



The Refractor

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

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 Number 8
 April 2003

What happened to the Space Shuttle?

Saturday, April 19, 7:30 pm
 Chabot Space & Science Center
 Physics Lab, Spees Building

Speaker: Rick Baldrige



On the morning of February 1st, 2003, Space Shuttle *Columbia* reentered the Earth's atmosphere, on its way back from a successful mission to the International Space Station. While the rest of the Bay Area was still under low clouds and fog, Rick was up on Mt. Hamilton with his video and still camera gear, ready to record another routine passage of the shuttle on its way to a Florida landing. What he got was something entirely unexpected. At the April 2003 meeting of the EAS, Rick will show the video and still images he captured which NASA is analyzing to try and discover just what went wrong that tragic day. Rick will present the facts discovered thus far in the ongoing investigation.



Rick Baldrige is a 25 year member of the Peninsula Astronomical Society and former President. He is also a member of the International Occultation Timing Association (I.O.T.A.), and interested in all types of occultation timings -- lunar total and grazing occultations, asteroidal occultations (timed 3 to date), etc. He says he's not much of a telescope builder, but he loves to look through them. "I greatly enjoy the PAS

Glacier Point Yosemite trips each year, viewing Vandenberg rocket launches and tracking satellites." He's seen 4 reentries prior to STS-107 and one launch, STS-111 (Endeavour) last May. Reentries were STS-62 (Columbia), STS-73 (Columbia), STS-77 (Endeavour) and STS-78 (Columbia). All were video taped, and STS-73 was photographed as well. The only Central California reentry he missed was STS-90 during daylight (and cloudy). Website pictures of Columbia's reentry at: <http://photos.yahoo.com/rickbaldrige> Click on the "Astronomy Stuff" album. ★



View from the Barcroft Laboratory in the White Mountains.
 Photo by Carter Roberts The days available for this year's outing will be from July 24 – 30 at \$55 a night for each night up there. Details on Page 3.

DINNER WITH THE SPEAKER

5:30 pm
 Saturday, April 19, 2002
HUNAN YUAN
 4100 Redwood Rd., #11
 (next to Safeway)
 Oakland
 (510) 531-1415
 Please call Betty Neall at 510/533-2394 by Friday, April 18th to confirm your place.

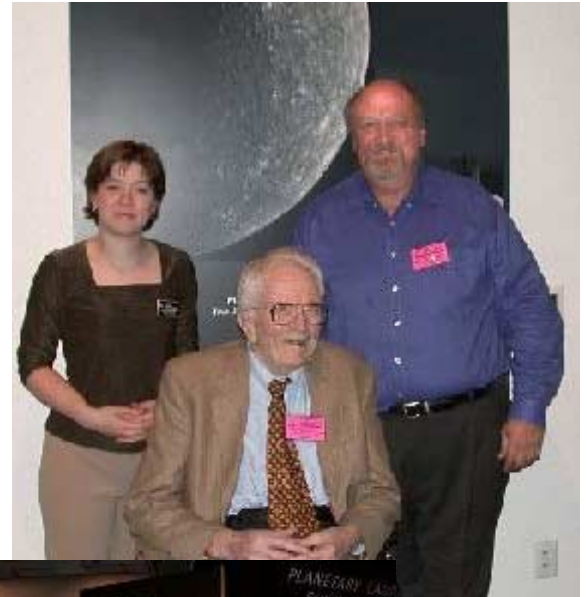
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Spare Shots

A rare conjunction of Chabot Directors!

