SJAA EPHEMERIS

SJAA Activities Calendar

Jim Van Nuland

November

4 **General meeting at Houge Park**. Dr. Ivan Linscott from Stanford will speak on Radio Beacon Remote Sensing within the Solar System. 8 p.m.
5 **Fall Swap at Houge Park. Noon. See page 2.**
8 **Mercury Transits. See it at Houge Park.**
9 ATM Workshop at Houge Park. 7:30 p.m.
10 Houge Park star party. Sunset 5:01 p.m., 64% moon rise 9:49 p.m. Star party hours: 7:00 to 10:00
10 Astronomy Class at Houge Park. 7:30 p.m.
11 Dark sky weekend. Sunset 5:00 p.m., 54% moon rise 10:53 p.m.
18 Dark sky weekend. Sunset 4:56 p.m., 1% moon rise 5:47 a.m.
24 Houge Park star party. Sunset 4:52 p.m., 19% moon sets 8:10 p.m. Star party hours: 7:00 to 10:00
25 ATM Workshop at Houge Park. 7:30 p.m.

December

2 **General meeting at Houge Park**. Shiloh Unruh on the Egypt Eclipse. 8 p.m.
7 ATM Workshop at Houge Park. 7:30 p.m.
15 Astronomy Class at Houge Park. 7:30 p.m.
15 Houge Park star party. Sunset 4:51 p.m., 16% moon rise 3:24 a.m. Star party hours: 7:00 to 10:00
16 Dark sky weekend. Sunset 4:52 p.m., 10% moon rise 4:37 a.m.
23 Dark sky weekend. Sunset 4:55 p.m., 16% moon sets 8:05 p.m.
29 Houge Park star party. Sunset 4:59 p.m., 80% moon sets 3:28 a.m. Star party hours: 7:00 to 10:00
30 ATM Workshop at Houge Park. 7:30 p.m.

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

24 hour news and information hotline: (408) 559-1221

November Events

Dr. Ivan Linscott will be our speaker at the November 4th General Meeting. The time is 8 p.m. and the location is Hogue Park. His talk is on Radio Beacon Remote Sensing within the Solar System. Dr. Linscott worked on the REX instrument (Radio Science Experiment) that is on the New Horizons spacecraft headed toward Pluto. This will be used to measure atmospheric composition and temperature of Pluto, Charon and possibly other Kuiper Belt Objects (KBOs). See more info on page 2.

Linscott on Radio Beacons
November 4 @ 8 p.m.
Houge Park

Fall Swap Meeting
November 5 @ Noon
Houge Park

The annual swap meet is a great place to find bargains and to help your favorite amateur astronomy club. It is on Sunday, November 5 starting at noon. This is also at Hogue Park. See the swap meet article on page 2.

Mercury Transit
November 8
Houge Park

On November 8, Mercury will transit the Sun. A good place to see it (weather permitting) is Hogue Park. If you miss this one, the next one is May of 2016. See more about this on page 3.

Cruikshank on Pluto
November 8 @ 7 p.m.
Foothill College

The eighth year of the Silicon Valley Astronomy Lecture Series got off to a rousing start in October when Alex Filippenko gave his talk on Dark Energy. The next lecture is on Pluto and will be given by Dale Cruikshank. See the article on page 5 for more details.

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November General Meeting

Dr. Ivan Linscott

David Smith

Hogue Park, 8 p.m.
November 4, 2006

Our November 4 speaker, Dr. Ivan Linscott, will guide us through this story. Dr. Linscott is a Senior Research Associate at Stanford University. He received his Ph.D. in high energy physics from U.C. Berkeley. He teaches courses on waves, the Fourier transform, and digital signal processing.

Abstract

In the mid 1970's, a graduate student in EE Stanford's Center for Radar Astronomy discovered an obscure transform could take a radio signal from a spacecraft and produce a precise profile of the temperature and pressure of planetary atmospheres. That student was Gunnar Lindal, and his discovery ushered in an era of exploration using a now well practiced technique called radio occultation. Spacecraft radio beacons are even now probing the structure of atmospheres, surfaces and rings throughout the solar system. In particular, the search for water on Mars brought together a team from Stanford and JPL last November to perform a UHF bi-static radar experiment during Mars opposition. Because UHF wavelengths penetrate deep into the Martian surface, the echoes recorded on-board the Mars orbiter Odyssey tell a rich and complex story of the Northern plains on Mars, one that I am pleased to share with you.

