

ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

Vol. 54, No. 11 – November 2006

November 15, 2006 – General Meeting

7:00 pm Doors Open . 7:30 pm Announcements . 8:00 pm Speaker

PROFESSOR ADRIENNE COOL

DEPARTMENT OF PHYSICS AND ASTRONOMY, SAN FRANCISCO STATE UNIVERSITY

GLOBULAR CLUSTERS AND THE MILLION-BODY PROBLEM: BINARY STARS TO THE RESCUE



The globular clusters we see in the Milky Way today are remarkably long-lived. Yet stars are continually evaporating from them, carrying energy out of their cores. Early theoretical modeling suggested that this energy loss would lead to total collapse of the centers of these clusters. But few, if any, globulars harbor black holes. How do globular clusters avoid this fate? It now appears that binary stars come to their rescue, acting like egg beaters that keep the stars in the core stirred up. I will discuss what is known about binary stars in globular clusters, focusing in particular on what has been learned with the Hubble Space Telescope and the Chandra X-ray Observatory. I will also present recent results from HST's Advanced Camera for Surveys including some of the surprises that my students and I have uncovered.

Dr. Adrienne Cool is a native of New York City, and received her undergraduate degree in physics at Yale University. She spent a few years after college working on medical imaging

techniques, then went to Columbia University where she obtained a Master's degree in electrical engineering. During that time, she happened on some popular astronomy books and decided that astronomy was for her. She bought a pair of binoculars, learned the constellations from her rooftop in Brooklyn, and went off to a PhD program in astronomy at Harvard. She came to the San Francisco Bay Area for a postdoc at Berkeley. Currently, Dr. Cool is a professor in the Department of Physics and Astronomy at San Francisco State University where she and her students spend their time looking for needles in the haystacks of Hubble images of globular clusters.

!!!! IMPORTANT !!!! NEWSLETTER ANNOUNCEMENT

Commencing with the December issue, SFAA's official newsletter, *Above the Fog*, will be delivered via e-mail. When the newsletter becomes available, members will receive an e-mail notification with a link to the online version. If you wish to continue receiving the newsletter in hard copy format, please submit a request to treasurer@sfaa-astronomy.org.

2006 CI ub Officers & Contacts

<i>President</i>	John Dillon	(415) 332-8096
<i>Vice President</i>	Kenneth Frank	(415) 789-0459
<i>Secretary</i>	Stefanie Ulrey	treasurer@sfaa-astronomy.org
<i>Treasurer</i>	Stefanie Ulrey	treasurer@sfaa-astronomy.org
<i>Speaker Chair</i>	Linda Mahan	doublestar@comcast.net
<i>City Star Party</i>	Randy Taylor	(415) 255-8670 randytaylor3@aol.com
<i>Membership & Subscriptions Bulletin</i>	Stefanie Ulrey	treasurer@sfaa-astronomy.org
<i>Editor-in-Chief</i>	Phil Estrin	
<i>Associate Editor</i>	Annette Gabrielli	(415) 703-4539 agabrielli-sfaa@sbcglobal.net
<i>Telescope Loans</i>	Pete Goldie	(415) 206-9867
<i>Honorary Director and Board Member Emeritus</i>	John Dobson	(415) 665-4054
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	Dirk Lammerts	(415) 242-1464
	Robert English	(415) 383-6475 sfaa@bogusnet.net
	Annette Gabrielli	(415) 703-4539 agabrielli-sfaa@sbcglobal.net
	Michael Portuesi	(415) 550-9366
<i>Alt. Board Members</i>	Karim Mokhtar	moktarkarim@yahoo.com
<i>Webmaster</i>	Joe Amato	Web-master@sfaa-astronomy.net

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.

