SJAA EPHEMERIS

SJAA activities calendar

Jim Van Nuland

February

1 Deep sky weekend. Sunset 5:31 p.m., 1% Moon sets 5:54 p.m.
7 Houge Park star party. Sunset 5:39 p.m., 38% Moon sets 11:52 p.m.
8 ATM class. Houge Park, 7:30 p.m.
15 **General meeting**, Houge Park. 8:00 p.m. *SJAA flies through the Leonids*. Mike Koop, Morris and Jane Houston Jones **Elections!**
20 ATM class. Houge Park, 7:30 p.m.
21 Astronomy class. Houge Park, 7:30 p.m., Jay Freeman, *Binocular observing*
21 Houge Park star party. Sunset 5:54 p.m., 67% Moon rises 11:41 p.m.
22 Deep sky weekend. Sunset 5:53 p.m., 56% Moon rises 12:50 a.m.

March

1 Deep sky weekend. Sunset 6:00 p.m., 1% Moon rises 6:49 a.m.
7 Astronomy class. Houge Park, 7:30 p.m. Dave on the Moon
7 Houge Park star party. Sunset 6:07 p.m., 22% Moon sets 10:40 p.m.
8 ATM class. Houge Park, 7:30 p.m.
15 **General Meeting**, Houge Park. Robert Naeye, ASP: *Solving the Universe's Mysteries Through Extra Dimensions*
22 Deep sky weekend. Sunset 6:19 p.m., 71% Moon rises 11:50 p.m.
27 ATM class. Houge Park, 7:30 p.m.
28 Houge Park star party. Sunset 6:27 p.m., 12% Moon rises 4:54 a.m.
29 Deep sky weekend. Sunset 6:26 p.m., 7% Moon rises 5:20 a.m.

Fremont Peak observatory gets a facelift

Morris Jones and Mike Koop

Mike Koop took these pictures of the nearly completed improvements made by State Parks at the site of the Fremont Peak observatory as part of their volunteer improvement program.

Perhaps the most significant improvement is the removal of four large trees that obscured the southern sky from the once popular observing area behind the ranger residence. Other improvements include new roads and walkways with low-intensity safety lighting, observing pads on the south side of the observatory with safety lighting and power, and a large outdoor multi-use area on the west side.

Top right: The before picture, Fremont Peak Observatory as seen from Fremont Peak. Above left: Powered observing pads. Above right: Multi-use area with turnaround for constellation talks and additional telescopes. Below: The after picture, Fremont Peak Observatory as seen from the summit. Note that the large tree seen in the top right picture is no longer there.

24 Hour News and Information Hotline: (408) 559-1221
http://www.sjaa.net

Volume 14 Number 2 Official Publication of the San Jose Astronomical Association, February 2003

Mooning

Simplified eyepiece selection

Dave North

This month's question wandered in via email from member George Feliz, who is curious about choosing eyepieces for mooning.

Complicated question, as he was also curious about mounts, floaters, and whether I agreed with a planetary/lunar eyepiece review at cloudynights.com. So let's dive in.

First a ground rule: I'm only going to talk about lunar viewing. That's what we're here for.

And for that reason, the above URL is not particularly useful.[1] But: it is instructive to consider why, even if the discussion breaks my first ground rule.

Why? Because there is not a great deal of overlap between planetary and lunar observation, and they try to cover both in one article.

The object of most planetary observation is the distinction of fine shades of color (often similar colors!) with soft edges. This can be seen especially when you consider the two "tough" planets, Jupiter and Mars.

Really seeing what's going on requires an extremely fine revelation of contrast and color.

Enough of planets.

On the Moon, most demands for contrast nearly disappear. There is no atmosphere to "smudge" the light. There are no clouds. There is almost no color and it seldom comes into play.

It's basically a problem of seeing medium gray contrasted against a really hard black, with some whitish elements thrown in. The range of contrast from the lighter portions of the Moon to the incredible black of a lunar shadow is about as sharp as it gets short of stellar observation (I love double stars!)

Another point: we get a Lot of light from the Moon. It's very bright.

Blah blah. What does it mean?

It means we're ready to mention another point: eyepieces don't look at the Moon without a telescope.

