

PRIME FOCUS

Tri-Valley Stargazers

January 2008



Meeting Info:

What

Member's Night

Who

TVS Members

When

January 18, 2008
Doors open at 7:00 p.m.
Lecture at 7:30 p.m.

Where

Unitarian Universalist
Church in Livermore
1893 N. Vasco Road

Inside

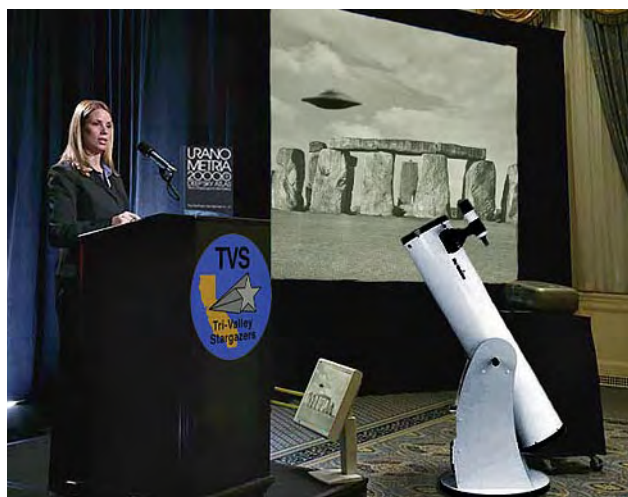
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January Meeting

Member's Night TVS Members

It's been a while since we've had a Member's Night, so we figured now would be a good time to have one. Not being able to find a speaker for this month had absolutely no effect on the decision.

Member's are encouraged to bring astrophotos, gadgets, toys, new scopes received for Christmas, etc. to show and tell with the rest of the club. Book, software, and web site reviews are also welcome. As long as it's astronomy related, bring it in and show it off.



TVS Membership Renewal Time

January is the start of our 2008 membership year. If you haven't already done so, please renew your TVS membership. You can find the renewal form on the back page of the newsletter. Please fill it out and send it in with your check to PO Box 2476, Livermore, CA 94551. You can also give your check and form to our treasurer David Feindel at the club meeting.

There has been a change to the *Sky & Telescope* magazine renewal. In the past, subscriptions or renewals to both *S&T* and *Astronomy* magazines needed to be submitted to TVS, which then forwarded them to their respective publishers.

S&T has recently changed their policy. Members now get a renewal notice in the mail, with the discounted rate shown. Fill it out, and return it to *S&T* directly. The publisher will contact the club once a year to verify your membership. *Astronomy* magazine will continue to follow the procedure for subscribing or renewing through the club.

Rates this year are \$32.95 for a 1-year subscription to *S&T*, and \$34/\$60 for a 1- or 2-year subscription to *Astronomy*. If you have questions regarding the subscriptions, contact club Treasurer David Feindel.

News & Notes

2008 TVS Meeting Dates

The following lists the TVS meeting dates for the next few months. The lecture meetings are on the third Friday of the month, with the Board meetings on the Monday following the lecture meeting. The *Prime Focus* deadline applies to that month's issue (e.g., the March 9th deadline is for the March issue).

Lecture Meeting	Board Meeting	Prime Focus Deadline
Jan 18	Jan 21	Jan 6
Feb 15	Feb 18	Feb 3
Mar 21	Mar 24	Mar 9

Money Matters

At our November board meeting, Treasurer **David Feindel** left word of the TVS account balances as of December 17, 2007.

Checking	\$3,685.97	
CD #1	\$3,685.97	matures 02/17/08
CD #2	\$2,599.00	matures 02/27/08

RASC Handbooks & Calendars

We received our order of RASC (Royal Astronomical Society of Canada) Handbooks and Calendars in late November. If you weren't able to make it to the December meeting to pick up your copy, we will have them available for purchase at our January meeting. The Handbooks are \$21, Calendars \$13. Cash or checks (made out to Tri-Valley Stargazers) accepted. If you wish a Handbook or Calendar (or both!) and won't be able to attend the January meeting, contact Treasurer David Feindel to reserve a copy.