SFAA WEBSITE AND ONLINE SERVICES



The SFAA web site at SFAA-Astronomy.org is provided to our members and the general public for the sharing of club information and services. The web site contains links for club [star parties](#), [events](#), [newsletters](#), [lectures](#) and [meetings](#). If you wish to interact with other members our web site offers a set of members-only [bulletin board forums](#). As an active member you will also have access to the SFAA Announcements mailing list so you may receive information on club events and activities via email. If you are an active member and not yet a subscriber to our mailing list, then we encourage you to join. Please send your request to join the SFAA Announcements mailing list to SFAAMailingList@sfaa-astronomy.org (in that email you must supply your name and address to verify your active membership). Other useful and interesting information and services are available on the site such as [observing location reviews](#), [charts & learning tools](#), member [astronomy photo gallery](#), and [members only telescope loans](#). Information about SFAA's membership, organization and by-laws are available at the club's online public document [archive](#). If you need to contact a representative of the SFAA, then please visit our [contacts](#) page to help in finding the right person to answer your questions.

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 20th day of the month.** Send your articles to Phil Estrin at pestrin@dir.ca.gov.

CI ub Tel escopes

The SFAA owns eight very fine, easy to use, loaner telescopes well-suited for deep sky, planets, and star parties. All scopes are available to any SFAA member. The loaner custodians for the majority of our fleet are Pete & Sarah Goldie. Please contact them at pg@lbin.com for details if you are interested in borrowing a scope or if you have items you can donate for the loaner program (eyepieces, star maps/books, red flashlights, collimator, etc.). Please contact the appropriate member indicated below if you are interested in borrowing one of the telescopes.



- 1) 6" f/10.3 Dobsonian/Pete Goldie
- 2) 8" f/7 Dobsonian/Pete Goldie
- 3) 8.5" f/6 Dobsonian/Pete Goldie
- 4) 10" f/8 Dobsonian/Pete Goldie
- 5) 114mm f/4 Newtonian StarBlast/Pete Goldie
- 6) 8" f/10 Celestron SCT/Annette Gabrielli/agabrielli-sfaa@sbcglobal.net
- 7) 8" f/10 Meade SCT/Stefanie Ulrey/treasurer@sfaa-astronomy.org
- 8) 9.5" f/5.6 Celestron Newtonian/Ken Frank/kennethfrank@planitarium.net

CI ub 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. For information on the course tapes themselves:



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

THROUGH THE FINDER...

We are daily spinning closer to the sun while tilting further from its direct glare (that's an amateur astronomer's way of saying winter is coming) which signals that there are some calendrical SFAA milestones to remember. Each new year begins with the election of a new Board and the recognition of special achievements by our members. Look for the ballot of Officers and Directors in next month's newsletter. Also remember that nominations for our special achievement awards are now open. The awards are for: "Observer of the Year," "Service," and the not-necessarily annual "Herman Fast" lifetime achievement award. The "Observer" award is in recognition of an SFAA member attaining some observing milestone – completing the Messier or Herschel list, e.g., or something of that sort. The "Service" award is given to someone who has provided noteworthy service this year to SFAA or the amateur astronomy community in general. The "Herman Fast" award is reserved for special recognition for someone who has shown a lifelong commitment to our hobby. Got a nominee – let us know.

Next's month's membership lecture/meeting at the Randall Museum is our annual Member's Night when we SFAA'ers provide our own edu-tainment and offer short presentations about topics of communal interest. It's also the night when you can display your newest astro-art and/or astro-photography to be judged by your peers. Winners are announced at the annual dinner at the **Basque Cultural Center on January 27** (mark your calendars now, but more details next month). Now I haven't any talent for, or suggestions about, producing astro-art, but I did have an idea for those interested in astro-photography. How about photographing the transit of Mercury on Nov. 8? Not a very original idea, I suppose, but hey, it's not something you can try every day, or every decade. Exposure shouldn't be a challenge – there's plenty of light. You don't have to fiddle with dials in the dark. And there's plenty of time (it's not exactly what you'd call "rapid transit"!); You've got 5 hours to fiddle with dials in daylight. And if you want to make it "arty," maybe you could line up something interesting to silhouette against the sun – GG Bridge, Transamerica pyramid, a passing pelican, a turtle tossed into the air, whatever? But what do I know about astrophotography. Just trying to spur interest. Remember to catch the turtle.

See you in the dark, or mid-day on Nov. 8.

John Dillon
President

TREASURER POSITION OPEN

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. The Treasurer also maintains current and lapsed membership lists and send 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. About six hours a month on the duties of the office, plus the time needed for the board meeting.

