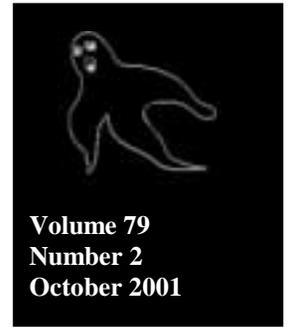




The Refractor

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



Volume 79
 Number 2
 October 2001

Presentation of a Visit to the Beijing Observatory By Linda Lazzeretti

Saturday, October 13, 2001

Physics Lab, 2nd Floor, Spees Building

- General Meeting – 7:30 pm
- Lecture – 8:00 pm

Travel with Linda Lazzeretti as she takes us on a journey through China's three best space science facilities. Linda, who has been an EAS member for three years and our board secretary this past year, has just returned from a month-long visit to 'the Middle Kingdom' where she explored the Beijing Ancient Observatory, Hong Kong Observatory, and the new Space Museum in Kowloon, Hong Kong.

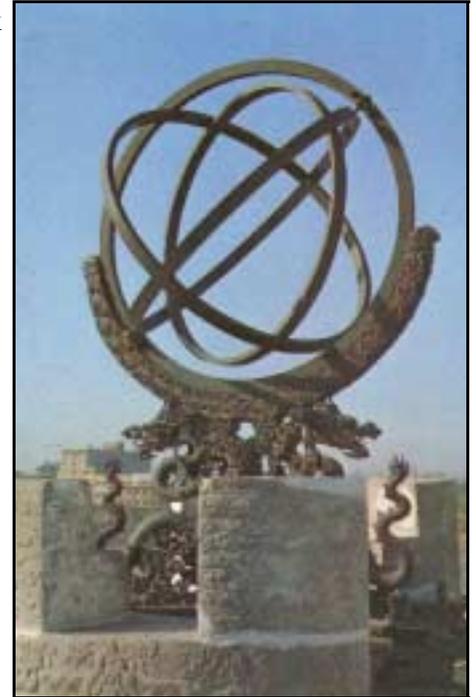
Linda comes to us from an education background starting with Pacific Oaks College and teaching in Pasadena schools. She went on to teach at UCLA where she was the demonstration teacher for the Fernald Learning Disabilities School., then back to Pacific Oaks for a Masters in Human Development and additional SDC, SH and RS credentials in special education.

Linda's background in astronomy goes back to her hometown of Richmond, Calif. where as a child she would climb to the top of her father's old shed and stare up at the night sky vowing to travel there someday. She did, in a round about fashion, with her first classroom field trip to Morrison Planetarium in 5th grade. She'd waited 5 years for it and it was the highlight of her elementary school memories. Later she ventured to many observatories around California and finally to the Aricebo Radio Observatory 3



years ago for a week of study with fellow teachers. On her return, she found herself writing a story about a woman who had studied the stars there which turned into a 400 page novel named "Dances with the Dark and the Light." The novel led to another involving a character named "Mayra," who "went along" on Linda's most recent trip to China.

Copies of the entire adventure called "China Seas/Sees" will be available at the October 13th meeting. So come and share your fortunes with Linda, Mayra and our EAS members. ★



