



SVAS

newsletter

Sacramento Valley Astronomical Society | founded in 1945

Vol. 57 no. 2 | February, 2000

Photo Contest for Astronomy Day

Round up your old astronomy photos or grab your camera and shoot some new photos and enter the first annual SVAS photo contest! There is a category for everyone to participate. Photos will be displayed during Astronomy Day (May 20) to generate interest in the subject of astrophotography and the SVAS.

Six categories will be open for photos from SVAS members. The categories are:

- 6 SVAS Club Activities: Star-B-que, Astronomy Day, Public Star Parties, etc.
- 6 Constellations and star trails
- 6 Solar System - traditional photography: Eclipse photos, planets, moon, comets

- 6 Deep Space - traditional photography: Galaxies, nebulas, clusters
- 6 Solar System - CCD: Eclipse photos, planets, moon, comets
- 6 Deep Space - CCD: Galaxies, nebulas, clusters

A plaque will be awarded as the first prize in each category with ribbons for second and third place.

The planned display is different than your basic County Fair and much more "high tech!". Our "high tech" presentation will avoid the security issues with protecting valuable pictures. Pictures will be submitted to Anne-Marie Wheatley who has kindly agreed to scan them into a power point presentation. The best pictures in each category will be selected by the board (excusing any board members with an entry) and these pictures will be printed in a standard format for display during Astronomy Day. We will let the viewing public vote on their favorite for each category. Awards will be presented at the Star-B-que 2000.

Since we need to scan the entries, we

need to have your pictures submitted by April 15th.

Pictures will be returned if you include a self-addressed stamped envelope. We have set a few rules to keep the confusion to a minimum. An entry form is printed below and a few rules have been made.

1. Each member may enter as many as ten entries. They may all be in the same or in different categories.
2. Pictures must be no larger than 8"x11" for scanning or you can send electronic files directly to Anne-Marie in either TIFF or JPEG format. All CCD pictures should be sent in electronic format (TIFF or JPEG format). Include your name, address, telephone number, e-mail address if available, and entry category on the back of any hard copy photos and a self-addressed stamped return envelope.
3. CCD photos or scanned photos can be emailed to Anne-Marie Wheatley at amwheat@ix.netcom.com
4. Send picture with entry forms must be received by April 15th, 2000.

Entry Form for SVAS 1st Annual Photo Contest

Send to: Anne-Marie Wheatley

Member's Name: _____ Date: _____

Phone Number: _____ email _____

Include name, address, phone number, and entry category on the back of each hard copy entry and this information with electronic files submitted to Anne-Marie Wheatley - 2320 Sanford Court, Rescue CA 95672 or e-mail amwheat@ix.netcom.com. For any question, call 530-676-0566. Comments such as type of equipment, f stop, time exposure and other details are optional but may be of interest to people that view your picture.

Winter Star Party Site

A site is to be used for the winter months, at Miller's Hill School, near Eldorado Hills. This site will be available to SVAS members on scheduled star party nights only, from December 1999 through approximately May 2000 (Note: The May star party will be at HGO if there is no snow on the ground).

