

ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

Vol. 57, No. 12 – December 2009

Wednesday, December 16, 2009 – General Meeting

Randall Museum . 199 Museum Way . San Francisco

7:00 pm Doors Open

7:30 pm Announcements

8:00 pm Speaker

SFAA's General Meetings take place on the 3rd Wednesday of each month (except January)

Members' Night

Guest Speakers

STEVE GOTTLIEB

2009 Solar Eclipse in China

Steve Gottlieb and his family spend three weeks in July touring China and culminating with viewing the longest total eclipse of the 21st century. He'll talk about his experiences in China and observing the eclipse from the 3000 ft Tianhuangping Reservoir with several thousand international eclipse chasers.

VIVIAN WHITE

Making the Most of Your Astronomy Club

Vivian will talk about some of the ways that the SFAA can enrich your life. From observing to field trips and beyond. How to get involved and ways to spread the love of astronomy to the community will be covered.



IMPORTANT DATES

SFAA GENERAL MEETINGS & LECTURES - DECEMBER 16 . JANUARY 20

*Third Wednesday of each month: 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)*

SFAA BOARD MEETINGS - DECEMBER 8 . JANUARY 12

*Second Tuesday of each month: 7:00 p.m. – 8:30 p.m.
Randall Museum, 199 Museum Way (Near 14th Street and Roosevelt)*

CITY STAR PARTIES - DECEMBER 26/5:00 P.M.

TELESCOPE CLINIC ONE HOUR BEFORE SUNSET

Land's End (Point Lobos) - Map and directions:

<http://www.sfaa-astronomy.org/clubarchive/directions-pointlobos.php>

NOTE: While City Star Parties WILL ALWAYS be held on Saturdays, some will be close to the last quarter phase of the moon; 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 Mt. Tam members-only events.

MT TAM SPECIAL USE PERMIT STAR PARTIES - MEMBERS ONLY

DECEMBER 19

GATEKEEPERS NEEDED

Special Use Permit observing nights on Mount Tamalpais are private and 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 2:00 a.m. except on specially approved nights (such as Messier Marathon).

MT TAM PUBLIC STAR PARTIES - **(MAY THROUGH OCTOBER ANNUALLY)**

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 from approx. 11 pm-2 am.

For more information go here: <http://www.sfaa-astronomy.org/starparties/>

UPCOMING GENERAL MEETING LECTURES & EVENTS

**JANUARY 30: SAN FRANCISCO AMATEUR ASTRONOMERS ANNUAL DINNER
DELANCEY STREET RESTAURANT, SAN FRANCISCO**



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

2010 Ballot for Officers & Board of Directors

President *(vote for one)*

- David Frey
- _____

Vice President *(vote for one)*

- Vivian White
- _____

Secretary *(vote for one)*

- _____

Treasurer *(vote for one)*

- David Wilton
- _____

Directors *(vote for seven)*

- Jim Cottle
- John Dillon
- Kenneth Frank
- Annette Gabrielli
- Dave Goggin
- Elan Morpugo
- Doug Smith
- Stefanie Ulrey
- _____
- _____

VOTING INSTRUCTIONS

You may cast your ballot at the membership meeting on 16 December 2009, or you may mail it to **SFAA Secretary, POB 15097, San Francisco, CA 94115**. Ballots must be received no later than January 15, 2010. Each club member may submit only one ballot. Family memberships may submit a separate ballot for each voting family member.

The club members listed above are candidates for officers and board of directors of SFAA for the year 2010. Please vote for one candidate for each officer position and seven candidates for the board of directors including write-ins. Voting for more than one candidate for any officer position or for more than seven candidates for the board of directors will invalidate the entire ballot.

All candidates, including write-ins, must have committed to attending at least seven board meetings and may not miss more than two consecutive meetings during the calendar year for which they are nominated.

The seven board of directors candidates who receive the highest number of votes will become regular board members. The two candidates receiving the next highest number of votes will become alternate board members. The new officers and board of directors will be installed at the Annual Awards Dinner on January 30, 2010.