DINNER WITH THE SPEAKER

5:30 PM

Saturday, Oct 13, 2001

PEARL OF SIAM RESTAURANT

5498 College Ave.

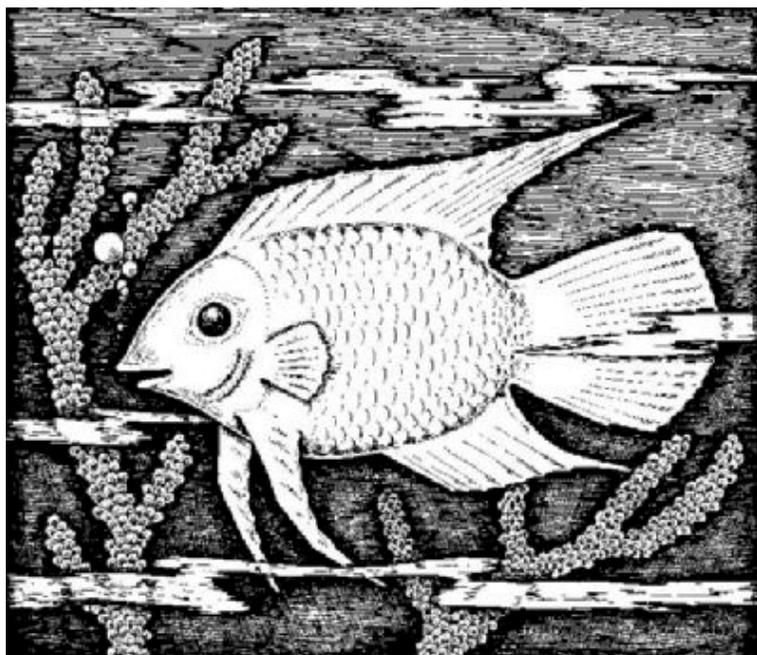
Oakland

(510) 420-8600

Please call Betty Neall at (510) 533-2394 by Friday, October 12, 2001 to confirm your place

Inside This Issue:

The Southern Fish	2
Points of Light	2
Three Inch Telescope	3
Chabot Events	3
October Events	3
Editor's Views	4
Help!	4
This Month's Photos	5



The Southern Fish

By Ellis Myers

Piscis Austrinus, although comprised of twelve stars mapped by Ptolemy in the second century, is so far to the south that for casual observers at our latitude it is nominally the single star Fomalhaut, the Solitary One.

In the telescope, however, there are a number of double stars to add interest to this lonely part of the sky. Also in this area, south of Aquarius and southeast of Capricornus, are several galaxies. NGC 7314 is an 11th-magnitude spiral galaxy, while NGC 7172, 7173, and 7176 form a group of three spirals worth finding.

Ancient Persians considered the bright eye of the Southern Fish, Fomalhaut*, as one of the Royal Stars of Heaven which marked the four corners of the sky. The stars at the other corners were the heart of Scorpius (Antares), the heart of Leo (Regulus), and the eye of Taurus (Aldebaran). All are roughly ninety degrees apart, and all except Regulus are reddish in color. However, Fomalhaut's ruddy color is more a matter of atmospheric interference owing to its position near the horizon, since its spectrum shows it to be a white main-sequence star similar in color to Deneb.

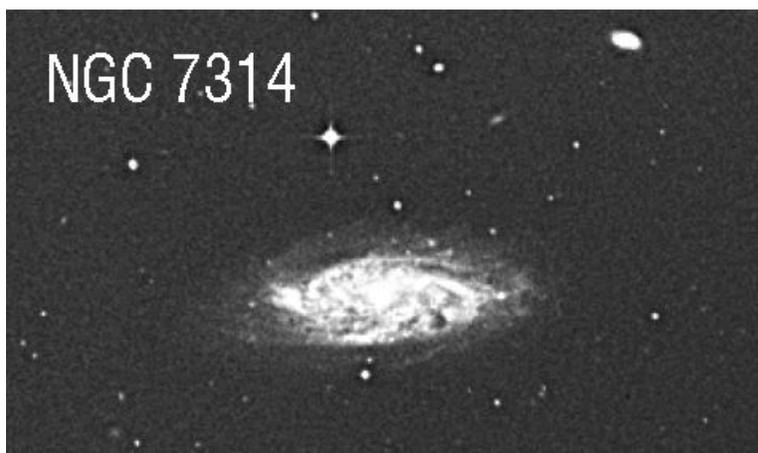
Fomalhaut is a star 25 light years away from us. Fourteen times as luminous as is the Sun, it presents a visual magnitude of 1.17, ranking among the seventeen brightest of all stars.

In 1998, astronomers announced the discovery of a toroidal disk of dust around Fomalhaut (as well as a similar disk around Vega). This discovery was made using the James Clerk Maxwell submillimeter telescope atop

Mauna Kea. At only about 200 million years of age, Fomalhaut is quite young and may have a solar system forming around it. Studying Fomalhaut may give us an idea of what our own Sun was like when it was a young star, long before the Sun's own dust disk condensed into the planets, moons, comets and asteroids of our Solar System.

