

# SJAA EPHEMERIS

## SJAA Activities Calendar

Jim Van Nuland

### December

- 3 Houge Park star party. Sunset 4:50 p.m., 13% moon rises 3:57 a.m.
- 4 Star party at Fremont Peak. Sunset 4:49 p.m., 7% moon rises 4:51 a.m.
- 9 Stargazing event for The Tech Museum
- 11 Star party at Fremont Peak. Sunset 4:50 p.m., 13% moon sets 8:16 p.m.
- 17 Houge Park star party. Sunset 4:52 p.m., 72% moon sets 2:22 a.m.
- 18 Christmas Potluck at Houge Park, 8 p.m. See inside for more information.

### January

- 1 Deep-Sky night. No host; expect observers at Fremont Peak. Sunset 5:00 p.m., 18% moon rises 3:41 a.m.
- 8 Deep-Sky night. Sunset 5:05 p.m., 5% moon sets 7:06 p.m.
- 14 Houge Park star party. Sunset 5:13 p.m., 55% moon sets 1:14 a.m.
- 15 Observational Astronomy class, Houge Park, 8 p.m.
- 22 General Meeting at Houge Park, 8 p.m. Speaker: Michael Light, author of *Full Moon*
- 28 Houge Park star party. Sunset 5:27 p.m., 42% moon rises 1:36 a.m.
- 29 Deep-Sky night. Sunset 5:28 p.m., 33% moon rises 2:29 a.m.

### Upcoming School Star Parties

#### January

- 11 Meadows Elementary
- 19 Bernal Elementary
- 26 Backup for Bernal Elementary

## On the Sidewalk with John

Morris Jones

"Come look at the moon!"

The frail gentleman with the white pony tail stands next to a small red tube that looks like a mortar or something dangerous. It's pointed at the moon. Some people shy away from the odd sight; just another crazy man on a San Francisco street corner. But there's something about the gentle expression on the old man's face, something inviting them to pause for a moment and look into the strange device next to him.

This is John Dobson's element, the thing he loves the most — introducing people to the universe. The ones who stop and look say, "Oh wow!" — a familiar sound to any of us who've set up our telescopes on the sidewalk.

"That's how the moon would look an hour before you land on it," says John. It doesn't matter whether it's true or not, it's a fascinating image to contemplate; it stirs the imagination and the memory of a time when someone actually might have been an hour from landing on the moon.

"That's so cool!" says a young viewer in moon-thrill.

"Oh no, that's not cool at all," inserts John. "Are you talking about the light side or the dark side? On the light side it's hotter than boiling water, but on the dark side it's really frigidly cold." The universal exclamation gives John his opportunity to teach them something before they have a chance to escape.

The dobsonian telescope, now so ubiquitous that the name isn't capitalized, was designed to rest on a side-

walk. Everywhere we look in astronomy we find variations on John's original "user-friendly" sidewalk telescope. In terms of view for the dollar, nothing can beat this simple way to mount a classic newtonian reflector. I'd been reading for years about how John founded the San Francisco Sidewalk Astronomers, but it never occurred to me that one evening I might be sharing a street corner with John himself showing the night sky to whoever would look.

Soon there's a line of people waiting for a glimpse through the eyepiece. John tirelessly gives them tidbits of knowledge and things to think about. He holds a stack of folded one-page fliers, and each viewer is eager to take one. So different from the commercial notices being handed out not far away, this flier serves to remind people a little about the universe they live in.

Nearby Jane and I have set up her 12.5" truss-tube dob. Jupiter is beginning to clear the building tops and we want to offer a different target. The seeing is terrible — Jupiter looks like a blob of fuzzy ice cream with four white nonpareils that fell off the sundae. The people don't mind. "Look, you can see its moons!" they exclaim.

If you ask, John will talk about telescopes, optics, mirrors and the like. He still teaches classes at the Randall Museum and the California Academy of Sciences on grinding mirrors and making a telescope.

What John would really rather talk

*Continued on next page*

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## On the Sidewalk with John



*John Dobson shows the moon through Jane Houston's 6" f/5 at 24th and Noe.*

*Photo by the author*

*Continued from previous page*

about is cosmology. He has spent most of his 84 years studying the physical universe and contemplating how we came to be. He is a firm holdout for a steady-state universe — a universe which didn't spring from nothing. Prominently displayed on his jacket is a button that says, "Nothing doesn't exist."

