

The Refractor

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

Volume 80
 Number 8
 April 2004

April 2004's talk:

*The pleasing spectacle of Venus upon
 the Sun's disk*: June 8th, 2004*

Saturday, April 3, 2004

7:30 pm – Speaker: Dr. John E. Westfall

Chabot Space & Science Center
 Physics Lab, 2nd Floor, Spees Building

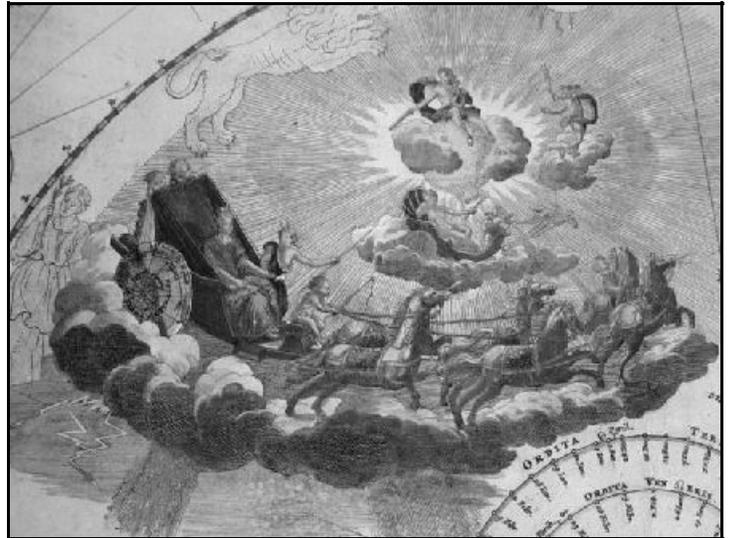
*Quotation from Jeremiah Horrocks's description on the first
 observed transit of Venus in 1639.

Judging by astronomical magazines and websites, interest is on the rise regarding the upcoming transit on Venus upon the Sun this June 8th, the first such event since 1882. In the 18th and 19th centuries expeditions crossed the world to observe this phenomenon, and they hoped from timing its associated events to find the basic unit of astronomical distance, that from the Earth to the Sun.

Now we will observe the transit chiefly for its historical associations and its rarity, but we can also learn more about the notorious “black drop” phenomenon and even about the upper atmosphere of Venus. The 2004 transit will be visible to most of mankind – the Old World, most of South America, and eastern North America. Those of us in western North America will need to take a trip if we wish to view the 2004 directly, traveling either as individuals, going with one of the many tours being offered, or perhaps attending one of several transit-oriented conferences in the visibility zone. Even stay-at-homes will be able to watch it via video and webcasts. This talk stresses where to go to watch the transit if traveling, what to watch for during the event, what equipment to use for it, and (naturally) where to forward one's observations.

(We plan to have copies of William Sheehan and John Westfall's new book, *The Transits of Venus*, available for sale and signing.)

Dr. Westfall, a mostly-continuous EAS member since the Truman administration, joined the Department of Geogra-



Venus in her chariot passes between the Sun and the Earth. Johann Doppelmayr, Atlas Coelestis (1742).

phy at San Francisco State University in 1968, specializing in remote sensing, lunar mapping, and historical geography, especially of astronomical expeditions. He has been enmeshed since 1953 in the Association of Lunar and Planetary Observers, and one of his roles is the coordinator of its Mercury/Venus Transit Section. His recent publications include *Atlas of the Lunar Terminator* (Cambridge, 2000) and, with William Sheehan, *The Transits of Venus* (Prometheus, 2004). He chases eclipses and transits, traveled to Cyprus to view the 2003 transit of Mercury, and plans to return there to observe the upcoming transit of Venus. ★

DINNER WITH THE SPEAKER

5:00 pm

Saturday, April 3

HUNAN YUAN

4100 Redwood Rd., #11

(next to Safeway)

Oakland

(510) 531-1415

Contact Dave Rodrigues

at 510/483-9191 or

daverod@aol.com by Fri-

day, April 2 to confirm

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The Cassini/Huygens space probe's evil twin brother – actually, an exact duplicate of the one that is almost to Saturn (arrives in July of 2004)

Friends in high places!