Another star in the constellation that is of interest is known as Lacaille 9352. This is the fourth fastest star in terms of proper motion across the sky. This is so fast that you can see the motion relative to other stars in one year, should you compare photographs made with a telescope of focal length 2000 mm or greater. ★

** The name is actually derived from the Arabic "fish's mouth," but the reference to the eye of the fish is traditional. Incidentally, this derivation indicates that the correct pronunciation is not French, as is often assumed: the name ought to rhyme with "ought."*



STScI Digitized Sky Survey

Double Stars in Piscis Austrinus

Name	RA	Dec.	Mags.	Separation
Beta	22h31.5m	-32°21'	4.4, 7.9	30.3"
Gamma	22h52.5m	-32°53'	4.5, 8.0	4.2"
Eta	22h00.8m	-28°27'	5.8, 6.8	1.7"

Points of Light



A color image of Albireo, taken by EAS member **Jim Scala**, illustrates the article "Surveying Fall Doubles" in the September-October issue of Mercury, the magazine of the Astronomical Society of the Pacific. Jim took the CCD photo on August 4 from his home observatory in Lafayette. ★

MEMBERSHIP RENEWAL FORM
Eastbay Astronomical Society
2002

(Must be completed and turned in no later than September 15th to ensure uninterrupted delivery of magazines and newsletter)

New Renewal

NAME: (please print) _____

ADDRESS: _____

CITY, STATE ZIP _____

DAY PHONE:_(____)_____ EVE PHONE:_(____)_____

EMAIL ADDRESS: (please print)_____

MEMBERSHIP CATEGORIES:

Optional discounted 12-month magazine subscriptions:

Regular \$24

Family \$36

Contributing \$40

Sustaining \$60 or more

Sky & Telescope \$29.95

Astronomy \$29.00

Optional, tax deductible donation(s) to any of the projects
of the Eastbay Astronomical Society:

Video Projector Burns Library

Other: _____ \$ _____

Total Enclosed: _____

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

Eastbay Astronomical Society

19047 Robinson Road

Sonoma, CA 95476-5517

For further information, please contact Treasurer and Membership Chairman Don Stone at
(707) 938-1667, ddcstone@earthlink.net, or write him at the Sonoma address, above.

As a cost savings to us, instead of getting a mailed hardcopy newsletter, would you prefer to be notified via email that:

The .pdf version of the newsletter is available for download from our website, or

The newsletter is available to be viewed on the club's website (<http://www.eastbayastro.org/>)

(Note: .pdf or web accessed newsletters are delivered faster, are in full color and help conserve paper, too!)

And,

Are you interested in volunteering your time/equipment for public stargazing at Chabot?

Other volunteer work for Chabot and/or the Eastbay Astronomical Society?

THANK YOU!

Staple or tape shut

Fold here

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

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Observed Through A Three-Inch Telescope

By Jim Scala

Some of the most pleasing astronomical views are those seen through three- (76-mm) or four-inch (102-mm) telescopes. Indeed, often when seeing is mediocre to poor, large telescopes can't separate a double star separated by two arc seconds, and planets are just dancing blobs, a good three-inch telescope easily separates doubles and discloses detail on planetary surfaces. There's nothing magic going on; the three-inch telescope simply cuts through atmospheric turbulence like a hot knife through butter and shows spectacular views when the owners of larger scopes are tearing their hair out and going home.

Public star parties nowadays have many 10-inch or larger telescopes with "bells and whistles" that take them from object to object with the push of a button or even a voice command. Did you ever wonder why, with all those big scopes around, visitors line up at the fine three-inch refractor for a view of the moon, Jupiter, Saturn or M-42. It's quite simple because even though the three inch is pushing itself, all the detail is there and the steady, crisp image is pleasing to the visitor's eye which hasn't been trained to use rods and cones correctly. He or she simply likes the image.

This series of articles will use images taken through my three-inch refractor. The first objective is to prove, by illustration, that an amateur doesn't need a large telescope to satisfy his or her interest in astronomy. Secondly, I hope to encourage small scope owners to use them more often and expand their astronomical activities with them. Finally, if you're thinking of purchasing a telescope, look over the images that appear in this column and consider putting your money into a fine quality small telescope to

enrich your hobby. You will be pleasantly surprised not only with solar system objects, but also with the deep-sky images easily within this telescope's reach.

The Sun on September 8, 2001



This image of the sun was taken through hazy skies using a homemade solar filter from scraps of Baader Planetarium neutral density film that would have been thrown away. I mounted the scrap using double-sided scotch tape on a piece of fiberboard cut into a circle. Hence, the

cost is nil, but the images it produces are excellent; for example, this material has a Strehl ratio of 0.95 as tested by the Astro-physics labs..

Examine the sunspots detail, how many and what types can you count? Can you identify the faculae on the upper left of the image? Now, the next time you have a chance to view the sun through a larger telescope under mediocre conditions, compare this image to what you observe.