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.

SJAA Swap Meet

Gary Mitchell

November 5, 2006 at Houge Park

Join us for the SJAA astronomical swap meet at Houge Park in San Jose on Sunday, November 5, 2006. The doors open at noon for sellers to set up, selling starts around 1 PM and generally lasts until 3 or 4 PM. Don't be too late–the good stuff sells quickly.

If it's related to astronomy, you might find it here! Telescopes, binoculars, eyepieces, mountings, mirrors, lenses, clock drives, books, camera equipment, star charts, finders, tubes, diagonals, photographs, space art... you name it.

You never know what goodies you can find. Check your garage and closets for anything astronomical you would like to sell. Anyone can buy and sell, it's fun and easy! Get your holiday shopping done early this year!

In the past the SJAA charged a 10% commission on all sales. It was brought to our attention that this might prevent your payment from being completely tax deductible and possibly could complicate things for the club. So, payments to the club are now voluntary donations–and thus are definitely tax deductible. In order to make things easier, sellers an option: continue with the 10 % donation (it's a donation now, not a commission), or if you wish just make it a flat donation for the table–$10 or $20 is recommended, depending on how much stuff you have and its value. Obviously this has to be on the honor system, or conscience system as the case may be. Just keep in mind this event is a needed fund raiser for the club. So, please be generous.

Do you have a large item to sell such as a telescope? Please email swap@sjaa.net with a description and a photo of the item or a link to your own web site for some pre-swap publicity. We will post the information to the swap web page to allow people to do some research before they get to the swap.

Do you have only one or two items to sell? A consignment table will be there for your convenience. You can put up to 3 items there and we'll handle it–you can go shop at the swap and not have to sit there with just a couple of items.

The SJAA does it for you!

Part of making the swap successful for all is to make sure lots of people know about it. Please pass the word–especially to those who are new to astronomy.

For more information and directions, visit our web site at http://www.sjaa.net.

The SJAA reserves the right to turn away inappropriate items for the swap.

Mercury Transit!

Akkana Peck

On November 8th, we will see a relatively rare event:

Mercury will pass across the face of the sun. This is the first Mercury transit we've been able to see since November of 1999; the next one won't happen until May of 2016. So grab your solar filter and take a look, or come join the fun at the SJAA event at Houge Park.

Any telescope will do, as long as you have a solar filter or other safe way of observing the sun. For the last transit, in 1999, people were issuing all sorts of dire warnings about how it would be subtle and difficult to detect and you'd need a big telescope.

Bosh! It was visible in binoculars (with aluminized mylar solar filters) and lovely in an 80mm short-focus refractor with an Orion glass solar filter. You might even be able to see it with the filtered but otherwise naked eye.

Be sure to use a safe solar filter: one that covers the front of the telescope, not the kind that threads into an eyepiece. The eyepiece kind can crack from the heat of all that concentrated sunlight, and you don't want to think what the sunlight would do to your retina.

If you can't get hold of a solar filter in time and can't get to a public event, don't despair. You might try eyepiece projection: use a cheap eyepiece (since concentrated sunlight could potentially damage an eyepiece) pointed *down*, at the ground, a box or a piece of paper. Be careful no one can get an eye or a hand underneath the eyepiece, and be sure to keep a cap on your finder. (So how do you point the telescope at the sun? Watch the shadow of the telescope and finder on the ground, and try to make the shadow as small as possible.)

This transit won't be a "graze" like the 1999 event, with Mercury skimming briefly along the limb of the sun. This month's transit is nearly an all-day affair, beginning before noon and lasting until just an hour before sunset. Here's the breakdown:

11:12:04 First contact (Mercury first starts to become visible)
11:13:57 Second contact (the full disk of Mercury is visible)
1:41:04 Maximum transit
4:08:16 Third contact (starting to lose Mercury)
4:10:08 Fourth contact (event over, go home)

These times apply for folks using white light filters (the relatively inexpensive kind you buy from places like Orion). But if you have a hydrogen alpha filter, it gets more interesting: you may be able to see Mercury even before it begins its transit, silhouetted against the sun's chromosphere or a conveniently located prominence. So if you do have an H-alpha filter, be sure to start watching early.

