

# SJAA EPHemeris

## SJAA Sponsors First California Star Party

Mark Wagner

My sincere thanks to the SJAA board of directors for the SJAA's sponsorship of the first California Star Party (CSP). The event was held at Lake San Antonio, 30 miles south of King City over the nights of September 29th and 30th. Advertised mostly by word of mouth, a posting or two on the internet, and via TAC's Bay Area mailing list, all who attended came away wanting CSP to develop into an annual event.

With Friday night being difficult for many on short notice (we began working on CSP only a few months in advance), observers were arriving late into the evening. Saturday saw more arrivals until finally, at sunset, 80 telescopes, give or take, were on scene. People came from as far south as San Diego, and north from Sacramento area. The Kern club based in Bakersfield and the Central Coast Astronomical Society were very evident.

SJAA board members of special note at the star party were Jim Bartolini, who along with SJAA member Doug Hudgins, had been recommending Lake San Antonio as an observing site for the past several years. These guys know their stuff ... the place was great. Mike Koop also attended, so we had two SJAA board members. Mike was very helpful in offering suggestions and support, representing the SJAA. Thanks to these special individuals for their contributions.

Next year we will have dates picked out well in advance so more people can arrange their schedules to attend. The atmosphere was laid back, casual, friendly, and fun. The proximity to the Bay Area, 2.5 hours south of San Jose and not much further from

Los Angeles, along with lots to do in the beautiful surrounding areas, makes Lake San Antonio an excellent place for this event.

Finally, kudos to the park staff at Lake San Antonio. Better, more accommodating people could not be hoped for. And, again, thanks to the SJAA, for helping make the first California Star Party a great success. I hope to see more of you there next year!

### Calstar Observations

Jamie Dillon & Steve Sargent

*[Excerpts from observering reports from the Calstar event held in September at Lake San Antonio.]*

Jamie Dillon:

I began and ended, by chance, with objects that I hadn't been able to see at Coe. Started with NGC 6539 in Ophiuchus, a globular which was just barely visible from Rashad's 12" the week before, invisible in my scope. Sure enough it's dim, diffuse with a bright core. Sure looks to have intervening dust. Ended the night at 5 a.m. with 559, a tiny little tight, distant compact OC [open cluster] in the middle of the W of Cassiopeia. I'd scanned that area more than once before without spotting the cluster. There it was.

NGC 253 was once again unbelievable, the big galaxy with the long shapely legs in Sculptor, clear

*Continued on following page*

### SJAA Activities Calendar

Jim Van Nuland

#### November

- 3 Hough Park star party. Sunset 5:15 p.m., 49% moon sets 11:11 p.m.
- 11 General Meeting — Alan Adler on enhancing newtonian telescopes. Hough Park, 8 p.m.
- 17 Hough Park star party. Sunset 4:56 p.m., 56% moon rise 11:04 p.m.
- 18 Fremont Peak star party. Sunset 4:55 p.m., 44% moon rise 0:11 a.m.
- 25 Fremont Peak star party. Sunset 4:51 p.m., New moon.

#### December

- 1 Hough Park star party. Sunset 4:50 p.m., 32% moon sets 9:56 p.m.
- 9 General Meeting. Christmas party.
- 15 Hough Park star party. Sunset 4:52 p.m., 71% moon rise 10:02 p.m.
- 16 Fremont Peak star party. Sunset 4:51 p.m., 60% moon rise 11:09 p.m. Moon rises early, but since astronomical dark begins at 6:24 pm, there are nearly 5 hours of darkness.

Are you a member of the SJAA email list? The email list receives up-to-the-minute announcements about SJAA events and activities for members. Visit here for details: <http://www.sjaa.net/majordomo.html>

**24 Hour News and Information Hotline: (408) 559-1221**

**www.sjaa.net**

## Calstar Observations

Continued from front page

dust lanes, looping arms. Phwooo. Then at the end of the night I spent time gazing at little Trumpler 1 off M103 in Cassiopeia. This is a beautiful distant OC, looks like a flight of geese, 4 stars in a tight straight line maybe 5' long, forming a wedge with a set of 3 stars at an angle ca 30 deg. A favorite. First described here as a "curdling in the Milky Way."

Telescope: (Felix is a Celestron 11" f/4.5 Dobs with a primary made by Discovery. Was using a 22 Pan, 16mm UO Koenig, a 6mm Radian and a TV 2x Barlow, with a Lumicon O-III.)

