



SJAA EPHEMERIS

SJAA Activities Calendar

Jim Van Nuland

(late) August

- 22 Astronomy Class at Houge Park. 7:30 p.m. TBA
- 22 Houge Park star party. Sunset 7:50 p.m., 59% moon rises 10:53 p.m. Star party hours: 9:00 until midnight.
- 23 Coyote Lake County Park public star party. Sunset 7:48 p.m., 47% moon rises 11:38 p.m.
- 30 Dark Sky weekend. Sunset 7:39 p.m., 0% moon sets 7:33 p.m.

September

- 5 Houge Park star party. Sunset 7:30 p.m., 37% moon sets 10:24 p.m. Star party hours: 8:30 until 11:30.
- 13 **General Meeting at Houge Park.** 8 p.m. Slide and Equipment night. Latest images, latest equipment, being made by our members.
- 19 Astronomy Class at Houge Park. 7:30 p.m. TBA
- 19 Houge Park star party. Sunset 7:08 p.m., 72% moon rises 9:37 p.m. Star party hours: 8:00 until 11:00.
- 20 Coyote Lake County Park public star party. Sunset 7:07 p.m., 61% moon rises 10:30 p.m.
- 22 Autumnal Equinox. 8:44 a.m.
- 25-27 CalStar star party at Lake San Antonio County Park
- 27 Dark Sky weekend. Sunset 6:56 p.m., 1% moon rises 6:24 p.m.

October

- 4 Dark Sky weekend. Sunset 6:46 p.m., 29% moon sets 9:47 p.m. Henry Coe Park's "Astronomy" lot has been reserved.
- 10 Houge Park star party. Sunset 6:37 p.m., 84% moon sets 3:45 a.m. Star party hours: 7:30 until 10:30.
- 11 **General Meeting at Houge Park.** 8 p.m. Our speaker is Dr. Monika Kress (SJSU), on the Virtual Planet Laboratory
- 24 Astronomy Class at Houge Park. 7:30 p.m. TBA
- 24 Houge Park star party. Sunset 6:18 p.m., 12% moon rises 4:14 a.m. Star party hours: 7:30 until 10:30.
- 25 Dark Sky weekend. Sunset 6:17 p.m., 6% moon rises 5:17 a.m.

The Board of Directors meets before each general meeting. Call the hotline for the exact time.

CalStar 2008 Sept. 25- 27

Rob Hawley

SJAA is pleased to announce that registration for this year's CalStar is open.

One big change in 2008 will be food. We decided not to contract with the caterer this year. The meals were simply too expensive and less than 1/4 of the attendees participated.

This year we are eliminating the car placard system we experimented with in 2007. Attendees will be on the honor system as in the past. We still need everyone to register since having a good count allows us to negotiate with the park for better service (i.e. getting enough toilets and getting them pumped).

An important reminder is that we close the roads in the dark and casual areas to all traffic at 8 p.m. We ask you to respect the road closures and use the Late Arrival Entrance we provide (or arrive on time).

The CalStar website (<http://www.sjaa.net/calstar>) will give you up to date info on the event, suggestions for first time attendees, directions, and even allow you to tour the site so you can select where you want to set up.

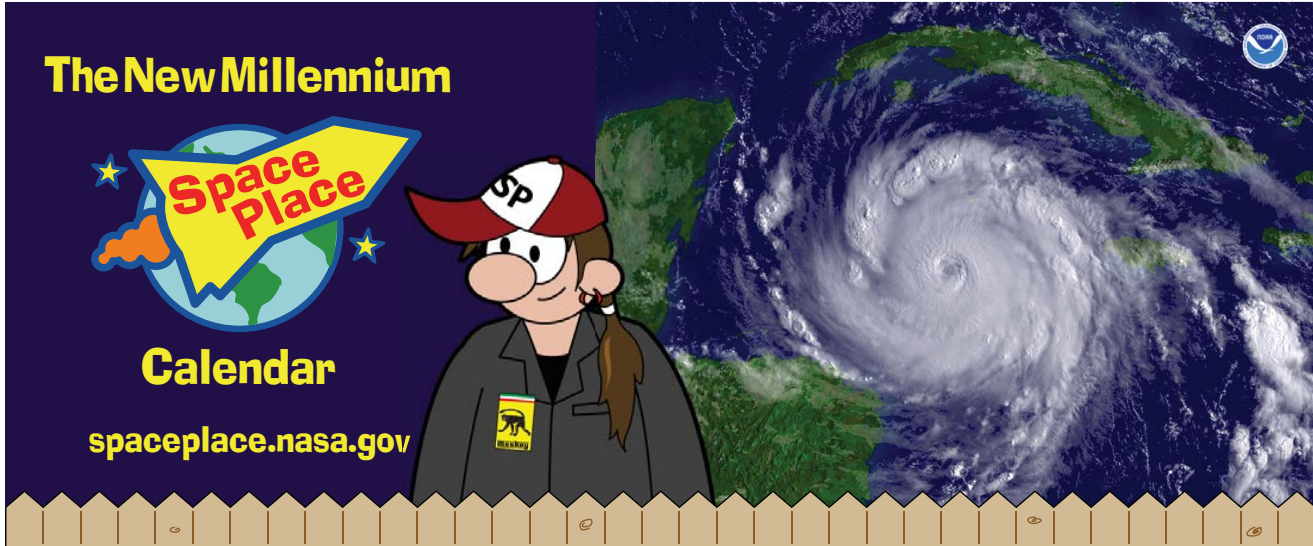
I hope you decide to join us.



