SJAA EPHEMERIS

Launching Mr. O.

Mary Kohlmiller

Have you heard about the spacecraft called Mr. O? Actually it is the Mars Reconnaissance Orbiter or MRO. It was launched on August 12, 2005 starting a 7 month flight to Mars and a nearly equal amount of time shaping its orbit for its scientific mission. The orbiter will use aerobraking to adjust its orbit from a long elliptical one to a more nearly circular orbit. It carries 6 scientific instruments for examining the surface, atmosphere and subsurface of Mars. The instruments will be used to learn about the history and distribution of water on Mars. The MRO will also be used to evaluate future landing sites for upcoming missions.

MRO will arrive at Mars on March 10, 2006. The science phase will commence in November 2006. One NASA scientist says that the MRO will change the data rate returned from Mars from a trickle to a fire hose. More specifically it will return 10 times as much data per minute as the best Martian spacecraft to date.

The next launches to Mars are the Phoenix Mars Scout in 2007 and the Mars Science Laboratory in 2009. The Phoenix will land near the northern polar ice cap. The Science Lab will be a large, advanced rover. Both missions will use the MRO to transmit data back to Earth.

James Graf is the project manager for the MRO mission. He is at NASA/JPL. More information is available at http://www.nasa.gov/mro.

SJAA Activities Calendar

Jim Van Nuland

September

3 Dark sky weekend. Sunset 7:33 p.m., 0% moon sets 7:49 p.m.
9 Houge Park star party. Sunset 7:24 p.m., 36% moon sets 10:25 p.m. Star party hours: 8:30 to 11:30.
10 ATM class at Houge Park. 7:30 p.m.
17 **General meeting** at Houge Park. Slide / Equipment Night.
22 ATM class at Houge Park. 7:30 p.m.
23 Houge Park star party. Sunset 7:03 p.m., 60% moon rise 10:33 p.m. Star party hours: 8:00 to 11:00
23 Astronomy Class at Houge Park. 7:30 p.m.
24 Public star party at Coyote Lake Park. Sunset 7:01 p.m., 50% moon rises 11:23 p.m. Starts at 8:00
29 **CalStar Regional Star Party** starts. Lake San Antonio. See article on page 2.

October

1 Dark sky weekend. Sunset 6:51 p.m., 1% moon rises 6:19 a.m. DST
7 Houge Park star party. Sunset 6:42 p.m., 22% moon sets 9:07 p.m. Star party hours: 7:30 p.m. to 10:30 p.m.
8 ATM Class at Houge Park. 7:30 p.m.
15 **General meeting** at Houge Park. 8 p.m. Diane Wooden of NASA will discuss Deep Impact.
20 ATM Class at Houge Park. 7:30 p.m.
28 Houge Park star party. Sunset 6:14 p.m., 13% moon rises 4:07 a.m. Star party hours: 7:30 p.m. to 10:30 p.m.
28 Astronomy Class at Hogue Park. 7:30 p.m.
29 Dark sky weekend. Sunset 6:13 p.m., 8% moon rises 4:04 a.m. DST
30 Daylight Savings Time end. Retard Clock 2 a.m. to 1 a.m.

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

Slide and Equipment Night

SJAA's version of Show and Tell is the annual Slide and Equipment Night. Bring your astronomical pictures or inventions on September 17, 2005 to Houge Park at 8 p.m.

You can bring new scopes and point out the fancy features to your envious friends. Last year a few people brought astronomical photos that they had taken. Others brought new scopes optimized for travel. Still others brought new accessories.

Of course, it is not mandatory to bring anything at all except your curiosity. Either way, we hope to see you there.

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

CalStar

Rob Hawley

The sixth edition of CalStar will be held at Lake San Antonio the nights of Thursday Sept. 29 through Saturday Oct 1, 2005. Registration is now open. This is a nice low key way to end the summer observing season; a reasonable sunset time and some of the darkest skies in California.

Catered dinners will be available on Friday and Saturday evenings by preregistration. Both meat and vegetarian meals are available. Check the web site below for detailed menus and prices.

