• Mt. Tam Star Party and City Star Party •	See "Important Upcoming Dates" in the newsletter
• Mount Tamalpais •	See "Important Upcoming Dates" in the newsletter
• Randall Museum •	September 6th - Mars Astronomy Day Starts 2:00 p.m. until Mars viewing is over http://www.randallmuseum.org/events.cfm Featured speaker - Dr. Chris McKay (NASA Ames)

Important Upcoming Dates

Board Meeting September 10 – 7:00 p.m.
 October 8 – 7:00 p.m.
 November 12 – 7:00 p.m.

Mt. Tam Star Party
 September 27 – 7:30 p.m.

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

SFAA General Meeting & Lecture September 17
 October 15
 November 19
*Morrison Planetarium, Golden Gate Park
 Refreshments at 7:00 p.m. - Speakers begin at 7:30 p.m.*

City Star Party
 September 6 – 7:30 p.m. (No Telescope Clinic)
 October 4 – 6:30 p.m.
*Telescope Clinic starts one hour before
 Star Party*

IS IT MARS YET? WHY? WHEN? WHERE?

Jane Houston Jones

First of all, welcome to all you folks who have just heard about our email list. We've had lots of new members join the list in the past couple weeks. I hope to see you out under the stars or under Mars during this great viewing opportunity. You can read our email list message archives here, if you want to check them out. <http://www.whiteoaks.com/pipermail/sfevents/>

We list all the local astronomy happenings, not just Mars related, but year-round astro events, mostly free events offered by the 20 or so astronomy clubs and science centers in the greater bay area on our email posts. Call our Sidewalk Astronomers hotline (415) 289-2007, for street-type guerilla astronomy events, though we don't have any now, as Mars is not visible until after 11:00 p.m., and we are traveling to darker state and national park locations during the foggy SF summer season. We will be on the sidewalk later in the month and in September. Our Mars resource guide is here: <http://www.whiteoaks.com/jane/Mars/> Here is where you'll find a nice big list of Mars events in August and September, and lots of other information. There are over 60 events at 20 different locations listed already for mid August through September.

Your friendly Sidewalk Astronomers (that's Mojo and me) will be at Glacier Point, Yosemite August 15 and 16 with the San Francisco Amateur Astronomers. The public is welcome to all Yosemite summer astronomy weekends. They are all listed on our big list. Then we'll be at Foresthill (near Auburn) August 17, Fremont Peak (near Gilroy) August 21, and we'll set up some sidewalk astronomy locations in SF and Marin, weather permitting, during the week of August 22 through 28 (viewing will be after 10:00 p.m., tho' when Mars rises above the buildings) and then we'll take our telescopes south to Anza Borrego State Park in San Diego County August 29 - September 1. All of these are for the public, but there are lots of other more local viewing opportunities on our Mars

page. Mars isn't visible until about 11:00 p.m. right now through telescopes. September 6th is our special Mars day and night at the Randall Museum in San Francisco! Views, weather permitting will start a little earlier in early September, probably closer to 9:00 p.m.

You'll be reading and hearing plenty of media bytes about this being the best view of Mars in 60,000 years. Well let's get real here. We humans are on this earth for a century if we take real good care of ourselves or eat plenty of preservatives. We can't even trace back our relatives more than about 1,000 years, even if we have really good genealogy software. And most of our ancestors didn't leave any Mars observing reports. So let's put these big numbers in some perspective.

We amateur astronomers, and all of you nice people with eyeballs get to view Mars every two years. It is never that far away. It ranges from 30 million miles to about 50 million miles from earth at its closest. Mars is always inside the orbit of Jupiter which is way out there at 450 - 600 million miles or so from us. On August 27th this year. Mars will be 34.6 million miles from earth (55.8 million kilometers) away. But in 1971 Mars was 34.9 million miles or 56.2 kilometers from earth. That's like, um, 300 thousand miles difference, about the difference from here to the moon. It's been even closer than that other times. It is not like you will see some gigantic object in the sky for the only time on August 27th. Mars won't look like the moon or anything. It will look similarly wonderful from now through mid September. But it is closer than in past oppositions, and we astronomers are glad for any publicity. It brings more people out to look at the sky. More and more people are looking up and that's a good thing. If any of you want all the gory details, send me a note and I'll send you the details of more than a dozen times Mars is or was "nearly" as close as now from 1845 to 2175.

