

SJAA EPHEMERIS

Observing is a StarBlast!

Jane Houston Jones

A new telescope made its debut at a recent public star party. I liked it so much I went out the next day and bought one for myself. Yes I'm talking about the f/4 4.5-inch Orion StarBlast reflector.

The telescope, which was reviewed in the June 2003 Sky and Telescope magazine, retails for \$149.00. SJAA members can get the club discount from the Cupertino store.

That price includes an Orion red-dot EZ Finder reflex sight, which retails for \$34.95, and two Explorer II (Kellner) eyepieces, which retail for \$27.95 each. It also comes with a collimation cap (similar to a Rigel a-line collimation device) which fits into the focuser for easy collimation of the telescope.

The Orion catalog markets this telescope for kids, and I agree — it is a telescope for kids of all ages. I used my StarBlast at a May 15 Project Astro lunar eclipse school star party, and the little scope provided great 25x and 75x views of the moon to a hundred kids and parents. Then the next weekend,

May 20-23, I brought the StarBlast to Lake Sonoma for some deep sky views. I observed 24 Messier objects, including all the Messiers in the Virgo realm of galaxies, that first night. M51, the Whirlpool galaxy in Canes Venatici, looked awesome! Both components were easily visible. The magnitude 9 Leo Trio, M65, M66 and NGC 3628 were easy to find, and nice to look at, too. NGC 3628 looked like a little edge-

on sliver. Spiral M65 looked like a little oval. M66 is the "fattest" of the trio of spirals, with some central bulge and a hint of spiral arm showing. Halton Arp included M66 in his catalog of peculiar galaxies as ARP 16 and this whole trio is Arp 317. The 17mm eyepiece, aimed at the Beehive cluster, provided dozens of stars in pretty trios and lines.

Continued on next page

SJAA activities calendar

Jim Van Nuland

August

- 1** Houge Park star party. Sunset 8:25 p.m., 17% Moon sets 10:42 p.m. Star party hours 9:30 p.m. to midnight
- 2** Deep Sky star party at Coyote Lake Park, east of Gilroy. Sunset 8:14 p.m., 26% moon sets 11:10 p.m.
- 7** ATM class. Houge Park, 7:30 p.m.
- 9** **General meeting**, Houge Park. 8:00 p.m. Tim Thompson: *Astrophysics, cosmology, & the age of the universe*
- 21** ATM class. Houge Park, 7:30 p.m.
- 22** Astronomy class. Houge Park, 7:30 p.m., subject TBA
- 22** Houge Park star party. Sunset 7:51 p.m., 22% Moon rises 2:04 a.m. Star party hours 9:00 p.m. to midnight
- 23** Deep sky weekend. Sunset 7:49 p.m., 12% Moon rises 3:01 a.m.
- 30** Deep sky weekend. Sunset 7:40 p.m., 15% Moon sets 9:41 p.m.

September

- 5** Houge Park star party. Sunset 7:31 p.m., 78% Moon sets 2:10 a.m. Star party hours 8:30 p.m. to 11:30 p.m.
- 6** ATM class. Houge Park, 7:30 p.m.
- 11** ATM class. Houge Park, 7:30 p.m. (no class on the 18th)
- 13** **General meeting**, Houge Park. 8:00 p.m. Slide and Equipment night
- 19** Astronomy class. Houge Park, 7:30 p.m. subject TBA
- 19** Houge Park star party. Sunset 7:10 p.m., 37% Moon rises 12:46 a.m. Star party hours 8:00 p.m. to 11:00 p.m.
- 20** Deep sky star party at Coyote Lake Park, east of Gilroy. Sunset 7:08 p.m., 25% Moon rises 1:46 a.m.
- 27** Deep sky weekend. Sunset 6:57 p.m., 6% Moon sets 8:10 p.m.
- 25-28** CalStar star party

The Board of Directors meets at 6:30 p.m. preceding each general meeting. All are welcome.