CalStar tries to accommodate folks of many experience levels. We separate the observing area into a dark enforced area and a casual area. The dark enforced area is assured by banning use of white light (and asking folks to use red lights sparingly). For folks that feel more comfortable with more light there is a casual use area with somewhat more relaxed light rules.

Most folks choose to camp either at the edge of the dark restricted area or in an adjacent casual area. RVs are welcome in the casual area. There are also a limited number of local accommodations. These should be arranged beforehand. Showers are available for the campers at an adjacent campground.

If three nights are not enough, then you are welcome to come early or stay extra nights. You just need to pay the park fees.

To register or for more information see the web page http://www.sjaa.net/calstar2005.html. Sponsored by the San Jose Astronomical Association.

The annual SJAA Yosemite Star Party was held August 5 and 6 at Glacier Point in Yosemite National Park. Photo courtesy of Hsin I. Huang.

Open Letter to Commander Eileen Collins

Dear Commander Collins:

Congratulations on a superb flight on STS-114. You are my newest hero and I just have to tell you all the reasons why in this letter. I hope you understand.

First of all, you are the new meaning of "cool." You are only in space about 2 minutes and you start getting these off-putting messages. "Discovery, Houston (like who else would it be), we just looked at the video replay of the external tank during launch and something the size of a Denny's Grand Slam breakfast broke off and missed the orbiter's wing by about 12 nanometers." Your response: "Copy". My response would also have been a four letter word but not that one.

Then they hit you with another one. "Discovery, Houston (bad news seems to arrive from the same place.) We just looked at the underside of the orbiter and it looks like my 6-year old nephew after eating a bag of Oreos." "Copy" was all you said.

By now they could have stopped trying to faze you but that just wouldn't be in style. "Discovery, Houston, we noticed that the area underneath your window looks like an unmade bed. We've studied the situation and decided that it will probably be ripped to shreds during reentry and we think that's a good idea." My reply would have been "you wanna think that through one more time" but your reply was "Copy".

The meeting with the Space Station crew must have been exciting but more so for them than for you. I think you look great anyways. What must you have looked like to two guys who have only seen each other for 4 months?

Now I'm sure that those who know you better would not be the least bit surprised that you were cool through this entire flight. What's surprising is how well you handled the political equivalent of tile damage. I'm not referring to the chat you had with the president. That is probably part of his job description and it didn't interrupt anything except his 5 week vacation.

But things took a turn for the cursed when other politicians stepped to the mike. First we saw the woman who started out by saying "I just had a very nice conversation with your husband." I didn't take that out of context by one iota, that's what she said. Then to prove that her "Humorous" bone had been removed she said something about your husband having to buy the back-to-school items for the kids. Well for crying out loud! You mean Wal-Mart won't make house calls anymore?

Then you had to talk to Tom DeLay. Now my mother told me that if you can't say anything nice about someone then don't say anything at all. Of course, my mother also told me to watch out for loose women and I did a whole lot of watching without any finding. I was surprised that he was even in the Johnson Space Center. Doesn't he recall that Johnson was a liberal democrat? I would have thought a spontaneous exorcism would have taken place as soon as he stepped inside. After making his remarks you could have done what I would have done – hung up. But no, you were too cool for that. Instead you thanked him and proceeded to describe the view of the Earth. If it was your intent to educate him then you should have added that the Earth appears to be round.

Since NASA thumbs its nose at unlucky numbers, it decides to have you land on day 13 of the mission. But wait, the weather looks a bit "iffy". So first you hear "Discovery, Houston, we want to have you go around another orbit." Then "Discovery, (they stopped saying "Houston" around this time because they figure you recognized their voice) we want you to stay another day in space." You just said "Copy, meet you on page 3 dash 8". I was hoping for your sake that page 3-8 was the comics page. I kept thinking that if Wally Schirra was in space at this time he would have said "Houston you bunch of wussies! Why don't one of you strap on a pair and let me land this thing."

The next day was more of the same weather. Gee, clouds in Florida in August. Who would have thought? Did someone think the weather was binary: hurricane or sunshine? Finally, you get cleared to land in California. The emotional moment for me was when you said the runway was in sight. That's because we all knew that you would land that 100 ton brick glider as softly as a hang-glider into a lake full of jello.