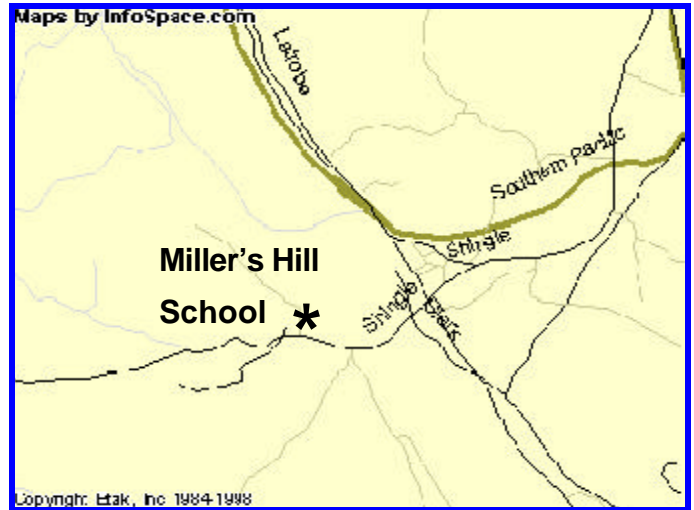
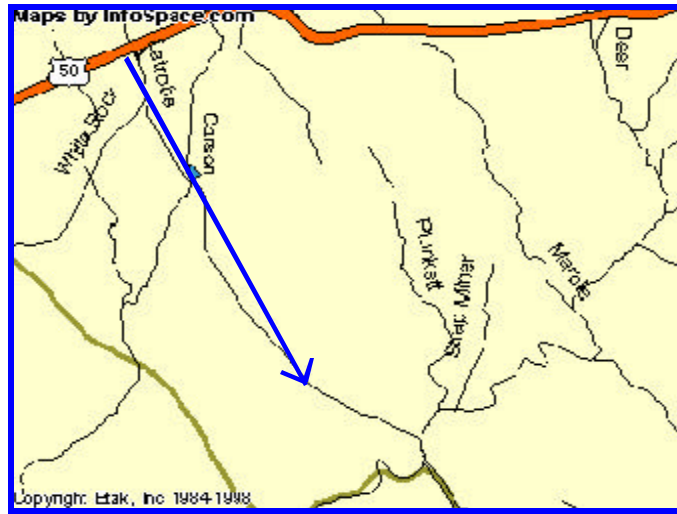
This site must not be used on any other day than the Star Party day.

Directions:

From Highway 50, exit at Latrobe-Eldorado Hills Blvd. Drive South on Latrobe Road for 8.5 miles.

After entering town, cross railroad tracks on Latrobe road. The next intersection (about 1/2 mile) is Latrobe Road and South Shingle Road. Turn right on South Shingle Road.

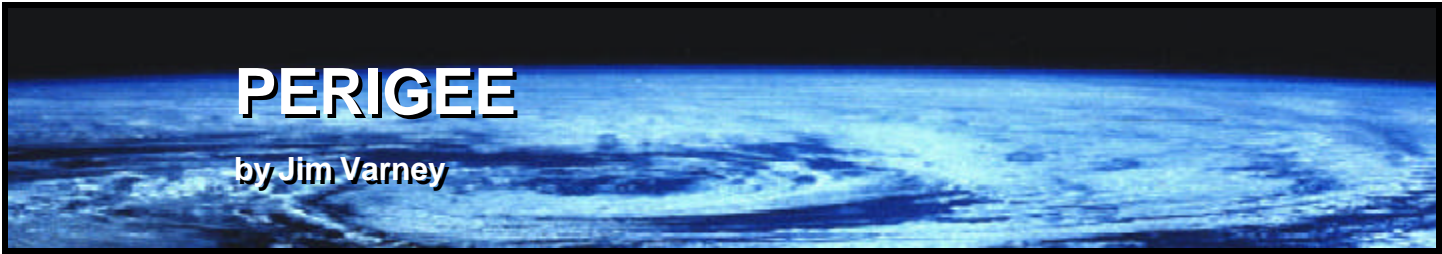
The viewing site is less than one mile west on South Shingle Road at Miller's Hill School.



Visit the SVAS website!

**Check it out at
[http://www.
skywatchers.org](http://www.skywatchers.org)**

**You can also download our
newsletter and be able to
see it in color.**



Two Interesting Satellites for February

February is not usually a month I associate with satellite watching – rain comes to mind instead – but, weather permitting, we will be visited by a couple of interesting naked eye satellites.

Resurs O1-3 Rk is a spent upper stage from a Zenit-2 rocket. On the launch pad a Zenit looks exactly like a No. 2 pencil, except this pencil is nearly 4 meters across and 60 meters tall. In 1994 this Zenit placed a land resources satellite into orbit. The upper stage “space junk” left in orbit provided one of the best naked eye satellite shows around, pulsing on and off from 2nd magnitude to invisibility as it crossed the sky. On August 14, 1995, I measured a flash period of 2.58 seconds. Nearly a year later, on July 6, 1996, I measured it at 13.77 seconds. The flash period gradually continued to lengthen until it stopped flashing completely.