Alexandra Barnett, Kingsley Wightman, and Dr. Mike Reynolds



Mark Gingrich, and Ken and Mary Swagerty commence the loading of plates

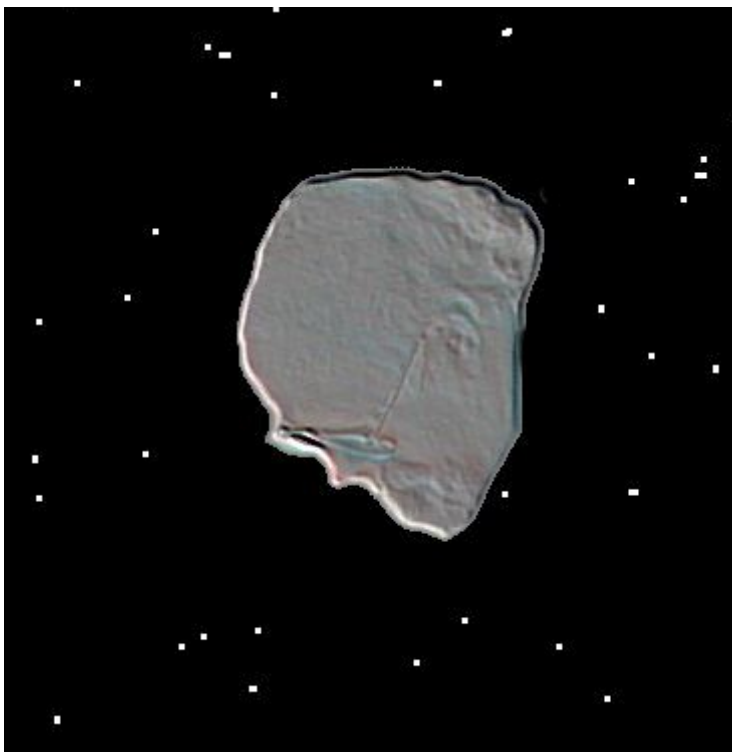


Bob Schalek, Paul Zurakowski and George Roush catching up with each other



Terry Galloway, Dr. Harold Weaver, and Bruce Skelly pause for a pose

Continued Page 5



Hubble Space Telescope image of Minor Planet 10683

Beyond A Shadow

NASA has announced an innovative and far-reaching plan to study the coronosphere. The experiment, named Project Helios, will be revolutionary in its concept, which is to generate an artificial, permanent eclipse of the Sun so that astronomers can perform their measurements at will, where until now, such studies were only possible at the infrequent moments of total eclipse.

Spokesman Robert S. Carter explains that by maneuvering an asteroid into geostatic orbit, it will be possible to position it at such a distance with respect to the Earth that its disk would subtend the same angle as does the Sun, thus creating a shadow at ground level which exactly duplicates a naturally occurring total eclipse. Minor adjustments in the guidance of the captive asteroid would allow such an artificial eclipse to remain at a stationary point on the surface, and indeed, could be positioned precisely over any selected observatory.

Tritium-fusion propulsion engines would be attached to the asteroid to serve as an "outboard motor" for steering the asteroid into Earth orbit. While the date of actual deployment of the Project Helios mission has not yet been scheduled, the asteroid that will be used has been selected. It is Minor Planet 10683 (also known as 1980 LY). This particular asteroid was chosen, reports Carter, because of its utmost insignificance. Discovered in 1980 by Carolyn Shoemaker, co-discoverer of the memorable Shoemaker-Levy 9 comet, this trifling rock is ideally situated for use in casting dark shadows on cosmological research. ★

Annual Barcroft Star Party July 24–30

The annual Low Oxygen Star Party will be held again this summer at the Barcroft Lab (12,435' ASL in the White Mtns) northeast of Bishop, CA. We will have up to 5 nights of observing from this outstanding site. This is a joint activity of EAS and the Tri-Valley Stargazers.

The schedule calls for assembling at the Grandview Campground (8600 ft) the night of Thursday, July 24. This is an important stopover to begin adjusting to the altitude. If you don't want to camp out here we strongly encourage spending the night at Mammoth Lakes which is about 8000 feet. On Friday July 25th we go up past the Bristlecone pines to Barcroft. Many people will stay there for 3 nights and return home on Monday but a few people are planning to stay until Wednesday. The longer the stay the better the chance of good weather and the easier it gets to do almost anything at that altitude.

The Barcroft Lab is a research facility and there are usually scientists there conducting high-altitude studies. Meals and bunk beds are provided for \$55/day/person.