But here on the street corner, there's not much time or opportunity to talk about the big issues. If he can get a few more people to see the universe with their own eyes, he knows they'll start to think about these things for themselves.

That doesn't stop him from planting a few seeds for thought. On another evening with John at 24th and Noe, Jane and I were showing Saturn in the big 12.5" while John had Jupiter in the 6".

The lines were long, and while people got a look at Saturn, one fellow said to me, "Is that a planet or a star?" I told him he was pointing at the planet Jupiter.

"That man over there said it's a star." He was referring naturally to John Dobson. He had just visited John for a look at Jupiter. What am I to say? John loves to be challenged on a subject like that, and loves to provoke a reaction or a question.

"It's not a planet, it's a star," John was saying, inviting anyone willing to challenge him and learn more about what really makes a star or a planet.

As the evening goes on, the atmosphere on the San Francisco street corner becomes joyful. More people decide to stay for a while and have second or third looks.

A police car pulls into the red-curbed space by the fire hydrant, and a couple of burly SFPD officers step out. But there's no crime to stop here — they just want a look through the telescopes too.

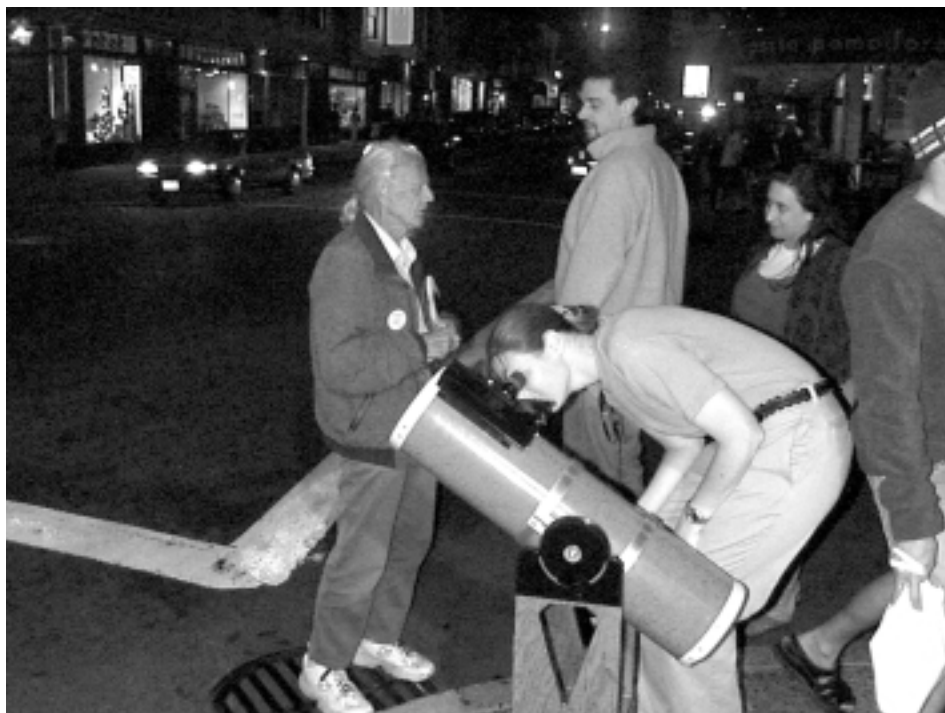
A moment later, a smiling man in a Muni driver's uniform gets a look at Jupiter and Saturn and says, "Thank you!" and dashes off. He had left a bus, with passengers, stopped at the corner across from us.

John is a familiar sight at 24th and Noe, and at 9th and Irving. Many of the residents know him and welcome his visits. They don't happen as often now; John spends most of the year away from San Francisco.

One of the local residents who knows of John is slowly making his way toward us on the sidewalk with precious cargo — his elderly mother. She is approaching warily, stooped over a cane, and silent behind her thick glasses. She looks to be well over ninety, and no doubt wondering why her son has coaxed her out of her comfortable apartment to come down to this chilly street corner. I don't think she knows what to make of this.

We find a step stool that would serve as a chair and carefully help the woman into it with a good angle for the low eyepiece. She struggles to bend close and get a look at the moon. Suddenly it seems like she's alive again, smiling and looking and speaking for the first time.