The times of second and third contact are also less than straightforward. Just as Mercury's disk becomes tangent to the Sun's, an illusion known as the "black drop effect" makes the point of contact appear to stretch before finally breaking. The official time of second and third contact is the time when you can just barely see sunlight all the way around the planet's disk. You can read more about the black drop effect in my July, 2004 column.

Is it just an odd coincidence that this transit and the last one were both in November? No, as it turns out: Mercury transits currently can only happen in early May or early November, because of the inclination of Mercury's orbit (about seven degrees). Those months are the only times when the Earth is lined up with Mercury's "nodes", the two points where Mercury's orbit crosses the ecliptic. November transits are a bit more common, because Mercury is moving more slowly at that point of its orbit, and so we're more likely to pass by when Mercury is there.

Practice now, and you'll be all ready for the next Venus transit in June of 2012! (Just kidding -- you won't need any practice to see the Venus transit. Watch this one because it's fun and interesting.)

It's a good thing we have the transit, because there isn't much else going on in the shallow sky (besides the ever-beautiful moon, of course). Uranus is high in the sky at sunset and sets a bit after midnight, so it's still accessible if you catch it early in the evening. Go for Neptune first, even though it's more difficult: it's about an hour and half ahead of Uranus. Saturn rises a bit before midnight and is a nice object for night owls. Later in the month, Mercury emerges into the morning sky to create a very nice viewing opportunity for early risers. The other planets are too close to the sun to be observed this month.

And finally, in other planetary news, the dwarf planet formerly known as Xena (or 2003 UB313, for sticklers) now has a real name: she's now called Eris, after the Greek goddess of strife and discord. Eris' moon will not be named Gabrielle, but instead is dubbed Dysnomia, after the daughter of Eris and the goddess of lawlessness. Not a bad pair of names, really, for Xena fans!

The BIGGEST Club Observing Site

Steven Nelson

This is the second in a series benchmarking club dark-sky observing sites in California. This month I will talk about the largest, at 22 acres, the Orange County Astronomers Anza site. http://www.ocastronomers.org/about_oca/club_observing_sites/anza_virtual_tour/anzavirtual_003.asp

As we move northwest from the SDAA site (Oct. Ephemeris) we get to this other inland desert site. It is east of most population on a county road (371) near the small desert subdivision of Anza at over 4300 ft elevation. The land is rolling and gullied bush-covered desert. This also was purchased about 30 years ago but the club seems to have carried all the mortgage and tax expenses (not a group of founders). The important site selection points seem to have been, dark sky, electric lines extended by local utility for no fee, driving time 1-2 hours. The neighborhood has had residential building lately (light pollution = zone 3, 50% of background). The large site has allowed slow but substantial development over several decades. The monthly club star parties are very well attended, members get 24/7 access. Public visiting is only allowed by special arrangement (note – no maps or lat-long on their Clear Sky Clock).

The site offers these major services to the OCA, (1) a developed dark sky site for large star parties, (2) Club Observatories, 21" and 14", (3) several areas for about 68 individual small pads and parking (private pads), (4) a place for seven large member observatories (private observatories), and (5) user club house with bathrooms, kitchen and dorms. The user pads are together in an open field near the restrooms, observatory, and "Anza House". These are available to members on a first-come basis. Two long cement strips for this use have space for back-in parking and most have electric outlets. As the decades have passed what used to be one simple dirt field has been expanded. Major land grading was needed for "the football field. Two other areas are left as unimproved fields.

The concrete block observatory was a major project for the first years. Think of a building project almost the scale of Fremont Peak. There was originally a small warming trailer – greatly expanded by replacement by a duplex mobile home. There is a new zoning plan that will allow them to add 25 observatory sites (which will need major grading). The maintenance and development costs for the club are going to significantly increase – a dues and fees increase is being implemented.

