

The Refractor

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



The Search for a Cousin of Earth: Science or Fiction? Dr. Franck Marchis

Dr. Franck Marchis, senior planetary astronomer and chair of the exoplanet group at the Carl Sagan Center of the SETI Institute, will discuss the search for an Earth-Like exoplanets conducted at the SETI Institute in collaboration with institutions around the world. Over the past fifteen years, this group has led the development of the Gemini Planet Imager, which went into operation three years ago. The GPI team announced in 2015 the direct imaging of the first Jupiter-like exoplanet around 51 Eri b, which is “only” 100 light-years away from us. Based on the success of this first-generation instrument, those astronomers are today developing a camera called TIKI which is based on a similar technology and will be capable of directly imaging and characterizing an Earth-like exoplanet around the Alpha Centauri system. This powerful instrument will allow astronomers to record the fingerprints of a possible biosphere on the surface of this terrestrial planet, thereby possibly answering the fundamental question “Are We Alone?”

Marchis is also the Chief Scientific Officer of Unistellar, a company which designed a new type of telescopes for the public. Unistellar’s Enhanced Vision Telescope is the first telescope that accumulates light so the user can finally see hundreds of faint astronomical objects. The telescope is capable as well to recognize the observed field of view and can guide and inform the user. The

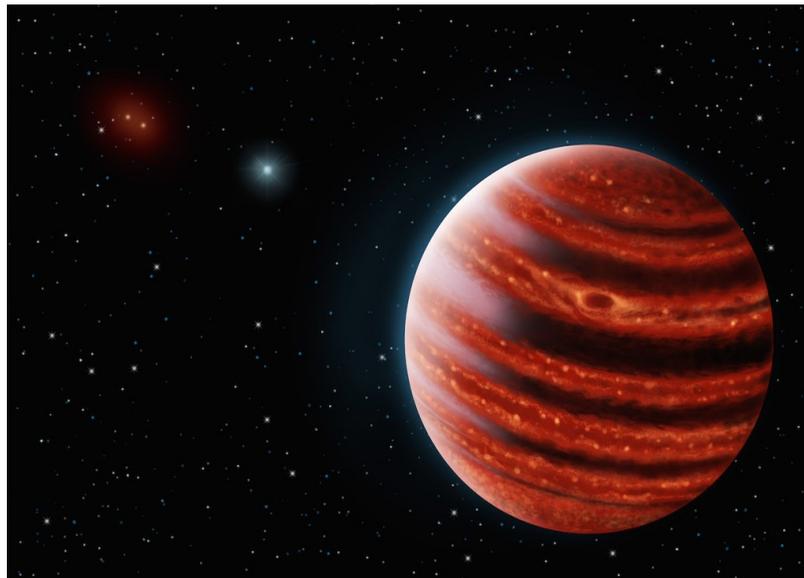
company has partnered with the SETI Institute which will host and analyze the data generated by this swarm of telescopes. The talk will be followed by a demo of the prototype (weather permitted).

About the speaker

Dr. Franck Marchis is a senior planetary astronomer and chair of the exoplanet group at the Carl Sagan Center of the SETI Institute. He began full-time work at the Institute in June 2011 after leaving a joint position with Institute and the department of astronomy at University of California, Berkeley. Marchis moved to the United States in October 2000 shortly after getting a Ph.D. from the University of Toulouse in France that he acquired while traveling around the world for his research and for the sake of exploration. Over the past nineteen years, he has dedicated his work to the study of our solar system, specifically the search for asteroids with moons, using mainly ground-based telescopes equipped with adaptive optics (AO). More recently he has been also involved in the definition of new generation of AOs for 8 -10 m class telescopes and future Extremely Large Telescopes. He has also developed algorithms to process and enhance the quality of astronomical and biological images. He is currently the collaboration manager of the

Gemini Planet Imager Exoplanet Survey, which consists in imaging and characterizing Jupiter-like exoplanets using an extreme AO system designed for the Gemini South telescope. Today, Marchis dedicates most of his energy to instruments capable of imaging and characterizing Earth-like exoplanets by being involved in education, public outreach, technology, and scientific investigations related to those ambitious projects both in the United States and in Europe. Marchis is a member of numerous science committees including the SETI Science council, the GPI steering Committee, the TMT Science Definition Team, PLOS One editor board, and the Planets Foundation Science Advisory board. He has

co-authored more than 350 scientific publications, trained numerous students, and served as a science consultant and interviewee for numerous documentaries and movies in English, French, and Spanish. The asteroid (6639) was named Marchis in honor of his discovery of the first triple-asteroid system in 2007. He has been an affiliated Astronomer at Observatoire de Paris since 2003.