San Francisco Amateur Astronomers

P.O. Box 15097

San Francisco, CA 94115



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

DECEMBER 16 MEMBERS' NIGHT CONTESTS

SUBMIT CONTEST ENTRIES AT THE DECEMBER 16 MEETING WHERE MEMBERS WILL CAST VOTES.

PRIZES FOR FIRST, SECOND AND THIRD PLACE WINNERS WILL BE AWARDED AT THE ANNUAL AWARDS DINNER ON JANUARY 30 AT DELANCEY STREET RESTAURANT.

Astrophotography



Members are encouraged to submit astrophotographs (up to three entries per member) for judging. All entries will be accepted and exhibited at the December meeting and voted upon by the general membership. Entries must have been taken this year (2009) and be of an astronomical theme. Size should be reasonable (11' x 14' or less), mounted or unmounted.

Astronomical Arts

This contest is open to all members and will be judged by the membership at the December General Meeting. Any art related to astronomy is welcome. Your drawings of astronomical objects are worth sharing with other club members, as well as craftwork, sculpture, jewelry, and paintings -- there are almost no restrictions here. Size is a consideration since we have to fit all entries, and club members, in the museum, alongside the Astrophotography Award entries. Also, no living critters, please. The museum may frown upon any living, breathing things that are not part of official exhibits. Live acts are restricted to the human kind. Please bring your entries to the December meeting. Any questions can be directed to club officers listed on page two in this bulletin.

Literary



Submissions may be fact or fiction, humor or opinion. You may have a favorite story about an observing experience, a trip, or about people who have crossed your astronomical path in one memorable way or another. Share the stories of your astronomy observing and/or travel experiences, maybe an article you have written, and enable us to appreciate them with you.

San Francisco Amateur Astronomers

Annual Awards Dinner

Saturday, January 30, 2010

6:00 p.m. - No-host Bar 7:00 p.m. - Dinner

DELANCEY STREET RESTAURANT

600 Embarcadero, San Francisco CA 94107 . (415) 512-5179

\$30.00 per person (Tax and gratuity included)



MENU

*Includes appetizers, soup, salad, dessert
and non-alcoholic beverages*

Served with Baskets of Assorted Breads

Select from the following entrée and dessert choices –

Oak Fired Barbequed Chicken

Oak Fired Barbequed Baby Back Ribs

Oak Fired Barbequed Combo

All above entrees served with greens

Mediterranean Vegetable Platter

Spinach and feta phyllos, over minted cucumber yogurt sauce, apricot spiced Israeli couscous, baba ganoush, hummus, olives, and pita bread

Chocolate Mousse

Warm 3 Ginger Gingerbread with whipped cream

Coffee or tea

PLEASE SEND A CHECK OR MONEY ORDER WITH YOUR CHOICE OF ENTREE PAYABLE TO

**SAN FRANCISCO AMATEUR ASTRONOMERS
AND SEND TO P.O. Box 15097, SAN FRANCISCO CA 94115**

BY FRIDAY, JANUARY 22, 2010.

REQUESTS RECEIVED AFTER THIS DATE CANNOT BE GUARANTEED.

FROM HIGHWAY 280: TAKE HIGHWAY 280 NORTH TOWARD CIVIC CENTER/BAY BRIDGE. TAKE LEFT RAMP ONTO KING ST AND PROCEED 1.0 MILE. CONTINUE ON THE EMBARCADERO, GO 0.4 MILE. MAKE A U-TURN AT BRANNAN ST. ONTO THE EMBARCADERO, ARRIVE AT 600 THE EMBARCADERO, ON THE RIGHT.





FROM HIGHWAY 101 (SOUTH OF SAN FRANCISCO): TAKE US-101 NORTH TO THE I-280 EXIT TOWARD PORT OF SAN FRANCISCO, GO 3.2 MILES. TAKE LEFT RAMP ONTO KING STREET, GO 1.0 MILE. CONTINUE ON THE EMBARCADERO, GO 0.4 MILE. MAKE A U-TURN AT BRANNAN ST. ONTO THE EMBARCADERO, ARRIVE AT 600 THE EMBARCADERO, ON THE RIGHT.

