

ABOVE THE FOG

• BULLETIN OF THE SAN FRANCISCO AMATEUR ASTRONOMERS •

Vol. 57, No. 7 – July 2009

Wednesday, July 15, 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)

The Tenth Planet & Beyond

A Presentation by Eugene Chiang

**Associate Professor of Astronomy and Earth & Planetary Science
UC Berkeley**

Over the last decade, astronomers have discovered more than 1000 icy, rocky objects beyond Neptune, one larger than Pluto. Join Eugene Chang for a presentation that will explore what we know about this "Kuiper Belt" of bodies and how these discoveries can help astronomers answer questions about the formation of our own solar system. The presentation will conclude by examining the incredible prospect that we may have glimpsed first light from a newly formed extrasolar planet interacting with its own primitive Kuiper belt.

Eugene Chiang is an Associate Professor of Astronomy and Earth & Planetary Science at the University of California, Berkeley. He received his Ph.D. in Astronomy from Caltech in 2000. His research centers on theoretical astrophysics, with an emphasis on understanding the origin and evolution of planetary systems.

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

IMPORTANT DATES

SFAA GENERAL MEETINGS & LECTURES - JULY 15 . AUGUST 19 . SEPTEMBER 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 14th Street and Roosevelt)*

SFAA BOARD MEETINGS - JULY 14 . AUGUST 11 . SEPTEMBER 8

*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 - JULY 11/8:30 P.M. . AUGUST 1/8:00 P.M. . AUGUST 29/7:30 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

JULY 18 . AUGUST 15 . SEPTEMBER 26 (SFAA PICNIC)

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 - JULY 25/8:24 P.M., AUGUST 22/7:53 P.M., SEPTEMBER 19/7:11 P.M.

GATEKEEPER VOLUNTEERS 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/>

!!!! SAVE THE DATE !!!! SFAA ANNUAL BOOTJACK STAR-B-Q Saturday . September 26, 2009

This is the biggest opportunity during the late summer months for members to meet, greet, eat, and retreat to dark skies. Our annual Star-B-Q will be held at Bootjack Campground on Mt Tam.

The Star-B-Q starts in the afternoon with a picnic. SFAA supplies the basic main course protein (hamburgers, hot dogs) -- you bring whatever you like to drink and share. Immediately following, the group repairs to our Rock Springs permit area behind locked gates for a night of members-only stargazing.

RSVP to Stephanie at vicepresident@sfaa-astronomy.org







July 2009 Almanac for San Francisco (Pacific Daylight Time)





(Source: US Naval Observatory)



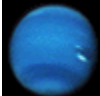
By SFAA Board Member Dave Wilton

Sun and Moon Data:

Date	Astronomical Twilight Begins	Sunrise	Sunset	Astronomical Twilight Ends	Moon	Moonrise	Moonset
4 July	4:00 am	5:53 am	8:35 pm	10:28 pm		6:54 pm	03:22 am
11 July	4:06 am	5:57 am	8:33 pm	10:24 pm		10:52 pm	10:00 am
18 July	4:14 am	6:02 am	8:29 pm	10:17 pm		2:03 am	5:36 pm
25 July	4:22 am	6:09 am	8:23 pm	10:10 pm		10:27 am	10:33 pm

Planetary Data:

	Mercury		Venus		Mars		Jupiter	
								
	Taurus 1-3/Leo 26-31		Taurus		Aries 1-2/Taurus 3-31		Capricornus	
Date	Rise	Set	Rise	Set	Rise	Set	Rise	Set
4 July	5:03 am	7:51 pm	3:10 am	5:09 pm	2:47 am	4:51 pm	10:52 pm	9:34 am
11 July	5:40 am	8:28 pm	3:08 am	5:19 pm	2:45 am	4:48 pm	10:24 pm	9:04 am
18 July	6:25 am	8:56 pm	3:08 am	5:29 pm	2:24 am	4:45 pm	9:54 pm	8:34 am
25 July	7:08 am	9:11 pm	3:11 am	5:38 pm	2:13 am	4:41 pm	9:25 pm	8:02 am