"Yes, I can see it, yes, yes."  
That's reason enough for me.



*24th and Noe is one of John Dobson's favorite locations for sidewalk astronomy. Photo by the author.*

## Table of Red Stars

Mark St. George, mstg@execulink.com

Red stars—most are carbon, all are variable.

Magnitude  $\geq 10$

Name	Ra	Dec	Mag	Comments	Name	Ra	Dec	Mag	Comments
VX AND	00 19.9	+44.7	8.0-9.5	367 Very Red	KSMON	06 19.8	-05.3	8.5-10	IRR
AQ AND	00 27.6	+35.6	6.9-8.2	332	BGMON	06 56.4	+07.0	9.2-10.4	30
UANT	10 35.2	-39.6	5.7-8.6	170	RVMON	06 58.4	+06.1	7.0-8.9	132
V AQL	19 04.4	-05.7	6.6-8.1	350 Deep Red	VOPH	16 26.7	-12.4	7.3-11.5	298
UV AQL	18 58.6	+14.4	8.6-9.6	340	ALPHA ORI	05 55.2	+07.6	0.4-1.3	— Betelgeuse
V ARI	02 15.0	+12.2	8.0-8.6	75	WORI	05 05.4	+01.2	6.5-10	210
UUAUR	06 36.5	+38.5	5.1-7	235	GKORI	06 17.7	+08.6	9.5-11	236
UCAM	05 42.2	+62.5	7.7-9.5	412 Near 1502	BLORI	05 31.9	+07.6	9.0-14	335
STCAM	04 51.2	+68.1	7.0-8.4	195	RXPEG	21 56.4	+22.8	8.0-9.5	630
TCNC	08 56.7	+19.8	7.8-10.6	482	TWPEG	22 04.0	+28.3	7.0-9.2	956
XCNC	08 55.4	+17.2	6.2-7.5	170	YPER	03 27.7	+44.2	8.1-10.9	252
Y CVN	12 45.1	+45.4	5.0-6.4	158 La Superba Very Red	ZPSC	01 16.1	+25.8	7.0-7.9	144
WCMA	07 08.0	-11.9	7.0-8	IRR Orange	TXPSC	23 46.4	+03.5	5.5-6.0	IRR 19 Piscium
VY CMA	07 23.0	-25.8	8.8-9.3	IRR	RTPUP	08 05.4	-38.7	8.5-9.2	100
RTCAP	20 17.0	-21.3	6.5-8.1	395	RUPUP	08 07.5	-22.9	8.9-11.1	425
RCAP	20 11.3	-14.0	9.4-14	345	XSGE	20 05.1	+20.6	8.7-9.7	196
STCAS	00 17.6	+50.3	9.0-10.5	IRR	BFSGE	20 02.4	+21.0	8.5-10	IRR
WWCAS	01 33.5	+57.8	9.1-11.7	IRR	SSSGR	18 30.4	-16.9	9.0-10	IRR
$\mu$ CEP	21 43.5	+58.8	3.7-5.0	IRR Herschel's Garnet Star	AQSGR	19 34.3	-16.4	6.6-7.7	200
TCRB	15 59.5	+26.0	2.3-10	Blaze Star -recurrent Nova	V1942 SGR	19 19.2	-15.9	6.7-7.1	IRR
VCRB	15 49.5	+39.5	6.9-12.5	358	ALPHA SCO	16 29.6	-26.6	0.9-1	1730 Antares
UCYG	20 19.7	+47.9	6.7-11	465 Strong Color	SXSCO	17 47.5	-35.7	8.5-9.5	IRR
V CYG	20 41.3	+48.2	7.8-13.8	420 Red!	SUSCO	16 40.6	-32.4	8.0-9.4	414
RSCYG	20 13.4	+38.7	6.6-9.4	417	RSCL	01 27.0	-32.5	6.1-8.8	363 Very Red
RV CYG	21 43.3	+38.0	7.1-9.3	300 Very Red	SSCT	18 50.3	-07.9	7.3-9	148
TDRA	17 56.5	+58.2	7.2-13	422 Visual Double	TSCT	18 55.4	-08.1	8.9-10	122
RYDRA	12 56.4	+66.0	6.0-8.2	170	RXSCT	18 37.0	-07.6	9.0-11	IRR
UXDRA	19 21.6	+76.6	6.2-7.0	170	DRSER	18 47.4	+05.5	8.4-11	IRR
TUGEM	06 10.9	+26.0	7.5-8.4	230	RSER	15 50.7	+15.2	5.7-14	357
UHYA	10 37.6	-13.4	4.7-6.2	IRR Very Red In Nice Field	YTAU	05 45.7	+20.7	7.1-9.5	241
VHYA	10 51.6	-21.3	6.5-12	533 Reddest Known	RTUMA	09 18.4	+51.4	8.6-9.6	IRR
RLEP	04 59.6	-14.8	5.9-11	432 Hind's Crimson Star	VYUMA	10 45.0	+67.4	6.0-6.6	IRR
YLYN	07 28.2	+46.0	6.9-7.5	110 Orange In A Nice Field	XVEL	09 55.5	-41.5	8.4-10.7	140
TLYR	18 32.3	+37.0	7.5-9.3	IRR Very Red	SSVIR	12 25.3	+00.7	6.0-9.6	355 Very Red
HKLYR	18 42.8	+37.0	8.5-10.6	IRR	BDVUL	20 37.3	+26.5	9.3-12.7	430