The author's 17.5-inch f/4.5 Litebox reflector "Hagrid" and 4.5-inch f/4 Orion StarBlast "Green Flash." Photo by Mike Portuesi

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

<http://www.sjaa.net>

StarBlast

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The next weekend I thought I should share the telescope with a real kid! So Larissa, the 9-year-old daughter of my friends Peter and Barbara Schumacher, obliged me at Fremont Peak. It didn't take any arm-twisting at all. We set the telescope on the sturdy picnic table outside the FPOA observatory, and settled in for two hours worth of observing. The picnic table made a great observing spot, with room for the observer to sit on the table next to the telescope, with eyepiece box and a star chart nearby. There was plenty of foot room on the picnic table bench for balance and for feet. It was comfortable to aim and view through the 18-inch tube. Larissa enjoyed lining up a selection of three eyepieces in the StarBlast eyepiece rack, too. I must admit she didn't like the view through the 6mm Kellner, and asked me if I had another 6mm she could use. I offered a 6mm Vixen Lanthanum, and she was happy.

As Mojo aimed the FPOA 30-inch Challenger telescope at object after object, Larissa looked at where the 30-inch was pointed and with a little help

Out there ...

Mid-summer Milky Way meanderings

Mark Wagner

Summer is flying by — have you used your telescope this month? Conditions have been about as good as they get, so don't miss out. Nights are lengthening and a mix of deep and galactic treats await us. And a reminder, CalStar is coming up new moon next month at Lake San Antonio — a wonderful dark sky site that is a very easy ride 2.5 hours down highway 101 just south of King City. See <http://www.sjaa.net/calstar2003>.

Our swath of sky this month, rising in the east for 3rd quarter and new moon, is between right ascension 20.31 and 22.47 — from Cepheus through Cygnus, Lacerta, Vulpecula, and south into Pegasus, Delphinus and Aquarius.

sometimes (with a green laser pointer) she star hopped to the same objects in the StarBlast. Some of the objects Larissa found in the StarBlast were M104, the Sombrero galaxy, M87 in Virgo, M86 and 84 in Virgo, M82 and 81 in Ursa Major. She also found the Whirlpool galaxy and Jupiter early in the evening. And she easily aimed at the naked eye visible Beehive cluster, M44 and the Coma Berenices star cluster, Melotte 111.

Later, she hopped to M20 the Trifid nebula, M8, the Lagoon, M24, the Sagittarius star cloud, and scanned other parts of the Milky Way. Oh, in scanning, she chanced upon the Swan nebula, M17. I can't remember what else she looked at, but her observing log had 13 objects on it by the time she was ready for a well-deserved snooze at 11:30 p.m.

Then, I went back to my 17.5-inch f/4.5 telescope for some projects of my own. When Larissa and her family left for their Fremont Peak campsite, I pointed out the rising planet Mars to her. I'm willing to bet she'll want to use the StarBlast again!

— Jane Houston Jones,
jane@whiteoaks.com

Start with the fine double star Beta Cephei, the northeastern star in the "box" that defines the main body of the constellation. The primary is very bright white at mag 3.8 with a yellow or rose colored companion west of and close to the primary, significantly dimmer at mag 7.8.

Cross the "box" of Cepheus to check out Delta Cephei, which I immediately saw as an Albiero clone. The double sits in an area rich in open clusters; spend some time there. Delta's primary shines at mag 4 and is a nice gold/white color, not quite as rich gold as Albiero. The companion is very blue and sits a wide 42" south.

Move to the center of the box to the double star Xi Cephei. I saw this as

a bright white primary with a dimmer yellowish-red companion almost 2" west. Can you split the third component apart from the secondary, just 1" to its east?

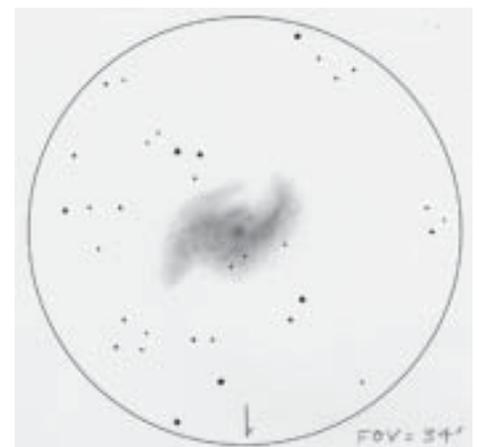
Just 2.2 degrees south-southwest is open cluster NGC 7160. Jeff Gortatowsky observed it and wrote "This cluster appears as a small thin cluster of some 10-20 members. It's somewhat spread out approximately east to west."