The free electric service extension seemed important to their site. Not all telescope sites here have electricity. The site has a regular well water supply and regular bathrooms. Such amenities as an observatory and ANZA House have helped their success over the decades, but now there are increasing maintenance costs and of course, a volunteer recruitment need. The private pads and observatories are built by those who 'license' the sites. There is much help from experienced members for these tasks. Barn raisings or dome raisings seem to help "community". Such a site, like SDAA's, has been the accumulation of efforts over the decades and generations of club members.

MORE DETAILS

The sixty private pads are small sites, most with electric service, that are available for yearly license. Serious observing can be done here in relative isolation, but unlike SDAA, there seems room for a car but not a tent. Places for about 10-15% of the club are available and the lease about doubles club yearly membership (to about $100 before increase). This seems to be one of the sources of income that helps pay annual electricity, taxes and maintenance. Pad "development" is the user responsibility. Typically users put in a cement pad and a permanent pier. Benches and equipment storage cabinets are sometimes installed. The "license" arrangement allows interest to be retained by the club but there has been some mention of profiteering. Check their wonderful WWW page.

The club observatory seems magnificent but the scope has had to be re-engineered. There is a $150 key and training charge to use the scope (no extra yearly fee). This is a facility slightly smaller than the Fremont Peak State Park observatory.

The private observatories area is for those who could afford building a major observatory. The original sites are now built-out (7) and OCA has a signup list for 17 more sites. These observatories re-sell privately, but require membership and some overview. The private observatories apparently pay about 3 X basic membership. There has been a very large discussion on the cost of development and these new sites.

I think this is yet another successful site, with multiple uses but a very large infrastructure. Space allows both expansion and 'errors' in plans. Expansion space seems to allow all interest groups and individuals room to grow and to pursue their specialized interests. I worry about such a large capital and maintenance cost that two mobile homes entail. Expansion without a detail financial plan may be a problem according to one source. Even getting electricity to all areas was a multi-decade project.

Like SDAA, hundreds of volunteer hours and donations really add up over the decades! There are now over 600 members in the OCA and the general dues are $50 [totals 5X SJAA] Some of this cash is used to support the site.

Staggering Distance

Dr. Tony Phillips

Tonight, when the sun sets and the twilight fades to black, go outside and look southwest. There's mighty Jupiter, gleaming brightly. It looks so nearby, yet Jupiter is 830 million km away. Light from the sun takes 43 minutes to reach the giant planet, and for Earth's fastest spaceship, New Horizons, it's a trip of 13 months.

That's nothing.

Not far to the left of Jupiter is Pluto. Oh, you won't be able to see it. Tiny Pluto is almost 5 billion km away. Sunlight takes more than 4 hours to get there, and New Horizons 9 years. From Pluto, the sun is merely the brightest star in a cold, jet-black sky.

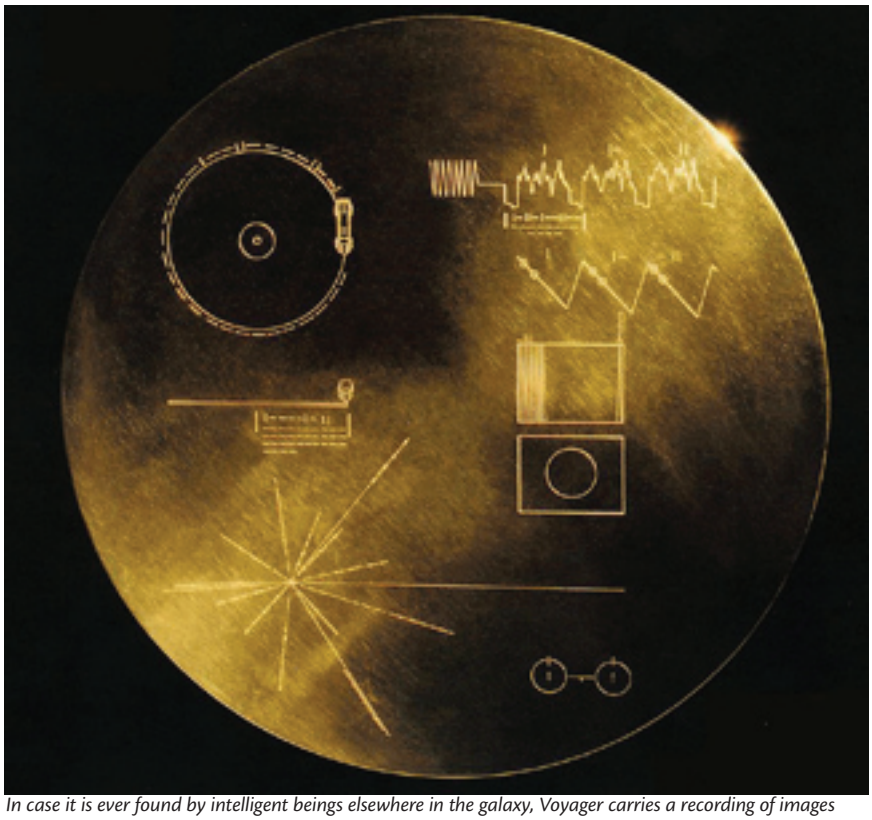
That's nothing.

