

# ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

Vol. 57, No. 10 – October 2009

*Wednesday, October 21, 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 3<sup>rd</sup> Wednesday of each month (except January)*

## *Exploring the Invisible Universe: The Past and Future of Radio Astronomy*

**A Presentation by Peter Williams**

**Department of Astronomy, UC Berkeley**

Join Peter Williams, fourth-year graduate student at the UC Berkeley Department of Astronomy, for a presentation on the basics of radio astronomy. Williams will explore what can be seen in the radio sky, and the different ways in which astronomy is done at optical and radio frequencies. The presentation will include information about what can be expected from radio astronomy in the near and not-so-near future: an exciting convergence of recent technological advances promises to do as much for radio astronomy as the invention of the CCD has done for visible-light astronomy.

# IMPORTANT DATES

## SFAA GENERAL MEETINGS & LECTURES - OCTOBER 21 . NOVEMBER 18 . DECEMBER 16

*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 14<sup>th</sup> Street and Roosevelt)*

## SFAA BOARD MEETINGS - OCTOBER 13 . NOVEMBER 10 . DECEMBER 8

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

## CITY STAR PARTIES - OCT 24/6:30 P.M. . NOV 21/5:00 P.M. . DEC 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

OCTOBER 17 . NOVEMBER 14 . 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 - OCTOBER 24/6:20 P.M.

### **GATEKEEPERS: Oct – Ken+1 needed**

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

NOVEMBER 18: This meeting will feature the movie BLAST!, about the Balloon-Borne, Large-Aperture, Submillimeter Telescope. <http://www.blastthemovie.com/about.html>

**DECEMBER 16: MEMBERS' NIGHT. ASTROPHOTOGRAPHY, ASTRONOMICAL ART AND LITERARY CONTESTS.**



**Saturday . September 26 2009 . 4:00 p.m.**  
**2008 SAN FRANCISCO AMATEUR ASTRONOMERS**  
**ANNUAL STAR-B-QUE**






**MT. TAMALPAIS STATE PARK**  
**BOOTJACK PICNIC AREA**







## October 2009 Almanac for San Francisco (Pacific Daylight Time)




(Source: US Naval Observatory)

### Sun and Moon Data:

Date	Astronomical Twilight Begins	Sunrise	Sunset	Astronomical Twilight Ends	Moon	Moonrise	Moonset
3 Oct	5:40 am	7:07 am	6:49 pm	8:16 pm		6:18 pm	6:36 am
10 Oct	5:47 am	7:14 am	6:39 pm	8:06 pm		23:47 pm	2:02 pm
17 Oct	5:53 am	7:20 am	6:29 pm	7:56 pm		6:51 am	5:55 pm
24 Oct	5:59 am	7:27 am	6:20 pm	7:48 pm		2:08 pm	0:25 pm 25 Oct
31 Oct	6:06 am	7:34 am	6:12 pm	7:41 pm		4:46 pm	5:24 am

### Planetary Data:

	Mercury		Venus		Mars		Jupiter	
								
	Leo 1-3/Virgo 4-31		Leo 1-9/Virgo 10-31		Gem 1-12/Can 13-31		Capricornus	
Date	Rise	Set	Rise	Set	Rise	Set	Rise	Set
3 Oct	5:42 am	6:09 pm	5:06 am	5:54 pm	0:44 am	3:17 pm	4:30 pm	2:51 am
10 Oct	5:50 am	6:05 pm	5:21 am	5:48 pm	0:34 am	3:04 pm	4:02 pm	2:22 am
17 Oct	6:17 am	6:05 pm	5:36 am	5:42 pm	0:24 am	2:49 pm	3:34 pm	1:55 pm
24 Oct	6:48 am	6:05 pm	5:51 am	5:36 pm	0:13 am	2:33 pm	3:07 pm	1:28 am
31 Oct	7:20 am	6:06 pm	6:06 pm	5:30 pm	0:01 am	2:17 pm	2:40 pm	1:03 am

	Saturn		Uranus		Neptune	
						
	Virgo		Pisces		Capricornus	
Date	Rise	Set	Rise	Set	Rise	Set
3 Oct	6:00 am	6:23 pm	6:04 pm	5:53 am	4:46 pm	3:25 am
10 Oct	5:37 am	5:57 pm	5:56 pm	5:24 am	4:18 pm	2:57 am
17 Oct	5:13 am	5:32 pm	5:08 pm	4:55 am	3:50 pm	2:29 am
24 Oct	4:49 am	5:06 pm	4:40 pm	4:27 am	3:22 pm	2:01 am
31 Oct	4:26 am	4:41 pm	4:12 pm	3:58 am	2:55 pm	1:34 am

