

# PRIME FOCUS

Tri-Valley Stargazers

April 2002



## Meeting Info:

### What

Movie Night

### Who

You

### When

April 19, 2002

Conversation at 7:00 p.m.

Movie at 7:30 p.m.

### Where

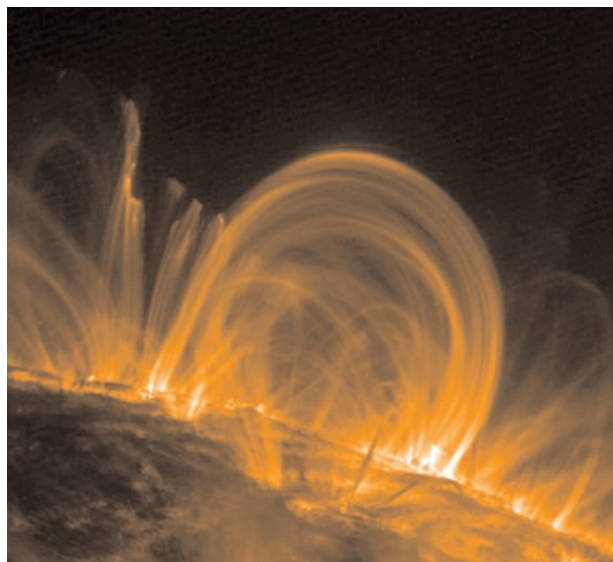
Unitarian Universalist

Church in Livermore

1893 N. Vasco Road

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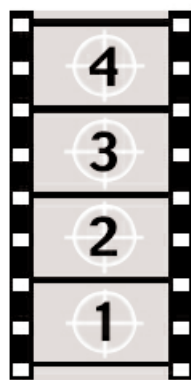


### The Sun

This image of coronal loops over the eastern limb of the Sun was taken in the TRACE 171A pass band, characteristic of plasma at 1 MK, on November 6, 1999, at 02:30 UT.

The image was rotated over +90 degrees. This image was featured in the national and international press in late September 2000, and was the Astronomy Picture of the Day for 28 September 2000.

Photo: TRACE



## April Meeting

### Movie Night

TVS goes to the movies. More correctly, the movies come to TVS. Either way, our April meeting will have us parked in front of the TV screen watching a DVD of the TRACE (Transitional Region and Coronal Explorer) mission and its resulting images. You'll get up close and personal views of the solar atmosphere without getting sunburned. If we have time, we might pop in one of the new DVDs acquired for our library, the BBC/A&E production of *Planets*.

TRACE is a NASA mission to observe and image the solar corona, photosphere, and transition region at high angular and temporal resolution. It was launched in April 1998 from Vandenberg Air Force Base. TRACE is used in conjunction with SOHO to get detailed information about the sun. For more information about the project, visit <http://vestige.lmsal.com/TRACE>.

But wait – there's more! Instead of the usual refreshment choice of cookies and donuts, we're going to serve up proper movie fare of popcorn and soda. Bowls, salt, and lots of napkins will be provided. So bring yourself and your friends and family for an evening at the movies.

## News & Notes

### New Selections Hit the Shelves at TVS

by TVS Librarian Jim Alves

The library has been active lately, particularly in new acquisitions. The latest material, which will be available for check out at the April meeting, is the *Planets* series on DVD. This four-volume set, produced by A&E and the BBC, includes over 400 minutes of space sciences information. Also available are videos on Auroras, Solar Eclipses and Telescope Collimation. Ken Crowell's latest book *Universe at Midnight* is available as well as his *Planet Quest* and *Alchemy of the Heavens* books and the popular *Magnificent Universe*, a large-format photographic eye-pleaser. Another photographic reference is Vehrenberg's *Atlas of Deep Sky Splendors*.