A smidgen to the right of Pluto, among the stars of the constellation Ophiuchus, is Voyager 1. Launched from Florida 29 years ago, the spacecraft is a staggering 15 billion km away. It has traveled beyond all the known planets, beyond the warmth of the sun, almost beyond the edge of the solar system itself.

Now that's something.

"On August 15, 2006, Voyager 1 reached the 100 AU mark—in other words, it is 100 times farther from the Sun than Earth," says Ed Stone, Voyager project scientist and the former director of NASA's Jet Propulsion Laboratory. "This is an important milestone in our exploration of the Solar System. No other spacecraft has gone so far."

At 100 AU (astronomical units), Voyager 1 is in a strange realm called "the heliosheath."



In case it is ever found by intelligent beings elsewhere in the galaxy, Voyager carries a recording of images and sounds of Earth and its inhabitants. The diagrams on the cover of the recording symbolize Earth's location in the galaxy and how to play the record.

As Stone explains, our entire solar system—planets and all—sits inside a giant bubble of gas called the heliosphere. The sun is responsible; it blows the bubble by means of the solar wind. Voyager 1 has traveled all the way from the bubble's heart to its outer edge, a gassy membrane dividing the solar system from interstellar space. This "membrane" is the heliosheath.

Before Voyager 1 reached its present location, researchers had calculated what the heliosheath might be like. "Many of our predictions were wrong," says Stone. In situ, Voyager 1 has encountered unexpected magnetic anomalies and a surprising increase in low-energy cosmic rays, among other things. It's all very strange—"and we're not even out of the Solar System yet."

To report new developments, Voyager radios Earth almost every day. At the speed of light, the messages take 14 hours to arrive. Says Stone, "it's worth the wait."

Keep up with the Voyager mission at voyager.jpl.nasa.gov. To learn the language of Voyager's messages, kids (of all ages) can check out spaceplace.nasa.gov/en/kids/vgr_fact1.shtml .

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

Solar System Stats for November 2006

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	15^h25^m	14^h29^m	14^h13^m	15^h31^m	9^h46^m	22^h51^m	21^h18^m	14^h24^m
	11	14^h45^m	15^h19^m	14^h40^m	15^h39^m	9^h48^m	22^h50^m	21^h18^m	15^h04^m
	21	14^h32^m	16^h10^m	15^h07^m	15^h49^m	9^h50^m	22^h50^m	21^h18^m	15^h45^m
Dec	1	-21°08'	-13°50'	-13°04'	-18°14'	14°31'	-8°14'	-15°58'	-14°17'
	11	-15°20'	-17°47'	-15°20'	-18°46'	14°22'	-8°16'	-15°57'	-17°18'
	21	-12°26'	-20°57'	-17°26'	-19°16'	14°16'	-8°16'	-15°56'	-19°49'
Dist	1	0.74	1.72	2.58	6.33	9.38	19.53	29.89	0.993
	11	0.69	1.71	2.56	6.36	9.22	19.69	30.06	0.990
	21	0.89	1.70	2.53	6.36	9.05	19.85	30.23	0.988
Mag	1	1.3	-3.8	1.6	-1.7	0.5	5.8	7.9	
	11	4.4	-3.8	1.6	-1.7	0.5	5.8	7.9	
	21	-0.2	-3.8	1.6	-1.7	0.5	5.8	7.9	
Size	1	9.1"	9.7"	3.6"	31.2"	17.7"	3.6"	2.2"	32'14"
	11	9.8"	9.8"	3.7"	31.0"	18.0"	3.6"	2.2"	32'18"
	21	7.6"	9.8"	3.7"	31.0"	18.4"	3.5"	2.2"	32'23"

