



The Refractor

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

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April 2011

April EAS Lecture Meeting

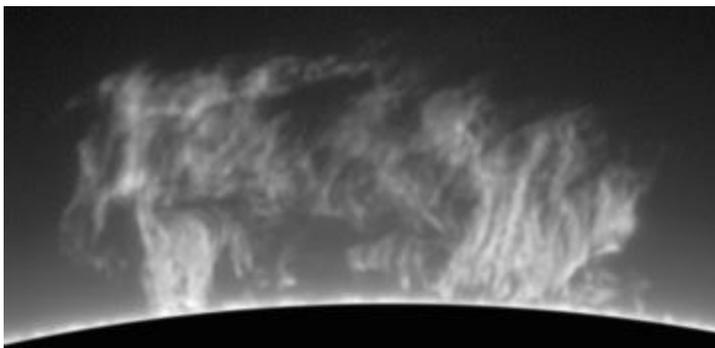
Title: **Star Formation in Galaxies Through
 Cosmic Time: Why We Care About Gas**

Speakers: **Amber Bauermeister**
Graduate Student, UC Berkeley
Astronomy Department

When: Saturday, April 16th, 7:30pm
 Location: Physics Lab, 2nd Floor, Dellums
 Building, Chabot Space & Science Center

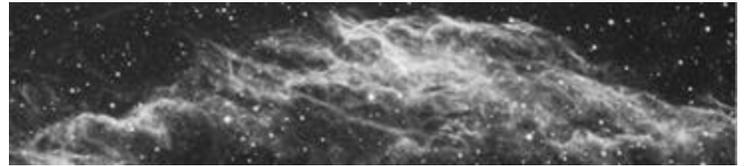
At first glance, galaxies seem to just be big collections of stars... but there is more to them than that! Galaxies are built of stars, dark matter, dust and gas and while we cannot directly observe the dark matter in galaxies, we can observe the gas using different wavelengths of light, from UV to radio waves. But what can we learn from studying the gas in galaxies? Galaxies are dynamic - constantly changing and evolving - and part of this evolution is the formation of new stars. These new stars form from the gas in these galaxies, so to understand the life of a galaxy, you must therefore understand the gas.

In this talk, I will give an overview of the different kinds of gas we see in galaxies and how we observe each type. We will then move on to star formation in different types of galaxies in the local universe and



Solar Prominences at Chabot!

Spectacular live video of the sun in H-alpha light on the giant plasma screen in Rachel's Dome, every sunny Weekend. Photo by Jim Ferreira



how the properties of the gas relate to the star formation. Do we have enough gas to keep forming stars at the current rate? What does this mean about this particular time in the history of the universe? To answer this, we will look at gas and star formation in galaxies at high redshift, when the universe was only a third of it's current age. Observations suggest that the galaxies at these early times were similar to the galaxies we see today, but with a lot more gas! An interesting question to ask is, how does the transition occur from gas-rich galaxies at early times to the relatively gas-poor galaxies we see today? I will discuss how we are currently trying to answer this question with the EGN0G survey at CARMA, a radio telescope in eastern California.

Amber Bauermeister is a fifth year graduate student in the UC Berkeley Astronomy Department. A southern California native, she has managed to stay in California, graduating from CalTech in 2006 and now living in Berkeley. For the past four years, she has been working with Professor Leo Blitz, studying the gas in both local and intermediate redshift galaxies. For this work, she has used the centimeter-wavelength Allen Telescope Array in northern California and is currently using the CARMA millimeter-wavelength array in eastern California. Amber is an avid backpacker and hiker: in July of 2009, she spent 3 awesome weeks backpacking the John Muir Trail, 220 miles through the high Sierra, from Yosemite Valley to Mt Whitney.

**DINNER WITH
 THE SPEAKER**
 5:30, Sat, Apr. 16
Hunan Yuan
 4100 Redwood Rd.
 (next to Safeway)
 No need to confirm,
 Just show up!

Inside this issue:

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Something special: a beautiful rainbow captured in moonlight by Pennsylvania photographer Ethan Tweedie

WANTED: PHOTOS OF OLD CHABOT

Do you have photographs of the Mountain Boulevard Chabot Observatory? If you do, pick out the best of the best and send a scanned image to the Newsletter editor. A new image will be posted in the newsletter each month.

FUTURE CONJUNCTIONS—2011

Apr 16 General Meeting, Chabot, Physics Lab, 7:30pm
14 Board Meeting, Chabot, Soda Room, 7:30pm
10 EAS MOVN*, 7pm-10pm, Wightman Plaza
May 14 General Meeting, Chabot, Physics Lab, 7:30pm
12 Board Meeting, Chabot, Soda Room, 7:30pm
8 EAS MOVN*, 7pm-10pm, Wightman Plaza

For questions or if you are uncertain about the weather, call (925)926-0853 before 6pm, or check Chabot's weather page at <http://www.chabot.space.org/forms/weather.aspx>

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 Ray Wong by E-mail at qm7@yahoo.com

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 Del-lums Building, down the hall next to the interactive lunar lander exhibit.

