

SJAA EPHEMERIS

SJAA Glacier Point weekend

Jane Houston Jones

*Glacier Point 37N 119W
Limiting magnitude 6.8 to 3.4
July 25 and 26 2003*

Everybody writes about the fantastic views. It's Yosemite, after all. The 7200 foot elevation. The granite. The sky. The clear air. Aiming a telescope at half dome before sunset and

watching the rock climbers settle in for the night at twilight. Sunset. Alpenglowl over the Sierra. The first star. The milky way. The oohs and aahs of the visitors. The sight and sound of Nevada Falls across the valley at midnight. Moonrise over half dome. Dawn.

I've been to Glacier Point many

times for astronomy club weekends. To me the best part of the Yosemite weekend is spending time with fellow astronomers. Two or three nights of camping, of telescope setup, tinkering with equipment, astro murmurs, views. Sharing information, listening to the person at the next telescope explain the Swan Nebula, and thinking, "dang, I wish I'd said that."

The SJAA goes to Yosemite every year. As Jim Van Nuland says, there is no such thing as a bad weekend at Yosemite. This year we had thunder and lightning at sunset, followed by clouds and late sprinkles on Saturday night. But at midnight the sky cleared and we had a great view of Mars. Friday night was great, and Thursday night (of

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SJAA activities calendar

Jim Van Nuland

September

- 4** Evergreen Valley College Montgomery Hill Observatory grand opening ceremony, 3:30 p.m.
- 5** Hogue 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** EVC Montgomery Hill Observatory star party, 9:00 p.m. Call (408) 223-6784 for reservations
- 6** ATM class. Hogue Park, 7:30 p.m.
- 11** ATM class. Hogue Park, 7:30 p.m. (no class on the 18th)
- 13** **General meeting**, Hogue Park. 8:00 p.m. Slide and equipment night, board meeting 6:30 p.m.
- 19** Astronomy class. Hogue Park, 7:30 p.m. subject to be announced
- 19** Hogue 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** Cal-Star star party

October

- 3** Hogue Park star party. Sunset 6:48 p.m., 65% Moon sets 1:08 a.m. Star party hours 7:30 p.m. to 10:30 p.m.
- 4** ATM class. Hogue Park, 7:30 p.m.
- 11** **General meeting**, Hogue Park. 8:00 p.m. Speaker to be announced, board meeting 6:30 p.m.
- 16** ATM class. Hogue Park, 7:30 p.m.
- 18** Deep Sky star party at Coyote Lake Park, east of Gilroy. Sunset 6:27 p.m., 51% moon sets 0:33 a.m.
- 24** Astronomy class. Hogue Park, 7:30 p.m., subject to be announced
- 24** Hogue Park star party. Sunset 6:19 p.m., no Moon. Star party hours 7:30 p.m. to 10:30 p.m.
- 25** Deep sky weekend. Sunset 6:18 p.m., 1% Moon sets 6:38 p.m.
- 26** Darkness squandering time ends at 2 a.m., turn clocks back to 1:00 a.m.
- 31** Halloween. Set up at home. Sunset 5:11 p.m., 50% Moon sets 11:06 p.m.



SJAA President Michael Koop sets up loaner scope #39 for an exceptional night of viewing at Glacier Point overlooking Half Dome. Photo by Jane Houston Jones

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

<http://www.sjaa.net>

Glacier Point

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course) was the best. Only Mojo, Bob Brauer and I were there. Ask us about it sometime, and if we can wipe the smile off our faces, we'll tell you about the superb night we had.

Saturday night we set up next to Jim Van Nuland. We talked about Yosemite. We talked about astronomy. We talked about equipment. We just talked. And in-between, we aimed our telescopes at this object or that object. At the next telescope, Rob Hawley was asked by a young girl "Do you love the sky?" He showed her the answer. No words were necessary.

— Jane Houston Jones,
jane@whiteoaks.com



This intrepid group of San Jose astronomers provided sky shows for dozens of Yosemite tourists over two nights in July.

Mooning

Mars and the low side

Dave North

First, the Moon will occult Mars this month, but we won't be able to see it.

I mention this because your observing efforts should very much be aimed at Mars this month, and should have been for some time now.

Unless a dust storm has intervened. I wouldn't know that at time of writing.

Besides, my Moon observations have been plagued by clouds, rotten seeing, locusts, you name it. Not an easy year. Hoping for better.

So what else do Mars and the Moon have in common?

Quite a bit, but I have a particular aspect in mind.

They both have a "high side" and a "low side."

Come to think of it, so do we. And Venus, maybe Mercury, Ganymede...

