



The Refractor

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

Volume 89
Number 8
May 2013

This Month's Event:

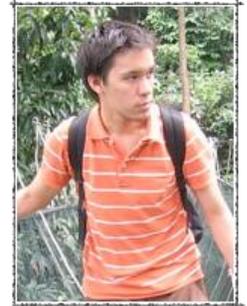
The Solar Wind

Speaker: Dr. Christopher Chen
When: Saturday, May 18, 7:30 PM
Where: Chabot Space and Science Center, Room:
Hauben Rm

Topic Highlights:

Dr. Chen will open with an introduction to solar wind, the stream of charged particles that flow away from the Sun and fills interplanetary space. He will describe this journey in detail, how it interacts with planets, moons, comets, and cosmic rays, how these in turn influence the solar wind particles. He will conclude by discussing how

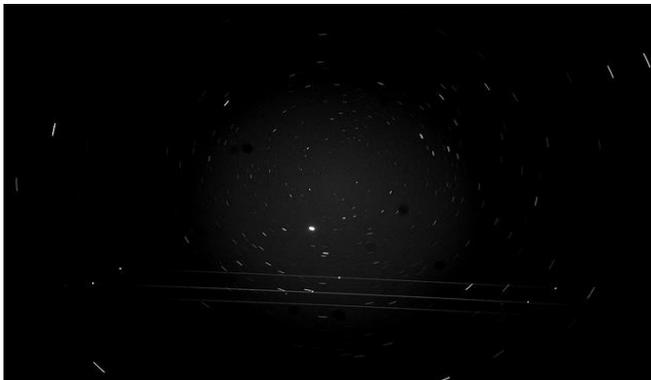
we've gathered our knowledge thus far, what questions till remain, and how we plan to address these questions in future missions. ★



Dr Christopher Chen is a research scientist at the Space Sciences Laboratory (SSL), University of California, Berkeley. He joined SSL in 2011, having completed his PhD in Space Physics at Imperial College London. He researches the physics of the solar wind using spacecraft data and is a member of the team working on the NASA Solar Probe Plus mission, which will send a spacecraft into the solar corona for the first time. For more information see: <http://sprg.ssl.berkeley.edu/~chen>.

WE WOULD LOVE TO HEAR FROM YOU!

We love learning and expanding our knowledge on all things stars and science related, and would



10-minute exposure facing North, on a Nikon D40, ISO 200. Photo courtesy of David Prosper.

Enjoy hearing about your own discoveries, seeing your photos and sharing with our fellow stargazers! Whether it's a quick iPhone photo on a moonlit walk, or a dedicated camera and telescope session to the planetary alignment, we'd appreciate the communal sharing! So go on, get out there, and show us what you find!

DINNER WITH THE SPEAKER

5:30 PM
Saturday, May 18
HUNAN YUAN
4100 Redwood Rd, #11
(next to Safeway)
Oakland
(510) 531 - 1415
No need to confirm—
just show up!

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Don's News 'N Views!

*Howdy Astro Fans!
Spring has sprung,
The grass is grew,
The season of Saturn,
Is now upon you.*

Yes, we are now beginning to view everyone's favorite planet, Saturn. You can schlep up to the big scopes on Fri/Sat public nights and wait in long lines like ordinary mortals, OR, as a fabulous member of the Eastbay Astronomical Society, you can come up and have luxuriously long views of Saturn, and whatever other amazing deep-sky objects that are available; I'm just sayin'. Jupiter's season has run its course, and is heading west for a nice long warm vacation into the Sun, where the "palm trees" (prominences) sway gently in the "breezes" coming off the CMEs (coronal mass ejections), and won't return until later this year in the fall/winter. Of course, you'd know this if you looked at our club's *What's Up* web page (<http://www.eastbayastro.org/index/whatsup.htm>), which I encourage you to do for a look at the overall outlook of the year's events.