The Space Flight Operations Facility (SFOF) at JPL is the destination point for all the data beamed back to earth via NASA's worldwide Deep Space Network (DSN) - from NASA's planetary and earth-orbiting spacecraft as well as spacecraft of other space agencies around the world. The SFOF is also the departure point for real time commands to spacecraft.

The SFOF, constructed in 1964 was designated a historic landmark in 1986 by the US Department of the Interior. The facility is designed to support and protect critical spaceflight operations activities and data in the event of a general power outage, earthquake or other disaster.

It is also where I work. My first day of work, Monday November 24th was like everybody's first day at work...almost. I drove onto Oak Grove Road from the 210 freeway near Pasadena, CA, and parked in the visitor parking lot. From there I walked to the visitor center, where the public JPL public tours originate. The eight new JPL employees that Monday morning arrived and were ushered into an auditorium for orientation, paperwork and a welcome from the JPL deputy director General Tattini.

Then it was off to the Red Planet cafe for lunch. Soon I was clearing space and finding my desk in the historic Space Flight Operations Facility. It was covered with scale models of half a dozen spacecraft currently or previously touring the solar system. And layers of of bookmarks, dvds of Saturn, Mars and Venus missions, lithographs, posters, Saturn Program pocket references and other cool stuff.

I took a walk around the building and gazed in wonder at the "darkroom", the circular hub of monitors and mission teams also known as the Deep Space Operations Center. A little later I visited the Cassini

Mission Control and watched monitors showing communications with the Cassini spacecraft. Ironically, the flight operations engineer for Cassini is also a sidewalk astronomer and a member of the JPL Astronomy club. Whole walls on every floor are painted with planetscapes, festooned with flybys, pasted with posters and splattered with stars.

As soon as I get a little more settled, I'll tell you about the Cassini mission outreach programs I will be managing, and request those of you who like this sort of thing to join me! Until then, enjoy and share a view of Saturn! ★

Cassini Mission Control:

<http://saturn.jpl.nasa.gov/mission/mc-responsibilities.cfm>

Order outreach material here:

<http://saturn.jpl.nasa.gov/gallery/products/order-form.cfm>

JPL tours: <http://www.jpl.nasa.gov/pso/pt.cfm>

Images of the Canberra Deep Space Network:

<http://www.whiteoaks.com/Australia2000/pg33.html>

Grand tour of NSW, Australia observatories:

<http://www.whiteoaks.com/Australia2000/pg33.html>

Jane Houston Jones

Pasadena, CA 34N 118W

Email: jane@whiteoaks.com

Web: <http://www.whiteoaks.com>



◀ *In the JPL Visitor Center, a model of the Marie Curie engineering test model and flight spare for Sojourner (which landed successfully on July 4, 1997) is displayed.*

► *Engineers test the Mars Lander airbat deployment system at JPL. Imagine being able to stroll over to this and other test facilities throughout the campus and watch all these kinds of activity!*



UPCOMING EVENTS:

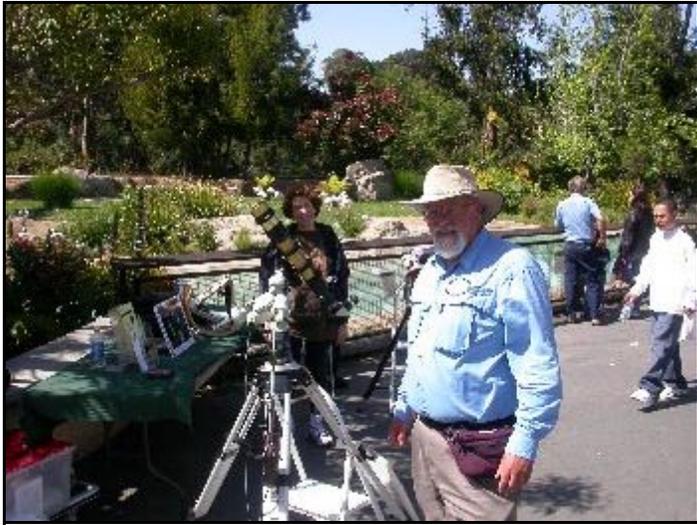
Chabot's Distinguished Lecture Series

April 17, 6:00 pm

World Rainforest Founder **David Seaborg** will be speaking about, "Global Environmental Issues: Problems, Consequences & Solutions." Severe environmental issues face our generation today. David Seaborg will speak about those issues and the actions we can take to help the future generations of our fragile planet.