	Saturn		Uranus		Neptune	
						
	Leo		Pisces		Capricornus	
Date	Rise	Set	Rise	Set	Rise	Set
4 July	11:08 pm	11:56 pm	0:12 am	0:03 pm	10:49 pm	9:34 am
11 July	10:43 am	11:30 pm	11:41 pm	11:36 pm	10:21 pm	9:06 am
18 July	10:19 am	11:04 pm	11:13 pm	11:08 pm	9:53 pm	8:37 am
25 July	9:55 am	10:38 pm	10:45 pm	10:40 am	9:25 pm	8:09 am

July Phenomena:






- 3 July, 2:00 pm: Mercury at greatest illuminated extent
- 3 July, 7:00 pm: Earth at aphelion, 94,505,048 miles (152,091,132 km)
- 7 July, 2:49 am: Penumbral lunar eclipse (too slight to see)
- 7 July, 8:00 pm: Moon at apogee, 252,421 miles (406,232 km)
- 10 July: Jupiter/Neptune conjunction, 0° 30'
- 21 July, noon: Moon at perigee, 222,118 miles (357,464 km)
- 21 July: Total solar eclipse (India, China, and western Pacific)
- 28 July, 7:00 pm: Delta Aquarids meteor shower peak

August 2009 Almanac for San Francisco (Pacific Daylight Time)





(Source: US Naval Observatory)



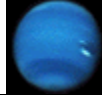
By SFAA Board Member Dave Wilton

Sun and Moon Data:

Date	Astronomical Twilight Begins	Sunrise	Sunset	Astronomical Twilight Ends	Moon	Moonrise	Moonset
1 Aug	4:31 am	6:14 am	8:18 pm	10:01 pm		5:41 pm	2:07 am
8 Aug	4:39 am	6:20 am	8:11 pm	9:50 pm		9:21 pm	8:53 am
15 Aug	4:48 am	6:26 am	8:02 pm	9:39 pm		0:48 am 14 Aug	4:24 pm
22 Aug	4:57 am	6:32 am	7:53 pm	9:27 pm		10:24 am	9:29 pm
29 Aug	5:05 am	6:38 am	7:43 pm	9:15 pm		3:23 pm	0:49 am 30 Aug

Planetary Data:

	Mercury		Venus		Mars		Jupiter	
								
	Leo 1-20/Virgo 21-31		Gem 2-24/Can 25-31		Taur. 1-25/Gem. 26-31		Capricornus	
Date	Rise	Set	Rise	Set	Rise	Set	Rise	Set
1 Aug	7:44 am	9:15 pm	3:15 am	5:47 pm	2:03 am	4:37 pm	8:55 pm	7:31 am
8 Aug	8:14 am	9:13 pm	3:22 am	5:55 pm	1:53 am	4:31 pm	8:25 pm	6:59 am
15 Aug	8:36 am	9:04 pm	3:31 am	6:01 pm	1:44 am	4:25 pm	7:55 pm	6:27 am
22 Aug	8:50 am	8:52 pm	3:42 am	6:05 pm	1:35 am	4:18 pm	7:25 pm	5:55 am
29 Aug	8:54 am	8:33 pm	3:55 am	6:07 pm	1:27 am	4:11 pm	6:55 pm	5:23 am

	Saturn		Uranus		Neptune	
						
	Leo 1-29/Virgo 30-31		Pisces		Capricornus	
Date	Rise	Set	Rise	Set	Rise	Set
1 Aug	9:31 am	10:12 pm	10:17 pm	10:11 am	8:57 pm	7:41 am
8 Aug	9:07 am	9:46 pm	9:49 pm	9:43 am	8:29 pm	7:12 am
15 Aug	8:43 am	9:21 pm	9:21 pm	9:14 am	8:01 pm	6:44 am
22 Aug	8:20 am	8:55 pm	8:53 pm	8:46 am	7:33 pm	6:15 am
29 Aug	7:56 am	8:30 pm	8:25 pm	8:17 am	7:05 pm	5:47 am

August Phenomena:

- 3 August, 6:00 pm: Moon at apogee, 252,294 miles (406,028 km)
- 5 August, 5:39 am: Weak penumbral lunar eclipse (midtime)
- 12 August, 10:00 am: Perseids meteor shower peak
- 14 August, 1:00 pm: Jupiter at opposition
- 17 August, 2:00 pm: Neptune at opposition
- 18 August, 10:00 pm: Moon at perigee, 223,469 miles (359,638 km)
- 24 August, 11:00 am: Mercury at greatest elongation, 27.4° east of Sun
- 26 August, 2:00 am: Mercury at greatest illuminated extent
- 31 August, 4:00 am: Moon at apogee, 251,823 miles (405,2

Volunteers Needed to Help with ASP Meeting in September Near SF Airport

Opportunity to Help and Get Free Admission

The 2009 Meeting of the Astronomical Society of the Pacific will be held Sat. Sept. 12 through Wed. Sept. 16, at the Westin Hotel in Millbrae, near the SF Airport. The topic will be education and outreach for astronomy.