*Patterns in the Sky* by Staal is a light read about the myths and legends of star constellations. Also available are a recently published set of four books for kids and teenagers about everything from star formation and the planets to astrobiology and x-ray telescopes. Of course, various star atlases and Messier marathon books are represented, including three-volume sets of *Burnham's Celestial Handbook* and Sinott's *Millennium Star Atlas*. Haven't read Sagan's *Cosmos* or Hawking's *Brief History of Time* lately? We have these including *Cosmos* in the large soft cover format. Interested in looking at back issues of *Sky & Telescope*? How about the last 40 years? Like historical references? Take a look at some vintage texts on telescope making. In fact, with over 250 non-magazine selections to browse, finding a good read or observing reference is not difficult.

About 90% of the club's selections are generous donations from members and non-members alike. We appreciate and encourage your donations. To check out material, you must be a member in good standing. Materials are available on a month-to-month basis. If you would like to make a material donation or want to know if a selection is available, please contact the TVS Librarian.

### SBIG Camera Donation Wanted

Do you have a SBIG 6, 7 or 8, working or not, that you'd like to donate to the Chabot Space & Science Center? Chabot is in need of such a device, but doesn't need the chip as it already has an even better one to put in it. The camera will be used with the 20" refractor Rachel to determine the spectral extinction coefficients of the atmosphere at Chabot. In return for your donation, you can receive such goodies as free tickets to the planetarium, movie, lectures, and even time on the scopes. If you have such a device, or if you have any questions, contact Terry Galloway at 510-841-9774 or terryg2@ix.netcom.com.

## Calendar of Events



### Ikeya-Zhang & M31

This composite shot was taken by Gerald Rhemann on April 4, in Jauerling, Austria. Equipment: Schmidt camera 90/255/435mm, Kodak Ektachrome 100/120, exposure 3.5 min. and 4.5 min., Kodak TP4415 hypered, exp. 5 min., LRGB-composite. Times: 19h 01m, 19h 08m, and 19h 16m UT.

### The Distinguished Lecture Series Chabot Space & Science Center

Below is a listing of the upcoming speakers for Chabot's lecture series. The talks start at 7:30 p.m. in the Tien Megadome Theater, with a reception and refreshments following the talks. Admission is \$5. For reservations and information call 510-336-7373. Tickets may also be purchased through Ticketweb.com or at the door.

#### April 18

Who: Dr. George Smoot (Physics Division, Lawrence Berkeley National Lab)

What: *When the Universe Sang: Harmonics of the Early Sky*

George will look at the results of several experiments dealing with the cosmic microwave background and their implications to seeing the flatness of the universe.

#### May 16

Who: Ken Crowell

What: *The Universe at Midnight*

Dr. Crowell will discuss his most recent book, *The Universe at Midnight*. He describes recent revelations in cosmology, including the surprising discovery that the universe's expansion is accelerating.

**Newsletter header image:** Comet Ikeya-Zhang. Photo taken on March 16, 2002 using a Starlight Xpress HX916 CCD Megapixel camera and a 10" f4.5 reflector at prime focus. This is a single 60 second exposure with Digital Development and a medium unsharp mask processing. *Photo: Paul Zelichowski.*

## Calendar of Events *continued*

**April 26, 8:00 p.m.**

**Who:** Kevin Keller Trio

**What:** *An evening of classical space music*

**Where:** Ask Jeeves Planetarium, Chabot Space & Science Center

**Cost:** \$15 (\$12 Chabot members – member advance sales at Chabot only)

Known to Bay Area audiences for their blend of beautiful music and state-of-the-art visuals, cellist Tania Simoncelli, bassist Mark Fassett, and keyboardist Kevin Keller present their exciting new show called “Across the Sky” in support of their new CD, which will be available for purchase at the concert. Seating is limited. Purchase tickets online or at the Chabot Box Office, 510-336-7373.

**April 28, doors open at 12:00 p.m.**

**Who:** San Jose Astronomical Association

**What:** Astronomical Auction & Swap Meet XXII

**Where:** Hogue Park, San Jose

**Cost:** Free

It’s spring and time for the annual migration of astronomical paraphernalia from one garage to another! We’ll have the auction first followed by the swap in order to allow people some additional haggling time for those items which 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. Kevin Medlock will be our auctioneer. Those who have observed Kevin’s performance in previous auctions have learned to appreciate his merciless 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 refuse non-appropriate material for the auction. A \$1 donation is required to obtain an auction bidder/seller number. The Auction begins at 1:00 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. 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.