May 8, 2004, 6:00 pm

Where does Space end? Why do bones become brittle in space? **Dr. Sten Odenwald**, Mr. *Ask an Astronomer* himself, will be on hand to answer those perplexing questions about what's new in astronomy in *Back to the Astronomy Cafe*. Book signing follows lecture.



Linda Lazerretti and Carter Roberts show the Sun to public at the Oakland Zoo in 2003.

Astronomy Day Events – April 24

Chabot Space & Science Center

11am - 5pm

Activities Free with General Admission

Astronomy activities throughout the day include the use of solar telescopes, daytime viewing of the Sun, the Moon and Venus, finding your birthday star, telescope making with jello lenses, and learning how telescopes work.

Oakland Zoo

10am – 5pm

EAS-sponsored solar viewing at the Oakland Zoo – 9777 Golf Links Road, Oakland, off Highway 580. Call Carter Roberts at (510) 524-2146 for volunteer opportunities and more info.

Jack London Square

10am – 9pm

EAS-sponsored solar and evening viewing at Jack London

Square at the far west end of Broadway Street in Oakland. Call Don Saito at (510) 482-2913 for volunteer opportunities and more info.

San Pablo

From sunset to 11:00 p.m. on Saturday April 24, 2004, rain or shine, 2372 18th St., San Pablo, CA. Telescope observing will be available along with the chance to help create an astronomical mural, which will be in conjunction with a similar event in Quebec, Canada. One of our sponsors is Astronomy Magazine who has generously provided full color astronomy posters, magazines and a variety of other items to be given away. *We have one telescope available and are looking for a few people who are interested in sharing their enthusiasm and/or telescopes and observing binoculars for an evening.* If you would like to be a part of this fun event, please call Julie Rodriguez Jones at **Art from the Soul**, the host of the event, at 510-232-6919 or cell 510-367-5524. Full details are available at <http://www.artsoul.homestead.com/AstronomyDay.html>.

The 3rd annual Shingletown Star Party

June 16th - 21st

Start your summer with some dark sky observing! Held in Shingletown, California under Magnitude 7 skies, this event is quickly becoming the premier California star party. Located at Shingletown airport near Lassen National Park, astronomers are able to set up their equipment on the runway (not used for aircraft) for the duration of their stay; as well as camp on site. There are plenty of services and amenities nearby, as well as showers on site. More information and on-line registration is available at <http://www.shingletownstarparty.org>. ★

Ship of Time

By Walter C. Cambra

In The Meadows Of The Heavens,
Stars Are Blooming...

Circling Planets Towing Their
Moons...

Swirling Galaxies Like Over-
Sized Snow Flakes Fluttering
Nigh...

In The Scope Of Time Or In
The Dimensions Of Mind...

We Feel Their Oscillating
Reflux Most Sublime...

Of Eternities Measured In
Time...

A Snails Pace We Track Most
Sublime!



The SJAA/Bay Area Annual Auction

Auction XXIV

It's time for the annual migration of astronomical paraphernalia from one garage to another! On Sunday, April 4, 2004, an astronomical auction and swap meet will be conducted at Hogue Park in San Jose, sponsored by the San Jose Astronomical Association. The SJAA Auction is a great opportunity for beginners to purchase their first telescope at a great price! Experienced observers often find equipment they need for their next observing project, from OIII filters to finders to star charts. All kinds of interesting items are found in the auction. We will have the auction first, followed by a swap, to allow people some additional haggling time for those items that were optimistically priced by the seller in the auction, or to sell those odds and ends items which were better off being in a swap. It is an even year, so Kevin Medlock will be our auctioneer. Those who have observed his performance in previous auctions have learned to appreciate his skillful evaluation of classical astronomical items on the spot. Great entertainment for all!

Doors open at 12:00 p.m. (or only slightly before) to register material for the auction, and view the auction material. The club reserves the right to accept only appropriate material for the auction so that the auction will run smoothly. The auction will begin at 1 p.m., and will run as long as needed. Seller may specify a minimum bid, which if not met, will return the item back to the seller with no commission applied. After the auction, buyers and sellers settle up using one check to (or from) SJAA and claim their items. Seller pays 10% commission, with a cap of \$50 for any one item. We do not handle charge cards. There is no fee for bidder cards.