The Society needs at least six volunteers for each day of the conference. If you work a day as a volunteer, you get registration for that day plus another day at the conference free. Volunteers assist with registration, message boards, audio-visual needs, checking badges, and other meeting-related tasks.

To get on the volunteer list, please email Cindy Hart with your name, contact information, and days of availability, at: <chart@harteventmarketing.com>

For more information about the meeting, see the web site:
<http://www.astrosociety.org/events/meeting.html>

Hi SF Astro enthusiasts!

My monthly NASA Podcast for International Year of Astronomy is about the Milky Way this month.

You can find the podcast series in many formats on my What's Up webpage here:

<http://solarsystem.nasa.gov/news/whatsup-view.cfm?WUID=164> and all the previous podcasts in the archive. Or sign up for an RSS Feed here: http://www.nasa.gov/multimedia/podcasting/whatsup_index.html

Even more great July IYA content is here on the NASAIYA website http://astronomy2009.nasa.gov/observe_jul.htm

And just for fun, some sidewalk astronomy friends and I put together a Harry Potter Observing List, just in time for the movie release this week! It's a literary observing project for the whole family - complete it and earn your O.W.L. :-). I hope you enjoy it and use it to show your friends and family Draco in the summer sky. There is even a star chart linked from the writeup, which you can find here <http://tr.im/HPsky>

Enjoy the writeups and podcasts. I miss you all, but am really enjoying southern California, even on a hot day like today! Jane

