

# SJAA EPHEMERIS

## Eclipse on the Bounty

Rob Hawley

Eclipses are exciting events. But nail biting is not supposed to be one of the adjectives. Heart stopping is supposed to be used to describe the beauty of

*almost* the same size. That *almost* was important for this eclipse. The moon's orbit is not a circle. If the moon is further from the earth an annular eclipse



*This photo is taken shortly before totality. Clouds were prevalent all day and just started to clear when this photo was taken. Photo by Rob Hawley.*

the eclipse not the events leading up to it.

Solar eclipses happen elsewhere in the solar system. Spectacular eclipses only happen on earth due to the coincidence that the sun is 390 times bigger than the moon and the moon is 390 times closer. Thus they appear

occurs where the sun's surface is not completely masked. If the moon is closer then a long total eclipse occurs (like in Baja). When this eclipse started near New Zealand the moon was slightly too far away so the eclipse was an annular. As the path of the shadow moved NE toward Pitcairn Island, the

*Continued on page 2*

**24 hour news and information hotline: (408) 559-1221**  
**<http://www.sjaa.net>**

## SJAA Activities Calendar

Jim Van Nuland

### May

- 7** Dark sky weekend. Sunset 8:03 p.m., 0% moon rise 6:06 a.m.
- 13** Houge Park star party. Sunset 8:08 p.m., 30% moon sets 1:21 a.m. Star party hours: 9:00 to midnight
- 14** ATM class at Houge Park. 7:30 p.m
- 21** **General meeting.** 8 p.m. Naishi Min on ancient Chinese Astronomy. See page 5.
- 26** ATM class at Houge Park. 7:30 p.m
- 27** Houge Park star party. Sunset 8:19 p.m., 74% moon rise 0:48 a.m. Star party hours: 9:30 to midnight
- 28** Dark sky weekend. Sunset 8:20 p.m., 63% moon rise 1:25 a.m.

### June

- 4** Dark sky weekend. Sunset 8:25 p.m., 2% moon rise 4:40 a.m. DST
- 10** Houge Park star party. Sunset 8:28 p.m., 16% moon sets 11:54 p.m. Star party hours: 9:30 p.m. to midnight.
- 11** ATM Class at Houge Park. 7:30 p.m.
- 11** Coyote Lark Park star party. Sunset 8:28 p.m., 23% moon sets 12:29 a.m. Start at 9:30.
- 18** **General meeting.** 8 p.m. Dorothy Schaumber from the Lick Observatory. History of Lick and its colorful cast.
- 23** ATM Class at Houge Park. 7:30 p.m.

The Board of Directors meets at 6:00 p.m. preceding each general meeting. All are welcome.

curvature of the earth brought the moon just close enough to cause totality. I opted to try for totality north of the legendary Pitcairn Island (of Bounty fame).

This trip was organized by ASP and had very distinguished speakers

including Frank Drake (who was on the bridge during the eclipse), Alex Filippenko, Mike Bennett, and others including several meteorologists. The captain had successfully seen two before and was definitely interested in adding a third.

Eclipses at sea are good news and bad news. The good news is you can position the boat virtually anywhere on the track (if the captain is willing). The bad news is that you are at sea which means rocking, salt spray, wind, and a somewhat greater chance of low cumulus. This captain was so professional that he held a dry run the day before to see which way the boat was most stable and to check sun angles.

### Directions to Houge Park

Houge (rhymes with "Yogi") Park is in San Jose, near Campbell and Los Gatos. 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.

From Hwy. 85, take the Bascom Avenue exit. Go north, and turn right at the first traffic light, onto White Oaks Road. At the first stop sign, turn left onto Twilight Drive. You will now be passing the park. Turn right at the first driveway, into the parking lot.

### *Venus visible! Diamond Ring! A corona elongated NE to SW! Lots of prominences.*

Eclipse day began well. The captain got to the track early after traveling east then north from Pitcairn Island (about 21S 128 W). At 6 AM our site had only scattered clouds.

First contact (the beginning of the partial phase) was about 10:30 AM. We turned and headed southwest along the track (our most stable direction). By 11 AM the eclipse was progressing nicely. I had my 80 mm scope and was recording pictures of the partial phases. The air was noticeably cooler by 11:30. Unfortunately the humid tropical air reacted to that sudden cooling by forming clouds. With totality only 30 minutes away the skies turned from scattered to broken clouds.