If you have an 80mm refractor or a 4.5-inch newt,[2] eyepieces are not going to be overly important. You won't be able to get much above 180x or so, and that will usually be fairly steady. The image will be somewhat dim, so there won't be a lot of detail to distinguish. This will also go for the 5" catadioptrics.[3]

If you have a 4-inch refractor or a six inch newt or Mak, you're in the "medium" ballpark where you can get into the 225x range fairly well, and maybe push 300x at times (though you're again getting a dim, uncontrasty image).

"Wait, Dave. You threw out all this technical crap and then said something like that? Are you nuts?"

Over that, you're in Fat City and you'll need some fairly good eyepieces to get the very best out of your scope.

More blah blah. Now what does it mean?

It means yet another problem: focal length. The longer the focal length and the longer the f/ratio, the better. Just take my word for it.

Long focal length, though, means you're not going to worry much about eye relief. Even standard plossls will deliver just fine.

Enough blah blah. What's the bottom line?

Based on experience, you want a 7mm Nagler.

Really.

It's the eyepiece I use the most, was once popular with Rich Neuschafer, and is still almost the exclusive favorite of Craig Wandke. All of us have something of a reputation as lunar observers, so.

Now ask any of us, and we'll tell you it won't give you the very finest contrast. It might have internal reflections under some conditions. It might have a bit of a soft image compared to the very best eyepieces.

So why do we like it? It's close in all categories, has reasonable eye relief, and has a wonderful wide field of view, which gives you "context" and "an attractive field."

Does it give you the best "data?" Nope.

So, in your next incarnation as a computer, stay away from Naglers. In this life, take a look through one and see what you think.

Wait, Dave. You threw out all this technical crap and then said something like that? Are you nuts?

Maybe. On the other hand, the idea here is to look at the Moon and have some fun. Enjoy.

For a lot of folks, trading obtuse theories is the fun of astronomy. For others, it's playing with hardware. For others, it's looking at stuff. For most of us, it's some combination of those things.

I have noticed, however, that the folks that enjoy looking at stuff often break with acknowledged theory, even when they agree with it.

Some examples:

Jay Freeman claims aperture wins, flat out (I agree mostly) and proceeds to observe with smaller instruments.

Rich agrees a good newt of greater aperture will deliver more data than a smaller refractor, and proceeds to enjoy the wonderful views through his

Continued on next page

[1] Okay, I didn't insert the URL because I think a fair amount of the article is more likely to mislead than educate. So I don't endorse it, even if I strongly agree with some of it.

[2] I have a 4.5-inch newt on which I have lavished an extraordinary amount of effort, just to see how nice it could get. The answer? 225x and a resolved core of M13 is easy from a dark site. When you hear these can't be useful instruments, be very dubious.

[3] I have a C8, and have heard all the theoretical crapola about how the huge central obstruction kills the contrast. In the real world, though, it gives excellent images and has severely trounced my 5-inch Tak under the right conditions, even on (gasp!) planets. Contrast is similar, but eight inches of resolution still whomp on five. It doesn't give quite the pretty image, though. Oh, come on, Dave. Who cares from pretty?

Mooning

Continued from previous page

refractor almost exclusively.

See a pattern?

In my case, I know the best views of the Moon and planets have come through my 12.5-inch newt with Takahashi eyepieces, so most of the time I look at it through a five-inch refractor and a Nagler.

Why?

Partly because most nights, the seeing isn't that great. With average to poor seeing, that combo is comfortable, fun, and shows most of what I'm going to see.

If I spot something, I'll change to a better eyepiece. If the sky turns out great, it's easy enough to drag out more horsepower.

So, what do I think are better eyepieces?

First, make sure you have the 180x 225x 300x power points covered with some eyepiece or other. Those are going to be the workhorse spots.

The very best eyepieces I've seen are the Zeiss Abbe orthos, and they are what sucked Rich away from his Nagler. They're incredible, but they're also impossible to get and cost a fortune. Oh well.

I like the Takahashi LE and Standard eyepieces a lot — they're what I use for the very best views. I like most plossls I've seen, and consider them the equal of most orthos. I get reasonable views through Naglers and panoptics both, but they do give up some detail and contrast.

I have an outstanding 6mm Vixen Lanthanum. Your mileage may vary; some VLs I've seen are not very good, and some are excellent. They will sometimes have a touch of false color, which is not important on the moon.

I like Brandons, which is a controversial view. I don't own any.