-- Jane Houston Jones

Senior Outreach Specialist, Cassini Program

JPL - 4800 Oak Grove Drive, MS 230-205

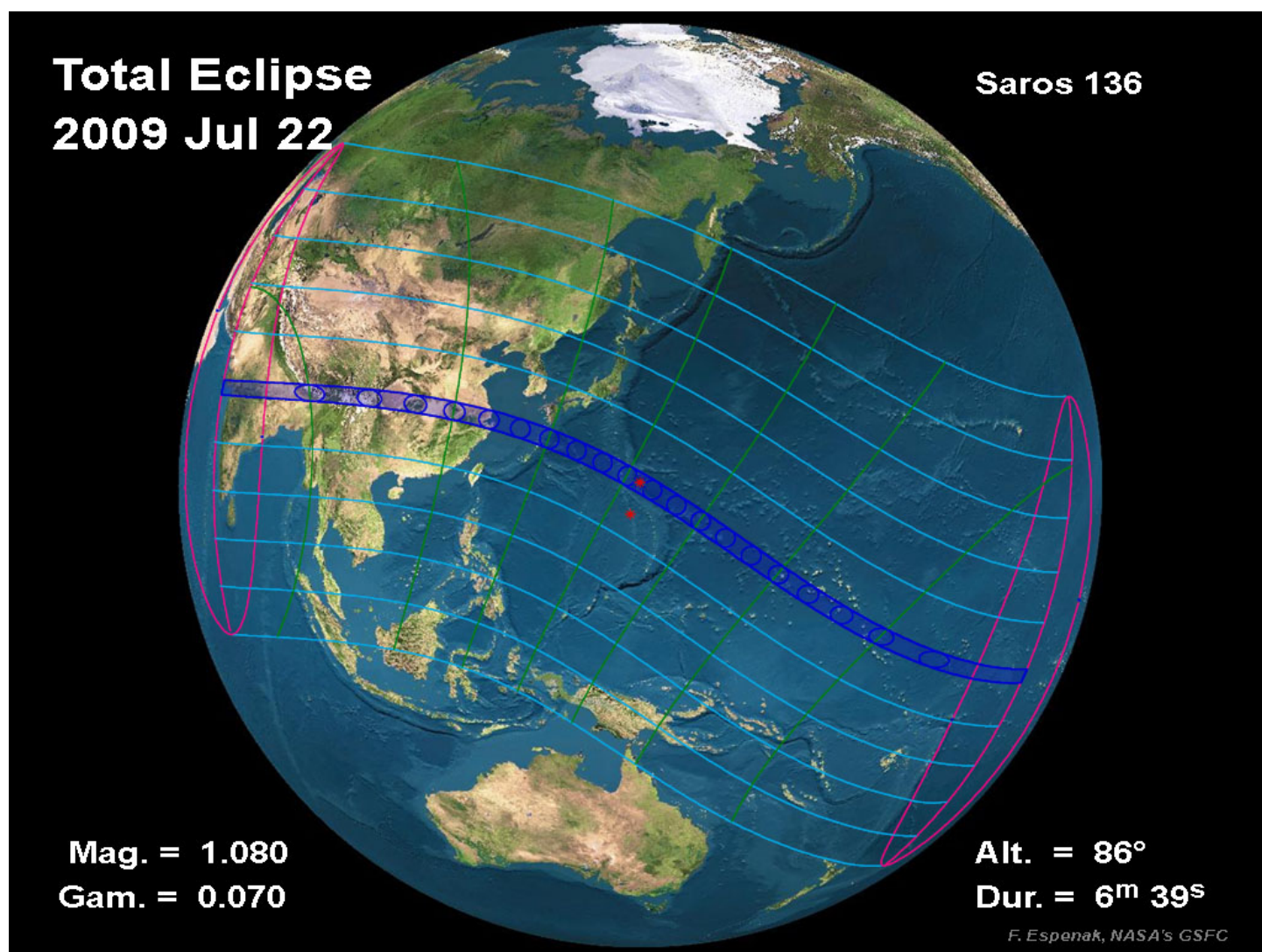
Pasadena, CA 91109 818-393-6435

jane.h.jones@jpl.nasa.gov

Cassini SOC <http://saturn.jpl.nasa.gov/education/saturnobservation/>

What's Up? <http://solarsystem.nasa.gov/news/whatsup.cfm>

Total Solar Eclipse of 2009 July 22



On Wednesday, 2009 July 22, a total eclipse of the Sun is visible from within a narrow corridor that traverses half of Earth. The path of the Moon's umbral shadow begins in India and crosses through Nepal, Bangladesh, Bhutan, Myanmar and China. After leaving mainland Asia, the path crosses Japan's Ryukyu Islands and curves southeast through the Pacific Ocean where the maximum duration of totality reaches 6 min 39 s. A partial eclipse is seen within the much broader path of the Moon's penumbral shadow, which includes most of eastern Asia, Indonesia, and the Pacific Ocean.

The complete NASA 2009 eclipse publication is available in electronic format as a Portable Document Format (PDF) file:

[Total Solar Eclipse of 2009 July 22 \(6.7 MB\)](#)

The PDF file requires [Adobe Reader](#) in order to be read. This software is available free of charge at the above link for a number of different computer platforms (Window, Macintosh, UNIX).

A web page is also available which posts all known [errata](#) to this publication (applicable to both hard copy and PDF forms of this document).

FIGURE 1: ORTHOGRAPHIC PROJECTION MAP OF THE ECLIPSE PATH

Total Solar Eclipse of 2009 Jul 22

Ecliptic Conjunction = 02:35:41.9 TD (= 02:34:36.0 UT)

Greatest Eclipse = 02:36:24.4 TD (= 02:35:18.5 UT)