Steve Sargent:

I'm in the process now of re-visiting the Messiers with Zefram, my JMI NGT-12.5. My emphasis is on objects that were much more difficult to see, or to find, in my Orion Short-tube 80. Using Burnham's, and Wil Tiron's Cambridge Star Atlas, I identified some other interesting objects that would be in the vicinity of my targeted Messiers.

NGC7317, 7318, 7319, & 7320

— Stephan's Quintet

Armed with Jay Freeman's S&T article, I pumped up the courage to

track this one down in Pegasus. Now, did I see it or didn't I? I definitely identified two bright patches, again at 159X, which I'm figuring are NGC7318 and 7320. On further study I thought I could separate NGC7319 from the group, but I don't think I can say I identified 7317 in the field.

NGC672 & IC1727

This was a great serendipitous discovery. Look 2 degrees south of the pointy end of Triangulum. You'll find this fascinating "rabbit ears" pair of edge-on spiral galaxies. After I saw them in Zephram, I went and looked to them some more in John's 25-inch Obsession. Way kewl!

I know I've omitted some old favorites like M31, M33, and M45 that I look at anytime they're up. I also got a stunning planetary view of Jupiter and Saturn through Rich's 7" refractor with the binoviewers, and an awesome view of the Crab nebula in someone's 25" dob.

[Ed note: That "someone" was Bill Cherrington and son Mark, members of the SFAA, and the Sidewalk Astronomers. Bill can be found at Fiddletown and the great US star parties (like CalStar is destined to be).

Thanks guys for sharing the memories!]



Photo from Calstar by Jeff Gortatowsky.

## Mooning

### Observing Domes From Ground Zero

Dave North

Last month we looked at some sinuous rilles here and on the moon, but it may not be so easy to connect to that if you haven't been "tubing" before (hiking through lava tubes).

Domes, on the other hand, are something most of you are intimately familiar with, whether you know it or not: Lassen Peak is a dome. Even better, it's only one dome in a whole field that includes every nearby peak.

If you've been there, you'll have some idea what these structures look like on the moon. But then again, maybe not.

As you approach the park, you'll note you've been climbing for some time.

Most of what you were climbing for many miles was the lower skirt of the Lassen structure.

Point one: some domes are big. On the moon, the Rumker complex is huge and dimpled even more than Lassen would be if viewed from the Moon. But overall, they are similar structures. And they're both so large that their size is not obvious to the casual observer.

Other domes come in tight — but separate — groupings. The Marius Hills are a good example of this.

Some are singular and have a simple central depression (cone); several of these can be seen around Copernicus.



Marius Hills sketch by Akkana Peck

But what causes them? The same process, both here and on the moon. Domes usually have a vent (the crater on the top of Lassen Peak, for example).

However, the vent is not adequate to relieve all the pressure of the magma pushing up from below. The result is a general rise of the entire area, just like a swelling under your skin.

It should be no surprise that domes often have a hemispherical shape.

On top of that general rise will be either a single eruptive series (a simple dome would be the result) or a repeated series of eruptions in different locations, all sourced from the same general weakness in the crust.

Large structures like Rumker or the Lassen area are examples of the latter.

On Earth, of course, erosion tends to wear down domes, so they're not as clean or plentiful as on the Moon. But those of us in northern California are lucky to have the youthful Lassen dome to inspect.

It's still active, in fact. The last eruption was only 85 years ago, a blink of an eye in geologic time (even in dog years). In fact, it's the only eruption in the last century in North America except Mount St. Helens.

What can you learn about the Moon from going to Lassen?

In some ways, not much. There aren't trees on the moon, but there are quite a few on Lassen.

And the spectacular Bumpass Hell, where water and hot gasses (including some sniffy sulfur compounds) are still leaking out, has no known parallel on the moon. Some outgassing is suspected, but something as thermally obvious as



An example of an earthly dome, Mt. Lassen. Photo by Akkana Peck

Bumpass Hell would probably show up on one instrument or another...

But the general shape and look can be very handy in understanding lunar domes, and in particular taking a hike to the top of Lassen can really give you and appreciation for what you're seeing up there.

The hike can be done by anyone in reasonable shape — the fact that I made it is a sure testament. I'm not a great high-altitude person, and the peak is almost 10,500 feet above sea level. The hike starts at over 8,000 feet, which is pretty near my normal limit.

I was pretty out of it all the way up, occasionally stumbling from the altitude weirdness. But it wasn't too tough, and definitely worth it.