As you came to a stop you took a moment to say some nice thank yous and then you went right back to work. "We'll meet you on page 5-7" you said which I hope is the sports page because the A's took over first place while you were gone. Houston? Not so good.

Sincerely,

Paul Kohlmiller

The Tenth Planet

Akkana Peck

The science news sites are abuzz with news of a "tenth planet" in our solar system. Much larger than previously discovered Kuiper belt objects Quaoar and Sedna, the new object, thought to be larger than Pluto, is currently designated 2003 UB313. There are rumours floating around of the discoverers giving it names like "Lila" and "Xena", but these are just temporary until the object is officially named. It's easier to say "Xena" than to say "2003 UB313." Although, come to think of it, "2003 UB313" is quite a bit easier to say than "Quaoar", so let's hope this one gets a pronounceable name so we can tell people about it easily.

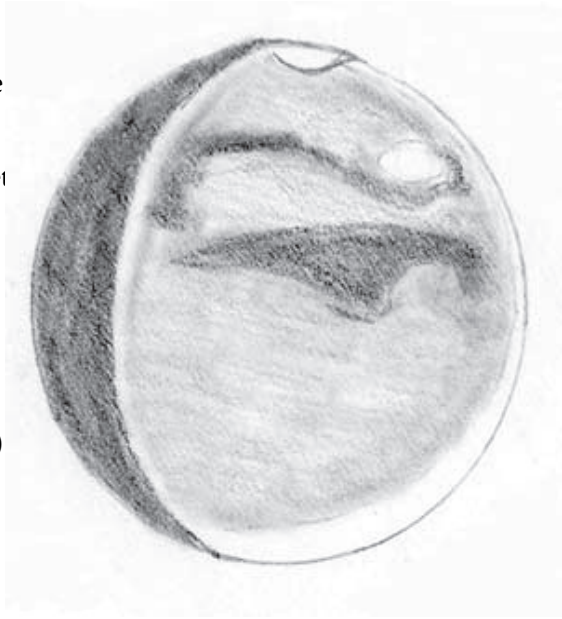
(Of course, whether to call it a planet is a never-ending debate. Does the word "planet" indicate size, origin, composition, or is it a fixed list of eight or nine with nothing else allowed? Me, I'm inclined to call anything Pluto's size or larger a planet. But whatever you call it, this is definitely an interesting discovery.)

2003 UB313 is currently in the constellation of Cetus, so it rises around dark and transits after midnight. At a distance of 96.6 AU, it's magnitude 18.9. That's out of visual range for most of us, but imagers should have a good chance to catch it. At perihelion it should get less 38 AU from the sun, inside Pluto's orbit. Since it's larger than Pluto, that means it should be easily visible in medium to large amateur telescopes.

That's the good news. The bad news is that 2003 UB313 is near aphelion now (its most distant point from the sun), and its orbital period is nearly 560 years. So you'll have a bit of a wait.

Meanwhile, Jupiter is disappearing in the evening haze. Get a look while you still can! Saturn has moved into the morning sky, but it still hasn't risen very high by the time it's lost in dawn twilight.

Venus is very low in the evening sky. Check out the conjunction between it and Jupiter on the night of September 1. They'll be about a degree and a half apart, so it'll take a wide-field telescope to show them both in the same field; but it should be a beautiful naked-eye or binocular sight. If you do check it out in a telescope you'll see its gibbous shape. Jupiter is slightly gibbous too, this far past opposition, but nowhere near as obviously as Venus.



The south polar cap is quite small. Mare Sirenum is the prominent feature visible in this sketch. To the south (up towards the south polar cap) Mare Chromium was darker than Sirenum. Lighter Eridania was a stark contrast to the darker features. Most of all she noticed the bluish north polar hood ("It was really blue!"). There was also a slight amount of evening limb haze on the preceding (terminator) limb and a brighter morning haze on the following limb. Visible without any filters. Sketch and caption by Jane Houston Jones from July 30, 2005, 4:15 a.m. PDT.

Meanwhile, Mars is finally rising early enough that we can all get a look at it. Start practicing on your "Mars eyes" so you'll be ready for the opposition at the end of October! Mars is so small (even at opposition), and its colors so subtle, that it takes a lot of practice to see detail and identify features. The more practice you can get before the opposition, the easier it'll be to recognize features when Mars is close and high in the sky.