And speaking of viewing through big observatory telescopes, I'd like to remind you about Lick Observatory's Public View Programs (regular, and *Music of the Spheres*). The good news is: they have bigger telescopes in a better location than ours. The bad news is: they are limited to 8 view nights per year, aren't free, and they're a fair distance away (the top of Mt. Hamilton, east of San Jose). Lick's view programs include views through their 36" refractor, and 40" reflector, plus an interesting lecture from an astronomer. Every Spring season, Lick Observatory posts their schedule for getting tickets to both their regular public view programs, and their (more expensive) *Music of the Spheres* view programs. It used to be that they'd post one specific date when they'd open up access to their lottery system, you'd call 'em, put in your name + how many tickets you wanted to get (up to 6), and if you were

picked, they'd let you know. They're doing it a little differently, now. Instead of one day, they have 8 days, starting at the end of April and interspersed throughout May, that you can call in to get the limited number of tickets for each of the 8 view dates available for the year. Anyways, it's \$12 per person for the regular public view nights, and from \$40 - \$150 per person for their MotS programs. Check 'em both out at <http://www.ucolick.org/public/index.html>. From EAS astrophotographer extraordinaire Bob Schalck: *Finally got to see it! The clouds parted!*



*Image taken on 03/17/2013 ~ 8:15 PM in North Bend, OR
130mm, ISO 400, 5 Sec, Samsung Pro*

After an amazing twelve years as EAS' Representative on the JPA (Joint Powers Association - CSSC's Board of Directors), Terry Galloway (who just received the 2013 *Astronomy Outreach Award* at our recent Annual Awards Dinner) has decided to retire from the position to let fresh blood be spilled from someone else, for a change. Just kidding! Sort of. This now leaves a position open for someone new to take his place.



Terry accepting his award at the annual awards dinner.

We're looking for someone interested in
cont'd on page 3

Cont'd from page 2

representing the EAS in the organization that actually runs the Chabot Space & Science Center - sets its policies and plans its actions. The specific role of the EAS in this august body is to provide ideas and information about Chabot's telescope operations, maintenance, and general astronomy promotion to the public. We already have one

person in mind, but if you're interested, let us know!

That's it for now! The Spring constellations are up, so go take your binoculars out and find the very pretty Beehive open star cluster in Cancer, say your last farewells to Orion and the Great Hexagon (Sirius, Rigel, Aldeberan, Capella, Castor, Pollux, and Procyon), and don't forget to share the fun with your family, friends and neighbors. ★

In Honor of Carter Roberts

Navbalsinder Sandhu

Friends gathered together to honor the memory of Carter Roberts, avid Eastbay Astronomical Society member, on the anniversary of his passing. Laughter and strong discussion peppered the conversation, as well as fond memories of Carter's many contributions to his love of the night sky.



An amazing photo capture of the Leonid Meteors in 2004, thanks to Carter Roberts. Photo re-post credit: KQED.org

Roberts's impact still echoes within EAS and Chabot Center every day.



Friends gather to share a meal and memories, post clean-up project. Photo credit: Alan Roche.

Among the attending were: Dave Rodrigues (Estate Executor), Rebecca Arntz, John Fang, Terry Galloway, Fred Johnson, Conrad Jung, Linda Lazzeretti, Ken Lum, Richard Ozer, Mike Pechner, Ralph Requa, Alan Roche, Don Saito, Bill Stock, and Ken Swagerty. Unwilling to see prizes sent to corners unknown, everyone gathered to inventory and assist in finding good homes for Roberts's estate. Many thanks to all who contributed to this significant project! ★

Eastbay Astronomical Society and Tri-Valley Stargazers: Barcroft (really) High-Altitude Star Party

Early September 2013: The Barcroft High-Altitude Star Party is a weeklong event where the *insanely* over-achieving astrophotographers go to ply their hobby at a site once considered for the Twin Keck Telescopes which now reside on Mauna Kea in Hawaii. Located just south of White Mountain in California's Owens Valley (Lat/Lon 37° 35.026'N, 118° 14.205'W), and at an elevation of 12,457' ASL, the BHASP may well be the highest regularly held star party in the *world*. Oxygen is available. Really.



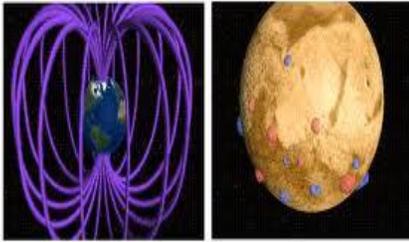
Photo courtesy of www.eastbayastro.org

For more info contact donsaito@yahoo.com.