What do I tote around? For the Moon, depending on scope and conditions, I have 2.8 and 4mm Takahashi orthos, 5 and 7.5 Takahashi LEs, 6mm Vixen Lanthanum, 7mm Nagler, 9mm Vixen Lanthanum, 13mm Televue Plossl and a 19 Panoptic for "full disk" views.

I do not necessarily think my selections are the best for anyone else. I definitely do not like Televue Radians, for example, and they have been quite popular. I consider them soft, twitchy and full of reflections.

I don't like the cheapo orthos I've seen, though they do get good reviews from other folks.

I do like a *lot* of eye relief, especially in the winter when the mist from my warm eye can fog the eyepiece.

But here's the real point: there's so much contrast on the Moon that any decent-quality eyepiece will do. This is not true on planets, but I'm not writing a planet column, so there.

Reflections are a drag when they happen, but the most common form is a pupillary reflection off your eye, and that is sometimes just a function of where you stick your head.

Now that's not really very specific advice, is it?

Nope.

But it's probably as good as you can get. Because the real trick is to go out and try other people's eyepieces in your scope, preferably at a Moon party (they happen fairly often at Houge Park) and draw your own conclusions. Theory aside, it's your scope and your eyepieces.

If you've got a 7 Nagler, fill in the gaps however else you want.

George was curious about floaters, which will be a problem on the Moon because magnification is the point.

Get a binoviewer. Only solution I know about. Then you can get two of each eyepiece, too!

However, I'm not an expert on this since I'm not really much afflicted by floaters (yet).

Oh, one other thing George asked about: mounts. Dob or equatorial?

That one's easy: equatorial. Especially if you want to sketch or shoot the odd photo.

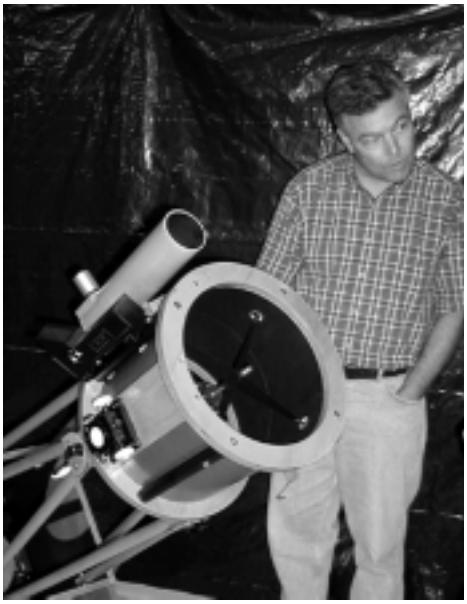
The problem is, my very best scope is a 12.5-inch dob, and I don't have an equatorial platform (which you should get, if you insist on using a dob all the time).

And that's another reason I often use the 7mm Nagler — that wide field can help with nudge-nudge disease.

On the other hand, I've used the 4mm Tak ortho on that scope because the settle time is effectively zero and the touch is good enough to allow that kind of high-power view (that's almost 400x, and it operates at 600 just fine when the sky allows).

It's just that I'd rather not fuss with the scope that much unless the sky is really, really good, in which case all bets are off and I'll be trying to borrow a Zeiss from Rich...

— *Dave North*, north@znet.com



Tom Whittemore shows his ten-inch truss tube dobsonian at last year's Slide and Equipment Night general meeting.

Andrah Foundation supports SJAA

As in previous years, the Andrah Foundation of Michigan, through it's local representatives, Paul and Ann Summers, have given $600 to SJAA. This is to promote education and public awareness of Astronomy. We thank Paul and Ann, and the Andrah Foundation, for their generosity.

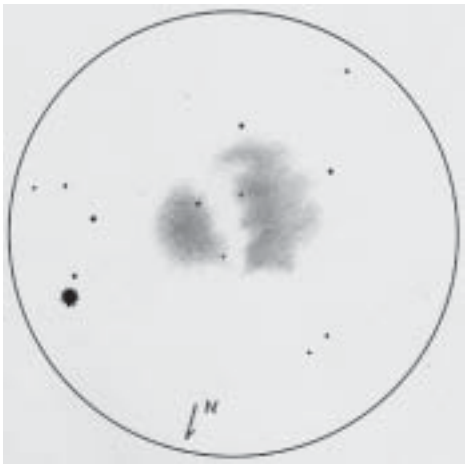
Out there

The season of fleeting skies

Mark Wagner

February is the heart of winter, so catch as catch can when it comes to observing. If you have a clear night, don't waste it! This month's objects are from right ascension 5:15 to 7:49. I've expanded the selections to include 3rd quarter and new moon weekend. I've also included comments from other local observers.