We are limited to 20 people, so priority will be given to those staying 3 nights or more. Send your check for \$55 per person per night payable to Dave Rodrigues 1633 Graff Ct. San Leandro, CA 94577. If you have questions contact Dave at (510) 483-9191 or davevrod@aol.com. ★



Dave Rodrigues (aka The Astro Wizard) up at Barcroft. Why the place needs a numbered address is truly beyond comprehension, it being the only building within a 15 –mile radius. Photo by Carter Roberts

Upcoming Event at Chabot

The Black Hole at the Center of Our Galaxy by Dr. Fluvio Melia, from the University of Arizona at Tucson, will be giving a talk on Saturday, April 12, at 6:30 PM in the Tien MegaDome Theater at Chabot Space & Science Center. The talk is free with general admission to the Center.

This superbly illustrated and nontechnical lecture will discuss one of the most enigmatic astronomical object yet observed -the black hole at the center of our galaxy - an exotic object we are on the verge of actually seeing within the next few years.

For more information on this and other upcoming lectures and book signings, please contact Denni Medlock at 510-336-7368. Chabot Space & Science Center is located at 10000 Skyline Blvd., Oakland, off Hwy 13 in the Oakland Hills.

Also coming May 31: Chet Raymo speaking on *The Path - A One Mile Walk Through the Universe*. ★

SJAA auction and swap meet this weekend!

The San Jose Astronomical Association is having their annual auction and swap meet this year at Houge Park in San Jose on Sunday, April 13. They'll open the doors at 12 noon so folks can register items for the auction, and to allow potential buyers the chance to preview the items to be auctioned. After the auction, they'll open the hall to the swap meet around 3 pm. Go to their web page for more details at <http://www.sjaa.net/swap.html> ★

Can a telescope get hay fever?

In reference to a question asked of Bob Schalck, the EAS' expert in charge of caring for Rachel and Leah's lenses – can pollen damage a telescope's optics?...

The answer to the question is “yes,” it can. I am checking with our scientists here. I'll ask what are the limits for AL. We coat with a overcoat which is required to meet a 24 hour salt spray test. This is gives about a 15 year life cycle.

Bare AL does not have the same protection.

I would ask someone for a list of trees and the PH value of the pollen within a 20 mile radius. I would check with UC Berkeley to start, they have a great tree study program. (Remember White Mountain!) If not U of A Tucson sure does.

I would also suggest we get a witness sample of bare AL, leave it outside until it fails.

It will be worth doing our homework on this one. The pollen season is March to May for pine trees. I would not worry about the 20 inch or 8 inch. since they have bare glass. Also they have been around for a long time and have not shown any effects from pollen. They are in great shape, plus I clean them every 6 months, (due soon) for the last 32 years.

Any questions or concerns let me know. If some one can get the PH value we may be able to do a chemical test here on a computer or a real test. ★



Astronomy in the Schools

Project Astro is recruiting amateur and professional astronomers for its 2003-2004 school year program. You'll be paired with a teacher from grade 4-9 whose interests match what you can contribute. The Project trains the partnerships in an enjoyable 2 day workshop in August, provides you with materials, lessons and other freebies, and asks that you commit to make at least 4 school visits during the school year.



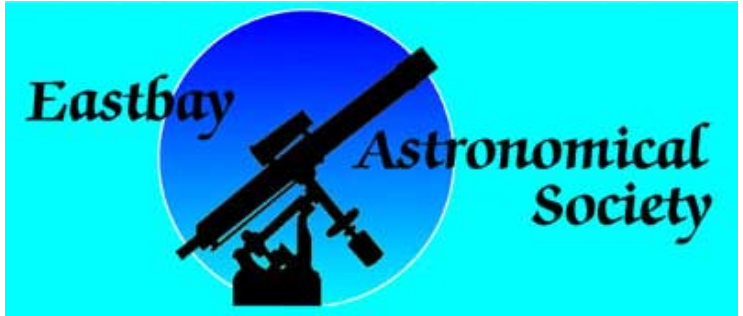
Celeste Burrows, Chabot's astronomy instructor, is available to provide tips or lend classroom materials. Celeste and other Project Astro volunteers vouch for how satisfying your contributions can be for you, and how valuable even a small amount of time is for the students. Because budget cuts will further limit opportunities for urban students this coming year Project Astro hopes to bring in more astronomers and especially provide more astronomers for Eastbay schools.