### Party Time at Houge

Come to Houge Park December 18 and help celebrate the arrival of the Winter Solstice. At regular meeting time this month, we'll be hosting a pot luck party. Bring any and every kind of food or beverage in any quantity. Silly astro themes are encouraged. We'll provide coffee.

In addition, we will host the Silly Astro Gift Exchange. Bring something relatively useless and weird, but wrapped. Participation is strictly optional.

And by all means, bring telescopes, astro gadgets, and photos to share with the group.



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## Mooning

David North

In the Bay Area, our Christmas present is to miss a series of interesting occultations: everything from Mars to asteroids will be occulted somewhere this month, but we won't see any of them!

Librations? When the east limb is best exposed, it's unlit. Same for the west. Both the maximum northern and southern librations work out to be somewhat unfavorable also.

In other words, there ain't nothing special happening up there this month.

Except for one thing: the unofficial beginning of Moon Season.

Why is that?

First, you have to understand I don't often (maybe a couple of times a year) get up in the morning and set up a telescope. I do most of my observing in the evening, before hitting the sack.

So if you want to see the moon in the evening, it is of course at its best when it is high in the sky.

This month, it will be at its highest just after full moon, and at its lowest a couple of days after new. That means the favored "first quarter and later" views will be at about an average declination, increasing each night.

The effect this has on average seeing is stunning! I'm sure you've heard me talk about this before, but usually in the context of one month or another being best... but that's something of a white lie.

Starting as early as December, we start getting very favorable views of the nights just before and after full moon, which have the virtue of always being clear (just ask any DSO addict). Then, as the first half of the year progresses, the prime days move forward from full toward first quarter in the late spring.

So why is it not so good after the maximum declination has moved forward beyond first quarter? It's simple, really: the first quarter moon is

at its maximum elevation right at sunset, so if you're ready you can get the ideal views just before dinner... but before first quarter, the maximum elevation is before sunset!

Now I know you can look at the moon in daylight, but it really doesn't show well until dusk has set in (full darkness is not necessary, and it gets much better right after sunset...)

But wait, there's more! What if you do want to view the moon in daylight, or before sunset?

Get a polarizing filter.

No, I don't mean a dual polarizing filter such as Orion sells to adjust the throughput, though if you get one of those you can unscrew it and have two

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***Everything from Mars to asteroids will be occulted somewhere this month, but we won't see any of them!***

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single polarizers... I mean just one.

Reflected light is polarized, as is some of the scattered light from the sun. If you stick a polarizer on your eyepiece and spin it around, you'll find a position where the contrast on the moon improves quite a bit.

Another experiment I've run with polarizers? It seemed to me they should be able to limit the effects of bad seeing, artificially improving "steadiness."

Results have been uncertain. Sometimes I think it works, and others I think it does nothing. Nor have I been able to determine what conditions might attend either result.

But it's a fun experiment, and relatively cheap. If anyone else cares to give it a shot, I'd like to hear what results you get... send me a message (north@znet.com).

## Shallow Sky In December

Akkana Peck

Jupiter and Saturn will be well placed for observing all month. If you get together for the holidays with family or friends who may not be aware of the goings-on in the sky, why not set up a telescope and share the joys of planet watching?