Even though it was September, there was still a snow/ice field at the top, which will not be present on the moon.

What is present is a central depression — which you will see on many lunar domes. Studying it, you can see how it might show up better in some light than others, and how shallow it is (so light angle is critical).

Also from way up there, you can look around at the other, older remnant domes from other vents, and get a feel for how a lunar dome field would look if you could get that close (most of us probably won't).

Overall, Lassen is not to be missed in its own right. But for lunaphiles, it's also a unique local

laboratory.

But maybe even more, it gives a real seat-of-the-pants "feel" for what you're seeing when you inspect lunar domes — a connection that can really make your ideas and eyepiece click all at once.

It's surprising how much of the moon you can see right here on Earth.

## Meteors

### Leonids Made Easy

Jane Houston Jones

Every November 17-18 Earth crosses the orbit of comet Temple-Tuttle and the Leonids peak. Most of us like the idea of catching a falling star. Meteor observing sounds interesting, but the idea of traveling to a dark sky location just to sit and count meteors in a remote dark cold place doesn't seem as attractive. To set up and observe meteors when you could be warm and sleeping seems like a bad idea doesn't it? Well here's a suggestion for you.

You will see Leonids from November 14 through 21. ZHR could range from 10 per hour to a full-blown storm at the peak. That's enough reason to stay up and watch for meteors instead of sleeping, in my opinion. If you can get off work on Friday so much the better. Or do what I do, and work "at home" on meteor morning Friday. I'd also consider observing the night before, just in case.

Here's what you'll likely see on peak night, Friday November 17 at 08:00 UT. Translated to local time, that's 1:00 a.m. on Friday morning, November 17th (late Thursday night, November 16th). The moon is full on the 11th. Last quarter is the 18th. This means the moon will be rising at 11:04 p.m. Thursday night, a couple hours earlier than the peak of the Leonids. That's not good. So I'd stay home if I were you, wake up before midnight, go

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## **Observing Leonids**

*Continued from previous page*

out on the deck or back yard, get comfy in a lawn chair and enjoy yourself!

Start observing at about 11:30 PM. The radiant is still about an hour from rising.

As the radiant rises an hour later, get ready for some action. Have a sky chart handy, such as the centerfold of one of the Astronomy magazines, so you know how to recognize Leo. The "head" or "sickle" or "backwards question mark" of Leo is the radiant of the Leonids. This is where the Leonids will appear to radiate from, as they hurtle head-on towards their fiery end in our atmosphere. The Leonids you see will be fast and bright, white, blue-white or slightly greenish. Many will have persistent trains. When you see a meteor, mentally trace it backwards and if you arrive at the "sickle" of Leo, then you've just seen a Leonid!

You may see meteors from the minor showers or sporadics. These will radiate from other directions. Slow bright yellow meteors may be Taurids. Some are just sporadics - unaligned grains from ancient icy dust-bunnies, left over from the creation of our solar system. There is a chance of a great storm, a burst of thousands of meteors, like what was seen in 1966. Wouldn't you just kick your self if the storm happened and you slept through it?



Akkana Peck has first light for her 8" f/6 dobsonian at "Slide and Equipment Night," September SJAA general meeting.

## *The Shallow Sky*

### **Give Thanks for the Great Gas Giants**

Akkana Peck

This November is a month for planetary observers to be thankful. On a Fremont Peak night last month, I observed Mercury, Venus, Earth, the asteroid Juno, Jupiter, Saturn, Uranus, and Neptune — all the major planets except Mars, which is still in the morning sky, and Pluto, which is hidden in the Sun's glare this month. This bountiful planetary cornucopia will carry us through Thanksgiving and into early December, so give thanks and get out there with your telescope (or if you don't have one, borrow one of the club loaners).

This month marks the opposition of the two great gas giants, Jupiter (November 28) and Saturn (on the 19th). They rise in the early evening and are visible all night, Saturn preceding Jupiter by about ten degrees, and the two of them making a lovely pattern with the Seven Sisters and the bull's eye Aldebaran.

Saturn's ring tilt is now at maximum, and this makes it much easier than usual to pick out ring detail. Cassini's division should be easy in any telescope; I've seen hints of the much fainter "Encke minimum", a dimming in brightness in the middle of the A (outer) ring, in telescopes as small as 4". Can it be seen in an 80mm or smaller? This is the year to find out; try it and let me know.

Jupiter's opposition is an unusually close one — the planet will be about as big and bright as we're likely to see it. Look for transits of its satellites and their shadows, and see how many features you can pick out in its stormy, multi-hued atmospheric bands. See the accompanying article on observing Jupiter and its features.