After the auction, material for the Swap Meet will be allowed into the hall, about 3:00 or perhaps earlier. Each buyer pays the seller. Sellers are to keep track of their sales, and pay a 10% commission. All commissions from the auction and the swap are tax-deductible.

Do you have a large item to sell such as a telescope? Please e-mail Bill Arnett at [auktion@sjaa.net](mailto:auktion@sjaa.net) with a description and a photo of the item or a link to your own website for some pre-auction publicity.

Hogue Park is located in San Jose. 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 Sunrise Drive, then turn left into the park.

For more about SJAA, questions on the auction, or to view preregistered auction items, visit our web site at [www.sjaa.net](http://www.sjaa.net) or email [auktion@sjaa.net](mailto:auktion@sjaa.net).

**April 30 & May 2, sunset**

**What:** *Dance of the Planets*

**Where:** Chabot Space & Science Center

**Cost:** \$15 for adults, \$10 under 12

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### **Officers**

#### **President:**

Chuck Grant  
[cg@fx4m.com](mailto:cg@fx4m.com)  
925-422-7278

#### **Vice-President:**

Gary Steinhour  
[steinhour1@juno.com](mailto:steinhour1@juno.com)

#### **Treasurer:**

Mike Anderson  
[andersonm@prodigy.net](mailto:andersonm@prodigy.net)

#### **Secretary:**

Maggie Halberg  
925-736-8627

#### **Board of Directors**

Alane Alchorn, Jim Alves, Dave Anderson, Dennis Beckley, Paul Caswell, Rich Combs, Debbie Dyke, Gert Gottschalk, Kathleen

Kelley, Signe McIntire, Dave Rodrigues, Frank Rogue, Mike Rushford, Debbie Scherrer, Al Stern, John Swenson, Norm Thomas, Phil Waide

#### **Volunteer Positions**

##### **Librarian:**

Jim Alves  
[jim\\_alves\\_engr@yahoo.com](mailto:jim_alves_engr@yahoo.com)  
925-634-0220

##### **Newsletter Editor:**

Debbie Dyke  
[ddfam@pacbell.net](mailto:ddfam@pacbell.net)  
925-461-3003

##### **Program Director:** unfilled

##### **Loaner Scope Manager:**

John Swenson  
[johnswenson1@attbi.com](mailto:johnswenson1@attbi.com)

#### **Webmaster:**

Chuck Grant

#### **Observatory Director/**

**Key Master:**

Chuck Grant

#### **School Star Party Chair:**

Rich Green (unofficially)  
[richgreen@pacbell.net](mailto:richgreen@pacbell.net)  
925-449-2190

#### **Public Star Party Chair:**

Rich Green (unofficially)

#### **Historians:**

Paul Caswell & Debbie Dyke

#### **Addresses**

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

#### **Lecture Meeting:**

Unitarian Universalist Church  
1893 N. Vasco Road, Livermore

#### **Board Meeting:**

Round Table Pizza  
1024 E. Stanley Blvd., Livermore

#### **Web & E-mail**

[www.trivalleystargazers.org](http://www.trivalleystargazers.org)

[tvts@trivalleystargazers.org](mailto:tvts@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](mailto:rushford@eyes-on-the-skies.org)). You may access it by visiting [www.eyes-on-the-skies.org](http://www.eyes-on-the-skies.org).

## Calendar of Events *continued*

Come join Chabot as it celebrates the “Dance of the Planets” with a special planetarium program, planet activities and viewing of the five classical planets as they line up along the ecliptic after sunset. Tickets will be available through TicketWeb.com.

**May 7, 7:00 p.m.**

**Who:** Dr. Harvey Tannanbaum (Harvard Center for Astrophysics)

**What:** *X-Ray Telescopes: Present and Future*

**Where:** Morrison Planetarium, San Francisco

**Cost:** \$3.00

With the launch of the Chandra X-Ray Observatory in July 1999, astronomers can now obtain high resolution images of the x-ray sky. This talk will show some recent Chandra results and will describe x-ray telescopes planned for the next 2 decades. For more info call 415-750-7141 or visit [www.calacademy.org/planetarium/special.html](http://www.calacademy.org/planetarium/special.html).