Jupiter shows a wealth of festoons this year, long streamers reaching from the north equatorial belt into the equatorial zone. The Great Spot Formerly Known As Red is not very prominent this year, and appears most often as a break in the southern equatorial belt, but on nights of excellent seeing, it's possible to see some swirls within the spot, and a train of white ovals preceding and following it.

Saturn remains a glorious sight, with the rings tilted generously open. It's easy to see the Crepe ring (the shadowy translucent ring inside the A and B rings), and Cassini's division (the wide gap dividing the outer A from the middle B ring). There's an obvious shading in the B ring, from bright at the outside edge next to Cassini's division to dark at the inside near the Crepe ring. I don't remember seeing this shading so easily in past oppositions.

My impression is that the gaps in the A ring (variously named after Encke, Keeler, deVico and various other observers, since there's no consensus on who first recorded the A-ring gap) are much easier to observe this year than they were at the last opposition; I've been able to see evidence of an A-ring gap in telescopes as small as a C-5, whereas last year I was hard pressed to see this mark even in telescopes of 8" or larger, and then only on nights of excellent seeing. I'm not sure if this is due to practice (I spent a lot of time last opposition looking for that darned A-ring gap) or that it's more obvious with the wider ring tilt we see this year. Probably both. Anyway, get out and take a look, and let me know how you do looking for this gap and

*Continued on next page*

what sort of telescope you're using.

Mars remains low in the southwest in early evening, and its gibbous disk continues to shrink as our distance from the red planet increases. Not much detail will be visible on Mars this month, but observers may enjoy watching a conjunction with Uranus on December 14, when the two planets, separated by roughly half a degree of sky, should be visible in the same low-power eyepiece field. It makes another close pass, with the moon, on the 12th; observers on the eastern US and in South America get to see an occultation, but here in California we'll miss it, alas.

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***Saturn remains a glorious sight, with the rings tilted generously open.***

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Neptune is west of Uranus, and therefore from our vantage point will be closer to the sun and more difficult to observe this month; faint Pluto is even closer, and will be very difficult to observe.

The earth crosses its winter solstice on the 21st. On December 22 the moon reaches its closest perigee of the year, at 356,753 km. Since that day is also the full moon, the full moon will be unusually large that day, and tides will be unusually high. Two weeks earlier, on the 8th, the moon reaches its farthest apogee of the year (406,624 km).

Early risers will get lovely views of Venus this month, especially in the first few days of December when the crescent moon is nearby. Below them, almost hidden in the sunrise glare, hangs Mercury, which should remain visible all month. It's at greatest Western elongation on the first, and sinks lower as the month progresses.

## Meteor Watch

### *"How'd it go?"*

David North

Of course, as I type this I have no idea how the Leonid watching went; deadline for the column is before that. But I hope it went well.

For Christmas, we have a couple of good meteor events if you didn't get the "perfect scope" under the tree: meteors just require eyes...

First up is the Geminids, with high rates and reliability from year to year: this is the shower of choice for veteran meteor observers.

They are usually the strongest shower of the year, producing over 100 meteors per hour centered on the morning of Dec. 13/14.

The Geminids are visible for one week prior to maximum, but the great majority of activity is limited to December 12/13 and 13/14. This shower produces many bright meteors, but persistent trains are rare.

Luckily The 1999 Geminids will not be plagued by harsh moonlight. The moon will set by about 22h-23h local time on peak nite leaving the 2nd and best half of the night for ideal viewing.

Most activity will occur after midnight.

The shower must be expected to peak near 2 a.m. local time. Fireball activity should be very high this year.

The parent object of the Geminids was unknown until recently. The Asteroid 3200 Phaethon, discovered by IRAS (Infrared Astronomical Satellite) in 1983, is now known to be the source of the Geminid meteors.

It is apparently the only non-cometary object associated with the evolution of a major annual stream.

Next up are the Ursids, visible for one week prior to Christmas.

Although the radiant is circumpolar for most Northern Hemisphere locations, activity will mainly be noted after mid-night on the morning of Dec.

21/22.

The best time is usually near 3 am local till dawn.

This years Ursids will be a major washout due to a Full Moon. If you feel compelled to watch under these conditions, face North.

Expect to see about 3 - 5/hour at best.