How these images are acquired?

All images in this column will have been taken with a 78-mm Takahashi refractor using a CCD imaging camera made by the Santa Barbara Instrument Group (SBIG) ST-10E. As the above image illustrates, sometimes a filter is required and other objects, such as planets, will call for a Barlow lens, but the basics will not change. I hope you enjoy the excellent images a fine small telescope can produce. ★

Upcoming Events at Chabot

By Denni Medlock

On Thursday, October 18th, 7:30pm, Dr. David Morrison will be speaking in Chabot's Tien MegaDome theatre on "Near Earth Asteroids: Their History and Implications". He is NASA's Director of Science at Ames Research Center. Tickets are \$5.00 and are available through the front desk box office or TicketWeb.com.

On Thursday, November 15th, 7:30 pm, Chabot's Director, Dr. Mike Reynolds will give a talk on "Falling Stars: a Guide to Meteor and Meteorites." His talk will be based on his newly released book of the same name and just in time for the Leonid meteor shower (storm?) Tickets are \$5.00 and available through the front desk box office or TicketWeb. Refreshments and a chance to meet with the speaker follows the lecture. ★

October Skies

OCTOBER 22: The Orionids meteor shower peaks during the early morning hours of October 22nd, and with a waxing crescent moonset at 11pm, that will leave the skies dark for good viewing. As long as you're up, then, you might as well also take a look at Saturn and Jupiter, which will be well above the horizon.

OCTOBER 28: Daylight Savings Time ends. Set your clock back one hour. (Spring forward, Fall back.)

OCTOBER 29: A nice conjunction between the two planets, Mercury, and Venus, on the morning of October 29th, just after 5am, local time. They will be just a bit more than a moon's width apart. ★

Editor's News 'n Views

By Don Saito

Hell of a month. Sometimes, I think we're doing pretty good as a species, and then something like 9/11 happens, and Reality kicks me in the teeth. Now, I'm confused. On the one hand, I want to kick butt – defend my own, take no prisoners. Blah bla-blah. But then, on the other hand, I realize striking back will just keep the cycle of violence going. They whack us, we whack them, back and forth, so on and so forth, forever. Meanwhile, nobody's happy, and everyone's miserable. What's the solution? I mean, the *real* solution?

But, the Universe just keeps on expanding, mindless of what we do on this rolling molecule we call Earth. This last month we saw a rare and beautiful event; the occultation of Saturn by the Moon, which **Conrad** captured for your enjoyment and edification with his trusty CoolPix 990 digital cam-



era. I, myself, rose to witness the early morning event, but the first part of it fooled me: I padded, robed and barefooted, outside, rubbing the sleep from my eyes, just before the appointed time, looked up, and saw the Moon sitting there *all by itself*. Saturn was nowhere to be seen! What I didn't realize was that I had come outside too close to the event to notice that Saturn was indeed still visible; it was just so close to the Moon's bright limb that it was hidden by its glare. (Cut me some slack! I'm new at this.) I should've put my telescope on it, but I was intending to see it with just binoculars. Anyway, I *did* get to see it reappear from the dark side, and that's half the fun right there.

Meanwhile, here's a short report from our own, planet-hugging **Debbie Dyke** on our last month's Speaker: "*At the September 1 meeting, the EAS had the pleasure of listening to a lot of bad astronomy. If that sounds a little strange it's be-*



cause you're not familiar with Phil Plait and his Bad Astronomy web site (www.badastronomy.com). Phil's web site is devoted to revealing bad astronomy found anywhere - in magazines, on TV, in the movies - and just general misconceptions about astronomy and physics. Phil has a Ph.D. in astronomy and works in the physics and astronomy department at Sonoma State University. For his talk, Phil delved into a really bad case of bad astronomy - Fox channel's Moon Hoax TV

program.

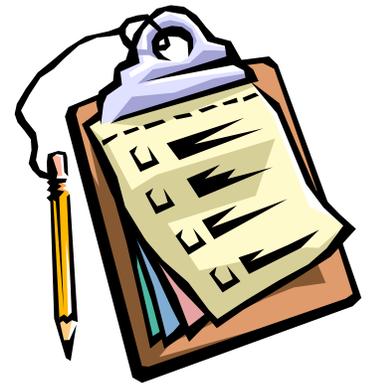
"For those who missed it, Fox TV aired a program that presented all manner of people talking about how the Moon landings were faked, and showing their "evidence" to support it. With great wit, Phil dissected many of the points the "experts" presented and showed how terribly wrong the "experts" were. I'm really glad he's on our side, as he can be quite merciless.