**May 18, 7:00 p.m.**

**Who:** AANC, and the College of San Mateo

**What:** *AANC Conference*

**Where:** College of San Mateo

**Cost:** \$20 for adults if pre-registered by May 10, \$25 at the door. \$10 for ages 10-18.

The theme for this year’s conference is *Everything Under the Sun (almost)* and will feature a speaker from the Kepler mission to search for terrestrial planets around other stars, a talk about the DART Membrane Telescope, a rep from Coronado Filters, plus many others. The conference will also showcase the College of San Mateo, the AANC astronomy clubs, and give participants more time to socialize.

Activities on this day (and night) include:

- Speakers galore
- Presentation of AANC awards for amateur, professional, commercial and special astronomer for 2002
- Solar viewing at lunchtime, weather permitting
- Great box lunches available for \$10.00
- College of San Mateo Planetarium Shows at lunch and after the closing remarks
- Exhibits, club exchanges, workshops and social hour after closing remarks
- A Spaghetti Feed sponsored by the San Mateo County Astronomical Society. RSVP when you register, but pay at the (spaghetti) door
- A star party in the evening, telescopes courtesy of CSM, SMCAS and other local amateur astronomers, weather permitting.

Visit [www.aanc-astronomy.org](http://www.aanc-astronomy.org) for more info and a registration form.

## Astronomical insights

by David Feindel

Comet Ikeya-Zhang. Clearly the highlight of this month’s observing. A beautiful sight in binoculars, better than even a telescope—3-5° FOV seem to work best. It was a beautiful sight, well worth sharing with the neighbors that stopped by to find out what we were staring at in the twilight sky from our front yard.

The two Saturday night expeditions to H2O for the March Messier Marathon got wiped out by clouds, wind, and rain. So instead of making my first Marathon attempt, I settled my attention on Leo, combining two AutoStar tours posted on the web. The first stop was Regulus; I could split its 8th magnitude double, which is reported as “hard” due to the magnitude of Regulus itself (a case where smaller aperture is better, perhaps??). Denebola’s optical double was easily split, as was Algeiba ( $\chi$  Leonis or “The Headlight Stars”), and 54 Leonis. I failed completely at splitting 7704 Leonis, and only got an elongation of 90 Leonis (3" separation of two 7th mag stars, using 140x). Leo’s M objects were all viewed, three for the first time (65, 66, 95, 96, and 105). M-105, the last, was what made me call it a night; dew was finally overcoming my home-made dew shield, and most stars seemed to be gaining “nebulousity”.

Following up last month’s questions on dark sky ratings... A quick study arrived at the following data (your mileage not only may vary, but should vary—different eyes, observing experience, optics quality, seeing that night, etc.) Numbers are limiting magnitudes of stars observable at or near the zenith, taken before moonrise. One technique I’ve come across since then is to use a dark towel or blanket to cover your head and ‘scope while looking from light-polluted environments; it noticeably lessens the effect of nearby lights on your dark adaptation. I would expect this to raise the Pleasanton numbers a couple of tenths.

Location	Naked Eye	Binoculars (8x42)	Telescope (90mm)
Pleasanton	4.2	7.5	9+
Del Valle park	5.8	8.5	10+

A second lesson learned from this brief “experiment” is the need to document your observations. I noticed that the Astronomical Society of the Pacific has a paper form, as do a couple of astronomy clubs on the web; *DeepSky 2002*, *SkyMap Pro*, *AstroByte Logging System*, and *The Simple Observing Log* are computer database software alternatives I’ve come across. Does anyone have recommendations?

Two very good web sites popped up on my computer this month. [www.ngcic.com](http://www.ngcic.com) leads you to more than you ever wanted to know about the NGC and IC catalogs. What was especially surprising to me is their claim that over 1,000 of the NGC objects have some sort of dispute attached to them. The site also has pictures and informa-

*continued next page*

## Star Parties

Although summer is still a few months away, now is the time to start planning your vacation time around the upcoming star party dates. Check the club's web site for updates and more information.