Eclipse Magnitude = 1.0799 Gamma = 0.0698

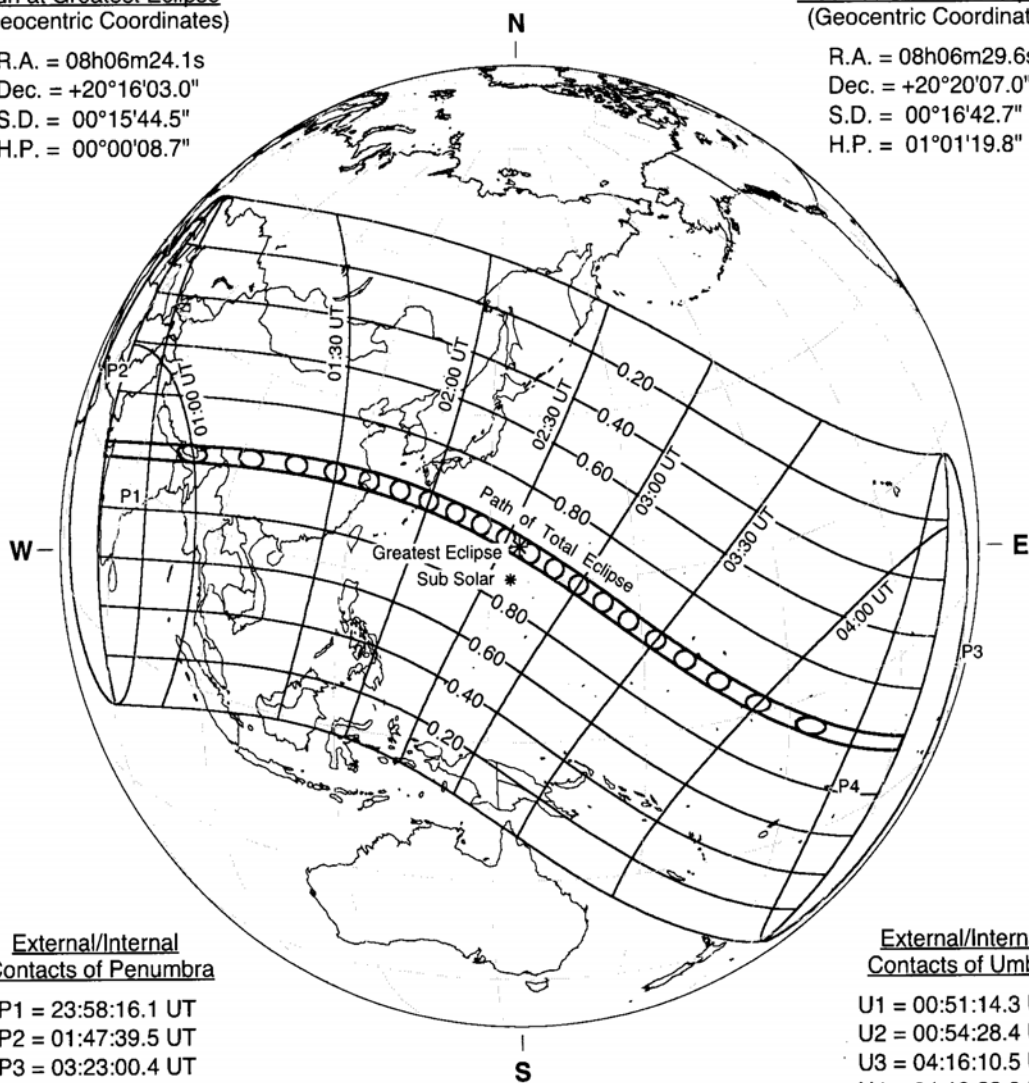
Saros Series = 136 Member = 37 of 71

Sun at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 08h06m24.1s
Dec. = +20°16'03.0"
S.D. = 00°15'44.5"
H.P. = 00°00'08.7"

Moon at Greatest Eclipse
(Geocentric Coordinates)

R.A. = 08h06m29.6s
Dec. = +20°20'07.0"
S.D. = 00°16'42.7"
H.P. = 01°01'19.8"



External/Internal
Contacts of Penumbra

P1 = 23:58:16.1 UT
P2 = 01:47:39.5 UT
P3 = 03:23:00.4 UT
P4 = 05:12:22.6 UT

External/Internal
Contacts of Umbra

U1 = 00:51:14.3 UT
U2 = 00:54:28.4 UT
U3 = 04:16:10.5 UT
U4 = 04:19:23.9 UT

Constants & Ephemeris

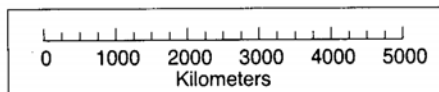
$\Delta T = 65.9$ s
 $k1 = 0.2725076$
 $k2 = 0.2722810$
 $\Delta b = 0.0''$ $\Delta l = 0.0''$
Eph. = DE200/LE200

Local Circumstances at Greatest Eclipse

Lat. = 24°13.2'N Sun Alt. = 85.9°
Long. = 144°07.0'E Sun Azm. = 197.6°
Path Width = 258.4 km Duration = 06m38.8s