Near opposition, one interesting challenge on Jupiter is to watch for its moons eclipsing their own shadows.

Normally, due to the angles between the sun, earth, and Jupiter, a Jovian moon and its shadow transit Jupiter's disk at different times: the shadow preceding the moon before opposition, following the moon after opposition. Within a few days of opposition, they transit at almost exactly the same time, and if the seeing is good (alas, often difficult in winter months), you can sometimes see a crescent-shaped shadow as the rest of the shadow is blocked by the moon.

Try for this with Io's shadow:

- on November 13th starting around midnight;
- November 15 starting a little before 7 p.m.;
- November 22 starting about 8 p.m.;
- November 24, already in progress as darkness falls.

With Ganymede's shadow, try

- November 18 starting at dusk, when Ganymede and its shadow make a transit followed closely by the GRS. For Europa, try
- November 19 at nightfall, and
- November 26 a bit before 7 p.m..

Neptune and Uranus are in Capricornus, visible most of the night as small greenish or blue-green disks. It's easy to see, after viewing these far-off planets in a small telescope, why early observers called nebulae like the Cat's-eye or the Ghost of Jupiter, which look so similar in a small instrument, "planetary nebulae". Modern observers who have access to Hubble photos might find this less easy to understand.

Mars rises about 3 a.m. in Virgo, moving eastward toward Spica as the month progresses. Its tiny reddish disk whets our appetite for the upcoming opposition this winter. More on that in future columns.

## Observing Jupiter's Features

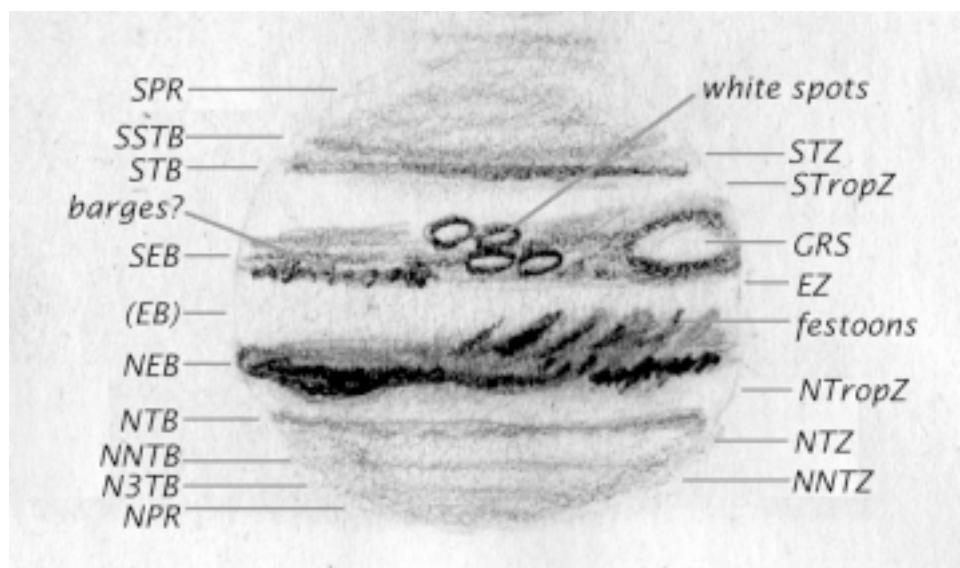
Akkana Peck

This sketch, made by Jane Houston through a 7" refractor on a night of excellent seeing at Fremont Peak, shows many (not all) of the features observable on Jupiter with amateur telescopes. By convention, south is up, to match a typical reflector view.

The dark and light bands are formed by clouds of different temperatures, heights, and compositions within Jupiter's atmosphere. The dark bands are called "belts", in contrast with the off-white "zones" between them. They appear brownish or reddish to most observers. Belts are named and abbreviated according to position on Jupiter: Equatorial Belt, South Temperate Band, and so on. The NEB, SEB, and the two Polar Regions are easy targets and should show up in any telescope, perhaps even high-powered binoculars if mounted on a tripod. Most of the other belts are more difficult to see, and require steady seeing and good optics. Note that even with the excellent seeing and excellent optics when this sketch was made, the EB was not visible. This is fairly typical — it's one of Jupiter's more elusive features. The highly detailed banding in the north polar region (e.g. separating the NNTB from the N3TB from the polar region) is also difficult and takes very steady skies.