### April 13 thru October 12 Mt. Diablo Star Party

The Mt. Diablo Astronomical Society's public star parties on top of Mt. Diablo. Check their web site for more info: <http://members.aol.com/mdas101b/private/index.htm>. Listed are the dates and the topics they will be discussing for each star party.

April 13	Build a scale model of the solar system.
May 18	"Why do planets align with the Zodiac?"
June 8	"What causes eclipses?"
July 13	"Why does the moon have phases?"
August 10	"What causes meteor showers?"
September 7	"Why are the days getting longer?"
October 12	"Why is there a North Star?"

### May 24-26 RTMC

The Riverside Telescope Makers' Conference (RTMC) Astronomy Expo takes place at a YMCA camp east of Big Bear Lake in the San Bernardino mountains of Southern California. For more info, visit [www.rtmc-inc.org](http://www.rtmc-inc.org) or call 909-948-2205.

### June 1, August 3, September 28

#### H2O Open House

A caravan will depart Livermore from the corner of Mines and Tesla at a time to be determined later. There is a \$3 per car entry fee to the site. Bring your own telescope or, if the telescope repair gods will allow, just look through the club's 17.5-inch scope. There is no running water, or power outlets. There are two outhouses. Plan your evening accordingly. If you have any questions, contact President **Chuck Grant** at 925-422-7278 or [cg@fx4m.com](mailto:cg@fx4m.com).

### June 8-9, (tentative) Camp Shelly

Our dates for Camp Shelly are still being ironed out. There is a possibility of a second weekend trip on Aug. 24-45.

### June 15, July 20, Aug 10, Sept 7 (tentative)

#### Sycamore Grove Star Party

TVS, in conjunction with LARPD, puts on star parties at Sycamore Grove in Livermore. These dates are tentative.

### July 10-14 Shingletown Star Party

This year, in conjunction with TAC (The Astronomy Connection), TAC-SAC (Sacramento) and Shasta County, the Shingletown Activities Council is proud to host the inaugural Shingletown Star Party for 5 days and nights at the Shingletown Airport, which is located approximately 40 miles east of Redding off of Hwy 44 in Shingletown. The dates are from noon on Wednesday, July 10th

through Monday at noon on July 15, 2002. The airport will be officially closed to air traffic during our stay, so we will be able to camp on site and leave our equipment set up on the paved runway.

More details and a sign-up form can be found at: [www.201.pair.com/resource/resource-intl/ssp.html](http://www.201.pair.com/resource/resource-intl/ssp.html) or contact Jim Ster by e-mail ([sterj@ecs.csus.edu](mailto:sterj@ecs.csus.edu)) or telephone (916-278-5624 voicemail) or Mark Wagner by e-mail ([mgw@resource-intl.com](mailto:mgw@resource-intl.com)) or telephone (408-356-1125).

### July 12-13 Yosemite

TVS will host a public star party at Glacier Point in Yosemite. For those who choose to participate in this trip, you'll be provided with free park entrance and camping at the Bridalveil Creek campground in exchange for allowing the public to look through your telescope. More info to come. If you can't wait and want to reserve a spot now, contact trip coordinator **Dave Rodrigues** at 510-483-9191.

### August 9-11 (tentative) White Mountain Trip

These dates are *very* tentative, as these dates are just our first choice for venturing up the mountain. We'll let you know the final dates when we get word from our trip coordinator **Dave Rodrigues**.

## Astronomical insights *cont'd*

tion about most of the objects, including the original discoverer, their equipment, reported position, magnitude, etc. There's also some fascinating information on Lord Rosse's 72" telescope, for ~40 years the largest telescope on Earth. For those spending time lunar observing, visit [www.inconstantmoon.com](http://www.inconstantmoon.com). Daily viewing guides highlighting features near that night's terminator, complete photographic maps of the moon, FAQs, orbital details, saros, and best of all, (optional) musical background choices, including classical (*Moonlight Sonata* and *Claire de Lune* of course), or Pink Floyd's *Us and Them* plus others for rock aficionados. You also have to like any site named [www.theshallowsky.com](http://www.theshallowsky.com), it contains information and further links on solar system objects.