Mars is moving into Taurus, which means it'll pull ever closer to Aldebaran. It's always fun to compare Mars to some of the brightest red stars – a couple of oppositions ago it passed close to Antares. Curiously, this time it'll hang out on the western edge of Taurus all through the opposition as it goes through its retrograde loop. It won't actually pass Aldebaran until March of next year.

Uranus is at opposition on the last day of August, which means it's ideally placed for observing all through September. It's in Aquarius (as it has been all year) and should be easily findable with a small telescope or even binoculars, if you use a good star chart.

Neptune is in Capricornus. It's a month past opposition, but don't let that stop you. First, being a little past opposition means it's higher in the sky before midnight. Second, it's in a particularly easy place to find right now, just northeast of the top middle star of the "martini glass" of Capricornus. It's only about magnitude 7.8, and there's a nice sixth magnitude star right in line with it, so if you haven't found Neptune before, try it now!

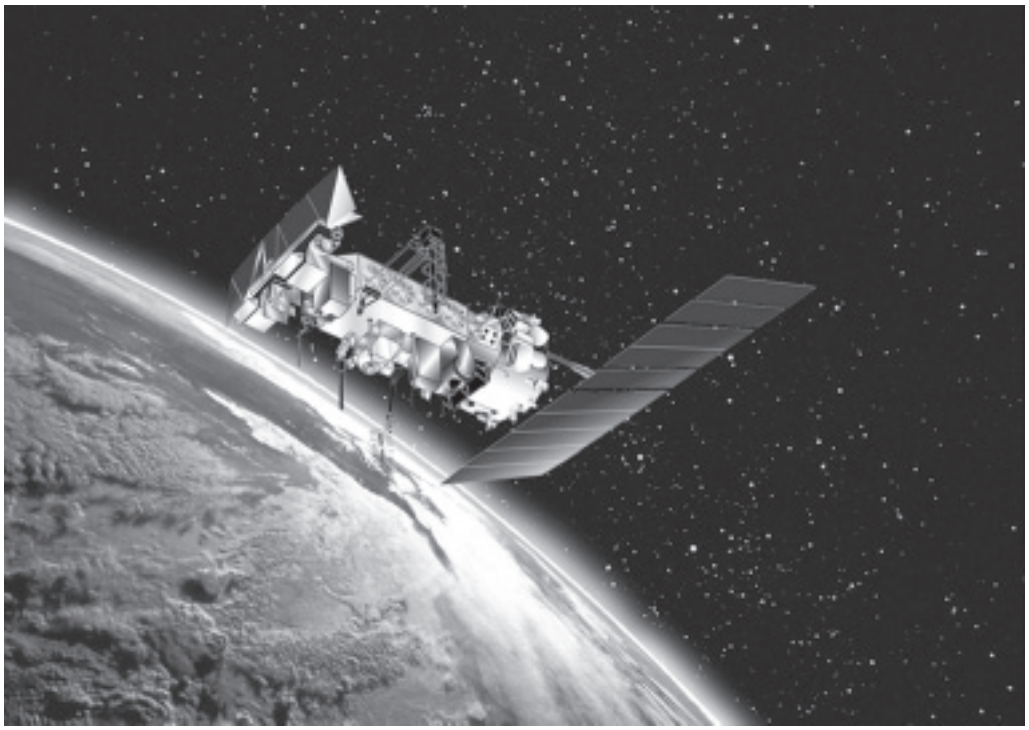
And finally, Pluto. You might want to take a look at the planet which is still our smallest, but no longer our most distant. Pluto is getting tough – it's well past opposition now and sets around midnight, so if you're hunting Pluto, start as soon as the sky gets fully dark and you'll probably succeed.