The Handbook is a useful book filled with all kinds of astronomical data. Some of the information, like the section on "Optics and Observing" and the "Table of Double and Multiple Stars", doesn't change much from year to year. Other sections, like the monthly sky events and the "Pluto Finder Chart", are updated with each issue. The calendar features photos taken by amateur astronomers.

Calendar of Events

January 14, 7:30 p.m.

What: *Star Dust: The Cosmic Seeds of Life*
Who: Dr. Sun Kwok, University of Hong Kong (author of the book "Cosmic Butterflies")
Where: Kanbar Hall, Jewish Community Center
Cost: \$4.00

For the last fifty years, scientists believed that life on Earth began with simple inorganic molecules that, under proper

conditions, gradually evolved into complex organic compounds and eventually life. Recently, through observations with space-based infrared telescopes, astronomers have discovered that old stars can synthesize organic compounds over relatively short time scales. Stellar winds then spread these organic materials throughout the Galaxy, including our primordial solar system.

You can purchase tickets online at <http://www.calacademy.org/lectures/tickets> or buy them at the door. For more information, call 415-321-8000.

The Dean Lectures have temporarily moved to the San Francisco Jewish Community Center at 3200 California Street (at Presidio Avenue) during the reconstruction of the Academy.

Parking is available across the street in the UCSF Laurel Heights campus parking lot for \$1.25 per night. Parking in the JCC garage is \$1.25 per half-hour. The #1 California, #3 Jackson, #4 Sutter, and #43 Masonic MUNI lines stop directly in front of the building. The #38 Geary and #24 Divisadero buses stop only a few blocks away.



The California Nebula (NGC1499) is located in the constellation of Perseus and is about 1,500 light years away. The red glow of the hydrogen gas is thought to be caused by the bright bluish star at the bottom, Xi Persei.

This image was taken in September, 2007, at Barcroft. It is a combination of two 2-hour exposures, processed in Photoshop to draw out the surrounding nebulosity. Photo taken with a Takahashi FSQ-106 mounted on an AP900 equatorial mount; guiding was with an SBIG STV using its E-Finder. *Photo: Bill Drelling*

Newsletter header image: NGC281

NGC281 is a star forming region about 10,000 light years away in the constellation Cassiopeia. This image was taken in November, 2007, at Del Valle. It was taken with a 4" F8 apo. The image details: H-Alpha: 18x10 minutes, RGB: 6x5 minutes; using an ST10XME 1x1 -20C. *Photo: Gert Gottschalk*

January 17, 6:00 p.m.

What: *Visions of the High Sierra*

Who: Tony Rowell

Where: City Forest Lodge, San Francisco

Cost: \$13.50. Reservations required

Join Sierra Club members for a social hour at 6:00 p.m., dinner at 7:00 p.m., and lecture at 8:00 p.m. at the City Forest Lodge, 254 Laguna Honda Blvd, San Francisco (across from the Laguna Honda Hospital).

Photographer Tony Rowell, son of the late renowned photographer Galen Rowell, will show stunning images taken by three generations of the Rowell family on the John Muir Trail. Tony will also show his own photos of Yosemite, Bishop, and Mt. Whitney, as well as his latest astronomy and astrophotos from the White Mountain and Eastern Sierra.

Tony’s work has been published in books, calendars, and magazines, and is on exhibit year-round at the Mountain Light Gallery and Tioga Pass Resort near Yosemite. Books, calendars, and fine-art prints will be available for purchase at the dinner.

Reservations are required for this exciting evening (no attendance for program only). Mail check for \$13.50 made out to “Sierra Club, S.F. Bay Chapter” to Barb Bourns at 274A Connecticut St, SF, CA 94107. **Checks must be received by Monday, January 14th.** Specify the “January Dinner” on the check. Bring your own wine or soft drinks. Glasses and ice available. Let Barb know if you are a vegetarian. If you have questions, call Barb before 9:00 p.m. at 415~431~6054.