Just under ten degrees west-southwest, across Alpha Cephei, is a real treat in a darker skies, NGC 6946, a fine spiral galaxy. Add to that an outstanding open cluster, NGC 6339, not even 40 arcminutes northwest. Two great objects in one low power field of view!

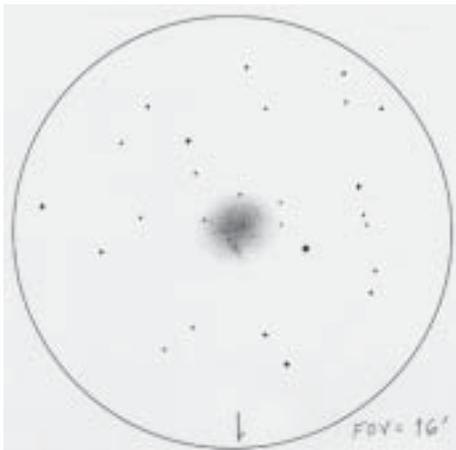
Use Alpha Cygni and Alpha Cephei as guide stars, placing the southern outer ring of a Telrad circle on the center point between the two stars. You should be close to NGC 7008 — a bright planetary nebula. It appears elongated slightly NNE-SSW and perhaps annular. There is a very bright knot on the northern edge and a pair of stars almost touching the southern edge.

Let's move 12 degrees east into Lacerta, to the large open cluster NGC 7243. At 70x it is large, amorphous, and has approximately 25 bright stars with many dim but resolvable other components. Note the three groups — one of 3 stars, another with 15 and the third with about 9. Empty lanes run

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NGC 6946, face-on spiral galaxy in Cepheus, sketched by Peter Natscher



NGC 6934, globular cluster in Delphinus, sketched by Peter Natscher

Milky Way meanderings

Continued from previous page

NNE-SSW between the three sections.

Next move 3.75 degrees southwest to NGC 7209, a fun mag 6.7 open cluster. It contains about 12 brighter stars with many more dimly forming a haze around and through the brighter members. A brightish star sits 14' west-northwest and a dimmer one 12' south of the cluster. This cluster is a nice view.

13.5 degrees southeast is a favorite — NGC 7331 in Pegasus. This beautiful spiral is usually a test from my backyard. On a good night it is an easy target, showing the extent of the

spiral arms. In larger aperture at a dark site you may glimpse three other small galaxies just east of the spiral.

7 degrees west-southwest is NGC 7217, just off SAO 72077, a double with two bright components. The galaxy lies outside the opening of a large "V" of stars, the brightest being mag 6.3. A brightish star lies southeast of the galaxy, and the galaxy itself is fairly round, perhaps a spiral, elongated in a northeast-southwest direction. NGC 7217 is distinct at mag 10.1 and SB 12.7.

NGC 6940 in Vulpecula is another easy to locate and surprising open cluster. From 39 Cygni cross to 41 Cygni and go the same distance beyond. This open is gorgeous! Big, bright and rich with a stream of stars running from the northwest to the southeast. This one could have easily replaced some of the tiny Messier open clusters! A real treat.