EAS Outreach Calendar

October 1st, Otsukimi/Moon Viewing Festival at the Lakeside Park Garden Center, by Lake Merritt in Oakland.

October 17th, star party event at Live Oak Elementary in San Ramon.

October 28th, star party event with Girl Scout group Hanna Ranch School, Hercules.

Newsletter from White Mountain Research Station

Every year, we rent time up at the Barcroft High Altitude Research Station in the White Mountains to provide our members with an opportunity to gain access to "research-grade" night skies. Well, they have begun publishing their own newsletters, and you can view them [here](#). It's full of info about the three facilities they make available, one of which is Barcroft, and it's chock-full of interesting stuff about these sites. Check it out!

The Refractor EAS Monthly Newsletter

The newsletter is always looking for submissions from members of the society. Including, but not limited to:

- observing reports
 - vintage photos of member telescopes
 - astro photos
 - vintage photos of member telescopes, telescope making, star parties and 'Old Chabot'
 - star party announcements
 - star party reports and photos
 - astronomy lecture and museum show announcements
 - outreach event announcements and reports
 - astronomy equipment reviews
 - astronomy & science book reviews
 - reviews and recommendations of on-line astronomy resources
 - astronomy and science equipment want-ads
- Send submissions by e-mail to the editor, Mina Reyes.

EAS Loaner Scope Program

Telescopes available for rental by EAS members 60mm & 80mm refractors, C90 Maksutov-Cassegrain, 2 - 10 inch Dobsonians, 4 & 8 inch Schmidt-Cassegrains. Scope rental is \$15 a month with a \$50 deposit. ***If you rent a scope and bring it to EAS outreach programs, monthly rent is waived - a good deal!*** For information, contact Barry Leska by E-mail at b.leska@comcast.net

EAS Library Hours

Currently open from 7pm to 10pm every Friday evening. Please enter through the Telescope Maker's Workshop at the first loading dock entrance. The Library is also open by appointment: Please call 1-510-336-7438 and leave a message. Library is located on the second floor of the Dellums Building, down the hall next to the interactive lunar lander exhibit.

Volunteer librarians are needed to expand library hours, if you'd like to help, contact [EAS Librarian](#) Deborah Gomez.

Telescope Makers' Workshop at 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 EAS members Dave Barosso, Barry Leska and Wilson Yoshida-Ng.

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 costs 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



Member Article

Recall: A look back on the Great Eclipse
By Clarence G. Underwood

I saw the Great Eclipse of 2017 in South Carolina. It was a mini-vacation trip that lasted less than a week. My family is from New York, but my two sisters have a house in North Carolina. They were influenced by friends to buy there. They have their primary residence in New York.

Anyway, they had friends that lived on the center-line in South Carolina. Just a hop, skip and a jump away. When I told them about the eclipse and the center- line, they insisted that I observe the event with them. See the eclipse and my sisters at the same time, what a joy.

While I was in South Carolina, I encountered a reporter from New York. We exchanged information and she took my picture.



Now a resident of California, Mr. Underwood is proud of his accomplishments professionally and personally, in the pursuit of his passions for the solar system, spacecraft missions, galaxies, spaceships, and science and technology. As a member of the prestigious Eastbay Astronomical Society, he supports the group's efforts in bringing knowledge about outer space to various STEM programs in the Oakland area.

On Monday, he was in South Carolina, near Santee, observing the eclipse through his telescopes.