Finally about 11:45 (E-10 minutes) the crescent sun disappeared behind a huge cloud. At that point it looked like my first cloud-out was inevitable. I forgot about my telescope and just scanned the skies hoping for a miracle. A deathly quiet descended on the ship.

Within seconds of totality the sun moved into thinner clouds and then totally into the clear. Venus visible! Diamond Ring! A corona elongated NE to SW! Lots of prominences. I watched for about 15 seconds then remembered my telescope. Seconds wasted in a futile attempt to get some pictures. I had the

good sense to abandon the telescope and look up just before the end of totality. 38 seconds over in the blink of an eye.

The experts had made a number of predictions for this event. We had expected lots of beads (I did not see any with my unaided eyes, but my wife did with binoculars). The sky was pretty light and the corona was only visible about 1 solar diameter on each side of the sun. Prominences and or chromosphere were visible all around the sun. This was a very striking event.

I have been asked in the past why go to more than one eclipse. There were a lot of "eclipse virgins" on this trip. Anyone



The ship puts out the eclipse success flag after viewing the total eclipse. Photo by Rob Hawley.

of them could now try to explain it. Eclipses are something that you experience not just observe. I am already set for Libya in 2006 (no clouds there!). It looks like in 2008 I will be joining TravelQuest in Siberia. And in 2010 the track is again close to Tahiti.

[Ed. Note: For another view of the eclipse see <http://www.moonglow.net/eclipse/2005apr08/index.shtml> ]

## Factoids

Dave North

First, May is the last of the Pretty Good Months for mooning in the evening. It may be the best, simply because your odds of decent weather and steady seeing are pretty good. So get out and do it.

My own viewing over the last month has been pretty grim between travels and rain etc. I'm writing on April 10, and the odds for the next week look okay, so here's hoping. In the mean time, some factoids.

Factoids are more or less brief and unrelated observations that probably have little cohesive value, won't change your life, but may nevertheless spark interest. Nothing you're likely to read in this column will be unique or even particularly pithy. There's probably nothing you couldn't find at the library or on the web.

It's the choice of blather makes any assemblage, column or other maundering worthwhile (if it in fact actually is).

So here's some choice blather. My choice.

First up is regolith. Most of the Moon's surface is covered by a fine 'groomed' dust. It's the result mostly of collisions of just about everything (meteors, dust, solar wind) with the Moon's surface. It runs about 2-8 meters thick on the Maria, and maybe about twice that on the highlands.

Astronauts commented that one of the hardest things about being on the Moon was trying to keep dust and "fines" (extremely fine dust particles) out of everything. They were generally not successful. The vast majority of obvious big features on the Moon are about 3.8 billion years old, ranging down to 3.1 billion years.

Some months ago I questioned whether Moon formation via selective accretion was reasonable. Further inspection of this idea implies it really isn't, due to volatile imbalance and some subtle radiometric differences. Or at least maybe not. However, this also led to further inspection of the Big Impact hypothesis. As far as I can tell, it doesn't add up either. So don't go listing that as a done deal. I'll stick with "I don't know" for now.

The first science fiction film, made in 1902, was "A Trip To The Moon." It was made by Georges Mèlès, a French (or "Liberty") person so the actual title was "Le Voyage Dans La Lune," which sounds a bit more romantic. It was a lighthearted sendup of overly conservative scientists, primarily.

Every first full Moon in October, residents near the Mekong in Thailand see colorful fireballs ascend to the sky from the river. Scientists are investigating; marsh gas has once again appeared as an explanation.

Neil Armstrong first stepped on the Moon with his left foot. Many people have tried to make something of this, but the most natural explanation is: he's a military man. Guess which foot is normally used first when marching?

The craters Messier and Messier "A" (The Crater Formerly Known As Pickering) were often thought to be the result of a single event where the impactor went underground and resurfaced, flying away to somewhere else. Probably, it was just two objects traveling together (perhaps a binary asteroid?) that hit at a glancing angle. Pickering was something of a goof, so they wiped him off the Moon and renamed his crater. I find this unconscionable, when there are far worse idiots still memorialized.

About 16 percent of the Moon's surface is Maria (flat basaltic flows in large basins. Or: the dark stuff you see when you look. Or: the Man In The Moon). The vast majority of this is all on the near side (the side we see). The likely explanation is that the far side crust is thicker. The likely explanations for that are great fun to speculate on.

Chinese see the Toad in The Moon. Others, a rabbit. If I showed you a picture of Mercury and labeled it "Far Side Of The Moon" you'd likely believe it. They look that much alike. Sun Myung Moon was crowned Moon King in a US Senate office building in March of last year. I guess that settles that.