24 hour news and information hotline:

(408) 559-1221

<http://www.sjaa.net>



Hurricane Dean hit the Yucatan Peninsula in Mexico on August 21, 2007, as the most severe (Category 5) storm. This image was made by a GOES satellite. Yes, Earth has some terrible weather, but check out other places in the solar system at spaceplace.nasa.gov/en/kids/goes/planets.

SEPTEMBER 2008

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	1	2	3	4	5	6
Classical Music Month. How can events on the Sun affect the sound of classical music on Earth?	Labor Day. Since you have the day off, what better way to spend it than on a Wild Weather Adventure?		Skyscraper Day. In this game, you fill a skyscraper with squishy balls, then see how small you can squish them.		Launch of Voyager 1, 1977. See photos of the solar system taken by this pioneering spacecraft at The Space Place gallery.	
FIRST QUARTER 7 Grandparents' Day. Your grandparents can help you with the How Old Do I Look? game.	8 International Literacy Day. See if your word unscrambling literacy can Beat the Heat in this fun game.	9	10 Swap Ideas Day. Some ideas are better than others when tested by the same rules. Try this class experiment to see how the best ideas evolve.	11	12	13
14 Luna 2 crashes into the Moon, 1959; the first spacecraft to reach another body. How did the Moon form? Why would we not be here if it hadn't?	FULL MOON 15	16 Hurricane Katrina National Day of Prayer and Remembrance. Learn how these monster storms form and see a video of Katrina from space.	17	18	19	20 American Association for the Advancement of Science founded in 1848. Check out your favorite cool science subjects at The Space Place.
LAST QUARTER 21	22 Autumnal Equinox (first day of fall)	23	24 Punctuation Day. Punctuate your conversations with fun facts about the "signs" of the zodiac.	25	26	27 Family Health and Fitness Day. A good day to go to the park and launch pop rockets.
28	NEW MOON 29	30				

Month of September: spaceplace.nasa.gov/en/kids/ulysses

- Sep. 1: spaceplace.nasa.gov/en/kids/goes/wwa
- Sep. 3: spaceplace.nasa.gov/en/kids/eo3_compression.shtml
- Sep. 5: spaceplace.nasa.gov/en/educators/teachers_ss_images.shtml
- Sep. 7: spaceplace.nasa.gov/en/kids/galex/whats_older
- Sep. 8: spaceplace.nasa.gov/en/kids/st8/thermal_loop

- Sep. 10: spaceplace.nasa.gov/en/educators/teachers_page2.shtml#darwin
- Sep. 14: spaceplace.nasa.gov/en/kids/phonedrmarc/2003_march.shtml
- Sep. 16: spaceplace.nasa.gov/en/kids/goes/hurricanes
- Sep. 20: spaceplace.nasa.gov/en/kids/cool_subjects.shtml
- Sep. 24: spaceplace.nasa.gov/en/kids/st6starfinder/st6starfinder2.shtml
- Sep. 27: spaceplace.nasa.gov/en/kids/rocket.shtml

Some Say Phoenixes end in Fire, Some Say in Ice

Akkana Peck

This September Venus, Mars and Mercury continue the twilight dance they began last month.

As the month opens, the trio makes a nice triangle in the dusk sky. If you can get a clear western horizon on the 1st (that's a Monday night), start looking right after sunset, since they'll be sinking fast. Bright Venus (magnitude -3.8) should be fairly easy to find. Once you've found her, swing your binoculars left about three degrees and a little down for much fainter magnitude-0 Mercury; then try for the challenge of Mars, at magnitude 1.7 and located a bit under four degrees up and to the left of Mercury (5-3/4 from Venus).