FROM MARIN COUNTY: TAKE US-101 SOUTH OVER THE GOLDEN GATE BRIDGE. CONTINUE ON RICHARDSON AVENUE, GO 0.2 MILES. CONTINUE ON LOMBARD STREET, GO 1.1 MILES. TURN LEFT ON VAN NESS AVENUE, GO 0.2 MILES. TURN RIGHT ON BAY STREET, GO 1.1 MILES. TURN RIGHT ON THE EMBARCADERO, GO 1.9 MILES. ARRIVE AT 600 THE EMBARCADERO, ON THE RIGHT.





December 2009 Almanac for San Francisco (Pacific Standard Time)



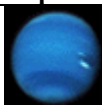
(Source: US Naval Observatory)

Sun and Moon Data:

Date	Astronomical Twilight Begins	Sunrise	Sunset	Astronomical Twilight Ends	Moon	Moonrise	Moonsset
5 Dec	5:37 am	7:10 am	4:51 pm	6:24 pm		8:52 pm	10:24 am
12 Dec	5:42 am	7:16 am	4:51 pm	6:25 pm		3:42 am	2:01 pm
19 Dec	5:46 am	7:21 am	4:54 pm	6:28 pm		9:38 am	8:03 pm
26 Dec	5:49 am	7:24 am	4:58 pm	6:32 pm		12:40 pm	1:57 am

Planetary Data:

	Mercury		Venus		Mars		Jupiter	
								
	Ophiuchus 1-3/ Sagittarius 4-31		Libra 1-3/Scorp 3-8/ Ophiuchus 9-23/ Sagittarius 24-31		Leo		Capricornus	
Date	Rise	Set	Rise	Set	Rise	Set	Rise	Set
5 Dec	8:35 am	5:48 pm	6:27 am	4:19 pm	9:35 pm	11:38 am	11:34 am	10:01 pm
12 Dec	8:50 am	6:06 pm	6:42 am	4:23 pm	9:12 pm	11:15 am	11:09 am	9:39 pm
19 Dec	8:52 am	6:19 pm	6:57 am	4:29 pm	8:45 pm	10:50 am	10:45 am	9:18 pm
26 Dec	8:31 am	6:13 pm	7:10 am	4:38 pm	8:16 pm	10:23 am	10:21 am	8:57 pm

	Saturn		Uranus		Neptune	
						
	Virgo		Pisces		Capricornus	
Date	Rise	Set	Rise	Set	Rise	Set
5 Dec	1:23 am	1:31 pm	12:53 pm	0:39 am	11:38 am	10:13 pm
12 Dec	0:58 am	1:05 pm	12:26 pm	0:11 am	11:11 am	9:47 pm
19 Dec	0:32 am	12:38 pm	11:59 am	11:41 pm	10:44 am	9:20 pm
26 Dec	0:06 am	12:11 pm	11:31 am	11:14 pm	10:17	8:53 pm





December Phenomena:

- 3 August, 6:00 pm: Moon at apogee, 252,294 miles (406,028 km)
- 4 December, 6:00 am: Moon at perigee, 225,856 miles (363,481 km)
- 13 December, 9:00 pm: Geminids meteor shower peak
- 17 December, 5:00 am: Mercury at greatest illuminated extent
- 18 December, 9:00 am: Mercury at greatest elongation, 20.3° east of Sun
- 20 December, 7:00 am: Moon at apogee, 252,109 miles (405,731 km)
- 21 December, 9:47 am: Winter solstice
- 31 December, 10:52-11:54 am: Partial lunar eclipse





February 2010 Almanac for San Francisco (Pacific Standard Time)



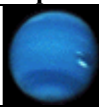
(Source: US Naval Observatory)

Sun and Moon Data:

Date	Astronomical Twilight Begins	Sunrise	Sunset	Astronomical Twilight Ends	Moon	Moonrise	Moonset
6 Feb	5:40 am	7:09 am	5:39 pm	7:08 pm		1:35 am	11:19 am
13 Feb	5:33 am	7:01 am	5:47 pm	7:15 pm		6:40 am	5:44 pm
20 Feb	5:26 am	6:53 am	5:55 pm	7:22 pm		9:48 am	00:45 next day
27 Feb	5:17 am	6:44 am	6:02 pm	7:29 pm		5:18 pm	5:53 am

Planetary Data:

	Mercury		Venus		Mars		Jupiter	
								
	Sgr (1-9) / Cap (10-26) / Aqr (27-28)		Cap (1-8) / Aqr (9-28)		Cancer		Aquarius	
Date	Rise	Set	Rise	Set	Rise	Set	Rise	Set
6 Feb	5:59 am	3:43 pm	7:34 am	6:06 pm	4:23 pm	7:04 am	8:01 am	6:58 pm
13 Feb	6:08 am	4:03 pm	7:31 am	6:23 pm	3:43 pm	6:29 am	7:37 am	6:39 pm
20 Feb	6:17 am	4:28 pm	7:26 am	6:39 pm	3:06 pm	5:54 pm	7:14 am	6:19 pm
27 Feb	6:23 am	4:57 pm	7:20 am	6:54 pm	2:33 pm	5:21 pm	6:51 am	6:00 pm

	Saturn		Uranus		Neptune	
						
	Virgo		Pisces		Capricornus	
Date	Rise	Set	Rise	Set	Rise	Set
6 Feb	9:15 pm	9:27 am	8:50 am	8:36 pm	7:35 am	6:15 pm
13 Feb	8:46 pm	8:58 am	8:23 am	8:10 pm	7:08 am	5:49 pm
20 Feb	8:16 pm	8:30 am	7:56 am	7:44 pm	6:42 am	5:23 pm
27 Feb	7:47 pm	8:02 am	7:30 am	7:19 pm	6:15 am	4:57 pm

February Phenomena:

3 Feb, 10:00 pm: Spica 3.2° N of Moon
 7 Feb, 2:00 pm: Antares 1.2° S of Moon
 7 Feb, 9:00 pm: Venus 1.0° S of Neptune
 11 Feb, 8:00 pm: Mercury 2.2° S of Moon
 13 Feb, 8:00 pm: Neptune 3.4° S of Moon
 14 Feb, 12:00 pm: Venus 5.0° S of Moon
 14 Feb, 3:00 pm: Neptune at conjunction

14 Feb, 5:00 pm: Jupiter 4.6° S of Moon
 16 Feb, 4:00 am: Uranus 5.4° S of Moon
 16 Feb, 6:00 pm: Venus 0.5° S of Jupiter
 25 Feb, 7:00 pm: Mars 5.2° N of Moon
 27 Feb, 5:00 am: Mercury 1.7° S of Neptune
 27 Feb, 4:00 pm: Regulus 3.8° N of Moon
 28 Feb, 2:00 am: Jupiter at conjunction

SCOPE CITY FAMILY DAY – DECEMBER 10

Hi everyone

We had a successful Family Resource Fair day event today Scope City and we had over 700 people passing through the Mall. I sponsored the San Francisco Astronomical society and the event was sponsored by the Mayor's office and we were visited by David Chiu and a special envoy from the mayor's office. David Chiu is the President. Board of Supervisors District 3 and we became acquainted.

Sam

Swiss



SIDEWALK ASTRONOMY & JOHN DOBSON 94TH BIRTHDAY



Sportsfield Lighting to be installed at the Beach Chalet Soccer Fields near Ocean Beach

The San Francisco Recreation and Park Department is planning to rebuild the soccer fields at the western end of Golden Gate Park, next to Ocean Beach. In addition to adding artificial turf, the project will install 60 foot sports field lights on the playing fields, new pole lights along a path between the soccer fields and the Great Highway, and new parking lot lights for an expanded soccer parking lot. The lights will be on until 10:00 p.m. most nights, throughout the year. In the future, according to the Golden Gate Park Master Plan, a fifth field may be added directly to the south of the four existing fields. The fifth field may also be artificial turf and have additional sports field lighting. When completed, the fields will extend up to half the width of Golden Gate Park, an area larger than Candlestick Stadium. The project can result in decreased night sky darkness with increased fog glow on foggy evenings, degraded wildlife habitat, and infringement on the wild nature of the western end of Golden Gate Park and on Ocean Beach.