As Artist in Residence for NASA, Laurie Anderson produced a performance titled "The End Of The Moon." Reviewers and audiences apparently loved it; in a move that may not be related, NASA discontinued the Artist in Residence program.

Generally people have ascribed the term "Blue Moon" to the second full Moon in a month, but etymologists don't agree with that idea. So what does it mean? Nobody's sure, but now and again actual Blue Moons have been sited, usually due to atmospheric disturbances. Two notable examples are following the explosion of Krakatoa and after a massive forest fire in Alberta, Canada in 1950. It may well be that "Once in a Blue Moon" actually refers to the Moon turning, well, blue! In an age of metaphor, who'd think people might actually say what they mean?

Alan Shepard hit a golf ball about 800 yards on the Moon, easily outdriving Tiger Woods' best efforts.

And one last astronaut note: for some reason, they left a gold plated 33 rpm record of "Camelot" there. Anybody know why?

## Cloud Pictures

Akkana Peck

Ever looked at clouds and dreamed about the shapes they made? How about clouds the size of planets?

The cloud covered planet Jupiter is at its best in May. Just past opposition (last month), it's already high at sundown, and transits before midnight. That means it's time for our annual review of Jupiter's cloud features! The sketch accompanying this article shows some of the features you can expect to see with an amateur sized telescope.

Start with the Equatorial Bands, north and south. They look different — one is darker than the other, and better defined — but when you're just getting started, the easiest way to tell them apart is by bumping your scope a little in the direction of north or south, to tell which direction is which.

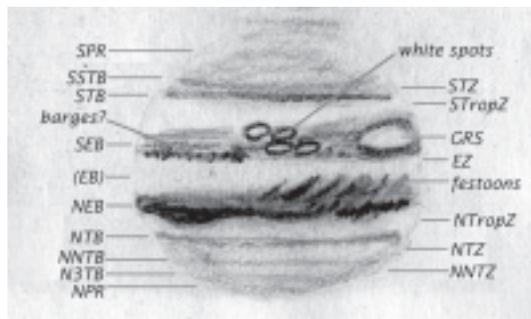
Once you see the bands, you'll probably notice the polar regions, rather grey or grey-blue compared to the mostly creamy yellows and pale reds of the rest of Jupiter's disk. The equatorial bands and polar regions should be visible in any telescope, down to the smallest 60mm department store refractor or Astroscan portable. If you don't see them right away, though, don't despair: keep looking! Seeing detail on planets takes practice: the more you look, the more you'll see. Guaranteed.

Of course, it never hurts to try different eyepieces: more power, or less, may help. Star parties are great for that: you may be able to borrow eyepieces and see what powers work best in your own scope, or at least look at the effect of different magnifications in other people's scopes, to find out if you need to add to your eyepiece collection.

After getting a good look at the bands,

you'll undoubtedly want to see Jupiter's famous "Great Red Spot", a giant anti-cyclone (it's a high pressure storm, not a low pressure one like a cyclone) in Jupiter's southern hemisphere.

Last year, there was some hope that the Great Spot Formerly Known As Red was getting pinker, and that over time we might actually have a Red Spot to look at, something that stands out and that we can show passers-by at star parties.



*Jupiter sketch by Jane Houston Jones.*

No such luck. So far this year, the GSKAR is just as pale pink as in other recent years. You'll recognize it better by looking for the "Great Red Spot Hollow", the place where the southern equatorial band splits to go around the spot, then rejoins on the other side. The band is darker than the spot itself, but if you look for an area where it's a little wider, with a split in the middle, you'll probably hit the right area.

On a really good night, with good optics, you can see detail inside the spot itself. Don't expect to see this every time, but it's something to hope for when the air steadies out. On a night like that, you can also look for detail at the edges of the bands — long sweeping tendrils called "festoons" which sometimes appear blue, many fainter pale-pink bands in the temperate zones below the polar regions, the thin and elusive equatorial band, and the dark spots, or "barges",

and the collections of white ovals, which appear at various places in Jupiter's atmosphere.

Don't forget, as you look at this wealth of detail: the Red Spot is three times the size of the earth. Those little white ovals are nearly the size of the earth. And all these features are just cloud pictures, in the atmosphere of a planet so big it's hard to compare it to our own.

Mind blowing!

Once you tear yourself away from Jupiter:

Saturn is low in the western sky in the early evening: catch it now before it vanishes for the summer. This low in the sky, you won't see many cloud pictures, but the rings are always a treat.