But more about now, now. Those of you who wake up at midnight or before dawn and look outside to the southeast to southwest have already seen Mars. You can't miss it! Only the moon is brighter! It's that bright ochre (not red) thing in the southeast at midnight and in the southwest at dawn. It never gets that high - only about 35 degrees above the horizon. 90 degrees is overhead. You can all do the math.

Where can you go to see Mars in August? You'll have to wait until 11:00 p.m. or later right now, and by August 27th, you'll still have to wait until about 10:00 p.m. for a good view through a telescope. Views before 10:00 p.m. will show a orangeish blob like a melted scoop of sherbet, or rather sorbet here in Marin. It's worth it, tho'. I set up a small telescope here at home most nights at 2:00 a.m. for a view.

Mars rises 9:00 p.m. on August 17th and by 6:30 p.m. on September 17. It transits (highest point midway between rise and set) 2:15 a.m. August 16th and 11:46 p.m. September 17th. That gives you an idea of the viewing window. You'll need a good southeastern horizon to see Mars before 11:00 now.

Hope this whets your appetite for some Mars views. Remember to check frequently on the list of events here: <http://www.whiteoaks.com/jane/Mars/> Seems like the scheduled events are coming in faster than I can html them.

I've been sketching the view at Mars at transit time (4:00 a.m. in June, 3:00 a.m. in July and 2:00 a.m. in August) from San Rafael and my sketches are on the web page. This will give you an idea of what Mars looks like through a small telescope.

[AANC Editors] [AANC Contacts] AANC Mars Opposition Page

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 • <http://www.whiteoaks.com>

Mt. Tamalpais Interpretive Association Report Report on the July 26 program Tinka Ross • Astronomy Program Coordinator

The July 26 program had a high attendance estimated at 450+ with 40-50 cars in the upper lot. This is due to the fact that Dr. Penzias is a more prestigious speaker than normal, and extra publicity was generated for his talk. No dinner was held. Sales at the program totaled \$52 and donations were \$198.42, thanks to our aggressive greeters handing out ginger star cookies. 28 telescopes were available for public viewing thanks to SFAA.

The next program on **August 30** has been registered as an official MarsWatch 2003 with The Planetary Society. TPS volunteers will join us that evening. A picnic with TPS, our volunteers and the speaker will be held in Madrone Grove before the talk. Mill Valley Safeway is donating 200 Mars candy bars to distribute to the youngsters in the audience. I anticipate a good crowd and extra telescopes. Mars will be spectacular (weather permitting) and I am getting inquiries already.

I have received permission from the rangers to hold a storytelling in the Mt Theater from 6:30-7:30 on Saturday, **September 13** for the Harvest Moon. Mary Ellen Hill will be our storyteller and we may have a ranger (Sam?) give information on the park. This will be a less complicated program than usual, not requiring lanterns, a screen and projector, the observing session with SFAA and the astronomy lock on the gate. It will be held during regular park hours and will not require rangers to change any work schedule.

As a fundraiser for both the astronomy programs and the gravity barn project, I am selling raffle tickets for a trip to see the transit of Venus next June. I hope that some MTIA members will join me on a cruise down the Nile to get a crash course in Egyptology and see the first transit of Venus in 122 years. The tickets sell for \$5 or 5 for \$20, and board members are encouraged to take some to sell to friends. The drawing will be at the May 22 program. At each program between now and then tickets will be offered and there will be a drawing for a smaller prize just from the tickets sold that night and then all tickets (even winner for the night) will be in the mix for the trip.

SFAA Yosemite Trip - Mars and Moonrise in the Mountains

Jane Houston Jones



The SFAA group at the Yosemite Glacier Point star party.