It's relatively easy to do, very rewarding for you, and can make an important difference for your students. Check the Project Astro website at: <http://www.astrosociety.org/baprojectastro.html> for information and applications or call the Bay Area coordinator at (415) 337-1100 x101. You may also contact Celeste at Chabot, 510-336-7352 or cburrows@chabotspace.org ★



Shingletown Star Party 2003

Come join amateurs from all over the state to observe under great dark skies. Only 17 miles from beautiful Mount Lassen Volcanic National Park, northern California's hidden treasure... hiking, fishing, geologic wonders, and scenery beyond compare! Noon on Wednesday, June 25th through Noon on Monday, June 30th. Full Information, images and more at: <http://www.shingletownstarparty.org/>. A public star party and community bbq with the great people of Shingletown and Shasta County is held on Saturday, June 28. Come enjoy small town hospitality, friendliness, and great dark skies. ★



MEMBERSHIP APPLICATION FORM

(Please print clearly)

Name: _____

Address: _____

City: _____

State/Zip: _____

Email: _____

Day Phone: _____

Eve Phone: _____

Do not print address in Membership Directory listing

MEMBERSHIP CATEGORIES:

- Regular..... \$24
- Family \$36
- Contributing \$40
- Sustaining..... \$60 or more
- Student (digital newsletter only)... \$10

Optional discounted magazine subscription:

- Sky & Telescope \$29.95
- Astronomy \$29.00

Optional tax deductible donations:

- Burns Library \$ _____
- General Fund \$ _____

Total Enclosed: \$ _____

To help save the club money, I prefer to receive the newsletter in digital format.

Please cut out and mail this form and your check or money order payable to:

Eastbay Astronomical Society
19047 Robinson Road
Sonoma, CA 95476-5517

For more information, contact Treasurer Don Stone at: (707) 938-1667, or ddcstone@earthlink.net, or the address above.



Editor's News 'n Views

Though you may gingerly tip-toe your way through this month's newsletter, being careful to not fall for any April Fool "traps" I may have set for you, rest assured: there are only a few; I swear (though never in mixed company), heh, heh.

Lots of things have happened, or are about to happen, so let's get right to it, shall we? First, our Annual Awards Dinner was a big hit, with over 70 people in attendance. A couple of old friends were there: our speaker, **Dr. Harold Weaver**, and **Kingsley Wightman**, and a brand new one: Chabot's much anticipated new Executive Director, **Alexandra Barnett**. Dr. Weaver gave a talk on his cutting edge research on hydrogen in the region of space around our Sun, and Ms. Barnett gave us a presentation on the work she did to establish England's National Space Science Center. Very interesting stuff, both! This year's Helen Pillans Award was received by our former newsletter editor, **Ellis Myers**, and **Jake Siegel** received the first Betty Neall Award of Merit, along with a giant check for \$95. Congrats, gentlemen!

We also had this month's EAS Members Only view night, with some of the best views of Saturn and Jupiter any of us had ever seen before. The transparency wasn't all that great for the deep-sky objects, due to a high, thin overhead cloud layer (though we still saw several nice open star clusters and even the Spiral Galaxy,



Photo by Carter Roberts

M51). But, the stability of the air made the two bright planets come out particularly sharp and clear - especially when Carter put his Televue bino-viewers onto Rachel for spectacular pseudo-3D images that you could almost reach out and touch. (Gotta get me one of them things one of these days.)