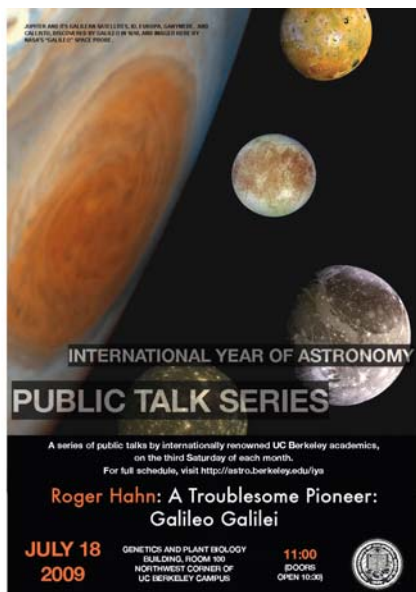
Geocentric Libration
(Optical + Physical)

$l = 0.67^\circ$
 $b = -0.09^\circ$
 $c = 10.53^\circ$



Brown Lun. No. = 1071

NASA 2009 Eclipse Bulletin, Espenak & Anderson



UC Berkeley, Astronomy Department INTERNATIONAL YEAR OF ASTRONOMY PUBLIC TALKS

Saturday, July 18, at 11 a.m. - 12:00 Noon
100 Genetics & Plant Biology Building

ROGER HAHN
Professor, UC Berkeley Graduate School
**A TROUBLESOME PIONEER: GALILEO
GALILEI**

Roger Hahn, UC Berkeley historian of science, gives a public talk placing Galileo in his historical context, in the 400th anniversary year of Galileo's first observations of the heavens.

Galileo revolutionized astronomy by turning his telescope to the heavens in 1609. The full story of his achievements is replete with complications that make it difficult for modern man to realize how troublesome his discoveries were in his own times. Many of them stem from Galileo's personality which was calculated to upset the established order; others from the changes his pioneering work forced upon traditional astronomers, and more especially upon the Catholic Church. 400 years later we picture him as a critical link in the progress of our understanding; but in his own times he was soundly criticized and properly condemned.

Born in France, Roger Hahn, now retired as a Professor of History, has taught the history of science at Berkeley for the past 48 years, and is an expert on classical celestial mechanics of the solar system. His latest book was a biography of Pierre Simon Laplace whose work completed the Scientific Revolution Galileo helped to advance. More than many other past figures of significance, Galileo has been exclusively judged by modern standards. As a professional historian, Hahn is a strong believer in setting the past in its context. Seen in this perspective Galileo was a serious troublemaker. He deserved much of the reproach he encountered..

Schedule of Monthly Talks

Date	Venue	Speaker	Topic
August 15	100 GPB	David Lindberg and Steve Croft	Astronomy and Evolution: From the Death of the Dinosaurs to the Stardust in your Bones
September 19 October 17 November 21	100 GPB	Nathan Smith	Live Fast - Die Young: Monster Stars and their Temper Tantrums
	100 GPB	Imke de Pater	Fascinating Objects in our Solar System
	100 GPB	Maryam Modjaz	Cosmic Fireworks: The Explosive Deaths of Massive Stars
December 19	TBA	Dick Plambeck	Star Formation through Radio Eyes



Photo included with permission

Join Astronaut Buzz Aldrin (the second man to step foot on the Moon) and others on the USS Hornet, where my recording of the launch of Apollo 11 made from the press site will be featured and many activities are planned commemorating the 40th anniversary of the mission and recovery of Apollo 11. The USS Hornet was the recovery ship for the Apollo 11 mission and has on board both Apollo boilerplate capsule and an open Mobile Quarantine Facility for inspection. Remember that, in 1969, we had no idea of the biologic hazards of the moon's environment and the astronauts went into isolation following their missions. Airstream was commissioned by NASA to manufacture several of the Mobile Quarantine Facilities for the Apollo missions and it is a rare treat to be able to actually walk into the Apollo 14 mobile quarantine facility.

The dates for this celebration are coincident with our club's Yosemite Star Party plans, but, if you plan to be in the bay area, this is the place to be on the weekend dates of July 24th, 25th, and 26th. "Splashdown 2009" is the official title of the Hornet's celebration and Aldrin will be signing his new autobiography "Magnificent Desolation". Copies along with "A" tickets for the book signing on July 25th will be available at the Hornet as premier launch of his newly published book. Check out the two links below for further information on the general celebration and Schedule of Events

<http://www.uss-hornet.org/posters/splashdown/index.shtml>
<http://www.uss-hornet.org/posters/splashdown/schedule.shtml>.

James Cottle, Ph.D.