The Great Red Spot (GRS) is Jupiter's most famous feature. A huge storm which has been raging as long as humans have had telescopes to look at Jupiter, it changes color and location over the years. It is fairly pale now, as the sketch shows (though it may be a little darker this year than last year, when the sketch was made). It sits within a hollow in the STB, called the "Great Red Spot Hollow", and often the hollow, where the dark band separates to make room for the GRS, is more obvious than the spot itself.

Festoons are another commonly observed feature. Blueish, in contrast with the reddish belts, they usually sweep out of the temperate bands



(especially the NTP) into the EZ.

"Barges" are dark spots that migrate within a band. They aren't well understood; they may be areas of cooler cloud.

A treat in the past few years has been the collection of white ovals, especially leading and following the GRS in the STB. White ovals can be either cyclonic or anticyclonic storms. On a night of steady seeing, an amazing amount of detail can be seen, and what initially appeared to be a split

in a band can turn out to be a complex of white spots of all sizes. ALPO and other observing groups track these white ovals, and issue alerts as they appear, disappear and merge, and have reported an unusual amount of activity in the last few years.

This is by no means a complete list of the features visible on Jupiter — and the features are always changing. Consider this just a basic guide for what you can see — now get out there and take a look for yourself!

## December Holiday Party

Mark Taylor

The club's December general meeting will again be held as a holiday party and social occasion. Last year we had many tasty "potluck" contributions, interesting "show and tell" items, a fun-filled "white elephant" gift exchange, and lots of great conversation.

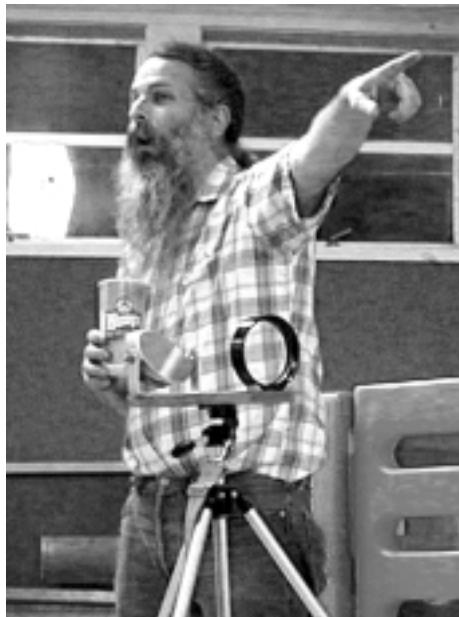
If you would like to display a piece of unique astro equipment, an astro photo, new software, or other such item please bring it along.

Contributions of food or drink are appreciated but not necessary. No alcohol, please.

If you would like to participate in this year's "white elephant" gift drawing, please anonymously wrap (no name tag) an astronomical item of small value and/or large humor and bring it along. It can be a used item you no longer want, an inexpensive new item, and can be either useful or funny. We'll do the exchange as a "draw or steal" lottery, which is always great fun.

Please join us on December 9th at 8pm for our holiday social.

## Slide and Equipment Night, September 2000



*Clockwise from lower left: (1) Arne Danielsen of Oslo, Norway, visiting San Jose on business, brought his great meteor photo. (2) Dave North introduced his unique dobsonian using two-tube support for the upper cage. (3) Dwight Elvey stands near the business end of a unique heliostat built from surplus components. The solar image is projected into a shaded box some 100 feet distant. (4) Gary Mitchell demonstrates his homemade guest-friendly information box for public star parties. The text is backlit with groups of red LEDs. Photos by Akkana Peck.*

## Celestial Calendar November 2000

Richard Stanton

Lunar Phases:	Date	Rise	Trans	Set
FQ 23:27 PST	03	12:59	18:04	23:12
FM 13:15 PST	11	17:22	00:21	06:19
LQ 07:24 PST	18	00:13	06:14	13:14
NM 15:11 PST	25	06:33	11:52	17:05

Nearer Planets:	R. A.	Dec.
Mercury, 1.05 A.U., Mag. -1.8		
07 05:20 10:53 16:25	13:54.1	-09:50
17 05:12 10:40 16:07	14:18.7	-11:27
27 05:43 10:54 16:05	15:12.0	-16:24

Venus, 1.11 A.U., Mag. -4.6		
07 09:52 14:31 19:09	17:29.4	-25:07
17 10:07 14:44 19:22	18:22.5	-25:31
27 10:16 14:57 19:39	19:14.9	-24:41