We're now on the way to Delphinus, and NGC 6934. The globular, while a poor cousin of the big bright Messier globulars, is still a pleasing find, and is unmistakable. A bright star sits close by to the object's west, with two more

Object	Type	R.A.	Dec.	Const
Beta	Dbl Str	21h 28m	+70 05	Cep
Xi	Dbl Str	22h 03m	+64 06	Cep
NGC 7160	OC	21h 53m	+62 36	Cep
NGC 6946	GX	20h 34m	+60 09	Cep
Delta	Dbl Str	22h 29m	+58 05	Cep
NGC 7008	PN	21h 00m	+54 32	Cyg
NGC 7243	OC	22h 15m	+49 53	Lac
NGC 7209	OC	22h 05m	+46 30	Lac
NGC 7331	GX	22h 37m	+34 24	Peg
NGC 7217	GX	22h 07m	+31 21	Peg
NGC 6940	OC	20h 34m	+28 18	Vul
NGC 6934	GC	20h 34m	+07 24	Del
NGC 7009	PN	21h 04m	-11 21	Aqr

stars still further to the west.

Finish with NGC 7009, which some will recognize as the Saturn Nebula. I was able to find it, above Capricornus' "bikini," just west of the bellybutton star (Nu Aquarii or 13 Aquarii). At 138x it appeared small, oblate and somewhat green-grey. I had no trouble identifying it, even at 72x it was definitely non-stellar.

It is a short drive to the local dark(er) sky sites. Friendly and helpful observers can be found at them nearly any good night. So treat yourself — pack up some warm clothes, thermos of coffee, your scope, and get out there! — *Mark Wagner*, mgw@resource-intl.com

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.

Tim Thompson to speak at the August SJAA meeting.

Houge Park meeting hall August 9, 2003, 8:00 p.m.

Tim Thompson of the Los Angeles Astronomical Society will be the guest speaker at the August 9 general meeting in his talk, *Astrophysics, cosmology, and the age of the universe*. He will be discussing the age of the universe as seen from 3 distinct points of view: (1) The astrophysics of stellar evolution, (2) the "classical" cosmology of the expanding universe, and (3) the "modern" cosmology of the cosmic background radiation. And how after nearly a century of tension, it now appears that all three of these independent approaches agree on an age for the universe of roughly 14 billion years.

Tim gave a very interesting talk to the SJAA last year on stellar evolution.

Join us Aug. 9th to hear about his latest topic.

— *Bob Havner*, bhavner@earthlink.net



August speaker Tim Thompson at RTMC this year. Photo by Akkana Peck.

Why you see spots Dave North

One weird coincidence this month: somebody decided to build a scope modeled after my 12.5-inch (see <http://timocharis.com/twelve/>) with some interesting refinements — no I won't give you his web address but I will say he's Canadian.

The coincidence? As part of his testing, he decided to shoot a couple of photos of ... the Moon. His first.

As far as I know, he had no idea about my column (a characteristic he shares with most of the universe).

No, 12.5 is not too much for the Moon.

This is a question month, since Bob Ray actually sent one in:

"What are the bright specks of light that come from areas near or in between the craters Cayley and Dionysius and at or near Censorinus?" (+4 deg. N/15deg. E. and -1 deg. S/33deg.)

"There are others, but I don't know what to call them. I can't find them on various Moon maps, but they are visible on photos. I believe you wrote an article about this some time ago..."

Disclaimer: slight editing for column style.

First, I'd like to point out that if I wrote a column on it, I don't remember it. So I certainly won't point the finger at Bob.

I've probably mentioned it, but so what? I never get an explanation right the first time anyway.

It's also possible Bob remembered the thorough and detailed talk Bob Garfinkle gave to the club ... but I don't think so. I know a few Bobs, and they generally stick together, so if he caught that talk he'd have remembered it.

No doubt about it.

So what are they?

First, it's fun how specific this question gets. I had no problem finding these suckers (yes, I did look the night the question came in. Bright spots can be looked at almost any time they're lit, though in general the higher the light,

the better. Why is that? Tell you later).

But even as well as the question is defined, I have to assume what we're talking about is ... bright halos and interior zones of various not-too-huge craters.

What are they?

They're bright, light colored stuff.

Okay, great answer Dave. But why is the stuff there? Isn't that what the real question is? Of course.

First I'll point out I should just forward this to Bob Garfinkle. But I'm not going to, so here we go.

As here, the Moon is built of layers. Some are lighter, some are

***"If I don't seem to be
horribly overwhelmingly
interested in the Moon this
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up."***

darker. Typically, the closer to black, the more magnesium and iron they contain (and are therefore called 'mafic' from the first letters of Magnesium and Iron. Iron? Okay, it's ferric, right?)