MOUNT TAMALPAIS STATE PARK

MOUNT TAMALPAIS INTERPRETIVE ASSOCIATION

INTERNATIONAL YEAR OF ASTRONOMY 2009 ASTRONOMY PROGRAMS – PUBLIC STAR PARTY

Public nights on Mount Tamalpais start with a lecture in the Mountain Theatre, followed by public viewing in the Rock Springs parking lot. After crowd departs, SFAA members may view privately from approx. 11 pm-2 am. For more information: <http://www.sfaa-astronomy.org/starparties/>

July 25 - 8:30 p.m. Dr. Natalie Batalha, San Jose State University
"Kepler's Hunt for Habitable Planets"

NASA's Kepler Mission has begun its 3.5-year quest for habitable planets like Earth in our galaxy. Dr. Batalha will describe how and where the spacecraft will look for planets we might call home and what to expect in the coming years as we work to understand whether Earth-like planets in our galaxy are common or rare..

August 22 - 8:30 p.m. Dr. Anthony Colaprete, NASA-Ames Research Center
"Prospecting for Water on the Moon"

In 2009, NASA will purposely crash two spacecraft into one of the Moon's polar regions. The impacts should raise huge plumes of material, visible even to smaller telescopes on Earth. Astronomers will search for evidence of water in the plumes to get a better sense of how much frozen water may lay hidden in the deep, shadowed craters of the Moon's North and South poles.

September 19 - 8:30 p.m. Wil van Breugel, Ph.D, University of California Merced
"Astrobiology: What is Life & Where is It?"

Astrobiology combines astronomy, biology, physics and chemistry to investigate the origin and evolution of life in extreme environments, including early Earth, and guides the search for alien life on other planets in our Solar System and beyond. Dr. vanBreugel will discuss how our perception and understanding of life has evolved, and the close connection of life to the cosmos.

October 24 - 7:30 p.m. Professor Michael Dine, University of California Santa Cruz
"The Dawn of the LHC Era: The Convergence of Particle Physics and Astrophysics"

Over the past year, the Large Hadron Collider, an extraordinary scientific instrument, has begun to operate in Geneva. It offers the possibility of answering some of the great questions we confront in understanding the universe, including the identity of the dark matter and the asymmetry between matter and antimatter

Fremont Peak Observers Association
Star-B-Que Potluck Picnic, Star Party, and Annual Meeting
Saturday, July 25, 2009
At Fremont Peak State Park

This is a GREAT way to meet amateur astronomers and enjoy the fun side of astronomy.

YOU ARE INVITED Anyone interested in astronomy or Fremont Peak State Park is welcome. You do not have to be a member of a club to attend.

POTLUCK Begins at 5 PM in the area below the observatory (ranger row). We will provide meat (hamburgers and chicken), condiments, soft drinks, and utensils. Please bring a side dish, dessert, salad, or your favorite dish to share.

DISTINGUISHED KEYNOTE SPEAKER Brian Day, of the NASA LCROSS Lunar Impactor Mission will present an illustrated talk on the LCROSS mission and its goals. LCROSS will impact the lunar South Pole between October 7-11, 2009. Bring your own pads for seating on the amphitheater steps. A **special LCROSS workshop** on how *you* can contribute to the mission will be held in the observatory meeting room after the reg

RAFFLE! Orion, Scope City, and Celestron are generous sponsors of the raffle. The Grand Prize is a new Celestron NexStar 6 SE telescope! Many other prizes will be awarded...

RSVP EARLY Call (831) 623-2465 or e-mail info@fpoa.net with your name, number of guests, number of cars, and whether you plan to attend the LCROSS workshop. RSVP by Thursday, July 23. Parking is limited; carpool and park efficiently when you arrive. Pay \$4 state park parking fee in the main parking area.

ASTRONOMICAL-GASTRONOMICAL CONTEST Your astronomically-themed dish may win a prize! Entries will be judged based on culinary ingenuity, looks, and astronomical relevance. Please enter before 6:00 pm, by placing your dish - suitably labeled - on the food table. Entries arriving late may be consumed without judging!

TRIVIA CONTEST Enter your answers to the Astronomical Trivia Contest by 6:30. Prizes for the winners!

KIDS ACTIVITIES Build your own telescope and use it! Create and study meteor impacts! More!