The shower must be expected to peak near 6 am local time to see the best activity.

The parent comet source of this

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***The Geminids are usually the strongest shower of the year***

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shower is Comet 8p/Tuttle that last reached perihelion in 1994. A short but strong display has been seen three times while Comet Tuttle was near aphelion.

The last burst of activity occurred in 1986. The year 2000 may provide the next possible strong display of Ursid Meteors... but this year? Probably not much.



*A Leonid meteor passes near Orion, November 18, 1995 at 11:45:22 UT as seen from Henry Coe State Park, California. Photo courtesy: Mike Koop, SJAA, California Meteor Society.*

# Comet Comments for December 1999

Don Machholz

## Periodic Comet Machholz 2

remains in the southern evening sky. In late October Component D was found several arcminutes southwest of the primary component. As the comet brightens perhaps other parts will be found. In the Elements portion of this column I've included information for Comet LINEAR (C/1999 S4). As stated last month, it should brighten to unaided eye visibility next July in the northern polar region.

During the past month the LINEAR program in New Mexico found three new comets while the automated equipment at Lowell Observatory in Arizona (LONEOS) found three. The Catalina program found two, one being shared with LONEOS. The satellite SOHO found one new comet. Most notable is that Robert McNaught and M. Hartley discovered a comet (C/1999 T1) which is faint now but should be visible in amateurs' telescopes next summer. The Southern Hemisphere is favored until Jan. 2001, when the comet will move rapidly northward.

**Comet Hunting Notes:** We are nearly half-way through the year for the Wilson Comet Award. This award of \$20,000 is divided among amateurs who find comets each year (June 12 to the next June 11). This "year", with seven months to go, only one person is eligible for the award. That is Steve Lynn of Australia who found a comet with handheld 10x50 binoculars on July 13. Obviously the automated search programs have taken away some of the potential amateur finds, with LINEAR's C/1998 T1 and C/1999 J3 being two recent examples.

## Ephemeris

141P/Machholz 2						
Date(00UT)	R.A. (2000)	Dec El	Sky	Mag		
11-08	18h32.9m	-11d50'	54d	E	10.9	
11-13	18h47.8m	-11d46'	53d	E	10.1	
11-18	19h03.8m	-11d39'	52d	E	9.4	
11-23	19h20.8m	-11d33'	51d	E	8.7	
11-28	19h39.0m	-11d27'	50d	E	8.2	
12-03	19h58.5m	-11d25'	50d	E	7.7	
12-08	20h19.5m	-11d29'	50d	E	7.4	
12-13	20h42.5m	-11d41'	50d	E	7.2	
12-18	21h08.2m	-12d04'	50d	E	7.1	
12-23	21h37.7m	-12d38'	52d	E	7.2	
12-28	22h12.2m	-13d21'	55d	E	7.4	
01-02	22h53.4m	-14d07'	59d	E	7.8	
01-07	23h42.1m	-14d41'	65d	E	8.2	
01-12	00h37.6m	-14d41'	72d	E	8.7	

## Elements

Object:	P/Machholz 2
Peri. Date:	1999 12 09.2752
Peri. Dist (AU):	0.748905 AU
Arg/Peri (2000):	149.2991 deg.
Asc. Node (2000):	246.1434 deg.
Incl (2000):	012.8116 deg.
Eccen:	0.751075
Orbital Period:	5.22 years
Ref:	MPC 35815
Epoch:	1999 12 08
Absol. Mag/"n":	12.0/7.5

Object:	LINEAR (1999 S4)
Peri. Date:	2000 07 26.3979
Peri. Dist (AU):	0.766182 AU
Arg/Peri (2000):	150.9998 deg.
Asc. Node (2000):	083.1500 deg.
Incl (2000):	149.3473 deg.
Eccen:	1.0
Orbital Period:	Long Period
Ref:	MPC 36213
Epoch:	2000 07 26
Absol. Mag/"n":	7.0/4.0

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## Celestial Calendar

### December 1999

Richard Stanton

Lunar Phases:	Date	Rise	Trans	Set
NM 14:32 PST	07	06:44	11:57	17:06
FQ 16:50 PST	15	12:27	18:17	00:13
FM 09:31 PST	22	17:21	00:46	07:04
LQ 06:04 PST	29	23:54	06:13	12:24