January 23, 7:00 - 8:30 p.m.

What: *The View from the Center of the Universe: Discovering Our Extraordinary Place in the Cosmos*

Who: Joel Primack (U.C. Santa Cruz), and Philosopher and Attorney Nancy Ellen Abrams

Where: Smithwick Theatre at Foothill College

Cost: Free (\$2 for parking-in quarters)

Remarkable discoveries in the last decade are transforming cosmology—the study of the universe as a whole. Our cosmos appears to be made mostly of dark matter and dark energy, with the stars and galaxies we can see making up only a tiny fraction of it. We are beginning to understand the first few minutes after the Big Bang and the way in which the structure of the universe arose.

This interdisciplinary program is something of a departure from our usual series of lectures, but should intrigue and challenge everyone interested in the meaning of science for our times.

Joel Primack and Nancy Ellen Abrams’ program is both a progress report and philosophical reflection on our modern view of ourselves and our place in the cosmos. Using the latest science, cosmic images and visualizations, plus music, themes from myth, and even cartoons, they will illustrate how the new ideas about the universe have widespread cultural implications.

Primack is an award-winning physicist and cosmologist, who writes for both his colleagues and the public.

Abrams is a former Fulbright Scholar and student of mythology. While working for the Congressional Office

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Lecture Meeting:
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1893 N. Vasco Road, Livermore

Board & Discussion Meetings:
Round Table Pizza
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Web & E-mail

www.trivalleystargazers.org
tvs@trivalleystargazers.org

Eyes on the Skies

Eyes on the Skies is a robotic solar telescope run by Mike Rushford (rushford@eyes-on-the-skies.org). You may access it by visiting www.eyes-on-the-skies.org.

TVS E-Group

So how do you join the TVS e-group you ask? Just send an e-mail message to the TVS e-mail address (tvs@trivalleystargazers.org) asking to join the group. Make sure you specify the e-mail address you want to use to read and post to the group.

What's Up *by Debbie Dyke*

All times Pacific Standard Time.

January

- 2 Wed Earth at perihelion (91,199,797.76 miles). 7:15 a.m.
- 3 Thur Moon at apogee (251,305 miles). 12:00 a.m.
- 8 Tue Mars 1.3° south of the Moon. 12:00 p.m.
- 13 Sun 1610 Galileo discovers Ganymede.
- 15 Tue **First Quarter Moon.** 11:46 a.m.
Look for Mercury in the early evening very low in the SSW sky. It will be highest around January 23rd, when it's about 7.5° above the horizon. 6:00 p.m.
- 17 Thur The Waxing Gibbous Moon is less than a degree from the Pleiades. 11:30 p.m.
- 18 Fri **Tri-Valley Stargazers general meeting.** 7:30 p.m. at the Unitarian Universalist Church, 1893 N. Vasco Road, Livermore.
- 19 Sat Moon at perigee (227,186 miles) 1:00 a.m.
Mars 2.5° from the almost Full Moon. 6:30 p.m.
- 20 Sun **Tri-Valley Stargazers discussion meeting.** 2:00 p.m. at the Round Table Pizza on 1024 E. Stanley Blvd., Livermore. Discuss astro stuff with your fellow members.
1930 Buzz Aldrin born.
- 21 Mon **Tri-Valley Stargazers Board meeting.** 7:00 p.m. at the Round Table Pizza in Livermore.
Mercury at greatest elongation east (19°). 9:00 p.m.
National Hugging Day.
- 22 Tue **Full Moon.** 5:35 a.m.
- 24 Thur The Moon is 1.5° from Regulus in the early morning. 6:00 a.m.
The almost Full Moon (Waning Gibbous) is 3.5° from Saturn. 9:30 p.m.
- 27 Sun 1967 Apollo 1 capsule catches fire while sitting on launch pad, killing all three astronauts on board.
- 28 Mon 1986 Space Shuttle Challenger explodes soon after liftoff, killing all seven on board.
- 29 Tue **Last Quarter Moon.** 9:03 p.m.
- 30 Wed Moon at apogee (205,810 miles) 8:00 p.m.