Computer simulation from City Fields Foundation public presentation



South Sunset Playing Fields from 3 blocks away

This type of sportsfield lighting can be seen in the South Sunset playing fields at 40th Avenue and Wawona in San Francisco. The lights can be seen from La Playa, seven blocks away.

If you are concerned about this project, it is very important that you attend the following public meetings and write letters to express your views. Write to the SF Recreation and Park Commission, the SF Board of Supervisors, and Mayor Newsom. You can write even if you live outside of San Francisco – soccer advocates will be writing from all over the Bay Area. See our website for more instructions. *Copy us on all your letters and emails, so that we have a record of your concerns and can present them at future hearings.*

This may be your only chance to influence on this project.

Tuesday, December 1, 2009
7:00 - 8:30 p.m.
Sunset Recreation Center
2201 Lawton Street (at 29th Avenue)

Monday, December 7, 2009
7:00 - 8:30 p.m.
Golden Gate Park Senior Center
6101 Fulton Street (at 37th Avenue)

December 17, 2009. Check our website for updates.

sfoceanedge@earthlink.net

www.sfoceanedge.org
SF Ocean Edge, c/o 2690 46th Avenue, San Francisco,
CA 94116

Recreation and Park Commission: As yet unscheduled, but it may be as early as

[AANC Contacts] What's Up for December? The Orion Nebula!

"Jane Houston Jones" <jane@whiteoaks.com>

My last What's Up podcast of 2009's International Year of Astronomy features The Orion Nebula. It takes the listener/viewer from Galileo's sketch of the Trapezium stars, on to Christian Huygens' first detailed sketch of the nebula itself and on to studies by the Hubble Telescope.

You can find it here on the Solar System Exploration archive page: <http://solarsystem.nasa.gov/news/whatsup-archive.cfm>

On the JPLnews Youtube channel: <http://www.youtube.com/profile?user=JPLnews#g/u>

On the NASA podcast page: http://www.nasa.gov/multimedia/podcasting/whatsup_index.html

Each month in 2009 the podcast series explored the first observation of a celestial object honoring the IYA 400 years of telescopic observations theme. Here is a brief recap [from each written transcript] of the podcast series - the animations in each podcast show and explain these first observations, telling a great story spanning from the present back to prehistoric times! If you'd like any of the components (artwork, old sketches, current images, etc.) just let me know!

January 2009 - Four hundred years ago, Galileo first observed the phases of Venus through a telescope. The prevailing belief was that the sun and planets revolved around the Earth. The phases looked similar to what he saw on Earth's Moon each month.

February 2009 - Galileo's famous observations of the moon from 1609 were the first to be published and publicized in 1610. [good lunar phase animation]

March 2009 - When Galileo aimed his telescopes at Saturn in 1610 he wasn't sure what he was seeing. He thought the rings were "handles" or large moons on either side of the planet. A few years later in 1612, he was astounded that the "handles" he previously observed had disappeared! And in 1616, the handles were back, but they looked different. This time he saw two half-circles on either side of the round globe of Saturn.

April 2009 - In 1845, Ireland's Third Earl of Ross, William Parsons, used his huge telescope at Birr Castle in the center of Ireland to observe and sketch the spiral structure of the Whirlpool Galaxy.

May 2009 - Galileo and Englishman Thomas Harriott both observed the sun and sunspots in 1610, but they weren't the first. Chinese and Korean astronomers wrote about sunspots almost three thousand years ago. John of Worcester, who was an English monk, made the earliest existing drawing of sunspots in 1128.

June 2009 - It's [the Hercules Cluster] called M-13 because this object is the 13th of Charles Messier's 1764 catalog of celestial objects. But he wasn't the discoverer of this cluster! M-13 was discovered half a century earlier by Edmund Halley.