Volunteer librarians are needed to expand library hours. **We are particularly interested in any member having experience with book cataloging software.** If you'd like to help contact EAS president Barry Leska 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.chabot.space.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.*

News & Views



Howdy Astro Fans! This year's EAS Annual Awards Dinner was a smash success, thanks to YOU, who responded to our last minute cries for help. We

had a desperate situation on our hands; only about a dozen people were signed up two weeks before the event, and we needed at least 50 to come close to breaking even for the expense of it. The real problem was not getting the word out soon enough - an error we won't be making



any more from now on! Within the last two weeks before the event more than 50 more of you signed-up, and that really saved our bacon - so, THANKS! And what a lovely event it was, too. Our speaker, Dr. Steve Bryson, Target Scientist of the NASA Kepler Mission, gave a fascinating talk on the current activities and results of the Mission. Our delicious and nutritious dinner was catered by Harry's Hofbrau, our



favorite caterer for at least the last decade or two. This year, we honored two of our members: Jim Ferreira received the Helen Pillans award for his meritorious and

admirable efforts toward promoting amateur astronomy and his work in astrophotography, and John Fang received (in absentia) the Carter Roberts Astronomy Service Award for his work organizing, promoting, and defending the EAS/CSSC Library. Then, we had fun doing door prizes (I got a water bottle!), and by the end, everyone had been filled to the brim with food, facts, and fun - Life just don't get no better'n this!

Your and my favorite Alvan Clark & Sons telescope, 128 year old Leah, had developed a stiffness in her dec axis, and a "clunk" in her RA axis, so we had to

shut her down until our Director of Instruments (Gert Gottschalk) and *former* Dir of Instruments (Ken Swagerty) came up one rainy non-Christmas eve to do a bit of exploratory analysis to see what the matter was. Fortunately, both problems turned out to be relatively easy to fix, so she was able to go back into operation immediately. Whew! I had visions of tearing her apart in ways not seen since 2001, when we refurbished and moved her to 10000 Skyline. I love her to death, but she does have somewhat of a weight problem - hurts my back just thinking about it. That, plus she's complex; but then again, aren't we all?



Cheerios! <crunch, crunch!>
;~Don



Photo above left: Gerald McKeegan doing a light bit of welding on Nellie's frame in preparation for adding an auto-wash spray system to keep the 36" mirror clean.

Photo lower right: Ken Swagerty and Gert Gottschalk work to repair problems with Leah's equatorial mount.

All photos courtesy of Don Saito. Thanks; Don!!



Messier 45

This sensational image by long time EAS member **Bill Drelling** was captured with a Takahashi FSQ-106N on an AP900GTO mount. Guiding was with an SBIG STV E-Finder. The camera was a Canon 50D. The image is a result of combining 3 separate exposures of 20 minutes apiece. The images were layered in Registar and processed in Photoshop.

M45 was photographed at the Eldorado Star Party in early November 2010. ESP is hosted by the same people that put on the Texax Star Party, but it is held at the X-Bar Ranch in Eldorado, TX in the Fall.





Eastbay Astronomical Society

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

April 2011
RETURN SERVICE REQUESTED

Eastbay Astronomical Society

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

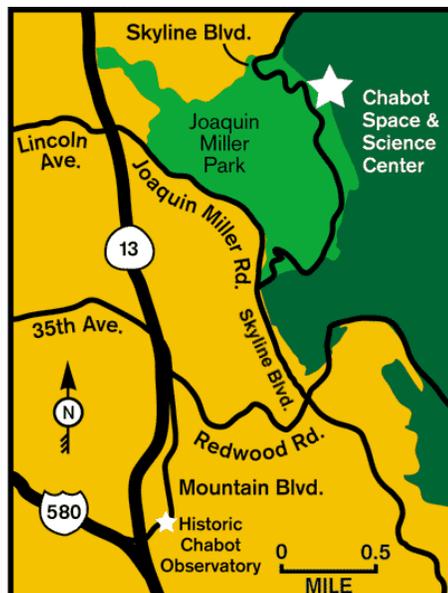
Secretary: Linda Lazzaretti (510) 633-2488

Articles and photos for *The Refractor* are encouraged. Deadline for the May, 2011 issue is May 1, 2011. 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: Paul Hoy ahoy@aol.com

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FUTURE CONJUNCTIONS

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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/>