So what's this all about?

If you grab an earth globe and look straight down on, say, Finland you'll think most of the globe is covered with land.

But if you turn it over and put Rapa in the crosshairs, there's almost no land at all.

You can accomplish a somewhat less dramatic — but convincing —

effect just by looking at it from the north pole (lotsa land) and the south pole (not much).

On Mars the whole deal is similar but reversed.

Quoting from USGS: "Probably the most important question concerning the global-scale tectonic history of Mars is the origin of the crustal dichotomy. The northern lowland is not only several kilometers lower than the southern highland, it also is surfaced by materials that are significantly younger than surface materials in the southern highland."

Venus apparently has a similar layout, though the true highlands are less extensive. They are, however, concentrated between the equator and north pole in one longitudinal area. In other words, another high side.

Mercury shows a similar trend, though both data and tendencies are not so clear. Even Ganymede may reflect such a topography — I'm having a heck of a time with the data.

And then there's the Moon.

Look at the side facing us and you see all those darker areas. They're not only dark — they're lower than the lighter areas.

But if you look at the far side of

the Moon (which you can't, of course, without using a map or globe) you'll note there are almost no lowlands at all.

Let me take a break for a moment to point out there's some bogosity in the impression you can get from all this. While it is true that it looks like there's a tendency of (at least nongaseous) bodies to have a "high" and "low" side, it's not clear it might always be for the same reasons.

Note that the current placement of the continents on Earth are not what they were supposed to be some millions of years ago (and that in fact they have diverged a bit from an even more concentrated high/low setup).

Earth is still tectonically active. The Moon and Mars are presumed to be largely (if not completely) settled at this point.

Or maybe ... but we'll get to that.

Another couple of weird facts: highlands are usually older than lowlands. This is true on Mars, the Moon and on the Earth. But maybe (again) for different reasons.

On Earth, theory indicates there are spreading zones primarily at the sea floors, where the plates move apart and the "trailing edge" is made of new crustal material hardened from molten matter coming up through the seam.

From our point of view, this is "new stuff."

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Mooning

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On the Moon, the idea is similar though the process is different. There it's expected the great Maria (dark lowlands) are formed from basaltic lavas oozed mostly after great impacts rather than tectonic spreading. Note that in all cases, the lower area is newer.

So we may conclude that the "highland/lowland" nature of planets may not so much be the result of some inhomogeneity at primal formation, but rather more likely the result of large (or maybe just asymmetric) impacts during childhood or the young adult era — or more radically, later in the planetary evolution.

It's also possible that seemingly quiescent tectonics are periodically awakened to some extent by a big honking impact.

What does this tell us about the Earth? I don't know, but I sure consider it an interesting question in that context.

Another Moon weirdness: the Maria are underlain by "mascons" or extraordinary mass concentrations. These are of course the lowlands.

This is generally presumed to be a result of the density of the magmas unleashed combined with the residual mass of impacting bodies. This "extra mass" may explain why you can have a slightly nonspherical body acting more or less as if it were a sphere — it's not important for an outer radius to be smooth, but rather for the average mass to "look that way."

This raises a bunch of interesting questions both on Mars and on the Moon.

On Mars, there have been speculations that the monstrous volcanic activity northern lowland Tharsis area (where you'll find Olympus Mons et al) was triggered by an impact on the opposite side of the planet that formed the Hellas basin (a huge anomalous lowland).

The highland areas on both the Moon and Mars are heavily cratered, indicative of greater age (and formation

by less recent lava flows. Almost all the surface crust of all the rocky planets is presumed to have emerged as some form of a lava at one time or another).

But at last, I'd like to point out what I find particularly puzzling. The "lowland" area of the Moon, on average, faces us all the time.

This may just be dumb luck.

On the other hand, I'm not a big fan of coincidence.

It's often speculated that if Mare Orientale were facing us rather than the orientation we see, people would be freaked out by the appearance of a large eyeball in the sky (not a bad picture of how it would look).

At the same time, if the Moon were simply turned 180 degrees, we'd see a pretty boring face with little color difference visible without optical aid. There would be no Man (or Bunny or whatever) in the Moon.

Instead, most of the Moon's lowlands have been tidally locked facing us. Why is that?

First, it requires that most of the impacts big enough to form a Mare basin happened in the same general quadrant — or that similar impacts on

the other side didn't form quite such good Maria for some reason.

For now, the former view seems to hold the day (it's just coincidence) particularly when you consider that the major Maria simply could not have been formed all at the same time.

Okay, we're stuck with at least one stroke of dumb luck for now.

But why does it face us?

