

# The Refractor

*The Bulletin of the Eastbay Astronomical Society*  
 Founded in 1924 at Chabot Observatory, Oakland, California

Volume 85  
 Number 10

Sept. 2009



## September 2009 EAS Lecture Meeting

**Speakers:** Alexie Leauthaud & Reiko Nakajima

**Talk Title:** Gravitational Lensing: A Tool For Understanding Dark Matter And Dark Energy

**When:** Saturday, September 5th, 7:30pm

**Where:** Physics Lab, 2nd Floor, Dellums Building, Chabot Space & Science Center

Cosmology is a study of the Universe, the physics of how it came to be, how it evolves, and what its contents are. Not everything about the Universe is understood. The study of distant galaxies and the cosmic microwave background (CMB) radiation leads us to one of the outstanding problems in Cosmology today--the presence of what is called Dark Matter and Dark Energy. Despite the undeniable evidence of their presence, neither quantities are well understood.

Gravitational lensing is the phenomena where a distant object (such as a galaxy) appears distorted, as the light path is deflected by the presence of a massive object laying line of sight between the observer and the galaxy. In this talk, we describe how gravitational lensing works, and how it will help us probe the nature of Dark Matter and Dark Energy.

Photo: EAS Library, Cathi Ferreira, Gene Webber, John Fang

## The CSSC/EAS Library

According to the Eastbay Astronomical Society Timeline compiled by Carter Roberts and Don Stone, the cornerstone for Chabot Observatory at Lafayette Square, downtown Oakland, was laid 22 May 1883. Though it is not noted in the timeline, it is probably a good guess that the yet to be built observatory had already begun to accumulate books and journals...an unwritten law of physics. By 1886, when Charles Burckhalter assumed directorship of Chabot, there were undoubtedly already heavily burdened bookshelves with various volumes pertaining to physics, engineering, astronomy, mathematics and more. With the addition of Burckhalter's own personal collection of books, the shelves in the relatively small facility likely overflowed on to the floors, with stacks of volumes and journals here and there throughout the building. At this point, it is rather safe to assume that some thought was being given, if not longing for, a properly organized research library. Assumptions aside, [continue page 2]

**DINNER WITH THE SPEAKER**  
 5:30, Sat, Sept. 5

Contact Paul Hoy  
 (510) 553-1225  
 For location

### Inside this issue:

-CSSC/EAS Library	page 2
-CSSC Volunteers	page 2
-Who's Who	page 3
-EAS Officer Elections	page 3
-CalStar & Barcroft	page 3
-Future conjunctions	page 3

we do know that it was not until 1925, November of that year, that the upstairs lecture room of the second Chabot Observatory, on Mountain Boulevard, was converted into that proper library. All of those imagined stacks of books, journals, charts and correspondence would finally find a home.

It too would be safe to assume that members of the East Bay Amateur Astronomical Association must also have been accumulating their own collection of books charts and journals, though, on a somewhat smaller scale. Apparently, however, it wasn't until 1 May 1954, that the now Eastbay Astronomical Society had amassed enough volumes to justify establishing, at Chabot Observatory, the Burns Memorial Library. The library was so named to honor the memory of former EAS Treasurer, Archibald E. Burns.

Both libraries saw continuous use by the EAS up through the early '90s. In fact, one could safely say that the 'old' Chabot library was the social hub of the Mountain Boulevard facility; rain or shine. With the observatory move to the Skyline Boulevard Chabot Space and Science Center, the books from both libraries found themselves languishing in storage.

Fast forward to 2005.

CSSC's Kathy Sawyer felt it was time for Chabot to, yet again, establish a proper library, and thus began a 3 year effort to pull together the EAS/CSSC, or, depending upon who you talk to, the CSSC/EAS library. Be that as it may, considerable time and energy went into bringing a significant portion of the collection out of the archives, cataloging and then shelving the volumes. In 2006 CSSC brought in Elia Van Lith, an archivist from the Bancroft Library, UC Berkeley, to sort through the collection, looking to preserve old and rare volumes and journals, along with records, documents, correspondence and the likes. Kathy Sawyer continued the labori-

ous task she started in 2005 of manually cataloging each and every book, using a computer program called Past Perfect.