In upcoming events, the early (discount) registration period for the Riverside Telescope Makers' Conference (RTMC) ends the last day of April, so if you plan to attend, you should get registered before then. Call them at 909 948-2205 or visit their website at <http://www.rtmc-inc.org/>

On Saturday, May 10th, it's *Astronomy Day!* with solar observation events happening at up at Chabot and down at Jack London Square. If you're available to do a bit of volunteer work manning a solar telescope at either location, let me or Carter know. If you've never done these kind of gigs before, let me tell you - it's a lot of fun, and you'll be helping to promote the EAS and Chabot, too. Believe you me: we can both use as much promotion as possible! ★

Spare Shots *cont'd from Page 2*

Carter awards the Helen Pillans Award to Ellis Myers!



Jake Siegel gets the first Betty Neall Award of Merit!



Friends from long ago:

Conrad Jung and Kingsley Wightman

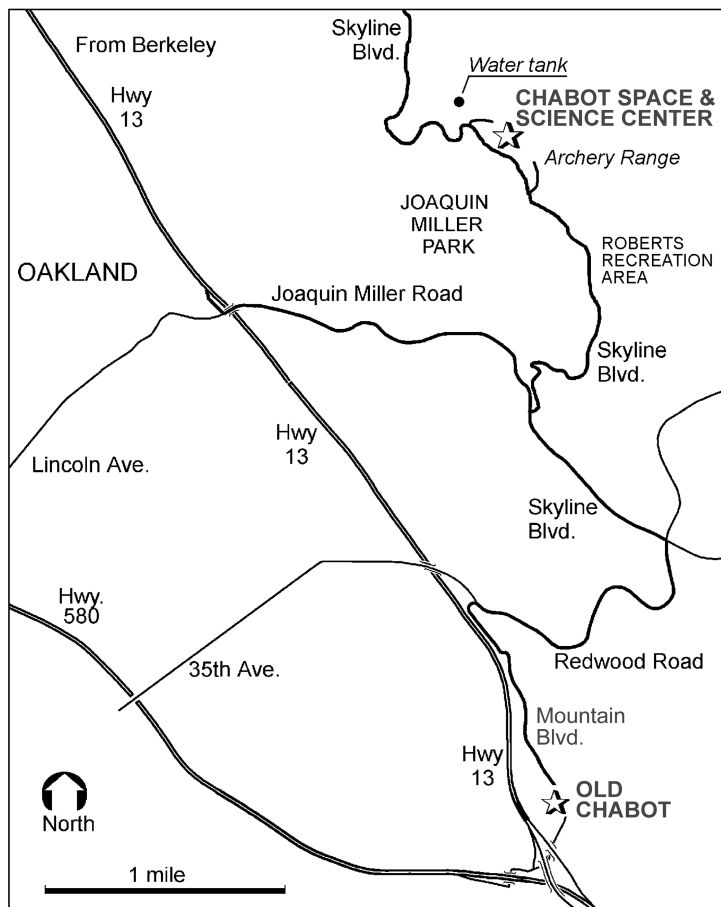


Glen Dahlbacka, Carter Roberts present John Glenn with a commemorative montage image of his historic flight on Space Shuttle Discovery back in late 1998.



Eastbay Astronomical Society

At Chabot Space & Science Center
 10000 Skyline Boulevard ● Oakland, CA 94619
 April 2003
 RETURN SERVICE REQUESTED



FUTURE CONJUNCTIONS

- Apr 10 No EAS Board Meeting this month due to Jupiter Event
- 19 7:30pm EAS General Meeting at Chabot
- 26 2:00pm – 4:00pm Library Work Party
- 26 Earth Day at Chabot w/EAS volunteers doing solar viewing
- May 8 7:30pm EAS Board Meeting at Chabot
- 10 Astronomy Day – EAS Solar Viewing at Jack London Square and possibly the Oakland Zoo, too.
- 17 7:30pm EAS General Meeting at Chabot
- June 12 7:30pm EAS Board Meeting at Chabot
- 21 7:30pm EAS General Meeting at Chabot

Eastbay Astronomical Society

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		cwroberts@earthlink.net
Vice President:	Phil Crabbe II	(510) 655-4772
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		ddcstone@earthlink.net

Articles and photos for *The Refractor* are encouraged. Deadline for the May issue is April 29, 2003. 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