These old rocket boosters are good to check in on from time to time. Oddly enough, boosters have been observed to suddenly start tumbling again after years of inactivity. If you see Resurs 1-3 Rk in February, will it be steady or will it flash?

Cosmos 1093 is a Tselina-D electronic intelligence satellite, used by the Soviets to listen in on American radio transmissions. Launched in April 1979, this 4,000 kg satellite is a relic of the Cold War. You won’t have much longer to see this museum piece; according to Alan Pickup’s decay calculations, it will reenter the Earth’s atmosphere in April 2000. That’s why the satellite will be nearly 1st magnitude – as it slowly spirals in towards its fiery death, it appears brighter to observers simply because it is closer to us as it passes over.

I don’t know if Cosmos 1093 is still functional. When it passes by, use your cell phone at your own risk!

Long-Range Satellite Predictions

These are bright, naked-eye satellites that are fairly easy to spot.

To use these predictions, just look in the listed direction somewhat prior to the time indicated. Take the listed time and subtract the error estimate and go out one minute before that. The “Drag Paradox” says that if a satellite experiences more drag than expected, it will appear earlier than predicted. If there’s less drag, it will be late.

If you can’t deal with uncertainty, go to my web page at www.softcom.net/users/jamesv a day or two before the event and get an updated prediction.

Selected Bright Naked Eye Satellites for Greater Sacramento
February 10 to 20, 2000 Times are PST
Start looking at least a minute prior to Time minus Error.
Don’t give up until at least a minute after Time plus Error.

Date	Name	NORAD CatNo	Time	Error (min)	Azim	Elev	Mag
Feb 10	TRMM	25603	6:34 pm	4	173	37	2
Feb 11	TRMM	25603	6:55 pm	5	180	41	2
Feb 11	Cosmos 2333 Rk	24298	7:23 pm	1	111	58	2
Feb 12	Resurs O1-3 Rk	23343	7:09 pm	1	116	58	1.5
Feb 13	Resurs O1-3 Rk	23343	7:38 pm	1	227	56	2
Feb 14	Cosmos 1093	11331	6:43 pm	10	77	78	1.6
Feb 16	Resurs O1-3 Rk	23343	7:27 pm	1	261	81	1.8
Feb 17	ISS	25544	7:13 pm	6	272	65	0

Azimuth is measured around the horizon from due north. North is 0, East is 90, South is 180 and West is 270.

Elevation is measured from the horizon (0) up to the zenith (90). “v” in front of a magnitude indicates reported flashing behavior. Rk indicates satellite is a dead rocket booster, not a live payload.

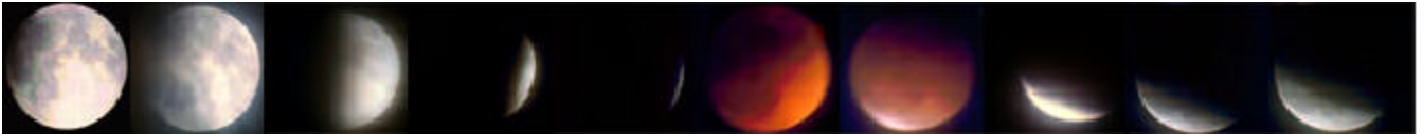


Photo: Charlie Coburn - SVAS member. The photos were taken using a Meade 4.5" f8 (910mm) Newtonian Reflector and a 2X barlow using a Pentax K1000 camera and Fuji Superia 800 film. The negatives were scanned on a film scanner and composited in Adobe Photoshop.