Recap: Mars's Magnetic Field

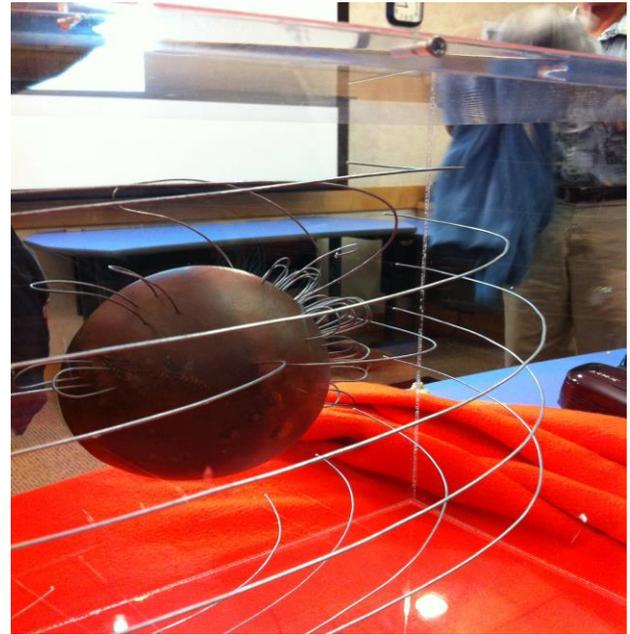
David Prosper

Matt Fillingim, a scientist from the Space Sciences Laboratory in Berkeley, graced us with a fascinating lecture on Mars and its magnetic field. It was an excellent presentation, and Matt's first for a group was, as he put it, "for a bunch of normal people, who weren't forced to be here!" He found out that we were not quite as normal as he at first may have thought!



Earth's magnetic field compared to Mars's.

Matt highlighted both lesser gravity and less circular magnetic fields as component to the erosion of Mars's atmosphere. Evidence of water sublimation and freezing indicates that Mars once may have had a very similar atmosphere to Earth's. Earth is much better protected by its encompassing magnetic fields, but these are also being eroded over time, making Mars even more fascinating to study – in a few million years, give or take a thousand, Earth could be just like Mars!



A carefully constructed model of Mars's magnetic fields helps us better understand how it interacts with other forces.

The audience had a lot of good questions and kept Matt on his toes as he supplied great answers, especially in regards to current theories of the various factors leading to the erosion of Mars' atmosphere by the Sun's solar wind. He revealed a wonderful model of Mars and its magnetic field - an actual to scale model – that made its maiden voyage out of the laboratory for our viewing pleasure! ★

Send A Message to Mars!

Maven will be heading out this November (currently tentatively set for the 18th!) to Mars, and has graciously offered to take some items on the journey!

The next mission will carry 3 haiku poems and a youth art piece, selected by public vote, to Mars! So if you have an epic message to share with future explorers, enter the contest and get details at the following link:

<http://lasp.colorado.edu/maven/goingtomars/send-your-name/>

Good luck! ★



Planetary Trio Tango

David Prosper

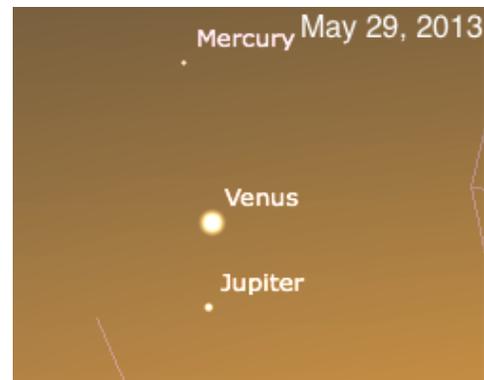
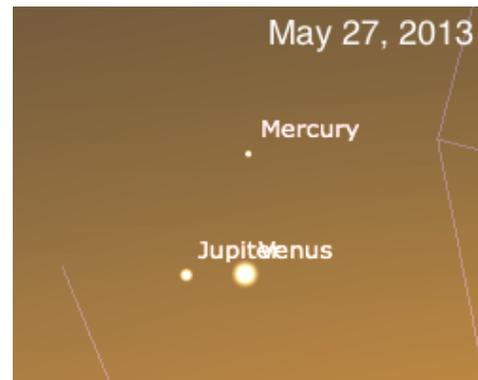
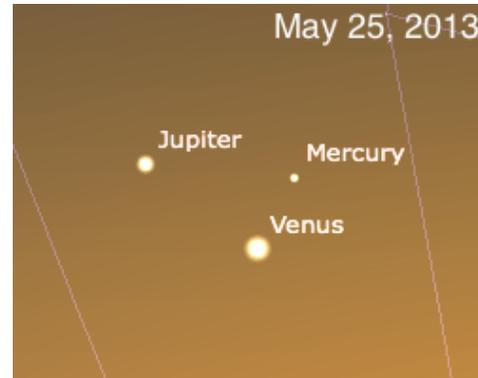
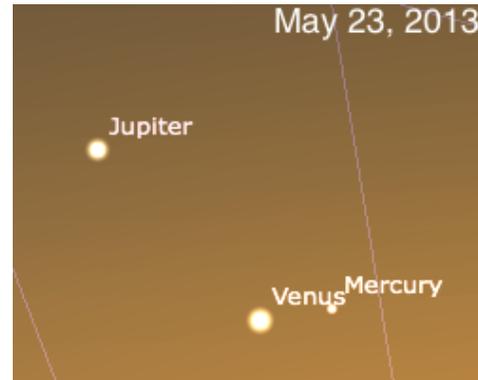
Hey folks! Are you ready to watch the west for a great show? Towards the end of this month, you will see Venus, Jupiter, and Mercury appear above the horizon as a little family, locked in a celestial tango.