The annual SFAA Yosemite trip was held August 15 and 16 this year. Not too many members signed up because the moon rose before midnight. But for those of us who did attend, it was a wonderful weekend, and we really enjoyed a few hours of truly dark Yosemite skies after sunset over the mountains. Plus we had the additional bonus of Mars viewing so close to opposition, and the moonrise spectacle. Any of you who haven't witnessed this moonrise near Half Dome experience, just ask Al Stern about watching crescent "horns" of moon rise above Nevada Falls a few years ago at Yosemite. Even though the phase was not crescent this year, watching the sky brighten before moonrise, aiming telescopes at the "spot" and the first glint of visible moonlight is always a special observing moment.

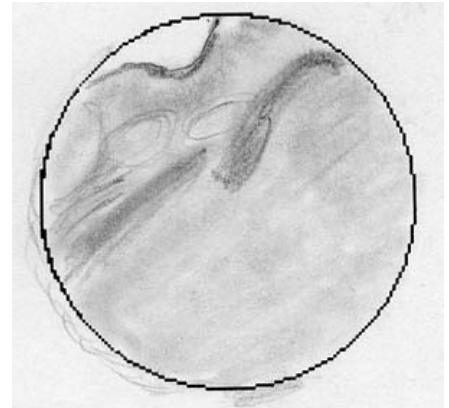
About half of us arrived at the Bridalveil Creek campground a day early and enjoyed a quieter observing night on Thursday night. Mojo and I like to arrive a day early to avoid the heavy Friday traffic out of the bay area, get acclimated to the high altitude, and have a rest before the observing weekend. After setting up our tent in the group campground in the afternoon, and having a nice quiet afternoon at the campsite, we bring our telescopes to the most beautiful star party location on the planet, Glacier Point.



Craig Harrison aligns the finder on his 10-inch dobsonian using the peak of Half Dome.

That first night of observing is often the best, for some reason. Thursday night, Ken Frank, Michael Portuesi, Jim Mace, Tim and Tom Hansen, Mojo and I set up telescopes at the Glacier Point amphitheatre and had a really nice observing night. Michael and I even sketched the moon after it rose. We were able to share eyepiece views with one another and we all set up on the top of the amphitheatre in a long line. Friday and Saturday nights we were joined for the public program by Peter and Barb Schmacher (plus their two astro-kids), Craig Harrison, Ray Cashin and Stephanie Ulrey.

Mars was my main observing interest this trip, so I spent a lot of time observing the red planet through



Mars sketched by the author from Glacier Point August 15, 2003 - Magnitude -2.7, 24.4" arc sec in diameter, Central Meridian 179 at 6:30 UT. Distance from earth: 0.38 AU, 57.0 million km, 35.3 million miles

our 7-inch refractor. Wouldn't you? Michael, Ken and I made sketches of Mars during the weekend. I've included a couple sketches here, and you can go to this webpage to see more trip SFAA photos and sketches. <http://www.whiteoaks.com/sfaa/yosemite2003>



Stephanie Ulrey ready for a night with Half Dome and her 4.5" Orion StarBlast

I'd like to thank Mojo for organizing the trip and also thanks to those who brought telescopes this year. The

national park system promotes this event big time in its magazines and newsletters and they expect each club to bring 10 - 20 telescopes to share views with the public. We were on the skimpy side at 10 telescopes each night, but what we lacked in quantity we more than made up in quality. Mojo and I presented a Milky way talk, and Michael presented his excellent Mars talk - the same talk he gave at the August SFAA City Star Party, and each of us manned telescopes Friday and Saturday night. Even 9 year old Larissa Schumacher was at work using a 4.5-inch Orion Starblast reflector. She used different color filters to show moonrise of a plum moon, a green cheese moon, a tangerine moon, and a blue moon, before telling a long line of viewers all about the Andromeda Galaxy. Then she took a ride up the Milky way spotting Messier object one after another.



Larissa and Peter Schumacher with his homebuilt 10-inch Dobsonian

Yosemite ranger Dave Balogh, the famous astro-ranger (who is a teacher during the school year, by the way) complimented us on the talks. Ranger Dave is the ranger featured in Bob Naeye's September Astronomy Magazine article about the Yosemite Star Party. The road to the Glacier Point star party season will soon be closed for the year. Soon the Glacier Point amphitheatre will be blanketed with snow as the starry skies twinkle overhead.



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://ww.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) or **Jim Mace** (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 (SF AA) 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 SF AA 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, SF AA, 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:

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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

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.