Initially, Kathy opened the library to CSSC staff and volunteers for a couple hours on Thursdays while doing her cataloging. More recently, CSSC volunteer and EAS member John Fang has been opening and tending the library on Fridays between 3pm and 7pm. John has also been opening the library to EAS members for an hour or so after monthly lecture meetings.

Along with the books, star charts and journals from the 'old' Chabot libraries, there is a collection of video tapes, DVDs and computer CDs available for viewing. Titles range from Alex Flippenko's "Understanding the Universe" astronomy lecture series to Carl Sagan's "Cosmos," along with a number of NASA produced titles. Video players and computers are available for use in the library.

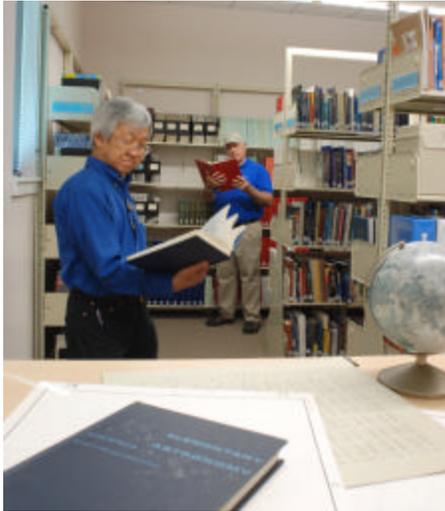
Presently, books and videos cannot be circulated; however, a means of checking out books is in the works. There will shortly be a scanner on one of the computers but there is still a need for a copying machine. If you know of someone willing to donate a photo-copier, that would be most welcome.

The library is tended and maintained by CSSC and EAS volunteers. Kathy Sawyer, John Fang and David Birnbaum are presently the only volunteer librarians, more are needed to operate the library on a regular schedule. If you think you'd like to help, contact EAS president Paul Hoy at (510) 553-1225 or by E-mail at [ahoy@aol.com](mailto:ahoy@aol.com)

A very big THANK YOU and congratulations to Kathy Sawyer for her vision and hard work making these books once again available to EAS, and the CSSC staff. And, thanks to CSSC for providing a splendid library space.

**EAS Library Hours:** 3:00pm - 7:00pm every Friday, and immediately after monthly EAS lecture meetings. The library is located on the second floor of the Dellums Building, down the hall next to the interactive lunar lander exhibit.

**EAS annual membership** starts each November 1<sup>st</sup>, so it isn't too early to think about renewing your membership. A



## Chabot Space & Science Center Invites EAS Members to Volunteer with Us!

- Share your knowledge of and passion for astronomy with thousands of CSSC visitors
- Experience the unique opportunity to operate Chabot's historical telescopes
- Share your own telescope at Chabot\*
- Inspire young astronomers and future scientists by assisting students in our astronomy education programs

**Explore these opportunities at our next Volunteer Orientation!**

**For upcoming orientation dates, or for more information, please contact us at: [volunteers@chabot.space.org](mailto:volunteers@chabot.space.org) or, call our Volunteer Manager Megan Gray at (510) 336-7414**

- *EAS members who are only interested in sharing their own telescope at Chabot are required to attend a Chabot volunteer orientation and complete a self-guided training worksheet entitled "Getting to know Chabot." After completion, you may join us on deck and share your own telescope any Friday or Saturday night!*

*\*\*Full Chabot Volunteers must make the regular volunteer commitment and pursue official placement through the Volunteer Manager.*

A renewal form is included in this edition of The Refractor and can also be found in the membership section of the EAS website. If you have a current club rate subscription to Sky & Telescope magazine, remember to renew directly with S&T rather than through EAS.

## Who's who

John Fang has been a CSSC volunteer since early 2004 and was part of the Dragon Skies team. Among other duties, he took on the challenging task of translating from Chinese to English an instruction manual for on site installation of the model of the Northern Song Dynasty Water Driven Astronomical Clock Tower, the center piece of the Dragon Skies exhibit. An EAS member since 2005, John recently has been involved with the operation of the EAS/CSSC library. His interest in science and astronomy also includes a keen interest in the cultural influences of both on different societies and different eras of human history, especially that of ancient China, Europe and the Middle East.