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

Stephanie Ulrey, Treasurer

IMPORTANT DATES

SFAA GENERAL MEETINGS & LECTURES

Wednesday, November 15

Wednesday, December 20

Wednesday, January 17

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)

BOARD MEETINGS

Tuesday, November 14

Tuesday, December 12

Tuesday, January 9

7:00-8:30 p.m.

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

CITY STAR PARTIES - Telescope Clinic one hour before sunset

SATURDAYS -- November 25, 5:00 p.m. at Land's End

December 16, 5:00 p.m. at Randall Museum

January 13, 5:06 p.m. at Land's End

Map and directions <http://www.sfaa-astronomy.org/sfaa/starparties/cspmap.shtml>

Weather may cancel the City Star Party. Call the SFAA Hotline at (415) 289-6636 AFTER 4 PM to learn the status of the event and the location. If the hotline announces the Star Party is cancelled, the Telescope Clinic and Lecture are cancelled as well. However, if the Hotline does not cancel the Star Party, be assured that the Lecture will proceed as scheduled even given less-than-perfect telescope conditions.

Please also note that while City Star Parties WILL ALWAYS be held on Saturdays, some will be closer to the last quarter phase of the moon, while others will be close to first quarter. This is so we can work around dates for Mt. Tam public star parties as well as our members-only events on Mt. Tam.

MT TAM STAR PARTIES – SPECIAL USE PERMIT – MEMBERS ONLY

SATURDAYS -- November 18, 5:00 p.m.

December 23, 5:00 p.m.

January 20, 5:00 p.m.

December 20 - DECEMBER MEMBER'S NIGHT GENERAL MEETING

The December 20th SFAA meeting is Member's Night, when members get a chance to speak about their special interests. A short talk about an observing experience, a favorite astronomy site, astronomy equipment or a particular target of study are a few suggestions of possible talks. Now is the time to begin thinking about how you can participate in the year's final meeting.

Please contact Linda Mahan doublestar@comcast.net

December Member's Night is also a chance to participate by entering the Astronomy Art Contest with your original artwork. You may enter drawings, paintings, sculpture, found art or collage. Be creative. A decorated cake was entered one year. Enjoy this chance to express yourself, and enter the Art Contest.

The Astronomical Photography contest is also a feature of Member's Night. Plan now to enter your original astro images.

Everyone present for the December meeting judges the Art and Astrophotography before the talks begin. Winners are announced at the Member's Dinner in January, where beautiful hand made awards are presented for First, Second and Third prizes in the Art and Astrophotography category. Enter, and plan to join your fellow SFAA members for the Awards Dinner. Your participation enriches the experience of SFAA.



NEW SFAA MEMBERS

Scope City is offering to new members a \$25 credit toward the purchase of telescopes and binoculars.

Obtain a receipt for dues payment from

Stephanie Ulrey, Treasurer,

treasurer@sfaa-astronomy.org.

Contact Sam Sweiss at Scope City to arrange for your discount.

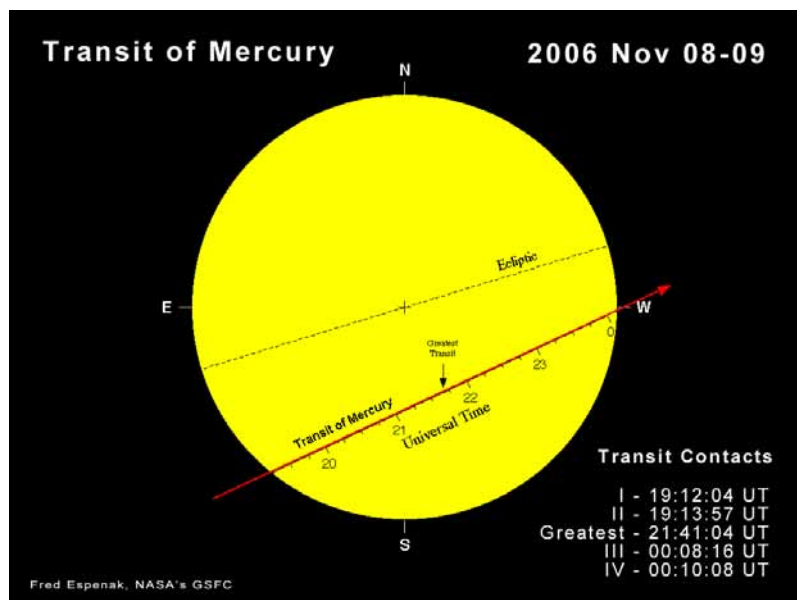
COSMOLOGY AND TELESCOPE MAKING CLASSES BY JOHN DOBSON