July 2009 - The Milky Way - Ptolemy had identified the six brightest stars in the Pleiades, but Galileo saw 36 stars through his telescope. Through the next two centuries, astronomers used bigger and bigger telescopes to study and map the Milky Way galaxy.

August 2009 - Have you ever wondered what makes these cosmic fireworks? Meteor showers are just the debris of a passing comet or sometimes the debris from a fragmented asteroid. [good meteor viewing animation]

September - Jupiter also has four large satellites, three of which are larger than our own moon. These four moons were discovered by Galileo 400 years ago. You can see them yourself with a small telescope or even binoculars, and watch them move around the planet just as Galileo did!

October 2009 - Astronomers have observed the Andromeda galaxy for over a thousand years. Persian astronomer Al-Sufi was the first to record and sketch his observations of what he called "the little cloud". In 964 he published this observation

and many others in his "Book of Fixed Stars".

Simon Marius first viewed the galaxy through a telescope in 1612.

November 2009 - In 1758, Charles Messier was scanning the skies for comet Halley. He noticed a whitish light, shaped like the flame of a candle in the constellation Taurus. M1, the Crab nebula became the first entry in his catalogue of 110 comet-like objects. 700 years earlier, a "guest star" was visible in the summer sky of 1054. Ancient astronomers in both the old and new worlds documented a new bright star in the daytime sky. It was a supernova in the constellation Taurus and was visible with the unaided eye for nearly two years.

December 2009 - This is the final month of International Year of Astronomy. But that shouldn't stop you from looking up next year.

This month's target is in one of the most-recognizable constellations: Orion.

January 2010 will be all about Mars opposition, first observations and the spacecraft studying this fascinating world! Here's to looking at What's Up in 2010! Jane

-- Jane Houston Jones

Monrovia, CA

Websites: <http://www.whiteoaks.com>

Old Town Astronomers: <http://www.otastro.org>

My NASA JPL What's Up podcast: <http://solarsystem.nasa.gov/news/whatsup.cfm>

Twitter: <http://twitter.com/jhjones> <http://twitter.com/CassiniSaturn>

Blog: <http://jane.whiteoaks.com/>

2009 CLUB OFFICERS & CONTACTS

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<i>Webmaster</i>	Joe Amato	wbmstr@sfaa-astronomy.org

CLUB TELESCOPES

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 telescopes@sfaa-astronomy.org 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/Ken Frank ken@sfaa-astronomy.org
- 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/ annette@sfaa-astronomy.org
- 7) 8" f/10 Meade SCT/Stefanie Ulrey/treasurer@sfaa-astronomy.org
- 8) 9.5" f/5.6 Celestron Newtonian/Ken Frank/ ken@sfaa-astronomy.org

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. For information on the course tapes themselves:

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

MEMBERSHIP DUES

Membership is billed for each upcoming year on June 30. Members may receive no more than one bulletin after the expiration of membership.

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 people who are interested in astronomy, the SFAA web site offers public and members only [bulletin board forums](#). If you wish to remain up-to-date on club activities, then we encourage you to subscribe to one or both of our public [mailing lists](#), which will allow you to receive our newsletter and/or club announcements via email. Other useful and interesting information and services are available on the site such as [observing location reviews](#), member [astronomy photos](#), 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 Editor@sfaa-astronomy.org

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.



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

MEMBERSHIP APPLICATION

Membership is billed for each upcoming year on June 30. Between January 1 and June 30, new members pay one half the amount listed below

Membership Categories (Check one):
 \$10 Youth/Student \$40 Institutional
 \$25 Individual \$75 Supporting
 \$30 Family

Information: Name(s) _____
Address _____
City _____
State _____ Zip _____
Home Phone _____
E-Mail _____

You can choose E-Mail (Recommended) or hard copy delivery for Above the Fog (Check one)

E-Mail Hard Copy

Please make checks payable to San Francisco Amateur Astronomers and mail to:

San Francisco Amateur Astronomers
POB 15097
San Francisco CA 94115