NGC 1907: Directly between Iota and Theta Aurigae is M38, a beautiful large and rich open cluster with many



NGC 2024 The Flame Nebula in Orion sketched by Peter natscher 120x

stars of similar magnitudes. NGC 1907 is a small yet dense open cluster in the same wide field view as the famous Messier. This view reminds many people of M35 and NGC 2158 in Gemini.

NGC 2158: Now compare NGC 2158, just SW of M35, a dimmer round OC with many stars. It is thought to be the same size as M35, but its great distance makes it small and dim by comparison.

NGC 2266: Robert Leyland: Nicer still is NGC 2266, easy to find near Epsilon GEM, a distinct OC with an nice arc of bright stars lead by the brightest in the group, over the fainter 60+ members of the cluster.

NGC 2371: This is a bi-lobed planetary, worth viewing with high magnification. Try a narrow band filter such as a UHC from in town.

NGC 2392: Bruce Jensen writes "PN, very bright and distinctive. The central star, the archetypal PN ring, and the outer fringed "hood" with radial striations were all evident and cleanly defined. Extraordinary."

NGC 2420: Jeff Blanchard observed "At 90x a pentagon of bright stars encircles the popcorn ball of nebulosity with some outliers extending 3-5¹ especially to the south. With increased power a few faint stars were resolved in the core with dark corridors winding through the nebulous region. Very interesting almost globular like."

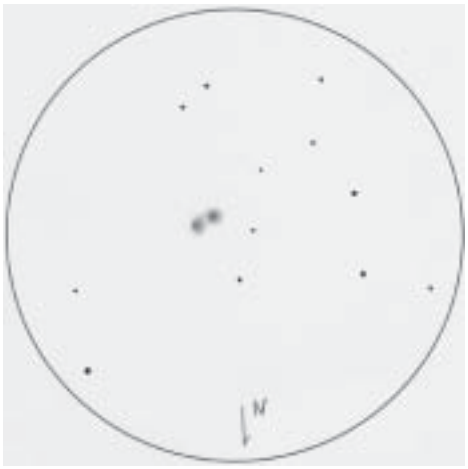
NGC 2419: Intergalactic Wanderer – I've seen this from in San Jose with an 8" Dob. Amazing that this furthest of globular clusters is 300,000 light years distant.

NGC 2264: Steve Sergeant says this open cluster (The Christmas Tree Cluster) in Monoceros is aptly named. The brightest star is at the base of the trunk of the tree.

NGC 2286: Find this object. Listed as moderately rich with a large range in brightness. It is mag 7.5 and is compressed. It was not difficult to find, I used a 6x30 to sight in a wide group of fairly bright stars nearly halfway between Sirius and Xi Geminorum.

NGC 2301: Use mag 4.1 Delta and 18 Monocerotis to navigate, this unusual open cluster can be seen in a large finder. It was spectacular, with two distinct chains of stars at right angles, the brighter one running N/S, the dimmer more diffuse chain running perpendicular to the E and having a fairly dense core at the intersection.

NGC 2353: This OC has two quite bright stars in the group. The shape of the cluster is interesting, being a long, extended shape up from a wide-based triangle of stars, sweeping up with two branches of stars extending off in the same direction. There were few bright stars in the group, but the shape and



NGC 2371 "butterfly" shaped planetary neb in Gemini sketched by Peter Natscher 309x

number of dim stars was easy to detect.

NGC 2024: Flame Nebula – On a good night the definition of this dusty nebula is like looking at the jagged edge of a leaf and seeing somewhat of a saw tooth pattern all around. When you have good transparency, this object will show well.

NGC 2194: Jamie Dillon says 2194 is a gorgeous, a tight bright dense little cluster with nebulosity trailing over to a neighbor patch, some 20' away. Showed off its stuff best at 79x.

