



May 2009 talk:

From Stardust to Planets via Silicon: Computer Experiments and Planet Formation

Speaker: Dr. Jeffrey Oishi University of California, Berkeley

When: Saturday, May 9th, 7:30pm

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

How did the Earth form? What about the other planets in the Solar System? What about the hundreds of planets orbiting stars other than the Sun that we have detected? The basic idea, that they somehow formed out of a flat disk of material surrounding their host star, was described by Immanuel Kant in 1755. In the intervening 253 years, we have collected a significant amount of data to support this picture, but we have filled in surprisingly few of the



details. However, the dramatic advances in computing over the past thirty years have allowed physicists to make theoretical breakthroughs that are starting to give us a rich and detailed understanding of how planets form. I will discuss what we know, what we don't know, and how we are finding out.



Dr. Jeffrey Oishi was born near Washington, DC. He got his PhD in 2007 from the University of Virginia after doing his thesis research on magnetic turbulence in star and planet formation at the American Museum of Natural History. Since 2008 he has been a postdoctoral researcher at UC Berkeley working on

large-scale computer modeling of the formation of the first stars. He can often be found at tiny, crowded bars listening to extremely loud music.

DINNER WITH	
THE SPEAKER	
5:30, Sat, May 9	
HUNAN YUAN	
4100 Redwood Rd.,	
#11 (next to Safeway)	
Oakland	
(510) 531-1415	
No need to confirm,	
just show up!	

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CSSC SOLAR TELESCOPE

Question: What does the Swedish Vacuum Solar Telescope of Canary Island fame and Rachel have in common? Aside from both having 20 inch objectives....

Answer: They both call Chabot Space and Science Center home.

For those of you not aware, installation of a research grade vacuum solar telescope is in the works at CSSC...presently in the final planning stages. Thanks



to the efforts of Ben Burress and Joe Waidl, the instrument was dismantled at its Canary Island site and shipped to Oakland where the components now await resurrection at a location just outside of the stairs that go down to the Megadome lobby.

The solar coelestat consists of two evacuated spheres that will be mounted at rooftop level. They rotate to point a BK7/F2 20 inch achromat at the sun. The focused light will be directed some 70 feet below, to

an optical bench in the Megadome lower lobby. The light will travel through a sealed pipe under vacuum to avoid heat turbulence along the optical path. At the optical bench the primary focused 8 inch diameter shaft of sunlight will be split with a portion being directed through a spectroscope where a 4 foot long, 4 inch high spectrum will be projected on a wall across the lobby. The projected spectrum is expected to show hundreds of black Fraunhofer absorption lines overlaying the familiar rainbow of colors. Light is also split off and passed through narrow band filters, H-alpha and Calcium-K, the output to be displayed on video monitors. The remaining white light will be projected an additional 30 feet with a 12 inch Barlow lens across the lobby and down to a table where a spectacular 32 inch diameter white light sun can be viewed by visitors sitting on stools. Here sunspots,



granulation and faculae can be viewed and sketched.

Associated exhibits may include a 1 meter cube Cosmic Ray Spark Chamber, presently under construction by Dan Miller and his colleagues. Also planned is a Solar Ionospheric Disturbance system (called SIDs) which will provide a live feed of radio solar emission variations in real time, both graphically and audibly through speakers.

Needless to say, this will

clearly be the finest solar telescope and associated solar exhibit available to the general public anywhere in the world.

*Early architect rendering showing solar telescope tower above observing deck - location will now be outside Megadome lobby.

News Notes:

-John Fang announced that the EAS Library shall routinely be open after general meetings.

-EAS Astrophotography Group: Rollen Maski will be taking over Bill Drelling's position as group director. Coast Guard Cmdr. Bill Drelling will be leaving the area, reassigned to duty in the deep south. Bill's expertise will be sorely missed and we look forward to his eventual return to the SF bay area.

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: <u>volunteers@chabotspace.org</u> 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.