John likes to travel, and always makes an effort to visit local science museums and observatories. To date he has been to Lick Observatory, Palomar Observatory, and Griffith Observatory which he first saw in the film "Rebel Without a Cause." He's taken in Hayden Planetarium in New York City, the Adler Planetarium in Chicago, near and the Kennedy Space Center on Cape Canaveral. His over seas travels have taken him to the Ancient Observatory in Beijing, the Purple Mountain Observatory in Nanjing, the Phoenix Mountain Observatory in Kunming, Yunnan Province, and the Ancient Solar Observatory in Dengfeng, Henan Province. In 2008 John braved the blazing desert heat of Xinjiang, China to witness the total solar eclipse. "An experience of a lifetime", says John.

## EAS Officer Elections

Yet, again, it is time to elect new EAS officers. Volunteers are needed for a nominating committee and nominations are sought for EAS President, Vice-President, Secretary and Treasurer. If you'd like to help or have a nomination, contact EAS President Paul Hoy at (510) 553- 1225 or by E-mail at ahoy@aol.com

## CALSTAR Star Party

Registration is now open for the CalStar star party at Lake San Antonio, hosted by The Astronomy Connection (TAC), the SF bay area astronomy network, and sponsored by the Astronomical Associations of Northern California and the San Jose Astronomical Association. A 3 day event, September 17, 18 and 19. For information and on-line registration go to [www.observers.org/CalStar/](http://www.observers.org/CalStar/)

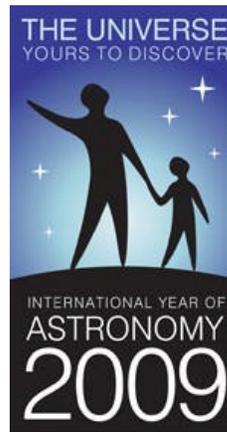
## Barcroft

White Mountain star party is September 12 thru 20. For more information contact Dave Rodrigues at (510) 483-9191 or E-mail [Davevrod@aol.com](mailto:Davevrod@aol.com)

**EAS Loaner Scope Program** has telescopes available for rental by EAS members. Scopes include 60mm and 80mm refractors, a C-90, two 10 inch Dobsonians, and ; 4, 8 and 11 inch Schmidt-Cassegrains. Scope rental is \$15 a month, with a \$50 deposit. For information, contact Ray Wong at (510) 796-8475 or [qm7@yahoo.com](mailto:qm7@yahoo.com)

## Astronomical Calendar

The Astronomical League is offering a special discount price to League members for the 84 page, 2010 edition of the Astronomical Calendar. The Calendar includes monthly sky charts and daily celestial highlights, plus detailed explanations of planetary movement, eclipse times and paths, lunar occultations, meteor showers and periodic comets. Price is \$19.95 which includes shipping. Normally the price is \$24.95 plus \$7.00 shipping. To take advantage of the free shipping you must order by Oct., 31. To order use the web site [www.Universalworkshop.com/clubs.htm](http://www.Universalworkshop.com/clubs.htm) or call (800) 533-5083.



## FUTURE CONJUNCTIONS—2009

- |      |    |  |
|------|----|--|
| Sept | 5  | EAS General Meeting, Chabot, Physics Lab, 7:30pm |
|      | 10 | Board Meeting, Chabot, Soda Board Rm, 7:30pm     |
|      | 27 | EAS MOVN*, 7pm-10pm, Wightman Plaza, Chabot      |
| Oct  | 3  | EAS General Meeting, Chabot, Physics Lab, 7:30pm |
|      | 8  | Board Meeting, Chabot, Soda Board Rm, 7:30pm     |
|      | 25 | EAS MOVN*, 7pm-10pm, Wightman Plaza, Chabot      |

\*Please call Gerald McKeegan at (925) 926-0853 after 5pm on the date of the MOVN to verify that it has not been cancelled due to weather or other considerations.