The lighter strata generally have more silicon, and are lighter in more ways than one: they are also less dense.

So the lighter stuff would naturally tend to 'float' on the darker and heavier stuff ... and when they're hot enough to be at least semifluid, that's just what happens.

Okay, how do you get a halo forming, or a bright interior to a crater? Imagine an area where there's a relatively thin layer of dark stuff over a layer of real light stuff.

Now slam something into it.

The dark stuff gets blown away, revealing a light interior for the new crater. Or maybe we slam hard enough to blow some of the light stuff up into

the air and it settles nearby — an 'ejecta blanket.'

That's about all there is to it.

(It's likely that lunar rays have a similar cause.)

But you say, okay Dave, if the light stuff floats on the dark stuff, why do you have a dark layer over a light one?

That's the interesting part!

Almost all lavas are initially dark. Lighter flows are usually the result of silicic material being heated by a darker flow and pushed up by it.

Another interesting possibility is when a particularly hot flow blankets an area that's already been separated such that the upper layer is silicic (light).

The blanket is very hot and causes the native (light) soil it settles on to heat up dramatically — hot enough to start "sorting" itself even more than it had been previously. However, the covering blanket has already solidified pretty much, so it has nowhere to go. Still, the lighter material floats up just under the new dark blanket ... and you get a particularly bright layer.

Okay, that's my understanding of the "most likely scenario." And I'm quite aware that there will be at least a few people reading this who are far more qualified to deal with these issues.

My email is north@znet.com — drop me a line and tell me where I've gone wrong, or how you would improve on what I accidentally got right.

And somebody send some decent seeing, would you?

If I don't seem to be horribly overwhelmingly interested in the Moon when you see me this month, consider that a sign of sanity with such a terrific Mars opposition forming up.

By the time you read this, of course, you'll know if the dust storms have turned this into a tragedy or not.

Hope not.

— *Dave North*, north@znet.com



Join this group at CalStar2003, September 25–27 2003

CalStar 2003

This year's CalStar, hosted by the SJAA, takes place September 25, 26, and 27, 2003 at Lake San Antonio. You can get all the information you need on the Calstar website: <http://www201.pair.com/resource/calstar/>

Basically, it is an end of the season star party. No speakers, no prizes, nothing but astronomy and friends. Lake San Antonio is halfway between Los Angeles and the San Francisco Bay Area. Park fee is \$32.00 per vehicle for the three nights, \$16.00 for an optional stay on Sunday night. Campsites, RV sites with full hookup, and even some rental cabins are available in the park.

Board meeting synopsis

From the SJAA board of directors June 14 meeting:

- 1) The club will host a lunar eclipse star party the night of the November 8 general meeting.
 - 2) The club plans to sponsor Mars star parties at Coyote Lake Park late August or early September.
 - 3) The SJAA's 50th anniversary program is to scan and place on the Internet all issues of the SJAA Ephemeris. The board is looking for volunteers.
 - 4) Jim Bartolini is the new CalStar Czar.
 - 5) Jack Zeiders was voted a life membership to the SJAA.
- SJAA board of directors meetings are at 6:30 p.m. prior to the club's general meetings.



Bubble bubble toil and trouble? Nah, it's comet making at 2002 FPOA Star-B-Cue. Photo by Paul Kohlmler

Celestial calendar

August 2003

Richard Stanton

Lunar phases:	Date	Rise	Trans	Set
FQ 00:28 PDT	05	14:19	19:35	00:09
FM 20:48 PDT	11	20:21	00:33	05:30
LQ 17:48 PDT	19	23:59	06:32	13:44
NM 10:26 PDT	27	06:19	13:22	20:14

Nearer planets:	R. A.	Dec.
Mercury, 0.86 A.U., Mag. +1.1		
07 08:30 14:55 21:20	10:47	+07:06
17 08:45 14:52 20:59	11:23	+01:25
27 08:32 14:29 20:25	11:39	-02:04