John Dobson will be teaching Observational Cosmology, every Tuesday, beginning 10/31 through December, at 7:00 p.m., at 4135 Judah St. (at 47th Ave). The course is free, but we'll pass the hat for donations at the end of each class to cover expenses, help with utilities, etc. Please note, these classes will be held at a private residence as a favor to John and his ongoing devotion to public education. Parking is difficult, better on Lincoln if you drive, best to carpool or take the N-Judah. Space may be limited, depending on attendance. Kindly R.S.V.P. so we'll know how many to expect. Call 665-4054 for information. Thank you!



IT'S TIME TO ORDER RASC HANDBOOKS
AND CALENDARS AGAIN
LET KEN <[KENNETHFRANK AT PLANITARIUM.NET](mailto:KENNETHFRANK@PLANITARIUM.NET)> KNOW
IF YOU WANT ONE --GOING FAST!

Wednesday, November 8 TRANSIT OF MERCURY See Mercury Cross the Sun



Courtesy of NASA

Next Wednesday, the San Francisco Bay Area will be well placed to view a rare celestial event - a transit of Mercury, or the passage of the planet Mercury across the face of the Sun.

Amateur astronomers across the Bay Area and Northern California will have telescopes set up for free public viewings of the transit, from 11 am to 4 pm. For more information, and to find a viewing site near you, visit our page on the SF Sidewalk Astronomers website:

<http://sfsidewalkastronomers.org/newsarticles/news/mercurytransit>

NOTE: This is a daytime event, which involves viewing the Sun. All astronomers sponsoring these events are using safe solar telescopes with special

filters designed for solar viewing. Never, ever look directly at the Sun either directly or through a conventional telescope. Permanent blindness or eye damage will result.

Michael Portuesi

San Francisco Sidewalk Astronomers

info@sfsidewalkastronomers.org . <http://sfsidewalkastronomers.org>

OBSERVING ACROSS THE ATLANTIC . SEPT-OCT, 2006

Two weeks, four observatories, new friends, old stones.

[Jane Houston Jones](#)

Longitude 0° 47'W, Latitude 50° 43'N – Selsey, Sussex, UK

[Photo Album Here](#)



Jane with Sir Patrick Moore on a visit to *Farthings*

Near the 17th century thatched roof of [Sir Patrick Moore's](#) "Farthings" residence in Sussex stand two observatories. The larger one contains a [15-inch f/6 Fullerscope reflector](#), and the smaller one holds a 5-inch Cooke refractor. The night we spent at Farthings was magical despite increasing clouds. Sir Patrick ("just Patrick, please") was admitted as a member of the British Astronomical Association at age 11 in 1934, 5 years after he first read *The Story of the Solar System*, by G. F. Chambers, F.R.A.S. This little book, written

in 1898, was a gift from his mother. Local amateur astronomer [Ian Sharp](#) joined us in the observatory on the night of our visit, and the BBC crew from Patrick's "The Sky at Night" TV show were there to film his October show in the morning. My biggest thrill, in addition to talking about sketching with Patrick, was to view a couple of his 7 Moon sketching journals, and some of his Jupiter, Saturn, Venus and Mars sketch collections. His first sketches were dated 1933, shortly before he joined the B.A.A. We were able to view a few stars through the 15-inch, but soon the clouds obscured the skies and we headed inside for conversation and stargazing of a different kind.

Longitude 1°50'W, Latitude 51° 11'N – Stonehenge, Wiltshire, UK



Mojo assembled this panorama from four individual pictures. More on the [photo page](#).



The Leviathan Telescope at Birr Castle, view from the south in the rest position.