NASA Space Place

Newest Weather Sentry Takes Up Watch

Patrick L. Barry

Today, we've become accustomed to seeing images of the Earth's swirling atmosphere from space every night on the evening news. Before 1960, no one had ever seen such images. The first-ever weather satellite was launched that year, kicking off a long line of weather satellites that have kept a continuous watch on our planet's fickle atmosphere—45 years and counting! The high-quality, extended weather forecasts that these satellites make possible have become an indispensable part of our modern society, helping commercial aircraft, recreational boaters, and even military operations avoid unnecessary risk from hazardous weather. But satellites don't last forever. Parts wear out, radiation takes its toll, and atmospheric drag slowly pulls the satellite out of orbit. Many weather satellites have a design life of only 2 years, though often they can last 5 or 10 years, or more. A steady schedule of new satellite launches is needed to keep the weather report on the news each night. In May 2005, NASA successfully launched the latest in this long line of weather satellites. Dubbed NOAA-N at launch and renamed NOAA-18 once it reached orbit, this satellite will take over for the older satellite NOAA-16, which was launched in September 2000. "NOAA always keeps at least two satellites in low-Earth orbit, circling the poles 14 times each day," explains Wilfred E. Mazur, Polar Satellite Acquisition Manager, NOAA/NESDIS. "As Earth rotates, these satellites end up covering Earth's entire surface each day. In fact, with two satellites in orbit, NOAA covers each spot on the Earth four times each day, twice during the day and twice at night," Mazur says.



By orbiting close to Earth (NOAA-18 is only 870 km above the ground), these "low-Earth orbit" satellites provide a detailed view of the weather. The other type of weather satellite, "geosynchronous," orbits much farther out at 35,786 km. At that altitude, geosynchronous satellites can keep a constant watch on whole continents, but without the kind of detail that NOAA-18 can provide. In particular, low-Earth orbiting satellites have the ability to use microwave radiometers to measure temperature and moisture in the atmosphere—two key measurements used for weather prediction that, for technical reasons, cannot be sensed by distant geosynchronous satellites. With NOAA-18 successfully placed in orbit, the 45-year legacy of high-tech weather forecasts that we're accustomed to will go on.

Find out more about NOAA-18 and the history of polar-orbiting weather satellites at http://goespoes.gsfc.nasa.gov/poes. For kids and anyone else curious about the concept, the difference between polar and geosynchronous orbits is explained at http://spaceplace.nasa.gov/en/kids/goes/goes_poes_orbits.shtml .

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

Astronomy For Recreation

Andrew Fraknoi

Starting in the Fall of 2005, Foothill College will offer a new 1-unit astronomy seminar to accompany its popular beginning course, Astronomy 10B (Stars, Galaxies, and the Universe.)

The seminar, called "Astronomy 105: Astronomy for Recreation," will be an overview of astronomy as a hobby or avocation, for those who would like to find more ways to enjoy the cosmos. It is offered Monday afternoons, from 1:40 to 2:30 pm, starting Sept. 26. No background in science or special equipment will be required.

Among the topics the seminar will cover are:
* What are the best web sites for astronomy knowledge, pictures, and observing help?
* Where are the best places in the Bay Area to look through a telescope?
* Family Astronomy: Doing fun, hands-on astronomy projects with your kids or grand-kids?
* Constellation lore and constellation finding: Using a handy star-finder wheel
* Astronomy and science fiction (movies and books): The good, the bad, and the ugly
* Eclipses and eclipse "chasing": Where and when to go
* Buying and using binoculars or a telescope
* Local organizations and projects you can get involved with
* Help getting your mind around the "big astronomy issues" in the news: black holes, cannibal galaxies, the big bang, dark matter

