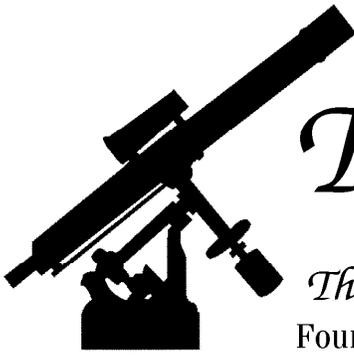




The Refractor - The Bulletin of the Eastbay Astronomical Society - October 2012



The Refractor

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

Volume 88
 Number 12
 October 2012

EAS October Lecture

Speaker: **Adam Miller**

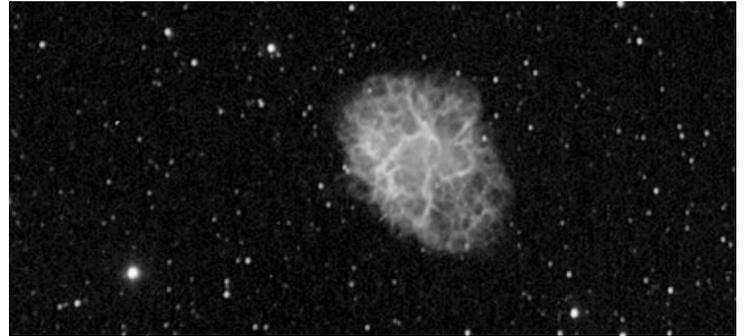
Title:

“The Very Brightest Supernovae” (Nature’s New Mysterious Explosions Defy Conventional Explanation)

When: **Saturday, October 20, 2012, 7:30-9:00pm**

Location: **Hauben Room, CSSC**

Massive stars punctuate the end of the luminous phase of their evolution with brilliant explosions known as supernovae. These explosions have been observed for over 1000 years and they are responsible for the dispersal of heavy elements, such as iron and silicon, throughout the universe. In this talk Adam will review the various sub-types of supernovae and the dominant energy sources powering these explosions. He will describe the methods used by astronomers to discover new supernovae and describe recent surveys, such as the Palomar Transient Factory, that have led to the discovery of thousands of new supernovae. These surveys, which were designed to find rare stellar explosions, have uncovered a new class of super-luminous supernovae that are as much as 100 times brighter than the conventional explosion at the end of the life of a massive star. While many of these super-luminous supernovae can be explained via extreme scenarios of well established theories, one subclass cannot be explained via conventional stellar explosion energetics. New theories are being developed to understand these explosions, and future surveys



should provide dozens of new examples to better study these mysterious explosions.

Adam Miller is a graduate student in the UC Berkeley Department of Astronomy and a member of the Palomar Transient Factory (PTF). He received a Bachelor's degree in physics and theater at the Massachusetts Institute of Technology and a Master's degree in physics from the University of Cambridge. Adam is currently working towards a Doctorate at UC Berkeley.

His research interests include anything that "goes bump in the night": all astronomical objects that vary in brightness over long or short durations of time. As a member of the PTF he has contributed to their discovery of more than one thousand supernovae



in the past three years, including the very bright supernova 2011fe in the spiral galaxy M101, which was featured on PBS News hour. His recent work has focused on the discovery and characterization of super-luminous supernovae, outbursts from young stars still in the process of formation, and the discovery of the peculiar R Coronae Borealis stars, which are thought to be the result of the merger of two low mass white dwarfs. Outside of astronomy you can find Adam on stage performing with his improvisational comedy troupe, Hobofish Improv.

DINNER WITH THE SPEAKER

5:30, Sat., Oct. 20

Hunan Yuan

4100 Redwood Rd.
 (next to Safeway)

No need to confirm,
 Just show up!

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Shuttle Endeavor on the last leg of its tour of California, in route from Sacramento to the San Francisco bay area., then on to its new home in Los Angeles. This splendid image was captured by long time EAS'er **Fred Schumacher**.

“Last Sunset For The Summer”

Cover photography by **Bob Schalck**, North Bend, Oregon

Past EAS Director of Instruments **Bob Schalck** and his wife **Mary**, both loonng time members of EAS were in town and stopped by to attend The Telescope Maker’s Workshop (TMW) on Friday, September 21st. While Waiting for TMW festivities to begin, they wondered out onto Wightman plaza and were met by this spectacular sunset with a first quarter moon, framed by Chabot’s telescope domes.



Free telescope observing at Chabot Friday and Saturday evenings from 7:30 to 10:30pm. Come on out and see the moon, planets and more through Chabot’s historic telescopes, and various amateur instruments on the observing deck.

Chabot also offers solar observing to center visitors Saturday and Sunday afternoons from 12:00-4:00pm. See sunspots, prominences and occasional flares through several dedicated solar telescopes.

FUTURE CONJUNCTIONS 2012

- Oct 20 General Meeting, Chabot, Hauben Rm, 7:30pm
- 11 Board Meeting, Chabot, Library, 7:30pm
- 21 EAS MOVN, 7pm-10pm, Wightman Plaza
- Nov17 General Meeting, Chabot, Hauben Rm , 7:30pm
- 8 Board Meeting, Chabot, Library, 7:30pm
- 18 EAS MOVN, 7pm-10pm, Wightman Plaza

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 and 8 inch Schmidt-Cassegrains. Scope rental is \$15 a month, with a \$50 deposit. For information, contact Barry Leska by E-mail at b.leska@comcast.net

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 And find out about our next Volunteer Orientation!