It is not likely that ancient observers used Stonehenge for astronomical predictions. More likely, any astronomical observations made at Stonehenge were of a simple kind carried out for religious and ritual practices.

The main axis of the monument faces the horizon where the Sun rises on midsummer morning, the longest day of the year. But the axis really only lines up roughly. The Sun actually rises to the left of the Heel Stone (the marker for the axis). And because of the Earth's precession, 4,000 years ago, the Sun would have risen even farther off the center axis.

Is Stonehenge a tribute to Stone Age brilliance or the farmer's common knowledge of the sky? A visit to Stonehenge or megaliths in Europe, Russia, the Americas, Africa, Asia, the Pacific reveal the remnants of ancient or accidental astronomers, who looked up in wonder just as we do today.

Longitude 7° 54'W, Latitude 55° 5'N – The Leviathan, Birr Castle and the Whirlpool Star Party, Co. Offaly, Ireland

For over 150 years, amateur and professional astronomers alike have been inspired by the science of [William Parsons](#), the 3rd Earl of Rosse. The annual Whirlpool Star Party, held adjacent to the Earl's castle and telescope, honors the work of the past with results of the present. On September 29, 2006, we met many of our fellow speakers and attendees at Dooley's Hotel, the home of the Whirlpool Star party, in the shadow of Birr Castle and the great 72-inch Leviathan Telescope.

After wine and cheese, we all headed through the stone arch to the grounds of Birr Castle, inhabited by the current Lord Rosse, the patron and supporter of the Whirlpool Star Party. With only the starry sky to guide us, we were soon standing against the great 72-inch [Leviathan telescope](#). Originally operated by chains and pulleys, the telescope is being renovated. Many attendees set up their own telescopes adjacent to the Leviathan and soon star party murmurs mixed with stunning views of the fall sky splendors.

Mojo and I were honored to be invited speakers at this year's Whirlpool Star Party. My talk was about my work on the Cassini Mission and a snapshot of Cassini's second year at the Saturnian system. Mojo's talk was about astronomy in the national parks of the US, part travelogue followed by the Milky Way talk he gives each summer in the national parks. These were just a small part of the speaker lineup, which included one other American visitor, Johnson Space Center's research pilot, [Triple Nickel](#).

Any amateur astronomers thinking of an Autumn trip to Ireland would enjoy this wonderful star party. We left after just a few days with dozens of new friends. I can't wait to go back!

Longitude 0° 0', Latitude 51° 28'N – Royal Observatory Greenwich, London, UK



The octagon room at Flamsteed house, and time signal ball, at the Royal Greenwich Observatory

The Royal Observatory, home of Greenwich Mean Time and the Prime Meridian line, is one of the most important historic scientific sites in the world. Founded in 1675, it is the official starting point for each new day, year and millennium. We took a stroll through the time galleries in Flamsteed House and listened to a Flamsteed lecture in the Octagon Room. [John Harrison's marine timekeepers H1-H4](#) are on display along with regulators, precision clocks and watches, chronometers in the 1,000 object

collection. [Telescopes of Halley, Flamsteed and Airy](#) fill the observatory. Out in the drizzling rain, we spotted an 8-foot section of William Herschel's 40-foot reflector telescope. No photographs were allowed in the museum.

OBSERVING CRATER ROSSE

[Jane Houston Jones](#)



This image of the Moon courtesy of Irish astronomer John Murphy. Used with permission. Rosse is the small (unnumbered) crater in Mare Nectaris.

Moon, is easily visible for much of the lunar month. I have enjoyed viewing it as a bright speck on the waxing crescent terminator, as part of the vivid lunar tapestry of the full Moon, and at sunset on the waning Moon a few days after full.

The Sea of Nectar (Mare Nectaris) is a small lunar mare or sea, a volcanic lava plain noticeably darker than the rest of the Moon's surface, located between the Sea of Tranquility (Mare Tranquillitatis) and the Sea of Fecundity (Mare Fecunditatis). Montes Pyrenaeus borders the mare to the west. To the southwest is the large, flooded Fraecastorius crater.

I love to aim my telescope at this small but significant crater because it reminds me of my visit to the 72-inch Leviathan reflector telescope and the great time we had in Ireland at the [2006 Whirlpool Star Party](#).