For more information see http://www.foothill.fhda.edu/ast/ast105.htm

Solar System Stats for September 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
RA	1	9^h44^m	13^h04^m	3^h01^m	13^h10^m	8^h33^m	22^h43^m	21^h12^m	10^h41^m
	11	10^h56^m	13^h47^m	3^h14^m	13^h17^m	8^h37^m	22^h41^m	21^h11^m	11^h17^m
	21	12^h04^m	14^h31^m	3^h23^m	13^h24^m	8^h42^m	22^h40^m	21^h10^m	11^h53^m
Dec.	1	+14°47'	-6°55'	+14°17'	-6°12'	+19°10'	-9°03'	-16°19'	+8°21'
	11	+8°48'	-11°49'	+15°16'	-6°57'	+18°54'	-9°12'	-16°24'	+4°38'
	21	+1°02'	-16°19'	+15°59'	-7°43'	+18°40'	-9°21'	-16°27'	+0°47'
Dist (AU)	1	1.13	1.14	0.66	6.19	9.92	19.06	29.13	1.009
	11	1.32	1.07	0.61	6.28	9.82	19.08	29.21	1.007
	21	1.40	1.00	0.57	6.35	9.70	19.12	29.32	1.004
Mag	1	-1.0	-3.9	-1.0	-1.7	0.3	5.7	7.8	
	11	-1.5	-3.9	-1.2	-1.7	0.3	5.7	7.8	
	21	-1.5	-4.0	-1.4	-1.7	0.4	5.7	7.9	
Size	1	6.0"	14.6"	14.1"	31.8"	16.7"	3.7"	2.3"	31'42"
	11	5.1"	15.6"	15.3"	31.4"	16.8"	3.7"	2.3"	31'46"
	21	4.8"	16.7"	16.5"	31.0"	17.1"	3.7"	2.3"	31'52"

Officers and Board of Directors

Pres	Mike Koop	(408) 446-0310
VP	Rob Hawley	(408) 997-6526
Sec	Jim Van Nuland	(408) 371-1307
Tres	Gary Mitchell	(408) 265-2336
Dir	Bill O'Shaughnessy	(408) 984-8304
Dir	David Smith	(408) 978-5503
Dir	Dana Crom	
Dir	Craig & Elena Scull	(408) 292-9317
Dir	Gordon Reade	

Ephemeris Staff

Editors Paul & Mary Kohlmiller (408) 848-9701

Circulation

Bob Brauer	(408) 292-7695
Lew Kurtz	(408) 739-7106
Dave North	north@znet.com

Printing Accuprint (408) 287-7200

School Star Party Chairman

Jim Van Nuland (408) 371-1307

Telescope Loaner Program

Mike Koop (408) 446-0310

Web Page

Paul Kohlmiller pkohlmil@best.com

SJAA Email Addresses

Board of Directors	board@sjaa.net
Membership ?'s	membership@sjaa.net
Chat List	chat@sjaa.net
Ephemeris	ephemeris@sjaa.net
Circulation	circulation@sjaa.net
Telescope Loaners	loaner@sjaa.net

Members Email Lists:
http://www.sjaa.net/mailman/listinfo

Publication Statement
SJAA Ephemeris, newsletter of the San Jose Astronomical Association, is published monthly.

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

Submit

Submit articles for publication in the SJAA Ephemeris. Send articles to the editors via e-mail to 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) 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
6	8" Celestron S/C	Karthik Ramamurthy
7	12.5" Dobson	Tom Fredrickson
10	Star Spectroscope	Jim Albers
13	Orion XT6 Dob	Ravinder Pal Singh
14	8" f/8.5 Dob	Colm McGinley
15	8" f/9 Dobson	Scott Pelger
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
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
11	Orion XT6 Dob	Ravi Shankar Erram	9/10/05
33	10" Deep Space Explorer	Jack Zeiders	8/23/05
36	Celestron 8" f/6 Skyhopper	Shinji Wakamatsu	11/12/05
37	4" Fluorite Refractor	Bob Leitch	10/1/05
39	17" Dobson	Steve Nelson	10/2/05

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	?
8	14" Dobson	Colm McGinley	11/01/05
9	C-11 Compustar	Bill Maney	Indefinite
12	Orion XT8 Dob	Kevin Roberts	10/16/05
16	Solar Scope	Bob Havner	9/12/05
21	10" Dobson	Michael Dajewski	Repair
35	Meade 8" Equatorial	Ethan Romander	9/6/05

Waiting list:

16	Solar Scope	Ken Frank
37	4" Fluorite Refractor	Carl Ching

San Jose Astronomical Association Membership Form

You can join or renew with the SJAA online at http://www.sjaa.net/SJAAmembership.html

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

Membership Type:

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

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

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

Make your check payable to "SJAA"
*(**not** Sky Publishing)*

Name: _____

Address: _____

City/ST/Zip: _____

Phone: _____

E-mail address: _____

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

Nonprofit Organization
U.S. Postage Paid
San Jose, California
Permit No. 5381