Most of the other planets are at their best in the morning sky. Pluto rises after 10, and doesn't transit until well after midnight, still low in the sky. Determined Plutocrats will be able to catch a glimpse, but most observers will want to wait a few months. Mars, Uranus, and Neptune share the morning skies; as with Pluto, you probably won't get a good look until later in the year. Mercury and Venus are both washed out in the sun's glare, and are not easily observable this month.

On May 8th, the asteroid 1 Ceres (1 meaning it was the first asteroid ever discovered, in 1801 by Giuseppe Piazzi) is at opposition, at about 7th magnitude. It's a bit over a degree northwest of Zuben El Chamali, the northernmost bright star in Libra.

A few days later, on the morning of the 14th, Mars and Uranus make a close pass; they might make an interesting pair for the early riser with a wide-field telescope.

## **Porrima**

**Naishi Min – May 21, 2005**

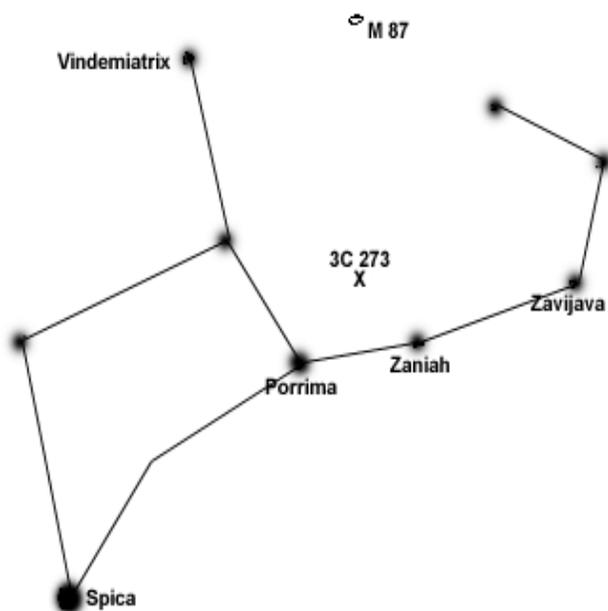
David Smith

Consider poor porrima. This star's name is actually Latin based as opposed to most star names which are Arabic. Porrima is somewhat prominent these days because it appears to be leading Jupiter across the sky. By early May they are side-by-side. Porrima (Gamma Virginis) is a double star though it may be difficult to resolve them because they are getting close together from our

viewpoint. The two stars rotate around each other at a distance of 40 AU, the same distance as between the Sun and Pluto. I could not resolve the double stars even after raising the magnification to 500x. The pair of nearly equal stars, each about 50% larger than the Sun, have their closest approach in 2007. Porrima is just 31 light years away. It's apparent magnitude is 3.65.

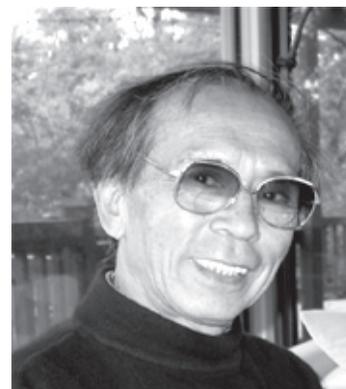
spotted it the night of April 9. It looked like a dim star and required averted vision unless you were dark-adapted. The designation 3C273 comes from being object 273 in the Third Cambridge Catalogue.

If 3C273 is a bit of a stretch, you are only 10 degrees away from M87. This giant elliptical galaxy is more than 60 million light years away. It owes at least



Our speaker for the May general meeting is Naishi Min, who was the director of the Shanghai, China Planetarium from 1958 to 1992. He has directed and produced over 20 planetarium shows for astronomy courses to middle and high schools, universities, and public in China.

Mr. Min will speak on ancient Chinese astronomy, including their traditional constellations and star names, which were devised over 3,000 years ago and are still in use in China. In his slide show, he will show armillaries used in Chinese observational astronomy for over a thousand years. An accomplished artist,



some part of its brightness to the fact that it is surrounded by 100,000 globular clusters.

So Porrima is a great location to start viewing. You can see a double star, Jupiter, a quasar and you're close to the Virgo cluster of galaxies. And it is ideally located in May.