...ON THE WEB

"Galileo's Telescope" by Albert Van Helden

The telescope was one of the central instruments of what has been called the Scientific Revolution of the

seventeenth century. It revealed hitherto unsuspected phenomena in the heavens and had a profound influence on the controversy between followers of the traditional geocentric astronomy and cosmology and those who favored the heliocentric system of Copernicus. It was the first extension of one of man's senses, and



demonstrated that ordinary observers could see things that the great Aristotle had not dreamed of. It therefore helped shift authority in the observation of nature from men to instruments. In short, it was the prototype of modern scientific instruments. But the telescope was not the invention of scientists; rather, it was the product of craftsmen. For that reason, much of its origin is inaccessible to us since craftsmen were by and large illiterate and therefore historically often invisible. (read more at http://cnx.org/content/ m11932/1.4/)

Editor's Note: Do you have an **astronomy** or **science** related personal web site, or, web posted article or review you'd like to share with fellow EAS members? Pass along the URL and a few words about the site to the editor at BakerSt@comcast.net

...WHO'S WHO *

Ray Wong -- EAS Board Member EAS Loner Scope Program Director

As a kid, the first book Ray Wong ever bought was on astronomy. Says he still has that book. But, like so many just discovering astronomy, a telescope would have to wait....five-and-a-half decades in Ray's case. In 2004, having spent much of his life at the eyepieces of a microscope as a biologist, geologist and micropalentologist, Ray had his first look through an observatory telescope, guided by the voice of Carter Roberts. Not too long after, he assembled his first modest telescopes, later purchasing a Meade ETX125, then moving up to a Meade 5 inch refractor, and an 8 inch Cave Astrola Newtonian. At the same time Ray became active at Chabot, initially with the Dragon Skies program, then as a telescope deck volunteer, finally joining EAS in 2005.

A year, or so, later Ray proposed the Loaner Scope Program (LSP) to the EAS board. He was allotted \$100 and given the task of reviving some of the donated scopes languishing in the catacombs of Rachel. In 2007 the LSP saw 'first light.' Ray says, to a degree he enjoys "the challenge of reviving an old telescope," however his primary interest is observational astronomy, including double and multiple stars. In 2008 Ray became a member of the EAS board of directors.

Editor's note: at the April EAS board meeting, Ray reported that LSP recently received the donation of a splendid Celestron C-90 Maksutov-Cassegrain. Sam Weiss at Scope City in San Francisco tested the telescope and said it was in excellent shape. Sam also donated a hybrid diagonal, and 1 ¹/₄" eyepieces for the C-90 -- THANKS, SAM. It could still use a wedge and tripod....should there be any floating about. The C-90 is available for rental @ \$15 per month, with a \$50 deposit. The cool part is, if you bring the scope to an EAS sponsored outreach event, the rental fee is waived.

LSP also offers a 60mm and 80mm refractor for rental, along with two 10 inch Dobsonians, and, 4 inch and 8 inch Schmidt-Cassegrains.

For more information on the EAS Loaner Scope Program and available telescopes, contact Ray Wong at qm7@yahoo.com.

FUTURE CONJUNCTIONS—2009

- May 3 EAS MOVN*, 7pm-10pm, Wightman Plaza, Chabot
 - 9 EAS General Meeting, Chabot, Physics Lab, 7:30pm
 - 14 Board Meeting, Chabot, Soda Board Rm, 7:30pm
 - 28 EAS MOVN*, 7pm-10pm, Wightman Plaza, Chabot
- Jun 6 EAS General Meeting, Chabot, Physics Lab, 7:30pm
 - 11 Board Meeting, Chabot, Soda Board Rm, 7:30pm
 - 28 EAS MOVN*, 7pm-10pm, Wightman Plaza, Chabot
- Jul 9 Board Meeting, Chabot, Soda Board Rm, 7:30pm
 - 11 EAS General Meeting, Chabot, Physics Lab, 7:30pm26 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.



At Chabot Space & Science Center 10000 Skyline Boulevard ● Oakland, CA 94619 March 2009 RETURN SERVICE REQUESTED

Eastbay Astronomical Society

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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 June 2009 issue is May, 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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 - 28 EAS MOVN*, 7pm-10pm, Wightman Plaza
 - 6 EAS General Meeting, Chabot, Physics Lab, 7:30pm
- June 11 Board Meeting, Chabot, Soda Board Rm, 7:30pm 28 EAS MOVN*, 7pm-10pm, Wightman Plaza

*Always call to confirm

Join the Eastbay Astronomical Society

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

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/