Lunar Eclipse of January 20

On the evening of January 20th, the first lunar eclipse of the new year occurred. The SVAS hosted an eclipse party at Miller's Hill School in Shingle Springs. The site is in the foothills with a sweeping panoramic view of Sacramento and beyond. About 20 SVAS members were present, many with scopes and another 30 students, parents, and guests came to view the eclipse.

Before the eclipse began, a channel 10 news crew showed up and talked to a number of the SVAS members. They stayed for the entire evening. I set up my big binoculars in the parking lot (next to a street light) so that they could video tape the process of bolting together the mount. Later I moved the binoculars to a darker area, but for viewing lunar eclipses, darkness is not a major requirement. I looked at the skyline and was surprised to observe cooling towers! I'm not sure how far Rancho Seco is from Latrobe, but the cooling towers were pretty obvious in the binoculars!

The weather acted like a two year old with a temper tantrum; in the early evening clouds obscured the moon, but later it seemed to cooperate and allow some nice viewing. By first contact, the moon was peeking through some breaks in the clouds. As the eclipse progressed and the moon rose, we had better viewing. Jupiter and Saturn are high in the southern sky these days and put on quite a nice display through fuzzy clouds. Often, a little haziness seems to enhance the contrast of the planets. Larry Harrison had his super planetary scope trained on the planets most of the evening and everyone was impressed with the beautiful views.

By time of second contact, the clouds parted enough for a nice view of the moon. The orange glow gives a surrealistic appearance and the view in the binoculars was excellent. I think the color of the moon was less orange than other eclipses I have

observed but this may be due to the hazy conditions. Predictions had been for a deeper color with an umbral magnitude of 1.33. The eclipsed moon was dark enough that some people checked out a few deep sky objects, such as M42 and the Beehive, but the conditions were generally unsatisfactory for more than the planets and the moon.

Although conditions were less than ideal, I enjoyed the evening and appreciated the opportunity to meet with old friends. Like other members present, it was fun to show the sky to newcomers and hear their delighted reactions and to observe another beautiful celestial event.

Although the next lunar eclipse is not as well positioned for observers here, it will occur on July 16th, 2000, a time of year that is certainly more likely to be clear. This next eclipse is for early birds or all nighters, and will occur early in the morning for us and the moon will set while still in eclipse.

David Buchla

January 2000 Meeting

The January SVAS meeting was facilitated by Joe Riddle (whom volunteered Thursday night!), Walt Heiges, and Chris Hulbe. The consensus of the group was to conduct a question and answer session.

The questions centered around three topics: Astronomy software, the moon, and telescope selection. Joe Riddle demonstrated the uses and abuses of The SKY software, by Software Bisque. Other programs were cited, and reviews of which have appeared in the past year in both *Astronomy* and *Sky and Telescope* magazines. After reading the reviews, Joe has concluded that software choice is a matter of familiarity and comfort. There is no "best" software, but there are many choices as to what feels most comfortable

for a given individual. Joe uses The SKY whenever he presents to the club, so many members have had a chance to see it in action.

Chris, Joe, and Walt demonstrated earth-lunar orbital mechanics through some simple demonstrations and discussion of the finer points of orbital mechanics. Participants had a chance to experience dizziness as they orbited each other. These orbital interactions are, in Joe's experience, both subtle and hard to present in a visual manner that explains all of the intricacies. The presenters suspect that the interest in the moon was piqued by the previous night's Lunar Eclipse. The mechanics of eclipses were also discussed.

Finally, the selection of a "first telescope" was addressed. Joe believes quite strongly in the principal that the best telescope is the one that will be used often. It is better to have a well-used six-inch reflector, than a rarely used eighteen inch techno-marvel. A six-inch telescope has enough light gathering ability to reveal thousands of deep sky (beyond the solar system) objects, millions of stars, and eight of the nine planets. That is enough telescope for a lifetime. Joe has been seriously observing for five years, and has yet to come close to "seeing it all" with his eight inch reflector that he built twenty-four years ago. Joe holds the probably controversial position that, if seeing objects is one's sole passion, that a computer driven telescope might simply be the way to go.