After the auction, material for the swap meet will be allowed into the hall, about 3 p.m. or perhaps earlier. Sellers are encouraged to bring items that would interest the astronomical audience such as astronomical, science, computer, or tech items. The SJAA reserves the right to turn away inappropriate items for the swap. Joe Sunseri of Earth and Sky Adventure Products will be there with many fine new and used items. At the swap, each buyer pays the seller. Sellers are to keep track of their sales, and pay a 10% commission, as for the auction. There are no table fees. All commissions from the auction and the swap are tax-deductible, as SJAA is a 501(c)(3) educational organization.

Do you have a large item such as a telescope? Please email the auction team at auction@sjaa.net with a description of the scope and a picture if possible. We will add it to the auction website for some pre-auction publicity. This allows the bidders to find out how much that APO scope is really worth, so you will be more likely to sell it. Do you have 5 or more items? We suggest pre-registering at the above email address as much as possible to avoid a crush at the registration table. For more about SJAA, visit our web site at <http://www.sjaa.net> or email Jim Van Nuland at the above address. See you there!

Directions: From Hwy. 17, take the Camden Avenue exit. Go east 0.4 miles, and turn right at the light, onto Bascom Avenue. At the next light, turn left onto Woodard Road. At the first stop sign, turn right onto Twilight Drive. Go three blocks, cross Sun-

rise Drive, then turn left into the park.

From Hwy. 85, take the Bascom Avenue exit. Go north about 0.2 miles; turn right at the first traffic light, onto White Oaks Road. At the first stop sign (another 0.2), turn left onto Twilight Drive. You will now be passing the park. Turn right at the first driveway, into the parking lot. ★

EAS and the Night Sky Network

The Eastbay Astronomical Society has been accepted into the Night Sky Network. The Night Sky Network is a joint project between the Astronomical Society of the Pacific and NASA.

Being a member of the Night Sky Network will make resources available to us, which can be used to enhance our outreach activities. These include star party visits to schools and pre-observing activities at Chabot. We are interested in finding Eastbay Astro members who are interested in working with kids and families using these activities. If you want to know more about the Night Sky Network visit <http://nightsky.jpl.nasa.gov/> or <http://www.astrosociety.org/education/nsn/nsnpress.html> or contact Paul Hoy at (510) 531-6305 or ahoy@aol.com ★

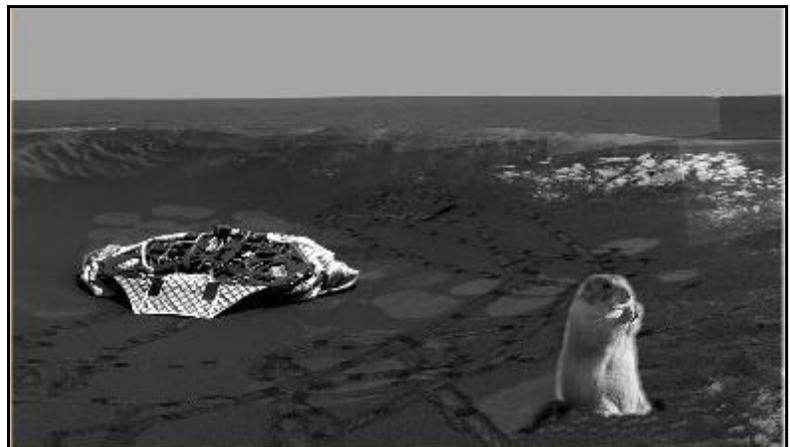
Project Astro

Are you interested in sharing your enthusiasm for astronomy with an excited class of students? Then Project Astro may be right for you.

Project Astro participants are partnered with a teacher who teaches between 4th and 9th grade. The armature astronomer commits to visiting a school class four times within the school year. During the required training you work with your assigned teacher and are given a manual chocked full of great activities for you to use with your school class. If you would like more information visit <http://www.astrosociety.org/baprojectastro.html> or just ask on of EAS's Project Astro participants: Paul Hoy, Carter Roberts, and Dave Rodrigues. ★

Evidence of life found on Mars!