Nearer Planets:	R. A.		Dec.
Mercury ... 1.27 A.U., Mag. -1.3			
07 05:30 10:38	15:46	15:32.8	-17:07
17 06:01 10:56	15:50	16:29.2	-21:02
27 06:36 11:21	16:05	17:33.4	-23:45

Venus ... 1.06 A.U., Mag. -4.6			
07 03:34 09:06	14:38	14:01.0	-09:53
17 03:52 09:13	14:32	14:46.6	-13:38
27 04:12 09:21	14:29	15:34.2	-16:58

Mars ... 1.76 A.U., Mag. 0.6			
07 10:49 15:50	20:51	20:45.1	-19:27
17 10:33 15:41	20:50	21:16.2	-17:10
27 10:15 15:32	20:50	21:46.6	-14:36

Jupiter ... 4.39 A.U., Mag. -2.6			
07 14:08 20:37	03:11	01:35.9	+08:30
17 13:27 19:57	02:31	01:34.8	+08:27
27 12:48 19:18	01:52	01:34.9	+08:31

Saturn ... 8.45 A.U., Mag. 0.6			
07 14:57 21:41	04:29	02:39.3	+12:50
17 14:16 20:59	03:47	02:37.2	+12:43
27 13:35 20:18	03:06	02:35.7	+12:38

SOL Star Type G2V Intelligent Life in System?			
Hours of Darkness			
11:14 07 07:09	11:59	16:49	16:53.8 -22:34
11:19 17 07:16	12:04	16:51	17:37.9 -23:20
11:18 27 07:21	12:09	16:56	18:22.2 -23:20

Astronomical Twilight:			
		Begin	End
JD 2,451,519	07	05:36	18:22
	529	17	05:43 18:24
	539	27	05:48 18:30

Sidereal Time:			
Transit Right Ascension at Local Midnight			
07 00:00	=		04:54
17 00:00	=		05:34
27 00:00	=		06:13

Darkest Saturday Night: 04-Dec-1999

Sunset	16:49
Twilight End	18:22
Moon Rise	03:56
Dawn Begin	05:34
Hours Dark	11:12

## For Sale

Heavy duty Astro-Physiscs 800 mount and pier assembly. The mount's controller can be used with an autoguider like the ST-4. \$2400 408-446-0975

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### Telescope Loaner Program

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### Web Page

Bill Arnett billa@znet.com

## 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 (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	Darryl Lambert
3	4" Quantum S/C	Manoj Khambete
7	12.5" Dobson	Jeff Crilly
19	6" Newt/P Mount	Dean Sala
23	6" Newt/P Mount	Glenn Yamasaki
28	13" Dobson	Bill Sweeney
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 till the scope becomes available after the due date.

# Scope	Description	Borrower	Due Date
6	8" Celestron S/C	David Artiaga	11/30/99
15	8" Dobson	Tim Roberts	12/3/99
16	Solar Scope	Ed Erbeck	12/26/99
24	60mm Refractor	Michael D. Turner	1/29/00
27	13" Dobson	Mike Rupe	12/5/99
29	C8, Astrophotography	Steve Sergeant	1/23/00

### 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
2	6" f/9 Dob	John Paul De Silva	?
4	60mm Refractor	Del Johnson	Indefinite
8	14" Dobson	Darryl Lambert	12/4/99
9	C-11 Compustar	Paul Barton	Indefinite
18	8" Newt/ P Mount	Dave North	Repair
21	10" Dobson	Ralph Seguin	12/4/99
26	11" Dobson	Nilesh Shah	12/1/99
31	8" f/8 Dobson	Lee Barford	1/23/00

### Waiting List

Michael D. Turner - Solar Scope

Bruce Horton - Telescope

### Notes:

Thank you to Ed Erbeck for the donation of three 2" focusers! Do you have some space to store a scope or two? Please contact me.

### Periodical Publication Statement

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San Jose Astronomical Association,  
c/o CEO  
P.O. Box 110566  
Campbell, CA 95011-0566

### Submit

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

To subscribe to or unsubscribe from the SJAA Mailing List send email to [sjaa-request@seds.org](mailto:sjaa-request@seds.org) 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

San Jose Astronomical Association  
c/o CEO  
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Campbell, CA 95011-0566

Name: \_\_\_\_\_

Address: \_\_\_\_\_

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