### Here Comes the Sun

This close up image of the sun comes from **Gert Gottschalk**. Gert used his 80mm f8 APO and his handy-dandy digital camera, the Canon G1. The image was taken on April 6, 22:00UT (2:00 p.m. PST) using a 6mm LV.

## What's Up *by Debbie Dyke*

All times Pacific Daylight unless otherwise noted.

### April

- 4 Thur **Last Quarter Moon** 7:29 p.m. PST.
- 11 Thur 1879 Bernhard Schmidt, the creator of the Schmidt telescope, born.
- 12 Fri **New Moon** 12:21 p.m.  
1961 Yuri Gagarin becomes the first man in orbit (orbit lasted 1h 48m).  
“Circling the Earth in the orbital spaceship I marvelled at the beauty of our planet. People of the world! Let us safeguard and enhance this beauty — not destroy it!”  
1981 Columbia becomes the first space shuttle launched into space. The mission lasted 2 days, 6 hours.
- 14 Sun 1970 Apollo 13 disaster strikes, but Tom Hanks saves the crew from almost certain death.  
1629 Christiaan Huygens born.
- 15 Mon The Moon, Mars, and M45 (the Pleiades) are lined up together in a 7° section of the western sky.  
International Astronomy Week (through April 21).
- 17 Wed Mercury at perihelion.
- 18 Thur The Moon is just 3° above Jupiter.
- 19 Fri **Tri-Valley Stargazers general meeting.** 7:30 p.m. at the Unitarian Universalist Church, 1893 N. Vasco Road, Livermore.  
Mercury at its greatest illuminated extent (its most square arcseconds of lit surface) at 21 square arcseconds.
- 20 Sat **International Astronomy Day**  
**First Quarter Moon** 5:48 a.m. The Moon is just 3° above M44, the Beehive Cluster.
- 21 Sun **Tri-Valley Stargazers discussion meeting.** 2:00 p.m. at the Round Table Pizza on 1024 E. Stanley Blvd., Livermore. Join your fellow members to chat about astro stuff.
- 22 Mon **Tri-Valley Stargazers Board meeting.** 7:00 p.m. at the Round Table Pizza in Livermore.  
Lyrid meteors peak 4:00 a.m.  
Earth Day. Go out and hug a tree.
- 25 Thur Moon at perigee (223,252 mi.) 9:00 a.m.  
1990 Hubble Space Telescope deployed from shuttle Discovery.
- 26 Fri **Full Moon** 8:00 p.m.
- 28 Sun SJAA's Annual Auction and Swap meet. See page 3 for more info.

### May

- 3 Fri International Solar Energy Day.
- 4 Sat **Last Quarter** 12:16 a.m.  
Mercury at greatest elongation east (21°) 9:00 p.m. — best evening view in 2002.  
A nice grouping of planets low in the west around 9:00 p.m. Look for a very bright (-3.9 mag) Venus.  
From Venus, Saturn will be 3.4° to the left, Mars 3° above, and Mercury 6.4° below and to the right.  
Eta Aquarid meteor shower peaks 9:00 p.m.
- 5 Sun Texas Star Party at Fort Davis, Texas. TSP runs for the whole week. Yee-haw.
- 7 Tues Moon at apogee (251,399 mi.) 12:00 p.m.
- 10 Fri Venus 0.3° N of Mars, with Saturn 4.4° S of the group 9:00 p.m.
- 12 Sun **New Moon** 3:45 a.m.  
Mother's Day.

## Astro Events

### Jupiter Transits

Below is a listing of transits times for various Jupiter related objects. The abbreviations are fairly straight forward: G=Ganymede, C=Callisto, I=Io, E=Europa, GRS=Great Red Spot, and if you see a 's' next to one of the moons, it means its shadow (e.g., Cs=Callisto's shadow); na means Jupiter is below the horizon at that time, or that it is up but it's still daylight.