The image below, obtained by NASA's Mars rover, Opportunity, on April 1, 2004, shows the first conclusive evidence that there *is* life on the Red Planet!!! ★





Editor's News 'n Views

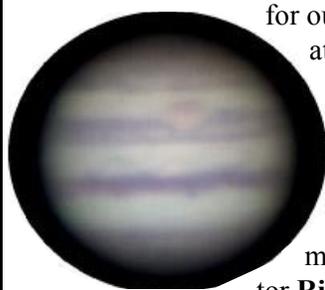
Howdy Astro Fans!

This year's annual awards dinner went excellently, though we would have liked to have seen more attendees come to it than has shown up the last few years. We're

now wondering if it's too expensive, and if we got something a little less fancy, we would get more attendees. If you have any thoughts on the subject regarding price, programming, quality of the food, location, etc., please let our Programs Director, Dave Rodrigues, know.

How did *your* Messier Marathon go? The best weekend for it *started* fairly good, with relatively good seeing starting on Friday, March 19, but got progressively worse, locally, with a thin overcast Saturday, and downright cloudy on Sunday. If anyone managed to make an attempt on the marathon, please let me know - we'd all be interested to hear how it went. Our March "Members Only" view night was a resounding success, with beautiful weather and pretty great seeing conditions. We telescope operators had a wonderful time looking at the half-moon phase of ultra-bright Venus, the Cassini *and* Enke divisions, and the Crepe ring, around Saturn. **Carter Roberts** put his bino-viewers on Rachel with a barlow lens, and Saturn looked positively 3-D. We also looked at Jupiter and I think that's the first time I've ever actually seen the color red in the Red Spot! And of course, we looked at the Orion Nebula and easily saw the two extra stars besides the four that make up the Trapezium. The one unfortunate thing was: only a couple of members showed up to participate in all the fun. We had more accidental walk-ins show up whom we invited to view, than members. I'm wondering if it wouldn't be a good idea to try having our club meetings on Sunday night or a weeknight, with Members Only telescope viewing after the meeting. Perhaps the double-venue would make coming up to Chabot more attractive

for our members, thereby increasing attendance and participation for both. Paul Hoy even managed to do a bit of astrophotography, taking pictures of M42 and Jupiter (see Paul's picture, left).



Here's a funny story told to me the other day by TMW Instructor **Rich Ozer**: On the evening of Mars'

opposition last year on August 28, TMW Instructor **Mark Vandewettering** brought his 6" scope out from the Telescope Makers' Workshop to do a few tests on it. Suddenly, a line of 50 people eager to look at Mars queued up behind him, and he spent the rest of the evening showing people Mars! It's a risky thing, setting up a telescope near a line of 800 people waiting to look through a telescope...

There are currently five people who are cleared to operate Chabot's 36" reflector Nellie: **Kevin Medlock, Ryan Diduck, Conrad Jung, Debbie Dyke,** and

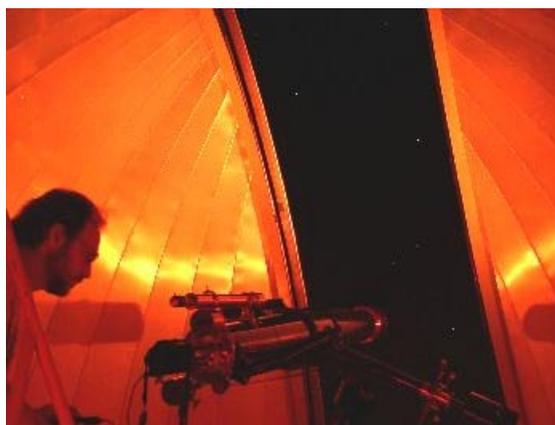
Celeste Burrows. More operators are needed, and so Assistant Programs Director Ryan Diduck has appointed the next two trainees: **Carter Roberts** and **Terry Galloway**. Congratulations, gentlemen!

Chabot is looking to upgrade their planetarium and had a series of free "public review" nights, of Spitz Inc.'s "immersive visualization system" all-dome projection system. I saw one of the demos, myself, and was favorably impressed with its abilities. It can make you feel like you're "flying" through space in 3D, and has a wonderful potential to add exciting elements to planetarium shows. Things to look forward to in the future! ★

► **Conrad** makes the front of the business section in the Sunday, March 14 issue of the *Oakland Tribune* - how nice!