February

- 1 Fri **Venus and Jupiter are 0.5° from each other,** low in the southeastern sky. Watch them slowly drift apart in the next few days. 6:00 a.m.
The crescent Moon is 2° from Antares in the morning sky. 6:00 a.m.
2003 Columbia breaks apart during reentry, killing all seven on board.
- 2 Sat Ground Hog Day.
- 3 Sun 1966 First soft landing on Moon by the Soviet spacecraft Luna 9. Luna returns the first pictures of the surface of the Moon.
- 4 Mon 1906 Clyde Tombaugh (discoverer of the now defunct planet Pluto) born.
- 5 Tue 1970 Apollo 14 lands on the Moon at Fra Mauro.
1974 Mariner 10 takes the first close up photos of Venus.
- 6 Wed 1971 Alan Shepherd (Apollo 14) is the first person to play golf on the Moon.
- 7 Thur Chinese New Year 4706. It's the Year of the Rat.
1984 First untethered spacewalk performed by Challenger astronauts Bruce McCandless and Robert Stewart.
1889 The Astronomical Society of the Pacific is formed.

Ultraviolet Surprise

by Patrick L. Barry and Tony Phillips

How would you like to visit a universe full of exotic stars and weird galaxies the likes of which astronomers on Earth have never seen before?

Now you can. Just point your web browser to galex.stsci.edu and start exploring.

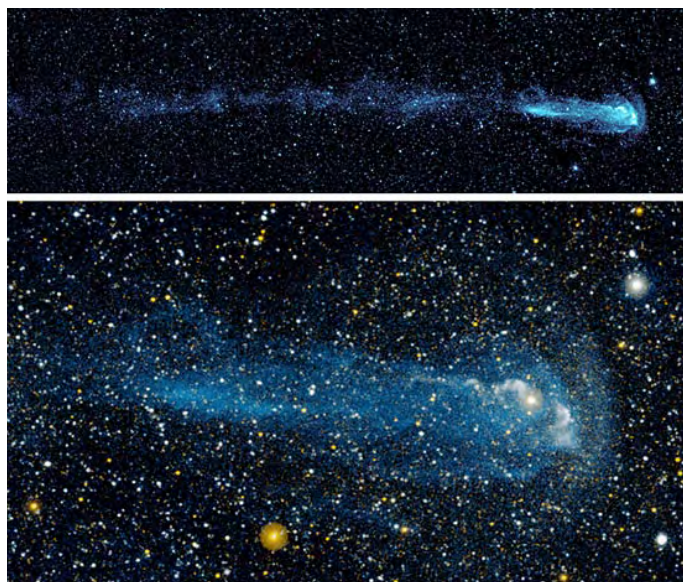
That's the address of the Galaxy Evolution Explorer image archive, a survey of the whole sky at ultraviolet wavelengths that can't be seen from the ground. Earth's atmosphere blocks far-ultraviolet light, so the only way to see the ultraviolet sky is by using a space telescope such as NASA's Galaxy Evolution Explorer.

About 65% of the images from the all-sky survey haven't been closely examined by astronomers yet, so there are plenty of surprises waiting to be uncovered.

"The Galaxy Evolution Explorer produces so much data that, beyond basic quality control, we just don't have time to look at it all," says Mark Seibert, an astronomy post-doc at the Observatories of the Carnegie Institution of Washington in Pasadena, California.