Mars, 2.17 A.U., Mag. 1.3		
07 03:04 09:09 15:14	12:09.4	+00:24
17 02:55 08:52 14:49	12:31.9	-02:01
27 02:46 08:35 14:25	12:54.4	-04:21

Jupiter, 4.06 A.U., Mag. -2.9		
07 18:12 01:29 08:42	04:29.1	+20:50
17 17:29 00:45 07:56	04:23.8	+20:39
27 16:44 23:55 07:11	04:18.2	+20:27

Saturn, 8.13 A.U., Mag. 0.5		
07 17:43 00:47 07:48	03:47.2	+17:34
17 17:01 00:05 07:05	03:43.9	+17:23
27 16:19 23:18 06:21	03:40.6	+17:13

Sol Star Type G2V Intelligent Life in System ?		
Hours of Darkness		
10:38 07 06:39 11:51 17:03 14:51.0		-16:24
10:54 17 06:50 12:53 16:55 15:31.7		-19:05
11:06 27 07:00 11:56 16:51 16:13.8		-21:12

Astronomical Twilight:  
Begin End

JD 2,451,855	07	05:10	18:32
865	17	05:20	18:26
875	27	05:29	18:22

Sidereal Time:

Transit Right Ascension at Local Midnight		
07 00:00 = 02:59		
17 00:00 = 03:39		
27 00:00 = 04:18		

Darkest Saturday Night: 25 Nov 2000		
Sunset	16:51	
Twilight End	18:23	
Moon Set	17:04	
Dawn Begin	05:27	
Hours Dark	11:04	

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## **Publication Statement**

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## **SJAA Loaner Scope Status**

All scopes are available to any SJAA member; contact Mike Koop by email ([loaner@sjaa.net](mailto:loaner@sjaa.net)) or by phone at work (408) 473-6315 or home (408) 446-0310 (Leave Message).

### **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
18	8" Newt/ P Mount	Paul Barton
30	7" f/9 Newt/Pipe Mount	Mike Koop

### **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
8	14" Dobson	Andrew Pierce	1/6/01
10	Star Spectroscope	Denny Woolaghan	11/13/00
11	Orion XT6 Dob	Peter Norvig	11/10/00
12	Orion XT8 Dob	Nick DeMonner	11/27/00
13	Orion XT6 Dob	Ilkka Kallio	11/29/00
15	8" Dobson	Daron Darr	10/20/00
16	Solar Scope	Gary Mitchell	11/20/00
19	6" Newt/P Mount	Li-Chung Ting	12/22/00
26	11" Dobson	David Cameron	12/8/00
27	13" Dobson	Jeff Crilly	10/15/00
28	13" Dobson	Dennis Hong	11/27/00
32	6" f/7 Dobson	Sandy Mohan	12/8/00

### **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
1	4.5" Newt/ P Mount	Tim Roberts	12/9/00
2	6" f/9 Dob	John Paul De Silva	?
3	4" Quantum S/C	Hsin I Huang	12/5/00
6	8" Celestron S/C	Lee Barford	1/7/01
7	12.5" Dobson	Doug Hendricks	1/8/01
9	C-11 Compustar	Paul Barton	Indefinite
21	10" Dobson	Ralph Seguin	Repair
23	6" Newt/P Mount	Raghav Srinivasan	11/12/00
24	60mm Refractor	Al Kestler	1/7/01
29	C8, Astrophotography	Bruce Horton	12/29/00
31	8" f/8 Dobson	Robert Morgan	12/17/00

### **Waiting List**

Orion XT6 Dob, Li-Chung Ting; Solar Scope, Jack Kellythorne; 13" Dobson, Bill Maney; 13" Dobson, Michael Dajewski.

## **Submit**

Members are encouraged to submit articles for publication in the SJAA Ephemeris. Send articles to the editors via e-mail to [ephemeris@sjaa.net](mailto:ephemeris@sjaa.net).

To subscribe to or unsubscribe from the SJAA Mailing List send email to [sjaa-request@sjaa.net](mailto:sjaa-request@sjaa.net) with a blank subject line followed by a single text line that says "subscribe" or "unsubscribe"

## San Jose Astronomical Association Membership Form

New \_\_ Renewal \_\_

Membership - \$15

Junior (younger than 18 years old) - \$6

Sky and Telescope - add \$30 to membership

(Sky & Tel will not accept multiyear subscriptions)

Make checks payable to "SJAA"

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

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