### October Phenomena:

5 October, 7:00 pm: Mercury at greatest elongation, 17.9° west of Sun

11 October, 0:00 am: Mercury at greatest illuminated extent

13 October, 5:00 am: Moon at perigee, 229,327 miles (369,066 km)





21 October, 3:00 am: Orionids meteor shower peak







## November 2009 Almanac for San Francisco (Pacific Standard Time)



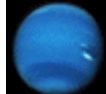
(Source: US Naval Observatory)

### Sun and Moon Data:

Date	Astronomical Twilight Begins	Sunrise	Sunset	Astronomical Twilight Ends	Moon	Moonrise	Moonset
7 Nov	5:12 am	6:42 am	5:05 pm	6:34 pm		9:51 pm	11:46 am
14 Nov	5:19 am	6:49 am	4:59 pm	6:30 pm		4:44 am	3:26 pm
21 Nov	5:25 am	6:57 am	4:55 pm	6:26 pm		11:06 am	9:14 pm
28 Nov	5:31 am	7:04 am	4:52 pm	6:24 pm		2:13 pm	3:10 am

### Planetary Data:

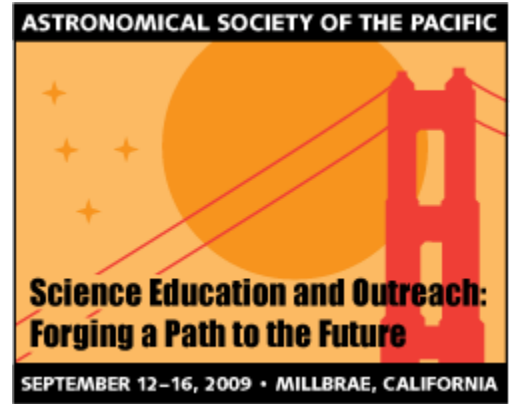
	Mercury		Venus		Mars		Jupiter	
								
	Virgo 1/Libra 2-17/ Scor 18-21/Oph 22-30		Virgo 1-13/ Libra 14-30		Cancer 1-29/Leo 30		Capricornus	
Date	Rise	Set	Rise	Set	Rise	Set	Rise	Set
7 Nov	6:50 am	5:08 pm	5:22 am	4:25 pm	10:46 pm	12:59 pm	1:14 pm	11:34 pm
14 Nov	7:20 am	5:12 pm	5:38 am	4:21 pm	10:31 pm	12:41 pm	12:49 pm	11:10 pm
21 Nov	7:48 am	5:20 pm	5:54 am	4:18 pm	10:14 pm	12:21 pm	12:23 pm	10:46 pm
28 Nov	8:14 am	5:32 pm	6:11 am	4:18 pm	9:56 pm	12:00 pm	11:58 am	10:24 pm

	Saturn		Uranus		Neptune	
						
	Virgo		Pisces		Capricornus	
Date	Rise	Set	Rise	Set	Rise	Set
7 Nov	3:02 am	3:15 pm	2:44 pm	2:30 am	1:27 pm	0:06 am
14 Nov	2:37 am	2:49 pm	2:16 pm	2:02 am	1:00 pm	11:35 pm
21 Nov	2:13 am	2:23 pm	1:49 pm	1:34 am	12:32 pm	11:08 pm
28 Nov	1:48 am	1:57 pm	1:21 pm	1:06 am	12:05 pm	10:41 pm

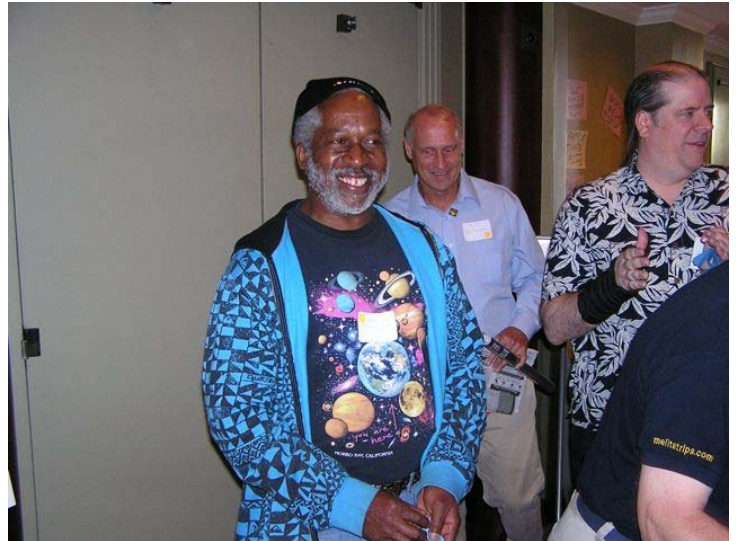
### November Phenomena:

- 1 November, 2:00 am: Daylight savings time ends (U.S.)
- 5 November, 2:00 am: Southern Taurids meteor shower peak
- 6 November, 11:00 pm: Moon at perigee, 229,225 miles (368,902 km)
- 12 November, 2:00 am: Northern Taurids meteor shower peak
- 17 November, 7:00 am: Leonids meteor shower peak
- 22 November, noon: Moon at apogee, 251,489 miles (404,733 km)

**Saturday, September 12, 2009**  
**Westin Hotel at San Francisco Airport, Millbrae**



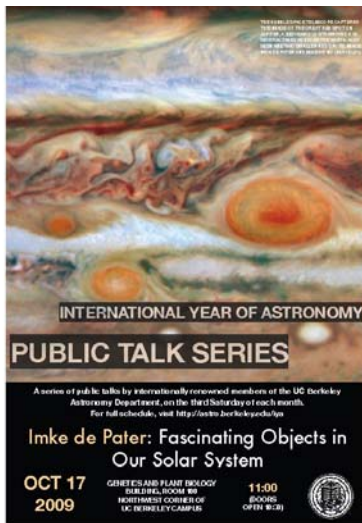




**UC Berkeley, Astronomy Department**  
**INTERNATIONAL YEAR OF ASTRONOMY PUBLIC TALKS**

**Saturday, October 17, at 11 a.m. (Doors open 10:30) - 12:00 Noon**  
**100 Genetics & Plant Biology Building, Room 100**  
**Northwest Corner of UC Berkeley Campus**

**IMKE DE PATER: FASCINATING OBJECTS IN OUR SOLAR SYSTEM**



Imke de Pater is a professor in the Department of Astronomy at UC Berkeley, and a world-renowned planetary scientist. She is an authority on modeling and mapping the planets of our solar system, and led a worldwide campaign to observe the impact of comet Shoemaker-Levy 9 with Jupiter in 1994. A frequent user of the huge Keck telescopes in Hawaii, she has discovered methane drizzle on Saturn's moon Titan, modeled Jupiter's magnetic fields, and revealed the dynamic behavior of Neptune's skies. Her graduate-level textbook, "Planetary Sciences", co-authored with Jack J. Lissauer, was the winner of the 2007 Chambliss Award for Astronomical Writing from the American Astronomical Society.

Our Solar System is comprised of bodies varying in size from the giant planet Jupiter, 12 times larger than our Earth, down to bodies less than a few kilometers in size, and further down to microscopically small dust grains. The planets and their satellites are now known to us as individual worlds, some of which show similarities to Earth (e.g., Titan, Mars), whereas others exhibit such extreme volcanism that even the largest volcanoes on Earth are dwarfed in comparison (Io, Enceladus). The giant planets are surrounded by rings, systems which are unique to each planet. In these systems we observe details that help us understand the physical processes in the early solar nebula that led to planet formation 4.5 billion years ago, which are still now operational in disks around other stars. Once in a while comets approach the Sun and exhibit fantastic displays. Remote observations and in situ analysis of cometary gases and dust grains help us understand the early epoch of planet formation in our Solar System.

In this talk Prof. de Pater will give you a tour through our Solar System. Using her team's observations from the 10-m Keck telescope, together with Hubble Space Telescope and spacecraft data, she will give you an up-to-date picture of several of the most fascinating objects therein



## 2009 CLUB OFFICERS & CONTACTS

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## 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](mailto: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](mailto: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](mailto:annette@sfaa-astronomy.org)
- 7) 8" f/10 Meade SCT/Stefanie Ulrey/[treasurer@sfaa-astronomy.org](mailto:treasurer@sfaa-astronomy.org)
- 8) 9.5" f/5.6 Celestron Newtonian/Ken Frank/ [ken@sfaa-astronomy.org](mailto: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/tc/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](http://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](mailto:Editor@sfaa-astronomy.org)

San Francisco Amateur Astronomers  
POB 15097  
San Francisco CA 94115

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

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

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 Home Phone \_\_\_\_\_  
 E-Mail \_\_\_\_\_  
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 \_\_\_\_\_ Zip \_\_\_\_\_

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

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

### 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](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.