At the beginning, you will not be able to see Mercury or Venus. Jupiter and Saturn still reign fairly high above the horizon after sunset, easily visible. However, as May comes to a close, Venus pops up, Jupiter arcs down, and Mercury, being true to its namesake, speeds up out of the West and handily bypassing Venus. This is often called the planetary dance! This is also Jupiter's farewell, as it drops below visibility as May comes to a close.

But why try to talk about it? Here is a great photo time lapse, cropped from Stellarium, that trace this planetary promenade across the dusky sky. Note the days in your calendars and please share a picture with us:

Interested in Learning More?

Check out the NightSkyNetwork website for more details on nearby Astronomy events-not just EAS and Chabot. We live in an area filled with amazingly rich opportunities for astronomy lovers, so check out their local calendar! Go to <http://nightsky.jpl.nasa.gov/> and click on "Calendar" to find events near you. Believe me, there are a ton! ★



Mercury, Venus, and Jupiter align in the night sky over the course of the week. Photos arranged by D.Prospier, courtesy of Stellarium.



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

May 2013
RETURN SERVICE REQUESTED

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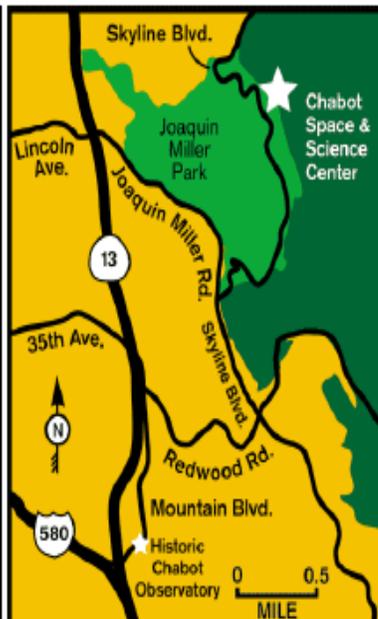
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Articles and photos for *The Refractor* are highly encouraged! Deadline for June 2013 issue is May 19, 2013. Items may be submitted by mail to: Editor – 840 Villa Ave, Apt 22, San Jose, CA 95126. Email address: NavbalsinderSandhu@gmail.com HM: (408)-705-7417



FUTURE CONJUNCTIONS

MAY 9 EAS Board Meeting, Chabot, 7:30 PM
12 EAS, MOVN, Wightman Plaza, 7:30 – 10:00 PM*
18 EAS Lecture: Solar Wind, Chabot, 7:30 PM

JUN 9 EAS MOVN, Wightman Plaza, 7:30 – 10:00 PM*
13 EAS Board Meeting, Chabot, 7:30 PM
15 EAS Monthly Presentation: TBD

*Always Call Gerald McKeagan to confirm: (925) – 926-0853

JOIN THE EASTBAY ASTRONOMICAL SOCIETY

REGULAR, \$24/YR FAMILY, \$36/YR
 CONTRIBUTING, \$40/YR STUDENT, \$15/YR
 SUSTAINING, \$60/YR, or more

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