Underwood has lost track of his Wingate track and field gear, but in this photo he's sporting a Lowell Observatory cap, in honor of "a place where so much information as generated about Mars. Because of Lowell's studies, people were more inclined to believe that life could exist on planets other than the Earth". Underwood also admits, "It made the War of the Worlds radio broadcast he heard during his boyhood years 'seem more real'". (BG)



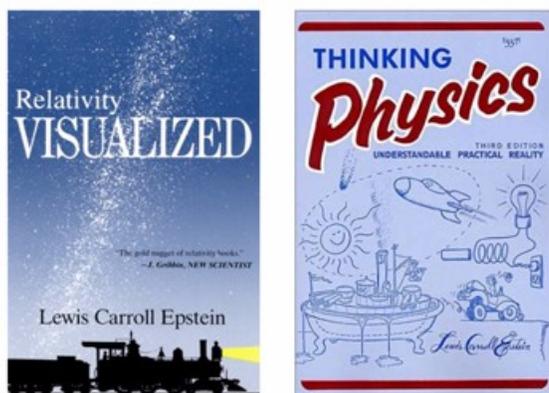
Just One More Word

Deborah Gomez, Librarian

EAS member Lewis Carroll Epstein, “Lew”, bought a few books to sell at the August 2017 meeting, and graciously donated the proceeds to EAS.

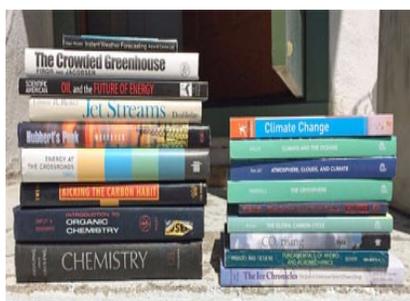
Lew’s best known books are pictured below; and one of the two titles is still in print. There are rave Amazon.com reviews for these books. Also, Lew is famous enough to have his own Wikipedia page.

https://en.wikipedia.org/wiki/Lewis_Carroll_Epstein



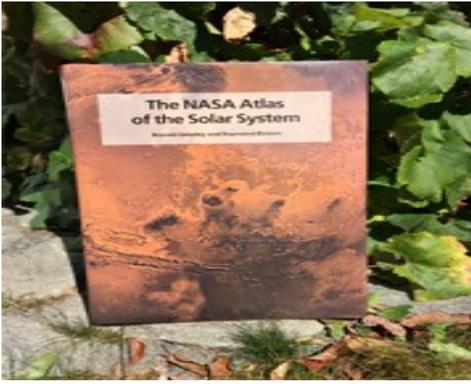
Over the summer, book donations came in from Steven Massie, Bill & Patty Corea, and Catherine Stone.

As befits a Senior Scientist in the Satellite Data Group in the Atmospheric Chemistry Division at Colorado’s NCAR/UCAR: Steven Massie sent a pile of books on climate change. A certain wit, Kathy Orsini, made the topical suggestion that the EAS Library should send them to the White House.



Catherine Stone donated all of her brother Don’s astronomical trove of books. Notably, most of the collection constitutes what did not make the journey from the Mountain Blvd. observatory to the shelves of Chabot. It is an important, and huge gift with so many titles on astronomy, and bits & pieces of EAS history.

Patty Corea and I met up at the Walnut Creek Library recently, and Patty donated Bill Corea’s library to EAS. The photo below shows off an almost new copy of the 1997 large format hardcover and first edition, “The NASA Atlas of the Solar System”.



There will be an EAS book sale at the December 9, 2017 meeting. A selection of the best books from the past year's donations will be available: Proceeds go to EAS.

- The EAS Library is open by appointment, and one hour before each monthly meeting. John Fang keeps Friday night hours most weeks: Please enter through the Telescope Makers Workshop door at Chabot Space & Science Center after 7pm.

Email > eb.astro.library@gmail.com



Chabot Observatory, Lafayette Square, 1894

Volunteer!

Chabot Space & Science Center (CSSC) invites EAS members to volunteer at Chabot.

- Share your knowledge of and passion for astronomy with thousands of CSSC's 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 CSSC's 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 Chabot's volunteer manager.