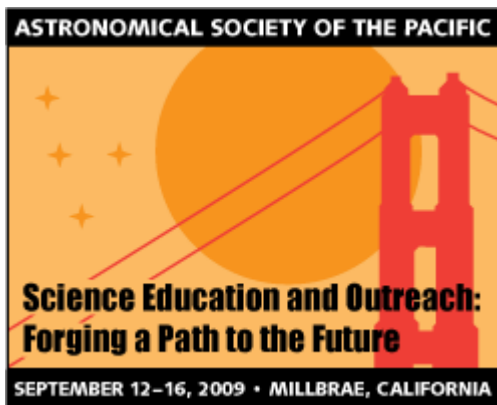
FPOA ANNUAL MEETING Members vote by 6:30 pm for 3 board directors. Nominate at info@fpoa.net.

GETTING TO FREMONT PEAK STATE PARK Set your GPS to 6899 San Juan Canyon Rd, San Juan Bautista, CA 95045. Exit US 101 to EAST SR156, 15 miles S of Gilroy and 20 miles N of Salinas. Go 2.9 miles to the traffic signal. Turn right. After 0.3 miles, jog left, then immediately right. Important! You should see a country road "G" sign, a "Not a Through Road" sign, and a "Fremont Peak State Park" sign! Continue 11 miles to the park. Check www.fpoa.net for more detailed directions.

SEE WONDERS OF THE NIGHT SKY! After dark you can look through the 30-inch Challenger telescope and see stars and stuff in the sky as you have never seen them before...especially if the sky is clear.

SPONSORS & HOSTS

Go here for a complete list of our very generous sponsors:www.fpoa.net/starbq2009/sponsors.html
Hosted by FPOA and AANC, with the support of the California Department of Parks and Recreation.



Science Education and Outreach: Forging a Path to the Future

September 12-16, 2009
Westin SFO, Millbrae, California

[Registration is now open](#) for the 2009 ASP meeting to be held in the San Francisco Bay Area at the Westin San Francisco Airport Hotel, 1 Old Bayshore Highway in Millbrae, California.

The ASP's annual meeting will be held in Northern California where the ASP was founded 120 years ago. The meeting will be located at the Westin SFO in Millbrae, California. In addition to the EPO symposia, there will be additional weekend hands-on workshops designed specifically for educators, as well as special sessions targeted to non-astronomy science practitioners.

How to Present	Registration	Proceedings	Meeting Schedule
Exhibitors	Lodging	Committee	Co-Sponsors

September 12-16, 2009
Westin SFO, Millbrae, California

Save the date for the Astronomical Society of the Pacific's 120th Anniversary celebration!

Registration is now open for the 2009 ASP meeting to be held in the San Francisco Bay Area at the Westin San Francisco Airport Hotel, 1 Old Bayshore Highway in Millbrae, California. The theme of the 2009 gathering will be "Science Education and Outreach: Forging a Path to the Future."

The meeting proper begins on Sunday evening, September 13, with the annual members' meeting and the opening reception. Meeting sessions begin on Monday, September 14, with the annual awards banquet held on Tuesday evening, September 15. The meeting will conclude the early evening of Wednesday, September 16.

In addition, the meeting will be preceded by hands-on workshops scheduled on Saturday and Sunday, September 12-13, for formal and informal educators, with a separate daily workshop registration fee from the meeting registration fee -- watch for specific information and an announcement of scholarships for workshop attendees shortly. (If you would like to propose a weekend workshop, contact the ASP separately at [asilva {at} astrosociety.org](mailto:asilva@astrosociety.org).) Additional special events for the weekend are in the offing -- watch for announcements shortly.

Click on the links to find information and details on [hotel reservations](#), [meeting registration](#), [exhibiting](#), submitting [poster and presentation abstracts](#), and submitting [proceedings write-ups](#). Be sure to [sign up](#) to receive more information and meeting alerts, and check back frequently as information is added.

Please join us in September in the San Francisco Bay Area, during the International Year of Astronomy, the International Year of Science, and the 120th anniversary of the founding of the Astronomical Society of the Pacific, as we look forward and consider how, working together, we can advance a future of science literacy, enlightenment and achievement!

[Sign up to be notified](#) as additional meeting program events are announced.

San Francisco Amateur Astronomers
POB 15097
San Francisco CA 94115

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

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

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Membership is billed for each upcoming year on June 30. Between January 1 and June 30, new

MEMBERSHIP APPLICATION

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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.