Silicon Valley Astronomy Lecture Series

Dale Cruikshank speaking on Pluto on November 8, 2006

7 p.m. at Foothill College

Andrew Fraknoi

Astronomer Dale Cruikshank of NASA's Ames Research Center will give a non-technical, illustrated talk on: "The Planet Pluto: Maligned but Not Forgotten" as part of the Silicon Valley Astronomy Lectures in the Smithwick Theater, Foothill College, El Monte Road and Freeway 280, in Los Altos Hills, California. No background in science will be required for this talk.

Although Pluto is only one of many worlds beyond Neptune that are now recognized as dwarf planets, it is the one we know best.

And to generations of Americans who in their youth learned about Pluto's discovery by a Kansas farm boy in 1930, it is perhaps the one that is most loved. With a thin atmosphere, a layer of smog, three moons, and a patchy surface made of many kinds of ice, Pluto is the gateway to the vast outer fringe of the Solar System, where trillions of lumps of ice, rock, and organic chemicals orbit the Sun in a permanent deep freeze.

Recognizing Pluto's importance to our understanding of the outer regions of the Solar System, NASA launched the New Horizons spacecraft in January, 2006. Streaking outward at nearly 70,000 miles per hour, New Horizons will reach Pluto in July 2015. The knowledge gained from this first close-up inspection of Pluto and its moons will expand our understanding of all the dwarf planets beyond Neptune. This new understanding will be all the more important as the completion of new and powerful survey telescopes begins to accelerate the discovery of new objects out there.

Dr. Cruikshank is one of the world's foremost authorities on the outer solar system. He and his colleagues discovered the ices that make up Pluto's surface and evaporate to form its thin atmosphere. As a former amateur astronomer, he has a knack for explaining scientific ideas in simple, direct language.

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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. **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
11	Orion XT6 Dob	Ravi Shankar Erram
12	Orion XT8 Dob	Sarah E. Jones
13	Orion XT6 Dob	Rajiv Vora
14	8" f/8.5 Dob	Bill Kerns
15	8" f/9 Dobson	Mike Koop
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
32	6" f/7 Dobson	Sandy Mohan
34	Dynamax 8" S/C	Yuan-Tung Chin
35	Meade 8" Equatorial	Mike Horzewski
37	4" Fluorite Refractor	Peter Young
38	Meade 4.5" Digital Newt	Tej Kohli
39	17" Dobson	Steve Nelson
42	11x80 Binoculars	Ritesh Vishwakarma
43	Orion XT4.5 Dob	Gary Mitchell
44	4.5" Skyview/ P Mount	Mantle Yu

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	Greg Bradburn	12/15/06
29	C8, Astrophotography	Rodney Moorehead	11/18/06

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	Charles Santori	10/2/06
9	C-11 Compustar	Bill Maney	Indefinite
16	Solar Scope	Mike Koop	Repair
21	10" Dobson	Michael Dajewski	Repair
28	13" Dobson	Craig Scull	11/1/06
33	10" Deep Space Explorer	Art Kalb	12/30/06
36	Celestron 8" f/6 Skyhopper	Kristi Whitfield	12/16/06
40	Super C8+	Srinath Krishnan	1/15/07
41	18" Sky Designs Dob	Kevin Roberts	12/17/06

Waiting list: No Waiting!

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

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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.)

☐ **I'll get the Ephemeris newsletter online**
http://ephemeris.sjaa.net Questions?
Send e-mail to membership@sjaa.net

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

Please make checks payable to "SJAA".

You can join or renew online:
http://www.sjaa.net/SJAAmembership.html

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City/ST/Zip: _____

Phone: _____

E-mail address: _____