"And yes, in case you had any doubts, we really did land on the Moon."

Thanks, Debbie! (The two of us took a trip to the Reno/Carson area this month to go see the Reno Air Races, but they were cancelled due to the terrorist drek. Despite the bin Laden BS, we managed to have some fun visiting the Fleischmann Planetarium on the University of Nevada campus grounds [that's their planet display that she's hugging in the picture], and playing more miniature golf than I have ever done at one time, in my entire life. I kicked her, ah, "derriere," by the way.)

HELP! (ourselves)

If you didn't know already, there is a campaign being conducted to gather 25,000 signatures to get a bond measure put on the March 5, 2002 ballot for \$59 million in funds to improve Chabot Space and Science Center, the Oakland Museum, and the Oakland Zoo. We only have until the end of October to get all the signatures we need, and as of this writing, we have less than half that number. What does this mean? It means we need YOU! (Don't look over your shoulder to see who we're pointing at.) It would be a real disappointment to come close to, but not get, enough signatures for this initiative, so let's not do that. Do it for the kids of Oakland – a definitely worthy cause. Both Carter and I have put in more than 8 hours gathering signatures in front of the grocery store near where I live, and downtown, and we're going to put in a lot more days before the end. If you can just get 10 signatures from the people at work, or if you can spend an entire day each weekend from now until the end, WE NEED YOUR HELP. Call Campaign Coordinator Karen Powers at 510-339-6211 or email her at karen_powers@hotmail.com and sign up. ★



YE GADS!
IS THIS YOUR LAST
ISSUE?



If your address label has a question mark on it (?), then you probably haven't renewed your club membership. Don't let this happen to you! Act quickly, so you won't miss even a single issue of *The Refractor!*

An Open Letter of Appreciation

Dear Mr. Saito and fellow members of the East Bay Astronomical Society,

Yesterday evening my son Phillip and I attended the Bort Meadows Star Party given by your society with the East Bay Regional Park District and Dave Rodrigues. It was one of the most mind-opening and meaningful experiences of our lives. Why? Because Dave, dressed as a Wizard, cast a spell over us.

As a teacher credentialed from U.C. Berkeley I am not easily impressed. I was, however, more than impressed by Dave. His enthusiasm was extraordinary and contagious; his knowledge seemingly endless. In fact, my son and I have made many trips to science museums, including several planetarium shows at the Chabot Science Center and the Academy of Science, but none of these experiences came close to last night's.

Dave spoke about the planets, moons, stars and galaxies. Between the facts and theories he intertwined anecdotal stories his mouth racing to keep pace with his zillion thoughts. Dave's passion is obvious as is his drive to share this enthusiasm and wonder with others. Somehow his impact went beyond astronomy and connected us to the greater questions of life.

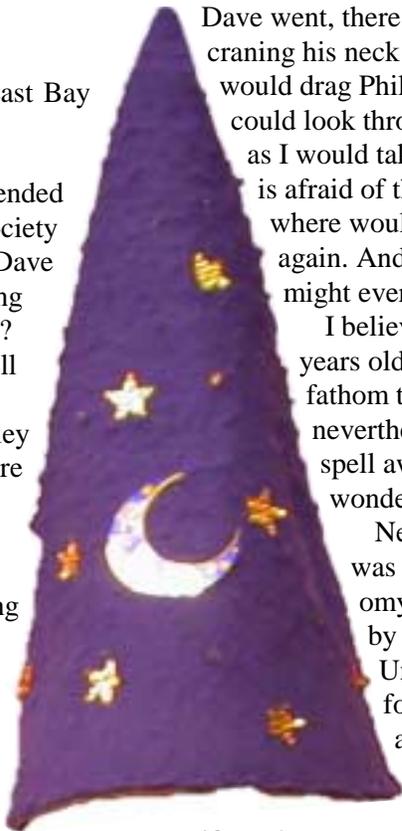
But, more than my personal impressions it was the experience of my son that truly affected me. I have never seen him so enthralled by anyone. (All the children were riveted at some point or another.) All night long Phillip followed Dave back and forth. Wherever

Dave went, there was my son smack in front of him, craning his neck to see Dave's face. Periodically, I would drag Phillip away from Mr. Wizard so he could look through the wonderful telescopes. Then as I would take my turn, my son (who by the way is afraid of the dark) would disappear. And where would I find him? Back in front of Dave again. And this from the most shy child you might ever meet.