Learning the night sky is very important, but the computer driven telescope, when properly aligned and working well, eliminates the need to learn star-hopping. Joe admits to having digital setting circles for this reason, but is a die-hard star-hopper as well. Joe demonstrated how the computer software allows this to be done flexibly and quickly.

The meeting was rounded out and concluded by an incredible volume of sales of SVAS merchandise which will add to the club's funds.

Joe Riddle

COMET COMMENTS

by Don Machholz

No bright comets are in our skies these nights so this Comet Comments contains no ephemerides or orbital elements. This gives us the opportunity to look back at 1999 and to discuss the comets we hope to see this year.

Amateurs Gary Hug and Graham Bell of Eskridge Kansas discovered a new comet on CCD images they took through a 0.3-meter Schmidt-Cassigrain reflector on Dec. 10. The comet was magnitude 19 and near the Beehive cluster when found. Comet 1999 X1 (Hug-Bell) has a seven year orbital period and stays outside the orbit of Mars.

The LINEAR program found its final comet of the year on December 20. Comet 1999 Y1 is more than a year from its perihelion, which is a distant 3.2 Astronomical Units.

Fifty-six comets were discovered in 1999. Only 7 of them are periodic-returning in fewer than 200 years.

Who made these discoveries? The LINEAR project in New Mexico, designed to find asteroids and comets that may hit the earth, found 20 comets. Many of them were first thought to be asteroids before closer examination (often by others) detected a coma or short tail. The SOHO program found 19 comets. SOHO is a spacecraft in solar orbit, about a million miles from the earth. It constantly monitors the solar region and has taught us a great deal about the sun. SOHO's comets are very bright and are often part of the Kruetz sungrazer family. Most of the SOHO comets are seen entering, but not exiting, the solar region. It is believed that they disintegrate as they pass near the sun.

Amateurs visually discovered three comets. All were Austrians: Tillbrook, Lee and Lynn. All three comets were found south of the equator. Four other amateurs, in two teams of two, used their own CCD's to discover comets. Korlevic and Juric found a comet in February, while Hug and Bell found one in December. The remaining twelve comets were found by those using professional equipment, often in the search for hit (or near-miss) asteroids and comets. Incidentally, for each comet they find there are hundreds of asteroids found.

The year 2000 doesn't line up to be a great year for comets, but you never know when a bright one will be discovered. Comet LINEAR (1999 S4) was expected to reach magnitude 3 in July when it will be placed in the northern polar region. However, recent observations show that the comet is slow to brighten as it moves toward the sun, and during one stretch the dust production decreased rather than increased. Now at 14th magnitude, it will be interesting to see what happens before we lose it in the solar glare in early April. Comet McNaught-Hartley (1999 T1) may

reach magnitude 6 late this year, but it is within 70 degrees of the sun and far south until then. Finally, Periodic Comet Encke will be briefly visible from each Hemisphere late in the year.

COMET HUNTING NOTES: The first visual telescopic comet discovery was in 1680.

In the 1760's Charles Messier and others competed to visually discover new comets. The first photographic comet find was in the 1890's. For one hundred years these were the two chief methods of finding comets. So what happened in 1999? 56 new comets were discovered. Three were visual. Two were photographic. Fifty-one were found by CCD's.

Don Machholz (530) 346-8963 DonM353259@aol.com.
Web Page: <http://members@aol.com/cometcom/index.html>

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School and Public Star Party Calendar

The SVAS members who have volunteered have been a tremendous help this last year. Please check your schedules and see if you can help with either of these. No experience is required! If you want to come out for either of these star parties with your telescope, please email me at: susan_strosahl@hp.com or call me at 785-5556. I will supply directions to those who sign up to each respective star party. Don't forget to wear lots of layered clothing, it will be cold this month!