The 36" reflector, Nellie, ready for viewing. Photo by Carter Roberts



◄ Paul Hoy taking astro-photos thru Chabot's antique 8" refractor, Leah

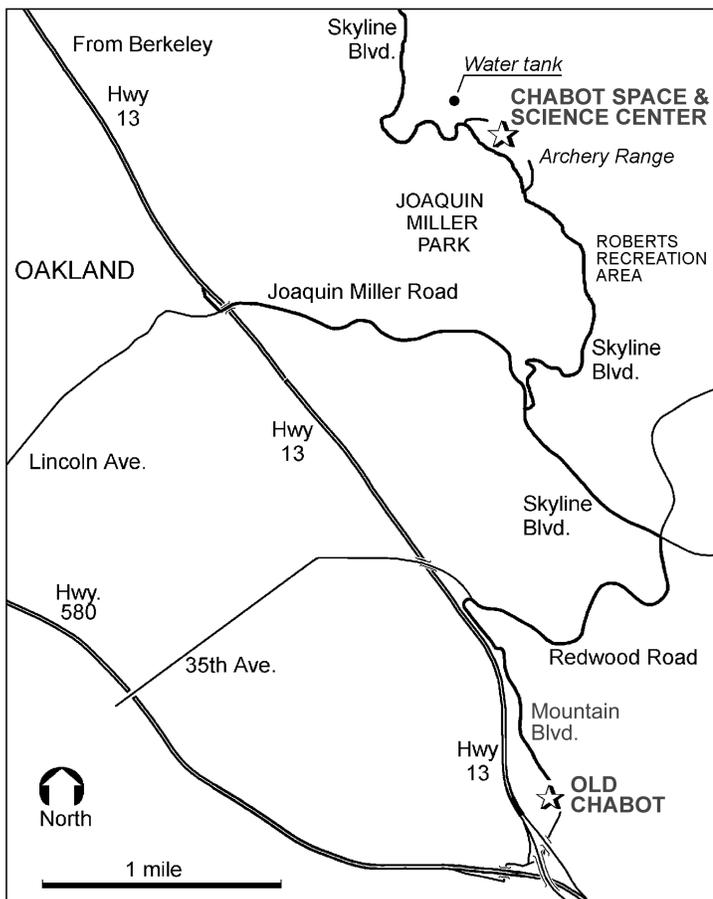


Eastbay Astronomical Society

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

April 2004

RETURN SERVICE REQUESTED



FUTURE CONJUNCTIONS

- Apr 3 EAS General Meeting at Chabot, 7:30pm Physics Lab
 8 EAS Board Meeting, Chabot, Soda Board Rm, 7:30pm
 18 EAS Members Only view night at Rachel and Leah
 24 EAS Astronomy Day events at Oakland Zoo Jack London Square
- May 8 EAS General Meeting at Chabot, 7:30pm Physics Lab
 13 EAS Board Meeting, Chabot, Soda Board Rm, 7:30pm
 16 EAS Members Only view night at Rachel and Leah

Eastbay Astronomical Society

| | | |
|------------------------|----------------|-------------------------|
| President: | Carter Roberts | (510) 524-2146 |
| | | cwroberts@earthlink.net |
| Vice President: | Phil Crabbe II | (510) 655-4772 |
| Treasurer, Membership: | Don Stone | (707) 938-1667 |
| | | ddcstone@earthlink.net |

Articles and photos for *The Refractor* are encouraged. Deadline for the May 2004 issue is April 15, 2004. Items may be submitted by mail to the editor, Don Saito, 3514 Randolph Avenue, Oakland, CA 94602-1228. Internet email address: donsaito@pacbell.net Hm: (510) 482-2913.

Join the Eastbay Astronomical Society

- Regular, \$24/year
 - Family, \$36/year
 - Contributing, \$40/year
 - Student, \$15/year (digital)
 - Sustaining, \$60/year or more newsletter, only
- Contact: Don Stone, EAS Membership Registrar
 Telephone: (707) 938-1667 Email: ddcstone@earthlink.net
 Mail: 19047 Robinson Road, Sonoma, CA 95476-5517