And on that night of Sep 1, don't miss the slim crescent 2-day-old moon, below and to the right of Mercury – just follow a line from Venus to Mercury, then go past Mercury a little more than that distance again.

The three evening planets hold their evening positions all month (as Mercury swells to a narrow crescent while gibbous Venus thickens) ... The tightest grouping is on the night of the 11th (conjunction is actually on the 12th during our daytime), when Venus and Mars will be scarcely a quarter of a degree apart and Mercury hovers about three degrees away. By the end of the month, Mercury and Mars will be so low they'll be tough to spot and Venus will stand alone, joined again by the moon, this time only 1.7 days old on Sep 30 and much harder to see.

As you look at Mars, have a nice refreshing glass of di-hydrogen oxide and think about the Phoenix probe, sitting in Mars' arctic carrying out its mission of soil analysis looking for water and other signs of habitability. Last month the plucky probe finally succeeded in analyzing a sample of soil to show that it did contain water.

Seemed a bit anticlimactic after all the "Water on Mars!" headlines we've been subjected to over the past few years, didn't it? The difference this time was that they directly measured water, not just evidence of it having been there in the past or probably having recently melted or sublimed. I'm sure all the Phoenix team members breathed a collective sigh of relief as they got the go-ahead to finish the assigned mission, which runs through September. After that Phoenix will go into weather-monitoring mode as Mars enters its frigid winter. Cross your fingers – the probe is not really expected to survive the Martian winter (some say Phoenixes end in fire, some say in ice), but it could happen – think how much longer the Rovers have been roving than anyone ever expected!

Meanwhile, in the night sky, Jupiter is now two months past opposition, in about as convenient a spot as it's going to get this year. Since it's so far south (in Scorpius), it'll never rise higher than 30° ... this probably isn't a year when you're going to see swirls in the great red spot, but it partially makes up for that with lovely binocular and low-power telescope views as it moves through the heart of the Milky Way.

Uranus is at opposition on the night of the 12th, hanging out in a star-poor area near the border between Aquarius and Pisces. On that same night Neptune, just a bit past opposition in Capricornus, is occulted by the moon – but the occultation is just finishing as they rise, and the chance of seeing Neptune emerge from the bright limb of a rising nearly full moon is slim.

Pluto, meanwhile, is conveniently located near M23 and NGC 6507 in northern Sagittarius. It's still in the Milky Way so there should be plenty of stars nearby to guide your Pluto hunt – or, if you're more the "glass half full"

sort, plenty of stars nearby to confuse you.

Saturn is lost in the sun's glow until the end of the month, when it emerges into the morning twilight.

ASTRONOMY magazine renewal time

Jim Van Nuland

It's time to renew our group subscription to Astronomy magazine. The rate for 2009 is still \$34, or \$60 for two years. Please send a check payable to Jim Van Nuland, 3509 Calico Ave., San Jose CA 95124.

Subscribers: if I have your e-mail address (from the SJAA roster), you should have gotten a note with particulars of your subscription. If not, write me, e-mail address below.

If you subscribe independently, and your subscription ends during 2008 or 9, you may convert to the group rate. Send a check and the renewal card or a mailing label to me, and you'll be added to the group for an additional 12/24 months.

If you do not subscribe and wish to do so, send the \$34/60 and your subscription will begin with the January 2009 issue.

I will hold your checks until late September, when the renewal package must be sent in. So don't worry that your check doesn't clear promptly.

Any questions? Call me at 408.371.1307, from 11 am to 11 pm, or e-mail to <jvn@svpal.org>.

PLEASE NOTE: this applies to Astronomy magazine, not Sky & Telescope! The latter subscription is paid to the treasurer as part of your SJAA dues.

Good Reading!

By all outward appearances, the red supergiant appeared normal. But below the surface, hidden from probing eyes, its core had already collapsed into an ultra-dense neutron star, sending a shock wave racing outward from the star's center at around 50 million kilometers per hour.

The shock wave superheated the plasma in its path to almost a million degrees Kelvin, causing the star to emit high-energy ultraviolet (UV) radiation. About six hours later, the shock wave reached the star's surface, causing it to explode in a Type IIP supernova named SNLS-04D2dc.