# Eastbay Astronomical Society

At Chabot Space & Science Center  
10000 Skyline Boulevard • Oakland, CA 94619

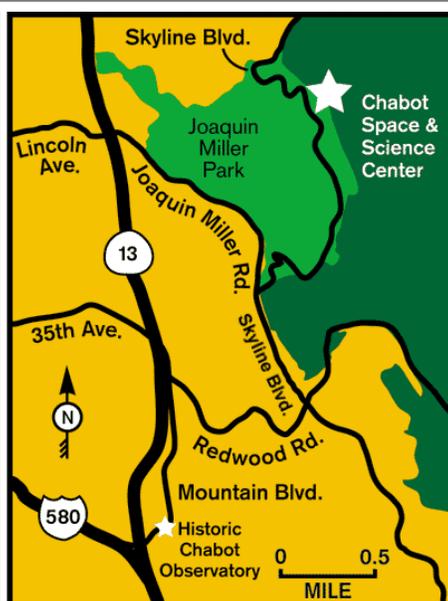
**June 2009**  
*RETURN SERVICE REQUESTED*

## Eastbay Astronomical Society

President: Paul Hoy (510) 553-1225 ahoy@aol.com  
Treas: Gerald McKeegan (925) 926-0853 geraldspace@earthlink.net  
Secretary: Linda Lazzaretti (510) 633-2488

Vice President: Alan Fisher  
Membership Reg: Bruce Skelly EastbayAstro@gmail.com  
Events Coord: Dave Rodrigues (510) 483-9191

Articles and photos for *The Refractor* are encouraged. Deadline for the Oct. 2009 issue is Sept., 20 2009. Items may be submitted by mail or E-mail to: Interim Editor - Jim Ferreira, 753 Oriole Avenue, Livermore CA 94551 bakerst@comcast.net (925) 449-0107



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\*Always call to confirm

### Join the Eastbay Astronomical Society

- Regular, \$24/year
- Family, \$36/year
- Contributing, \$40/year
- Student, \$15/year (digital newsletter, only)
- Sustaining, \$60/year or more

Contact: Gerald McKeegan, EAS Treasurer  
Telephone: (925) 926-0853 Email: geraldspace@earthlink.net  
Mail: 1760 1st Ave, Walnut Creek, CA 94597-2561  
**Sign up online at <http://www.eastbayastro.org/>**

**EASTBAY ASTRONOMICAL SOCIETY MEMBERSHIP APPLICATION FORM**

New  Renewal (Just print this page, fill it out, and mail it in!)

NAME: (please print) \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY, STATE, ZIP \_\_\_\_\_

DAY PHONE: (\_\_\_\_) \_\_\_\_\_

EVE PHONE: (\_\_\_\_) \_\_\_\_\_

EMAIL ADDRESS: (please print very legibly!) \_\_\_\_\_

**MEMBERSHIP CATEGORIES:**

- Regular \$24  Family \$36  Contributing \$40
- Sustaining \$60 or more \$\_\_\_\_\_  Student \$10 (digital newsletter only)

Optional discounted 12-month magazine subscriptions:

Sky & Telescope \$32.95  Astronomy \$34.00 (Both magazines may only be ordered between the months of July and December) (If you are renewing your S&T club subscription, please use the renewal notice sent to you by S&T.)

Optional, tax deductible donation(s) to any of the projects of the Eastbay Astronomical Society:  
Burns Library \$ \_\_\_\_\_ Betty Neall Youth Award Fund \$ \_\_\_\_\_ General \$ \_\_\_\_\_ Other: \_\_\_\_\_ \$ \_\_\_\_\_

EAS Lapel Pin \$3.00 +\$1.00 per pin for shipping and handling. # of pins \_\_\_\_\_ Total Amount for # of pins \$ \_\_\_\_\_

(Tip: If you buy them at a club meeting or event, you can avoid the S&H fee.)

Total Enclosed: \$ \_\_\_\_\_

Please mail this form and your check or money order payable to: Eastbay Astronomical Society , PO Box 18635, Oakland, CA 94619-0635

For more information, please contact club Treasurer Gerald McKeegan at (925) 926-0853, [geraldspace@earthlink.net](mailto:geraldspace@earthlink.net), or write him at above address.

By default, (if you have an email address) you will be notified by email that the digital (.pdf) version of the club newsletter is ready to download off the club website. If you prefer to get the B&W hard copy, please check the box below:

- I prefer the hard copy mailed to the address entered above.
- Are you interested in volunteering your time/equipment for public stargazing at Chabot?
- Are you interested in doing other volunteer work for Chabot and/or the Eastbay Astronomical Society?

**THANK YOU FOR JOINING US!**