#### April

Date	Object	Starts	Meridian	Ends
Tues 9	GRS	9:40p	11:40p	1:40a
Wed 10	GRS	na	7:40p	9:40p
Thur 11	E	na	7:40p	9:00p
	Es	8:50p	10:00p	11:40p
	GRS	10:20p	12:20a	na
Fri 12	GRS	na	8:20p	10:20p
	I	10:15p	11:20p	12:25a
	Is	11:25p	12:25a	na
Sun 14	Is	na	6:50p	8:10p
	GRS	7:55p	9:55p	11:55p
Tues 16	GRS	9:30p	11:30p	na
Wed 17	GRS	na	8:20p	10:20p
Thur 18	E	9:00p	10:25p	11:45p
	GRS	11:10p	na	na
	Es	11:25p	12:30a	na
Fri 19	GRS	7:00p	9:00p	11:00p
Sun 21	I	na	7:50p	8:55p
	Is	7:50p	8:50p	10:05p
	GRS	8:45p	10:45p	na
Tues 23	C	9:25p	11:10p	na
	GRS	10:20p	na	na
Wed 24	GRS	na	8:15p	10:15p
Thur 25	Gs	na	7:50p	9:30p
Fri 26	GRS	8:00p	10:00p	12:00a
Sun 28	I	8:40p	9:45p	10:50p
	GRS	9:30p	11:30p	na
	Is	9:45p	10:45p	12:00a
Mon 29	GRS	na	7:30p	9:30p

#### May

Wed 1	GRS	7:00p	9:00p	11:00p
Thur 2	G	na	7:35p	9:05p
	Gs	10:15p	11:40p	na
Fri 3	GRS	8:35p	10:35p	na

Sun 5	GRS	10:15p	na	na
	I	10:40p	na	na
Mon 6	Es	na	7:15p	8:40p
	GRS	na	8:20p	10:20p
Tues 7	Is	na	7:15p	8:25p
Wed 8	GRS	7:45p	9:45p	na
Thur 9	G	10:00p	11:30p	na
Fri 10	GRS	9:30p	11:30p	na
Sat 11	GRS	na	7:30p	9:30p

## News & Notes *continued*

### 2002 TVS Meeting Dates

For the next two years, our monthly lecture meetings will be on the **third** Friday of the month, with the Board meeting on the Monday following the lecture meeting. Here are the dates for 2002:

Lecture Meeting	Board Meeting	Prime Focus Deadline
Apr. 19	Apr. 22	Apr. 27
May 17	May 20	May 25
June 21	June 24	June 29
July 19	July 22	July 27
Aug. 16	Aug. 19	Aug. 24
Sep. 20	Sep. 23	Sep. 28
Oct. 18	Oct. 21	Oct. 26
Nov. 15	Nov. 18	Nov. 23
Dec. 20	Dec. 16	Dec. 28

### Money Matters

At the March Board meeting, treasurer **Mike Anderson** reported the current balances (as of March 25, 2002) of our various accounts:

Checking	\$2,357.83	
CD #1	\$3,853.54	matures 05/17/02
CD #3	\$2,378.16	matures 05/27/02
CD #4	\$2,024.06	matures 04/16/02

The last batch of *Astronomy* and *Sky & Telescope* magazine subscription payments were mailed just after the March Board meeting.

# PRIMEFOCUS



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

## 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 \_\_\_\_\_

Choose one: \_\_\_\_\_ I wish to download *Prime Focus* from the web (an e-mail notification will be sent to me when it's available for download). I understand that a paper version will *not* be mailed to me.  
\_\_\_\_\_ I wish *Prime Focus* to be mailed to me.

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

Membership category: \_\_\_\_\_ \$5 Student \_\_\_\_\_ \$20 Individual \_\_\_\_\_ \$25 Family  
\_\_\_\_\_ \$20 Hidden Hill Observatory (H2O) refundable key deposit (key property of TVS)  
\$ \_\_\_\_\_ 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.