NGC 2362: Akkana Peck noted an interesting phenomenon through a friend's 14" Dob. The bright foreground star (2362 and tau CMa?) appeared to move in a different direction from the cluster stars when the telescope was jiggled. Try it!

NGC 2440: Steve Gottlieb viewed this bi-polar planetary at 380x. Compact, high surface brightness inner region is elongated NNW-SSE. Two bright knots comprise both ends and the surface brightness is irregular.

Winter skies are awesome, but fleeting. Many of my remaining Herschel targets are in this season, as weather can be so limiting. If you run out of winter objects to chase, catch me at one of the local dark sky observing sites on a lucky winter observing night. I have plenty of suggestions for you!

— *Mark Wagner*, mgw@resource-intl.com

The shallow sky

Observing the clouds of Jupiter

Akkana Peck

Jupiter is at opposition this month! This means that it's your best chance (until next year) to observe all the fascinating detail of Jupiter's turbulent atmosphere.

The first time you look at Jupiter, you probably saw the Galilean moons right away. Those are the four large moons that Galileo discovered: Io, Europa, Ganymede and Callisto. On nearly any clear night you'll see some or all of these moons.

Look a little longer, and in almost any telescope you'll notice horizontal stripes across the planet. These are the north and south equatorial belts, pale red bands just north and south of Jupiter's equator. We abbreviate them as NEB and SEB. They're formed by clouds of different temperatures, heights, and compositions within Jupiter's atmosphere, in contrast with the off-white "zones" between them. Think of them like the Jet Stream — a band of cloud that stays in roughly the same place, while still changing shape and wandering slightly north or south.

"Pull up a chair and sit down! Get comfortable! Breath deeply!"

Almost as easy to see are the polar regions (NPR and SPR for north and south), greyish or blueish patches over the poles. Again, we're seeing clouds, not actual polar ice like we might see on Mars or our own planet.

How do you tell which direction is north and which is south? After all, when you're looking in a telescope, the planet is probably rotated, maybe flipped, maybe even mirror-reversed if you're looking through a refractor or SCT. Well, the easiest way is to keep your eye glued to the eyepiece while you bump the scope very slightly in the direction of north — put your hand on the south side of the tube, and just bump the scope a little. That will make the planet in the eyepiece appear to move south. Voila, you know which polar region is which!

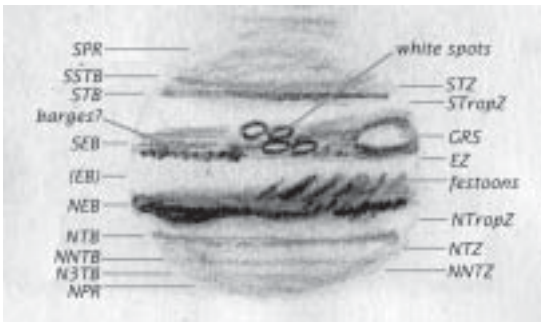
Okay, so you've looked at Jupiter a few times, and you've seen the red stripes and grey polar regions. Don't stop there! There's a lot more to see, but it takes some concentration and practice to see it. Planetary observing is a skill just like deep-sky observing, and the more you concentrate and practice tonight, the more you'll see tomorrow night. Pull up a chair and sit down! Get comfortable! Breathe deeply! Those all help you see more, too. And of course, just like I always do, I'll recommend sketching as a way of focusing your attention and helping you see more.

"What about the Great Red Spot?" I hear you asking. Of course we want to see the GRS! But don't believe everything you read: first of all, it's not very red, and hasn't been in years. If you want to see the Great Pale Pink Spot, though, you've come to the right place. It's in the SEB, so look first for a swelling in the SEB, a place where the band splits and widens. That's the Red Spot Hollow, the place where the GRS lives, and sometimes it's easier to see the Hollow (since the SEB is easy to see, but the GRS isn't) than to see the spot inside it.

In excellent seeing, sometimes you can see turbulent swirls inside the GRS, and in the split between the two halves of the SEB following behind the SEB. Seeing that steady isn't too common around here in winter, especially in an El Nino year, so don't be too upset if you don't see details like this right away — but keep looking, and every now and then you'll hit a clear, steady night that will amaze you.