1. Tuesday February 8, 2000

Location: Edison School
1200 Dom Way, Sac, CA
200 People - k-6 + parents
Sunset 5:35 pm
Moonset 8:57 pm
Setup 5:00 pm

2. Friday, April 7, 2000

Location: Quail Glen Elementary School
1250 Cane Vari, Roseville, CA
People 100 - need 7 telescopes
Setup 6:30 pm
Sunset 7:35 pm
Moonset 11:00 pm

3. Saturday, June 3, 2000

Girl Scouts, Regional I
Location: TBA

4. Friday, June 30, 2000

Girl Scouts, Local
Location: Albert Einstein Middle School
9325 Mirandy Drive, Rancho Cordova, CA

5. Saturday, Sept 23, 2000

Girl Scouts, Regional II
Location TBA

Light and Shadow in the Carina Nebula

Previously unseen details of a mysterious, complex structure within the Carina Nebula (NGC 3372) are revealed by this image of the "Keyhole Nebula," obtained with NASA's Hubble Space Telescope. The pic-

ture is a montage assembled from four different April 1999 telescope pointings with Hubble's Wide Field Planetary Camera 2, which used six different color filters.

Image Credit: NASA, The Hubble Heritage Team (AURA/STScI)



Classifieds

For Sale: Mead LX 50 10" F/10 SCT

Goodies: tripod with equatorial super wedge, dual axis motors and hand controller keypad, variable power source AC/DC, 8x50 view finder and 1x orion Ezfinder, 24.5 super wide angle eyepiece, 1.25" eyepiece holder and 1.25" star diagonal, Meade heavy duty carrying case (foam lined), SCT viewing chair (handcrafted) and mini chair, dew shield.

Astrophotography goodies: Pentax ME camera body (needs work), lenses 28 mm, 50mm, 135 mm; illuminated reticule eyepiece 9mm, T-mount (Pentax) and T adapter, piggyback mount and adjustable camera mount, shutter trigger cable, tele-extender, counterweight system. \$2,500.00 FIRM. Contact Lloyd Townsend Home (530)756-5618 or niclsh@SOLISYS.COM

For Sale: Celestron C-8 Computerized. Purchased 12/15/98 for \$1929.43, will sell for \$1000 or best offer. Contact: Bill Hollister

Home: 916-652-2349 after 5PM Work: 916-785-0827

For Sale: Orion 2 inch Skyglow broadband filter \$75.00. New condition. Contact George Storm at 916-731-4036.

For Sale: Celestron 8" StarHopper reflector with 25 mm eyepiece. Excellent condition. \$400. Call Branko at (916) 483-2887.

If you love books and astronomy and have a few hours to spare, the Astronomical Society of the Pacific, located in San Francisco, has great need of a volunteer to help maintain our library. Contact Marilyn Delgado @415.337.1100 x100 or write to the Society at 390 Ashton Avenue, San Francisco, CA 94112.

WHOM TO CALL

(916) SVAS-111 To save time, press:

- 1-Last minute changes & updates for SVAS events
- 4-General Meeting information & location
- 5-Star party information & location

SVAS Web Page: <http://www.skywatchers.org>

1998 SVAS OFFICERS:

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Cary Chleborad 457-9115

Past President

Ray Gray 771-3712

Vice President

Walt Heiges 684-3421

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Marie Woodin 852-6647

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Mark Bonitata (530) 889-0889

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Stuart Schulz 736-0449

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Susan Strosahl 785-5556

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Chris Hulbe 967-3794

Sheri McFarland 961-9667

Melanie Merjil 689-3137

Joe Riddle 488-5634

Alysse Rocha 985-4825

Susan Strosahl 920-0247

Welcome Chairman

Stosh Groner 989-9281

Telescope Making

Cary Chleborad 457-9115

WHERE TO MEET (See below for directions)

General meetings are held on the third Friday of each month, 7:30 p.m. at **Sacramento State University (CSUS), Mendocino Hall, Room 1015, 6000 J Street, Sacramento, CA.**

Visitors Welcome!

To Subscribe to the SVAS email list, send an empty message to svas-subscribe@makelist.com. Once subscribed, emails can be sent to svas@makelist.com.