Venus, 1.73 A.U., Mag. -3.9	R. A.	Dec.
07 06:01 13:03 20:05	08:55	+18:27
17 06:24 13:13 20:03	09:45	+14:53
27 06:46 13:22 19:57	10:32	+10:38

Mars, 0.38 A.U., Mag. -2.9	R. A.	Dec.
07 21:42 03:02 08:21	22:54	-13:55
17 21:00 02:16 07:33	22:48	-14:48
27 20:14 01:28 06:41	22:38	-15:43

Jupiter, 6.38 A.U., Mag. -1.7	R. A.	Dec.
07 07:14 14:00 20:46	09:52	+13:45
17 06:46 13:29 20:13	10:00	+13:01
27 06:17 12:58 19:39	10:09	+12:16

Saturn, 9.72 A.U., Mag. +0.9	R. A.	Dec.
07 03:26 10:42 17:59	06:34	+22:26
17 02:51 10:08 17:24	06:39	+22:22
27 02:16 09:33 16:49	06:43	+22:18

SOL star type G2V, Intelligent life in system ?						
Hours of darkness						
06:43	07	06:18	13:15	20:11	09:07	+16:31
07:12	17	06:26	13:13	20:00	09:44	+13:32
07:41	27	06:35	13:11	19:46	10:21	+10:11

Astronomical twilight:	Begin	End
JD 2,452,858	07 04:41	21:51
868	17 04:53	21:35
878	27 05:05	21:19

Sidereal time:	
Transit right ascension at local midnight	
07	00:00 = 19:53
17	00:00 = 20:33
27	00:00 = 21:12

Darkest Saturday night: 23 Aug 2003	
Sunset	19:53
Twilight	21:25
Moon rise	02:57
Dawn begin	04:55
Hours dark	07:29

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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.

SJAA loaner scope status

All scopes are available to any SJAA member; contact Mike Koop by email (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
1	4.5" Newt/ P Mount	Annette Reyes
3	4" Quantum S/C	Hsin I Huang
7	12.5" Dobson	Michael Lagae
16	Solar Scope	Bob Havner
19	6" Newt/P Mount	Daryn Baker
24	60mm Refractor	Al Kestler
27	13" Dobson	Richard Savage
32	6" f/7 Dobson	Sandy Mohan
33	10" Deep Space Explorer	Michael Wright
38	Meade 4.5" Digital Newt	Tej Kohli

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
6	8" Celestron S/C	Carl Ching	8/9/03
10	Star Spectroscope	Keng Teh	7/19/03
11	Orion XT6 Dob	Tina Mia Kurth	5/22/03
13	Orion XT6 Dob	Michael Rudy	7/27/03
15	8" Dobson	Gary Hansen	8/9/03
23	6" Newt/P Mount	Wei Cheng	8/9/03
28	13" Dobson	Jim Albers	7/20/03
29	C8, Astrophotography	Frank Williamson	8/9/03
35	Meade 8" Equatorial	Patrick Lewis	8/9/03
36	Celestron 8" f/6 Skyhopper	Dennis Hong	5/23/03
37	4" Fluorite Refractor	Jeff Crilly	6/3/03
39	17" Dobson	Lloyd Frisbee	7/13/03

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	Ron Gross	7/3/03
9	C-11 Compustar	Paul Barton	Indefinite
12	Orion XT8 Dob	Vinod Nagarajan	7/8/03
14	8" f/8.5 Dob	Tom Frerickson	7/19/03
21	10" Dobson	Ralph Seguin	Repair
26	11" Dobson	Jan Lynch	7/3/03
34	Dynamax 8" S/C	Mike Macedo	8/7/03

Waiting list:

3	4" Quantum S/C	Eric Anderson
8	14" Dobson	Craig Colvin
12	Orion XT8 Dob	Rob Hawley
16	Solar Scope	Dwight Elvey

San Jose Astronomical Association Membership Form

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

Membership Type:

- Regular — \$15
 Regular with Sky & Telescope — \$45
 Junior (under 18) — \$6
 Junior with Sky & Telescope — \$36

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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