Get that clear, steady night and a good scope, though, and the features I've mentioned so far are only the beginning. Take a look at the sketch, made by Jane Houston through a 7" refractor on a night of excellent seeing at Fremont Peak. In addition to the equatorial bands, there are many other bands called temperate bands which should be visible on a decent night. In addition, there's the elusive equatorial band (EB), very narrow and much paler in color than the other bands. Some years it's not visible at all; other years it's fairly easy.

The equatorial bands sometimes get long streaming fingers trailing off them into the nearby lighter zone, usually toward the equator. These are called "festoons", and they're lovely to watch. They change fairly rapidly; you can often see changes in a few days or a week, while most features on Jupiter persist longer).



This sketch by Jane Houston Jones shows most of the common features seen on Jupiter.

Remember that turbulence between the two segments of the SEB? Sometimes a particularly turbulent area will show up as a white spot. White spots run in packs — if you see one, there are probably several others nearby, as Jane's sketch shows. Smaller, dark spots (they may appear blue, or red, or just "dark") are called "barges", and appear to be cooler areas which, like festoons, come and go fairly quickly.

Sit back and think about the

Continued on next page

April events

April 12 Fulvio Melia, *The black hole in the middle of the galaxy*
April 13 Auction XXIII
April 25 Astronomy Class — Akkana on the planets

Observing Jupiter

Continued from previous page

scale of what we're seeing. These white spots are nearly as big as the earth; the GRS is much larger. Planet-sized swirls of turbulence, appearing and disappearing in a few weeks, and you can watch them change before your very eyes!

If that gets to be too much, take a break and go look at Saturn. It's nicely placed for observing all month, leading Jupiter in the sky by a few hours and showing a ring inclination of almost 27 degrees. Lovely! When it passed the Crab nebula last month, most people couldn't see both at the same time, but it sounds like everybody was happy to have a good excuse to go stare at Saturn for a while.

Mars rises about 3 a.m., but it never gets very high this month before it's overwhelmed by the light of dawn. We'll have to wait a few months more before we can see much on the small red planet. Mercury and Venus, too, are visible low in the morning sky.

— *Akkana Peck*, observer@shallowsky.org

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.

School star parties

Bob Havner

Here is a list of February School Star Parties. If one is near your home or work please come join us and share your hobby with some future astronomers.

February School Star Parties

Feb. 3, Vinci Park Elementary, NE San Jose
Feb. 5, Valle Vista Elementary, E. San Jose
Feb. 10, San Miguel, Sunnyvale
Feb. 11, J. F. Smith Elementary, E San Jose (re-re-sched)
Feb. 12, Toyon Elementary School, San Jose
Feb. 13, Cherry Chase, Sunnyvale
Feb. 26, Blossom Hill School, Los Gatos

For details see Jim Van Nuland's school star party page http://www.svpal.org/~jvn/current.htm

— *Bob Havner*, bhavner@earthlink.net

Family ASTRO event leader training

Kristin Nelson

The Astronomical Society of the Pacific would like to invite all amateur and professional astronomers to participate in the Family ASTRO Moon mission event leader training on February 8th (9:30 am - 2:30 pm) at SFSU.

Family ASTRO trains teachers, astronomers, and museum and community group educators to help children and adults explore astronomy together. Participants will learn to lead family astronomy events focusing on the Moon. You do not need to have a family to become an event leader! The training is free!

For more information or to apply, please visit our website http://www.astrosociety.org/education/family.html or contact Kristin Nelson, Bay Area coordinator at knelson@astrosociety.org or 415-337-1100 ext 101.

Celestial calendar February 2003

Richard Stanton

Lunar Phases:		Date	Rise	Trans	Set
NM	02:48 PST	01	07:43	12:47	17:57
FQ	03:10 PST	09	11:24	18:32	00:49
FM	15:50 PST	16	17:43	00:48	07:07
LQ	08:45 PST	23	00:51	06:00	11:02