The SVAS Newsletter is published monthly by and for the membership of the Sacramento Valley Astronomical Society. Permission is granted to other amateur astronomy organizations to reproduce in whole or in part for internal non-profit use, provided credit is given to the SVAS Newsletter and to authors of the reproduced materials.

Articles—Manuscripts and letters are welcome preferably via email or 3.5" diskette, in Word or text format. Items may be mailed to *Anne-Marie Wheatley, 2320 Sanford Ct, Rescue, CA 95672*, or emailed to amwheat@ix.netcom.com. **Deadline for the following month's newsletter is the Wednesday following the SVAS General Meeting.**

Advertising—Commercial non-personal advertising, business card through full page, is available. Contact Sheri McFarland at 961-9667 for information.

Classified advertising is free to members of SVAS. Submit ads monthly to the SVAS Newsletter at the above address.

HGO

SVAS maintains the Henry Grieb Observatory (HGO) in the Sierras for members only.

Monthly star parties are also held at the site.

For directions and regulations, please call Vice President **Walt Heiges** at **684-3421**

DIRECTIONS TO CSUS MENDOCINO HALL

From Hwy 50, take the Howe/Power Inn exit. At stop light, go straight across Howe. Go down two lights and turn right to enter the CSUS campus. Park in the parking lot across from the Hornet Bookstore. Mendocino Hall is located next to the Hornet Bookstore.

Membership Renewal/ New Member Application

Yes! Please renew my membership, or make me a new member of the Sacramento Valley Astronomical Society.

Renewal New Membership

General, \$25 — Enjoy monthly meetings, informative monthly newsletters, and awe inspiring views of the universe at monthly star parties.

Observatory, \$75 — Enjoy all the benefits of a general membership plus private use of the Henry Grieb Observatory (HGO). Must be a member for 6 months or longer, and must be approved by the Board of Directors.

1 year 2 years 3 years

Tell us about yourself...

Name(s) _____

Address _____

City _____ Zip _____

Telephone (_____) _____

E-Mail Address _____

Yes, I would like to be contacted about volunteering.

I agree to abide to the terms and conditions* governing use of the Henry Grieb Observatory property. I understand that failure to abide can result in revocation of use privileges and SVAS membership.

Signed _____ Date _____

*A copy of the HGO Rules of Operation and Regulations will be available upon request to all members.

Note: The term of annual membership is March-to-March. Dues for persons joining in September to December will be pro-rated. New members joining in January or February will be advanced to March.



Enclose payment and mail to:

**Sacramento Valley
Astronomical Society**
P. O. Box 15274
Sacramento, CA 95851-0274



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SVAS Calendar of Events

Please call SVAS-111 to verify event locations, dates, and times.

February

- 5 — **Star Party**, Latrobe (open only to members and their guests).
- 17 — 7:00 pm. **Board Meeting**, Denny's at Watt & Auburn.
- 18 — 7:30 pm. **651st General Meeting** at CSUS Mendocino Hall, Room 1015. Speaker: TBA

March

- 4 — **Star Party**, Latrobe (open only to members and their guests).
- 16 — 7:00 pm. **Board Meeting**, Denny's at Watt & Auburn.
- 17 — 7:30 pm. **652nd General Meeting** at CSUS Mendocino Hall, Room 1015. Speaker: TBA

April

- 4 — **Star Party**, Latrobe (open only to members and their guests).
- 16 — 7:00 pm. **Board Meeting**, Denny's at Watt & Auburn.
- 17 — 7:30 pm. **653rd General Meeting** at CSUS Mendocino Hall, Room 1015. Speaker: TBA

General Meetings are held on the 3rd Friday of the month at CSUS Mendocino Hall (next to bookstore) Room 1015

Star parties are held on the closest Saturday to the new moon at the Henry Grieb Observatory (HGO) or at Miller's Hill School (Latrobe) and are open only to SVAS members and their guests.