Recently, I aimed my 12.5-inch reflector at the slender five day old waxing crescent Moon. My eye was instantly drawn towards a tiny crater in Mare Nectaris in the southeast quadrant of the Moon. Named for William Parsons, third Earl of Rosse, this small crater stands out despite its diminutive size. It has both a higher albedo than the surrounding lunar mare, and a signpost of sorts – a bright lunar ray appears to bisect it and cross the Nectaris basin.

In a few lunar days, the origin of this ray will become apparent. It is part of the massive ray structure from Tycho. At full Moon, you can see this ray span over 1800 kilometers from Tycho to Rosse. Bowl-shaped Rosse, 12 kilometers in diameter, according to Antonin Rukl's *Atlas of the*



Image by John Murphy shows crater Rosse in Mare Nectaris

SFAA 2007

Calendar of Events

Mount Tam Public Events

Public nights on Mount Tamalpais start with a lecture in the Mountain Theatre, followed by public viewing in the Rock Springs parking lot. SFAA members may view privately after crowd departs, approx. 11 pm-2 am. Note that access to SUP private events is contingent on our participation in the public events.

- April 21, sunset 7:42 pm
- May 19, 8:08 pm
- June 23, 8:26 pm
- July 21, 8:19 pm
- August 18, 7:51 pm
- September 15, 7:11 pm
- October 13, 6:29 pm

Mount Tam SUP Events

SUP (Special Use Permit) observing nights on Mount Tamalpais are open *only* to SFAA members. Please arrive by sunset (times listed below). A permit is required for each car. We must vacate the mountain by 2 am except on specially approved nights (such as Messier Marathon).

- January 20, 5:14 pm
- February 17, 5:44 pm
- March 17 (Messier Marathon night), 7:12 pm
- April 14, 7:37 pm
- May 12, 8:01 pm
- June 16, 8:25 pm
- July 14, 8:23 pm
- August 11, 7:59 pm
- September 8 (Picnic night), 7:21 pm
- October 6, 6:39 pm
- November 10, 4:56 pm
- December 8, 4:44 pm

City Star Party

CSP events start at sunset (times listed below) with a public lecture, followed by public viewing. Land's End (LE) and the Randall Museum (RM) are the locations for the CSP this year.

- January 13 (LE), 5:06 pm
- February 24 (LE), 5:52 pm
- March 24 (RM), 7:18 pm
- April 28 (LE), 7:49 pm
- May 26 (LE), 8:13 pm
- June 9 (RM), 8:22 pm
- July 7 (LE), 8:26 pm
- August 25 (LE), 7:42 pm
- September 22 (RM), 7:00 pm
- October 20 (LE), 6:19 pm
- November 17 (LE), 4:51 pm
- December 15(RM), 4:46 pm

Board Meetings

2nd Tuesday of every month, at the Randall Museum. 7 pm. All SFAA members are invited.

- January 9
- February 13
- March 13
- April 10
- May 8
- June 12
- July 10
- August 14
- September 11
- October 9
- November 13
- December 11

General Meetings

3rd Wednesday of every month (except January) at the Randall Museum. Doors open 7 pm, announcements 7:30 pm, guest speaker 8 pm. All are invited.

- February 21
- March 21
- April 18
- May 16
- June 20
- July 18
- August 15
- September 19
- October 17
- November 21
- December 19

Other SFAA Events

- Annual Dinner, January 27
- Messier Marathon, March 17
- Astronomy Day, April 21
- Fremont Peak, May 11-12
- Annual Picnic, September 8
- Yosemite Weekend, TBA

Other Astronomy Events

- Riverside Telescope Maker's Conference, May 25-28 www.rtmcastronomyexpo.org
- Grand Canyon Star Party, June 9-16 www.tucsonastronomy.org/gcsp.html
- Shingletown Star Party, July 11-16
www.shingletownstarparty.org
- Oregon Star Party, August 16-19
www.oregonstarparty.org
- Fremont Peak Star-B-Q, TBA
www.fpoa.net
- Calstar (Lake San Antonio), TBA
www.sjaa.net/calstar

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:

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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.