Nearer Planets:				R. A.	Dec.
Mercury, 1.18 A.U., Mag. -1.4					
07	05:45	10:39	15:33	19:38.9	-21:14
17	05:55	10:55	15:55	20:33.6	-19:54
27	06:05	11:17	16:29	21:34.6	-16:28
Venus, 0.95 A.U., Mag. -4.7					
07	04:19	09:13	14:08	18:13.2	-21:01
17	04:28	09:23	14:19	19:02.4	-20:54
27	04:34	09:33	14:33	19:52.0	-19:51
Mars, 1.63 A.U., Mag. +0.5					
07	02:58	07:48	12:38	16:48.9	-22:08
17	02:49	07:37	12:24	17:16.2	-22:54
27	02:39	07:25	12:10	17:44.4	-23:23
Jupiter, 4.36 A.U., Mag. -2.5					
07	16:54	23:56	07:02	09:00.5	+17:55
17	16:08	23:11	06:19	08:55.3	+18:17
27	15:23	22:28	05:36	08:50.7	+18:36
Saturn, 8.58 A.U., Mag. +0.6					
07	13:06	20:23	03:44	05:26.7	+22:03
17	12:26	19:43	03:04	05:25.9	+22:04
27	11:46	19:04	02:25	05:25.9	+22:06

SOL Star Type G2V Intelligent Life in System ?

Hours of Darkness

10:31	07	07:06	12:22	17:39	21:22.1	-15:25
10:11	17	06:54	12:22	17:50	22:01.4	-12:06
09:49	27	06:41	12:20	18:00	22:39.6	-08:28

Astronomical Twilight:		Begin	End
JD 2,452,677	07	05:37	19:07
687	17	05:27	19:17
697	27	05:15	19:26

Sidereal Time:

Transit Right Ascension at Local Midnight

07 00:00 = 09:00
17 00:00 = 09:39
27 00:00 = 10:19

Darkest Saturday Night: 01 Feb 2003

Sunset	17:32
Twilight	19:01
Moon Set	17:55
Dawn Begin	05:42
Hours Dark	10:41

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Dir	Paul Mancuso	(408) 946-0738
Dir	David Smith	(408) 978-5503
Dir	Steve Nelson	(650) 968-4733

Ephemeris Staff

Editors Jane Houston Jones & Morris Jones (415) 453-2885

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

Bill Arnett bill@nineplanets.org

SJAA Email Addresses

Board of Directors board@sjaa.net
Announcements announce@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

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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.

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
10	Star Spectroscope	Lew Kurtz
16	Solar Scope	Suzanne Patrick
24	60mm Refractor	Al Kestler
32	6" f/7 Dobson	Sandy Mohan

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	David Findley	2/1/03
8	14" Dobson	Ron Gross	4/3/03
12	Orion XT8 Dob	George Gadd	1/19/03
13	Orion XT6 Dob	Vinod Nagarajan	1/18/03
14	8" f/8.5 Dob	Tom Frerickson	1/19/03
26	11" Dobson	Jan Lynch	4/3/03
33	10" Deep Space Explorer	Michael Wright	2/15/03
36	Celestron 8" f/6 Skyhopper	Gene Schmidt	3/5/03
38	Meade 4.5" Digital Newt	Tej Kohli	1/12/03

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	?
9	C-11 Compustar	Paul Barton	Indefinite
11	Orion XT6 Dob	Krishna Seshan	2/16/03
15	8" Dobson	Vikram Keshavamurthy	3/13/03
19	6" Newt/P Mount	Daryn Baker	3/27/03
21	10" Dobson	Ralph Seguin	Repair
23	6" Newt/P Mount	John Bunyan	2/28/03
27	13" Dobson	Richard Savage	3/21/03
28	13" Dobson	Michael Dajewski	1/31/03
29	C8, Astrophotography	Murali Balasubramaniam	3/27/03
34	Dynamax 8" S/C	Lee Barford	2/16/03
35	Meade 8" Equatorial	Carl Ching	3/13/03
37	4" Fluorite Refractor	Steve Sergeant	2/16/03
39	17" Dobson	Patrick Lewis	Repair

Waiting list:

10	Star Spectroscope	David Kingsley
11	Orion XT6 Dob	Kedar N Patankar
13	Orion XT6 Dob	Adam Clark
29	C8, Astrophotography	Alfred Viceral
36	Celestron 8" f/6 Skyhopper	Mike Macedo
37	4" Flourite Refractor	Jeff Crilly

San Jose Astronomical Association Membership Form

☐ **New** ☐ **Renewal** (Name and 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 acccept 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"

Name: _____

Address: _____

City/ST/Zip: _____

Phone: _____

E-mail address: _____

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ASSOCIATION
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SAN JOSE, CA 95159-8243

NON-PROFIT ORGANIZATION
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Board of Directors elections:
General meeting, February 15