This fresh view of the sky has already revealed striking and unexpected features of familiar celestial objects. Mira is a good example. Occasionally visible to the naked eye, Mira is a pulsating star monitored carefully by astronomers for more than 400 years. Yet until Galaxy Evolution Explorer recently examined Mira, no one would have guessed its secret: Mira possesses a comet-like tail 13 light-years long.

"Mira shows us that even well-observed stars can surprise



Astronomers looking at new ultraviolet images from the Galaxy Evolution Explorer spacecraft were surprised to discover a 13-light-year long tail on Mira, a star that has been extensively studied for 400 years.

us if we look at them in a different way and at different frequencies," Seibert says.

Another example: In April, scientists announced that galaxies such as NGC 1512 have giant ultraviolet spiral arms extending three times farther out into space than the arms that can be seen by visible-light telescopes. It would be like looking at your pet dog through an ultraviolet telescope and discovering his ears are really three times longer than you thought!

The images from the ultraviolet space telescope are ideal for hunting new phenomena. The telescope's small, 20-inch primary mirror (not much bigger than a typical backyard telescope) offers a wide field of view. Each image covers 1.2 degrees of sky—lots of territory for the unexpected.

If someone combing the archives does find something of interest, Seibert advises that she or he should first search astronomy journals to see whether the phenomenon has been observed before. If it hasn't, email a member of the Galaxy Evolution Explorer science team and let them know, Seibert says.

So what are you waiting for? Fire up your web browser and let the discoveries begin!

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Calendar of Events *continued*

of Technology Assessment, she invented a method called "scientific mediation" that lets government agencies make intelligent decisions despite scientific uncertainty. Together they teach the Cosmology & Culture course at the University of California, Santa Cruz, and have written a popular book, published in 2006, with the same title as this lecture.

The free lecture series is sponsored by the Foothill College Astronomy Program, NASA Ames Research Center, SETI Institute and Astronomical Society of the Pacific. Past lectures from the series are available online in MP3-format at www.astrosociety.org/education/podcast/index.html.

Seating is on a first-come, first-served basis. Arrive early to locate parking. Visitors must purchase a campus parking permit for \$2 (eight quarters). Parking lots 1, 5 and 6 provide access to the theatre. For more information, visit www.foothill.edu or call (650) 949-7888. For additional information: <http://www.astrosociety.org/education/podcast/index.html>.

Tri-Valley Stargazers
P.O. Box 2476
Livermore, CA 94551



PRIMEFOCUS

Tri-Valley Stargazers Membership Application

Member agrees to hold Tri-Valley Stargazers, and any cooperating organizations or landowners, harmless from all claims of liability for any injury or loss sustained at a TVS function.

Name _____ Phone _____ e-mail _____

Address _____

Do not release my: _____ address, _____ phone, or _____ e-mail information to other TVS members.

- Membership category:
- _____ \$5 Student.
 - _____ \$30 Basic. You will receive e-mail notification when the PDF version of *Prime Focus* is available for download off the TVS web site.
 - _____ \$40 Regular. You will receive a paper version of *Prime Focus* in the mail.
 - _____ \$10 Hidden Hill Observatory (H2O) yearly access fee. You need to be a key holder to access the site.
 - _____ \$20 H2O key holder fee. (A refundable key *deposit*—key property of TVS).
 - _____ \$40 Patron Membership. Must be a member for at least a year and a key holder.
 - _____ \$34 One year subscription to *Astronomy* magazine.
 - _____ \$60 Two year subscription to *Astronomy* magazine.
 - _____ \$32.95 One year subscription to *Sky & Telescope* magazine. **Note:** Subscription to *S&T* is for new subscribers only. Existing subscribers please renew directly through *S&T*.
 - \$ _____ Tax deductible contribution to Tri-Valley Stargazers.
 - \$ _____ TOTAL – Return to: Tri-Valley Stargazers, P.O. Box 2476, Livermore, CA 94551

Membership information: Term is one calendar year, January through December. Student members must be less than 18 years old or still in high school.