References

References

<http://www.spacegazer.com/march-2005-g.asp>  
<http://www.astro.uiuc.edu/~kaler/sow/porrima.html>

As can be seen in the chart, quasar 3C273 is close to Porrima. This quasar has a magnitude of 12.9 and is quite possibly the most distant object you can find in your telescope. It is nearly 2 billion light years away. We think we

he has painted beautiful models of ancient Chinese observatories.

A historian with interest in new ways of visually explaining astronomy, Naishi Min has developed cardboard pop-up models to aid visualization of concepts such as the relationships between equatorial, ecliptic, and horizon coordinate systems. He will show us these, as well as his planispheres, moon-phase predictors, pop-up armillary, and the VeMarsJuSa, a predictor of positions of four naked-eye planets. (Guess which!). He has published over 20 astronomical-themed pop-up books, to go with his other books and publications.

–PK

## Dr. Nathalie Cabrol – May 18, 2005 at 7 p.m.

Dr. Cabrol of NASA Ames Research Center (SETI Institute) in Mountain View will give an illustrated, non-technical talk entitled “What Are We Finding on Mars”. The talk will be at the Smithwick Theater on the Foothill College Campus. The talk is free and open to all. One of my favorite parts of these talks is when the kids ask questions at the end. Parking is \$2.

Dr. Cabrol was the champion in the process that selected Gusev Crater as the landing spot for the Spirit rover. She is also working on a project to use robotics that look for signs of life in the Atacama Desert of Chile. A native of Paris, France, she is a planetary geologist and specializes in Mars hydrology. For more information on Dr. Cabrol see <http://www.earthsky.com/shows/profiles/cabrol.php>.

This talk winds up the 2004-2005 series for the Silicon Valley Astronomy Lecture Series. This series was another great season for the “Fraknoi Talks.”

– PK

Club officers were (re-)elected at the Board meeting on March 26, 2005. They are chosen from the new Board, and serve one-year terms.

President: Mike Koop  
 Vice-President: Rob Hawley  
 Treasurer: Gary Mitchell  
 Secretary: Jim Van Nuland

Three are familiar names. Rob replaced outgoing V-P Bob Havner, who declined re-nomination. We thank Bob for all his contributions including arranging speakers, leading the Messier Marathon and informing us about the Night Sky Network and Project ASTRO.

## Solar System Stats for May 2005

Adapted from the Observer’s Handbook published by The Royal Astronomical Society of Canada which in turn gets this data from the U.S. Naval Observatory’s Nautical Almanac Office and Her Majesty’s Nautical Almanac Office and contributions by David Lane, St. Mary’s University, Halifax NS.

		Mercury	Venus	Mars	Jupiter	Saturn	Uranus	Neptune	Sun
<b>RA</b>	1	0 <sup>h</sup> 56 <sup>m</sup>	3 <sup>h</sup> 05 <sup>m</sup>	22 <sup>h</sup> 10 <sup>m</sup>	12 <sup>h</sup> 42 <sup>m</sup>	7 <sup>h</sup> 34 <sup>m</sup>	22 <sup>h</sup> 47 <sup>m</sup>	21 <sup>h</sup> 20 <sup>m</sup>	2 <sup>h</sup> 33 <sup>m</sup>
	11	1 <sup>h</sup> 47 <sup>m</sup>	3 <sup>h</sup> 55 <sup>m</sup>	22 <sup>h</sup> 38 <sup>m</sup>	12 <sup>h</sup> 38 <sup>m</sup>	7 <sup>h</sup> 37 <sup>m</sup>	22 <sup>h</sup> 48 <sup>m</sup>	21 <sup>h</sup> 20 <sup>m</sup>	3 <sup>h</sup> 12 <sup>m</sup>
	21	2 <sup>h</sup> 52 <sup>m</sup>	4 <sup>h</sup> 47 <sup>m</sup>	23 <sup>h</sup> 05 <sup>m</sup>	12 <sup>h</sup> 36 <sup>m</sup>	7 <sup>h</sup> 41 <sup>m</sup>	22 <sup>h</sup> 49 <sup>m</sup>	21 <sup>h</sup> 20 <sup>m</sup>	3 <sup>h</sup> 51 <sup>m</sup>
<b>Dec.</b>	1	+2°52'	+16°58'	-13°02'	-2°48'	+21°51'	-8°33'	-15°43'	+15°01'
	11	+8°09'	+20°20'	-10°34'	-2°29'	+21°45'	-8°26'	-15°42'	+17°50'
	21	+14°48'	+22°46'	-7°59'	-2°17'	+21°37'	-8°21'	-15°42'	+20°09'
<b>Dist (AU)</b>	1	0.91	1.71	1.39	4.56	9.35	20.54	30.17	1.008
	11	1.07	1.69	1.32	4.65	9.50	20.39	30.00	1.010
	21	1.22	1.67	1.25	4.76	9.64	20.22	29.83	1.012
<b>Mag</b>	1	0.2	-3.8	0.6	-2.4	0.2	5.9	7.9	
	11	-0.2	-3.8	0.5	-2.3	0.2	5.9	7.9	
	21	-0.8	-3.8	0.4	-2.3	0.2	5.9	7.9	
<b>Size</b>	1	7.4"	9.8"	6.7"	43.2"	17.7"	3.4"	2.2"	31'45"
	11	6.3"	9.9"	7.1"	42.3"	17.4"	3.4"	2.2"	31'40"
	21	5.5"	10.0"	7.5"	41.4"	17.2"	3.5"	2.2"	31'36"