<http://www.chabotspace.org/adult-volunteers.htm>

**EAS members who are only interested in sharing their own telescope at Chabot (not a full volunteer commitment) are required to attend a volunteer orientation. After completion, you may join us on deck and share your own telescope any Friday or Saturday night! Chabot Volunteers must make the regular volunteer commitment and pursue official placement through the Volunteer Manager.*

TELESCOPE MAKERS' WORKSHOP

Chabot Space & Science Center - Every Friday Evening!

Chabot's TELESCOPE MAKERS' WORKSHOP (TMW) is one of only a handful of regularly scheduled telescope making workshops in the U.S., and probably the world. TMW meets every Friday evening throughout the year, except Memorial Day weekend (which is the annual Riverside Telescopes Makers Conference). It has been in operation since December of 1930, founded by Franklin B. Wright, and is currently run by Richard Ozer with help from other EAS members, including instructors Dave Barosso, Bill Marriott, Mark Thein and Mark Vandewettering.

The price of admission is FREE. All you have to do is show up, buy a mirror blank and a "tool" (typically \$100-\$200 depending on the size of the mirror) and start 'pushin' glass!" TMW provides the instruction and optical testing expertise along with various grinding and polishing compounds you'll need. The mirror making process involves first grinding a curve, then polishing the curve to a mirror finish, and finally, figuring your mirror to optical perfection. Optical testing equipment is available to check the progress of your mirror each step of the way.



With determination, and a bit of luck, you can wind up with a telescope that cost 1/3 to 1/4 that of a commercially built instrument, while optically superior! The process does take time - depending upon how much effort you put into it, and other factors, it could take weeks to several months to complete a mirror. But, the process is fun, educational, and the camaraderie amongst fellow telescope makers in itself is worth the price of admission. Telescope making is a great activity for kids of all ages.

For more information contact **Richard Ozer** at (510) 532-5477 or rozer@pacbell.net



Winter Star Party

All are invited to attend the **Winter Star Party** at Chouinard Vineyards on Saturday, October 20th, with setup beginning at 6:30pm.

Location: Chouinard Vineyards and Winery, 33853 Palomares Road, Castro Valley

Chouinard is located off of Highway 580 in Castro Valley, south of Oakland, between HWY 680 and the HWY 238 connector to HWY 880. Take the Eden Canyon / Palomares exit from 580 and head south. After the 4-way stop sign at East Castro Valley Blvd., go about 1/3 of a mile, and you'll see the Spark Stoves barn. At the barn, turn onto Palomares Road and proceed 6 miles, you'll see the Chouinard sign on the right side of the road. Pull into the parking lot and look for the telescopes.

Might want to show up a little early to sample some of Chouinard's fine wines! The tasting room is open from noon to 5:00pm.

A few rules: no loud noise, red lights only, no smoking, and take away everything you bring, food and non-alcoholic beverages are OK.

There are amenities: electricity for your computers and equipment (do bring your own extension cords), and there are restrooms. Occasionally wine tasting (at option of our host).



For additional information contact **Barry Leska** at b.leska@comcast.net



Eastbay Astronomical Society

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

October 2012

RETURN SERVICE REQUESTED

Eastbay Astronomical Society

President: Barry Leska b.leska@comcast.net

Treas: Richard Ozer (510) 532-5477 rozer@pacbell.net

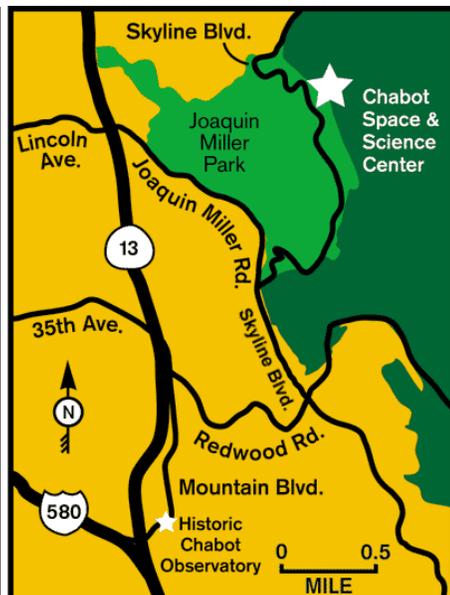
Secretary: Don Saito (510) 301-2570 donsaito@yahoo.com

Articles and photos for *The Refractor* are encouraged. Deadline for the November 2012 issue is Nov. 1, 2012. Items may be submitted by snail-mail or E-mail to: **Editor - Jim Ferreira, 753 Oriole Avenue, Livermore CA 94551 bakerst@comcast.net (925) 449-0107**

Vice President: Linda Lazzeretti (510) 633-2488

Membership Reg: Rod Simmons wileycoyote-genius@earthlink.net

Events Coord: Gene Weber (925) 963-1165 gene.weber@gmail.com



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Join the Eastbay Astronomical Society

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

Contact: Richard Ozer, EAS Treasurer

Phone: (510) 532-5477 Email: rozer@pacbell.net

Sign up online at <http://www.eastbayastro.org/>