Long before the explosion's visible light was detected by telescopes on Earth, NASA's Galaxy Evolution Explorer (GALEX) space telescope captured the earlier pulse of UV light — scientists' first glimpse of a star entering its death throes.

"This UV light has traveled through the star at the moment of its death but before it was blown apart," explains Kevin Schawinski, the University of Oxford astrophysicist who led the observation. "So this light encodes some information about the state of the star the moment it died."

And that's exactly why astronomers are so excited. Observing the beautiful nebula left behind by a supernova doesn't reveal much about what the star was like before it exploded; most of the evidence has been obliterated. Information encoded in these UV "pre-flashes" could offer scientists an unprecedented window into the innards of stars on the verge of exploding.

In this case, Schawinski and his colleagues calculated that just before its death, the star was 500 to 1000 times larger in diameter than our sun, confirming that the star was in fact a red supergiant. "We've been able to tell you the size of a star that died in a galaxy several billion

light-years away," Schawinski marvels.

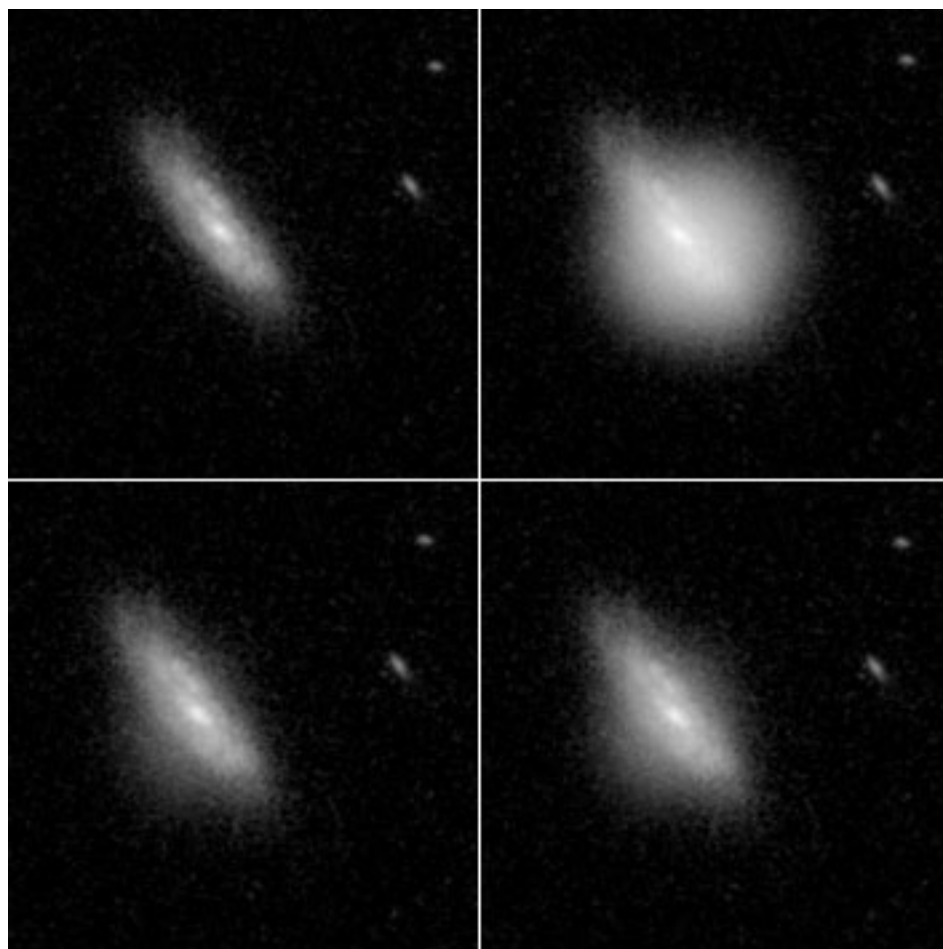
"GALEX has played a very important role in actually seeing this for a few reasons," Schawinski says. First, GALEX is a space telescope, so it can see far-UV light that's blocked by Earth's atmosphere.

Also, GALEX is designed to take a broad view of the sky. Its relatively small 20-inch primary mirror gives it a wide, 1.2-degree field of view, making it more likely to catch the UV flash preceding a supernova.

With these advantages, GALEX is uniquely equipped to catch a supernova before it explodes. "Just when we like to see it," Schawinski says.

For more information, visit <http://www.galex.caltech.edu>, "Ultraviolet Gives View Inside Real 'Death Star.'" Kids can check out how to make a mobile of glittering galaxies at http://spaceplace.nasa.gov/en/kids/galex_make1.shtml.