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#### Submit

Submit articles for publication in the SJAA Ephemeris. Send articles to the editors via e-mail to [ephemeris@sjaa.net](mailto:ephemeris@sjaa.net). **Deadline, 10th of previous month.**

## SJAA loaner scope status

All scopes are available to any SJAA member; contact Mike Koop by email ([koopm@best.com](mailto:koopm@best.com)) or by phone at work (408) 473-6315 or home (408) 446-0310 (Please leave message, phone screened).

### Available scopes

These are scopes that are available for immediate loan, stored at other SJAA members homes. If you are interested in borrowing one of these scopes, please contact Mike Koop for a scope pick up at any of the listed SJAA events.

# Scope	Description	Stored by
1	4.5" Newt/ P Mount	Annette Reyes
3	4" Quantum S/C	Hsin I. Huang
7	12.5" Dobson	Tom Fredrickson
8	14" Dobson	Jan Lynch
14	8" f/8.5 Dob	Colm McGinley
15	8" Dobson	Scott Pelger
16	Solar Scope	Bob Havner
19	6" Newt/P Mount	Daryn Baker
23	6" Newt/P Mount	Wei Cheng
24	60mm Refractor	Al Kestler
26	11" Dobson	Vivek Kumar
27	13" Dobson	Steve Houlihan
28	13" Dobson	Anupam Dalal
29	C8, Astrophotography	Mark Ziebarth
32	6" f/7 Dobson	Sandy Mohan
34	Dynamax 8" S/C	Yuan-Tung Chin
37	4" Fluorite Refractor	Steve Sergeant
38	Meade 4.5" Digital Newt	Tej Kohli
40	Super C8+	Mike Macedo
41	18" Sky Designs Dob	Len Bradley
42	11x80 Binoculars	Ritesh Vishwakarma

### Scope loans

These are scopes that have been recently loaned out. If you are interested in borrowing one of these scopes, you will be placed on the waiting list until the scope becomes available after the due date.

# Scope	Description	Borrower	Due Date
10	Star Spectroscope	Jim Albers	3/18/05
11	Orion XT6 Dob	John Durant	4/12/05
13	Orion XT6 Dob	Ravinder Pal Singh	4/14/05
35	Meade 8" Equatorial	Ethan Romander	6/6/05

### Extended scope loans

These are scopes that have had their loan period extended. If you are interested in borrowing one of these scopes, we will contact the current borrower and try to work out a reasonable transfer time for both parties.

# Scope	Description	Borrower	Due Date
2	6" f/9 Dob	John Paul De Silva	?
6	8" Celestron S/C	Karthik Ramamurthy	4/8/05
9	C-11 Compustar	Bill Maney	Indefinite
12	Orion XT8 Dob	Mike Koop	Transit
21	10" Dobson	Michael Dajewski	Repair
33	10" Deep Space Explorer	Ion Coman	4/22/05
36	Celestron 8" f/6 Skyhopper	Saman Behjat	5/28/05
39	17" Dobson	Rob Hawley	2/28/05

### Waiting list:

8	14" Dobson	Colm McGinley
33	10" Deep Space Explorer	Zachary Jacobs
37	4" Fluorite Refractor	Bob Leitch

## San Jose Astronomical Association Membership Form

**New**    **Renewal** (Name only, plus corrections below)

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- Regular — \$15  
 Regular with Sky & Telescope — \$48  
 Junior (under 18) — \$6  
 Junior with Sky & Telescope — \$39

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.)

Bring this form to any SJAA Meeting  
or send (with your check) to

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Make your check payable to "SJAA"  
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