I believe that Phillip, who is only five years old, and thus certainly could not fathom the specifics of the discourse, was nevertheless deeply touched. Dave's magic spell awakening my son to the awesome wonders of the universe.

Never more than a casual star gazer, I was so inspired that I bought two astronomy books: *The Universe and Beyond* by Terence Dickinson for me, and *Our Universe* by the National Geographic for my son. My husband and I have already begun the journey of reading Phillip's book to him something he clearly enjoys. Please let me know, if you have any suggestions for other good introductory books. I would also be extremely grateful if you could send me notice anytime Mr. Rodrigues speaks so we might hear him again.

Please thank Dave for us. I would have thanked him myself but Phillip was very tired and we had to leave earlier than the others. Perhaps Dave will remember us if you mention that we are the ones who asked, among other questions, "Why is the sky blue?" Thank you again for sponsoring this event and providing such an exceptional speaker.



◀ Dan Arthur helps with his 'scope at the Japanese Moon Festival



▶ Jose's last night at Chabot

While we watched the Sun, the Taiko drummers drummed! StreetFest 2001, Chinatown, Oakland Aug 26th



◀ *Fleischmann Planetarium and sundial, Reno, Nevada*

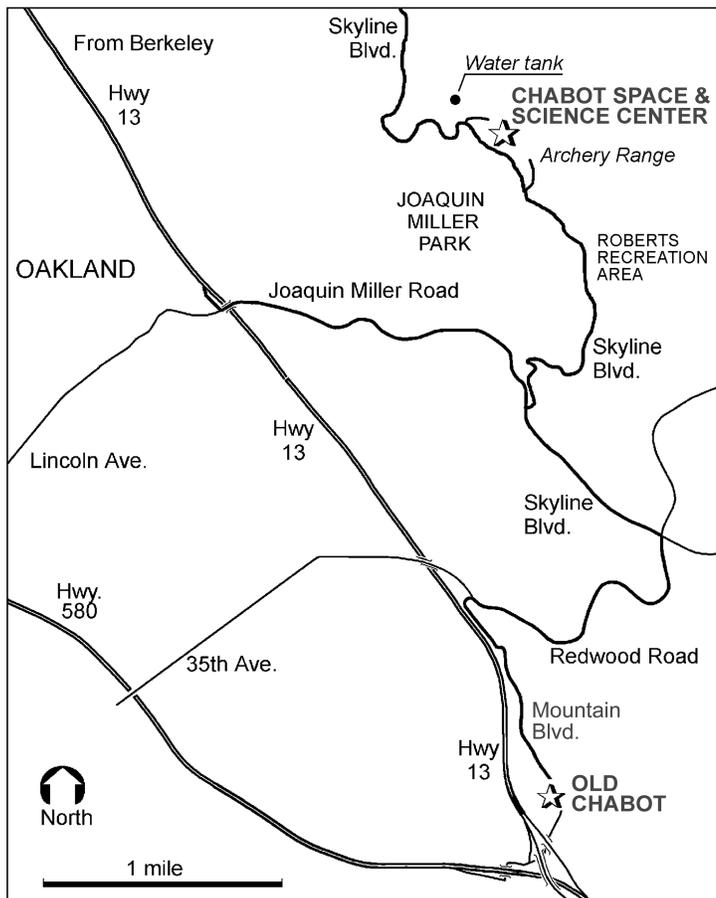
▶ *"Triple-bogey Dyke" takes a swing at her torturer*



Eastbay Astronomical Society

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

October 2001
RETURN SERVICE REQUESTED



FUTURE CONJUNCTIONS

Oct	
6	ENCHLADA Meeting, Chabot
11	7:30pm EAS Board Meeting, Chabot
13	7:30pm EAS Lecture/ Meeting, Chabot
Nov	
3	7:30pm EAS Lecture/Meeting, Chabot
8	7:30pm EAS Board Meeting, Chabot

Eastbay Astronomical Society

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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 November issue is October 15, 2001. Items may be submitted by mail to the editor, Don Saito, 3514 Randolph Avenue, Oakland, CA 94602-1228. Internet email address: donsaito@pacbell.net. Day: (510) 587-6052 Eve: (510) 482-

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- Regular, \$24/year
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