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



Sequence of images shows supernova start to finish. The top left image shows the galaxy before the supernova. At top right, the bright UV flash called the shock breakout indicates a red supergiant has collapsed. At bottom left, moments later, the flash is mostly gone. As the debris expands, it heats up again and becomes brighter (bottom right). The supernova became 10 times the size of the original over the following few days, thus becoming visible to supernova hunters.

Credit for Attending Silicon Valley Astronomy Lectures

Andrew Fraknoi

This fall, we will begin the tenth annual Silicon Valley Astronomy Lectures at Foothill College and will offer six exciting new talks on recent developments in astronomy.

We wanted to let you know that it is now possible to earn a unit of credit at Foothill College for attending all six Wednesday evening lectures during the 2008-2009 school year (one absence is OK) and writing a short paper on an astronomy topic of your choice.

If you are interested, you should register for the course Astronomy 36 in the fall quarter. (Grades will be assigned in the spring quarter, after all the lectures have happened and you have written your short paper.)

Registration is at: <http://www.foothill.edu/reg> Registration is limited and open now on a first come, first served bases.

We might also mention that Foothill's day & evening "Astronomy for Poets" classes are now open for public registration, if you or someone you know is interested in a fuller introduction to astronomy. We call them "Astronomy for Poets" to emphasize that no background in science or math is required or expected. Every year, we have students from ages 16 to 80 taking these classes.

In the fall of 2008, we offer Astronomy 10B (a first course, despite the B in the name), an introduction to stars, galaxies, and the Big Bang. It is being taught in room 8338, our newly-built lecture hall with spectacular audio-visual facilities.

Hope to see you at the lectures, whether you register or not.

NASA Ames Return to The Moon Family Night

Jim Parsons

My name is Jim Parsons and on behalf of Ames Research Center, I would like to invite the members of The San Jose Astronomical Association to the upcoming 2nd "Return to the Moon" Family Night at NASA Ames. This occasion is taking place in hopes of informing the public of the upcoming Lunar Reconnaissance Orbiter (LRO) and its attendant Lunar CRater Observing and Sensing Satellite (LCROSS) mission which will help obtain vital data necessary for the return of humans to the moon and any successful long term presence on the moon.

Last year's Family Night event was a great success with a public turn out of over 6,500 people who enjoyed presentations connected with the upcoming missions to the moon.

This year, The Return to the Moon Family Night will take place 6 September 2008. We are planning presentations from team members, demonstrations of robotic rovers, displays of Apollo Moon rocks and soil samples and an opportunity for astronomical groups to bring telescopes onto Ames Research Center for an evening of lunar viewing at Ames. This would be a wonderful opportunity to introduce the SJAA to many thousands of Bay Area residents who may not be familiar with your organization.

The day's events will take place Saturday 6 September 2008 starting at 3:00 p.m. running through 10:00 p.m. Presentations will be from 4:30 p.m. through 8:30 p.m. and lunar telescope observation will begin at 7:30 p.m.

I hope we can interest The SJAA and its members to attend and enjoy the evening as we come ever closer to the launch of LRO and the LCROSS payload to pave the way for an eventual human return to the moon.

The Last 31 Days In Astronomy

AUG-11-2008 **Enceladus Flyby** The Cassini spacecraft made its closest approach to the ice geyser moon around Saturn. It got as close as 30 miles. If it is still available, a blog is available that captures the excitement felt by Carolyn Porco and others on the team. <http://blogs.nasa.gov/cm/blog/cassini-aug08/>

AUG-10-2008 **Hubble's 100,000 Spin** Hubble completed its 100,000th orbit. The next shuttle mission will repair and upgrade the telescope in early October. All potential delays including a fuel tank for a possible rescue mission have been overcome so far. <http://www.jpl.nasa.gov/news/features.cfm?feature=1824>

AUG-1-2008 **Eclipse defeats clouds** Many eclipse chasers risked cloudy skies but most rewarded with good views. The plane-based viewers had no risk of clouds and they got about a minute more of totality than those on the ground. NASA TV broadcast from China and clouds were abundant but cleared enough to capture totality for those of us left at home. And the folks on San Jose-based MWT Associate's Siberia trip snubbed their noses at the 70% prediction of rain and got a great view. <http://cs.astronomy.com/asycs/blogs/astronomy/2008/08/06/clear-skies-for-totality.aspx>

JUL-30-2008 **Ethane Lakes** Cassini has confirmed that lakes of liquid hydrocarbons exist on Saturn's moon Titan. One lake, called Ontario Lacus because it is just slightly larger than Lake Ontario, consists of liquid ethane. At 300 degrees before 0 Fahrenheit, ethane can be a liquid and can also evaporate and later rain back down onto the surface. <http://jpl.nasa.gov/news/news.cfm?release=2008-152>

Star - B - Q 2008

All photographs and captions courtesy of Morris "Mojo" Jones.



Fremont Peak Observatory

Update From Jane Houston Jones

I'll be supporting NASA's 2009's International Year of Astronomy (IYA) efforts by recording a monthly podcast featuring the NASA IYA topic and monthly celestial object. You can see what we'll be doing here: <http://astronomy2009.nasa.gov/news.htm>. My What's Up podcast will be just one component of the monthly NASA material.

If you are ever visiting the LA area, JPL has lots of public events. We have monthly lectures, both here at JPL for the public and at Pasadena City College. We have an active speaker's bureau. We have public tours every day and our annual open house occurs each May. All

these events can be found on the JPL Public Services website (<http://www.jpl.nasa.gov/ps/>) and Griffith and Mt. Wilson Observatories are just around the corner, too.

And every first quarter moon weekend you'll find Mojo (ed. note: Mojo is Jane's husband, Morris Jones) and I and our Old Town Sidewalk Astronomers cohorts out on the sidewalks of Pasadena and Monrovia serving up views of the moon and planets. The schedule is at <http://www.otastro.org/>. Many new moon or third quarter moon weekends we trek out I-10 near Desert Center for dark sky observing weekends, to a spot we first found during a Messier Marathon with Don Machholz. It's our favorite observing location now.

Jane Houston Jones



*Peter Jenniskens signs a copy of his book **Meteor Showers and their Parent Comets** for Richard Ozer.*



Jane Houston Jones with Akkana Peck and Dave North.



The Star-B-Q attendees gather near the observatory for the raffle drawing and awards presentations prior to the talk by Peter Jenniskens.

Telescope Loaner Program

The loaner program offers members a means to try scopes of various sizes and technologies before you buy. It is one of the real jewels of being a member of the club. Scopes are available for all experience levels.

The inventory is constantly changing. As of this writing (early August) these scopes were available.

Scope Number	Scope Description
42	11x80 Binoculars
43	4.5" f/8 Orion XT Dob
44	4.5" f/8 Orion Skyview Newt
37	4" Celestron Flourite Refractor
32	5.5" f/7.6 Signature Dob
23	6" f/8 Edmund Newt on EQ Mount
13	6" f/8 Orion XT Dob
34	8" f/10 Dynamax S/C
29	8" Celestron S/C Astrophoto
14	8" f/8.5 Homemade Dob
35	8" f/6 Meade Newt on EQ Mount
7	12.5" f/7 Homemade Dob
41	18 inch f/4.5 Sky Designs Dob
10	Star Spectroscope

For up to date information please see the loaner program web page: <http://www.sjaa.net/loaners>

Slide and Equipment Night September 13, 2008 8 p.m. Houge Park

This "show and tell" night is one of the most popular annual events at SJAA. Bring equipment or images to share or just listen to what others bring in that may surprise you.

Officers and Board of Directors

Pres Rob Hawley (408) 997-6526
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Dir Gordon Reade
Dir Robert Armstrong
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The SJAA *Ephemeris* is published in three formats: hardcopy, Adobe Acrobat PDF, and HTML. The PDF and HTML versions are found at <http://ephemeris.sjaa.net>.

Articles for publication should be submitted by the 10th of the previous month. The PDF version is generally available by the 24th of the previous month and the HTML version by the last day of the previous month.

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San Jose Astronomical Association Membership Form

P.O. Box 28243 San Jose, CA 95159-8243

New **Renewal** (Name only if no corrections)

I'll get the Ephemeris newsletter online

<http://ephemeris.sjaa.net> Questions?

Send e-mail to membership@sjaa.net

Membership Type:

- Regular — \$20
 Regular with Sky & Telescope — \$53
 Junior (under 18) — \$10
 Junior with Sky & Telescope — \$43

Bring this form to any SJAA Meeting
or send to the club address (above).

Please make checks payable to "SJAA".

Subscribing to Sky & Telescope magazine through the SJAA
saves you \$10 off the regular rate. (S&T will not accept multi-year
subscriptions through the club program. Allow 2 months lead time.)

You can join or renew online:

<http://www.sjaa.net/SJAAmembership.html>

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