I have not seen any modeling of the idea that during the process of winding down to tidal lock, the Moon may have settled with the mascons facing us quite as a natural result of their higher density.

A normal effect of the tidal locking process.

I have seen this discussed as a reason for Io's peculiar behavior orbiting Jupiter, so I know the idea has been at least toyed with.

It would be very interesting to see an inspection of this idea as regards the Moon.

Maybe someone's already done it. If so, I know nothing of it.

As usual.

— Dave North, north@znet.com

The shallow sky

Mars attacks

Akkana Peck

As September opens, we've just passed the closest Mars opposition in some 70,000 years. That means that Mars is the closest it will ever be in our lifetimes; it's nearly as big and bright as Jupiter.

The media frenzy no doubt had all your friends and colleagues asking you about the exact date of the opposition (August 27th), since the papers all seemed to give people the impression that Mars was going to zoom in that day, shine for a day then vanish into the depths of space. So now it's September, the magic opposition date is past, and Big Mars is gone with a whoosh! never to be seen again, right?

Nothing could be further from the truth. Happily, Mars stays pretty close to us throughout the month of September — at mid-month its angular size

has only diminished an arcsecond from its maximum size, and even by month's end it's only down a few more arcseconds — and it'll actually be easier to observe after opposition than before. The secret is that after opposition, Mars will rise earlier, which means it will be higher earlier in the evening, much more accessible to people who aren't able to stay up all night on a regular basis. That means that it will be easier to look at it regularly — perhaps every night — and *that* means you'll be ready and looking when that night of superb seeing occurs. Through most of September, Mars will rise about sunset, when the seeing is often very steady, and will be visible all night.

Mars is approaching the southern

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Mars attacks

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summer solstice, which happens on September 29. This is a peak period for dust, so we may have more localized dust storms in various areas on the planet. Let's just hope that none of them turn global. Clouds and limb hazes should become rarer than in the past few months (if you've been watching).

Remember that dust storm I talked about with trepidation last month? Fortunately, that one didn't turn into anything, and so far we've seen pretty good weather on the red planet. The south polar cap (the one visible to us) continues to retreat slowly, but it's still quite visible in even a small telescope, and the dark markings along its sometimes ragged edge are showing some quite interesting detail, especially on the sides near Sinus Meridiani and Syrtis Major.

Hellas seems unusually dim; in past years, it has often looked like another polar cap (though this year, due to its placement, it would be difficult to confuse it with a polar cap) and sometimes brighter than the real polar cap, but this year, it seems scarcely brighter than the light red mountainous or cratered areas nearby, and much less prominent than smaller nearby light areas such as Elysium. I haven't seen anyone venture an explanation as to why this might be. Your guess is as good as mine! Perhaps localized dust? Keep your eyes open and watch the Hellas region and see if it changes over the next month or two. Will any bright patches appear?

If you have colored filters, try using light blues and greens to look for clouds and limb hazes. Some observers swear by them, others say they don't help. Darker colors, especially reds and oranges, can also show interesting things on Mars, but sometimes cut out too much light in a small telescope. If you don't have colored filters, don't worry that you have to run out and get some. A fun thing to do is to borrow filters and swap views at star parties. Sometimes you can notice things through someone else's scope,

or through a borrowed filter, then once you've seen it, when you look again through your own unfiltered scope, there it is — it was there all along!

I know you've heard it from me before, but try sketching what you see, especially if you're having trouble seeing much detail on Mars. You'll be amazed at how it helps you to focus your attention on what you're really seeing. The object isn't to create a work of art (though if you can do that, that's fun too) so lack of art skill or equipment is not an issue here. Even a ballpoint pen and the back of an envelope can be enough — draw the outlines of the dark and light areas you see, then look again tomorrow and see if you see the same, or more, or less. Does it correspond with the map? With other people's drawings? Can you identify what you saw?

Quick software note: I've updated my Palm program Marsmap, so there's a new and faster version out which should fix the bugs in the version from previous years. It doesn't replace a detailed map, but it's helpful if you want a quick feature or central meridian

reference without having to cart a laptop computer around. It's linked off my Mars FAQ page, <http://shallowsky.com/mars.html> along with all the other Mars software I've found (know of anything I've missed? Let me know!)

What about the other planets? Are there other planets to look at besides Mars? Oh, yes, I suppose there are.

Venus is too close to the sun to be observable this month. Mercury almost is, but a determined observer can glimpse it with effort in the morning sky around the end of the month. Jupiter, too, emerges into the dawn sky late in the month. Saturn rises earlier, about 2 a.m. early in the month, closer to midnight later in the month, so you'll probably get a chance to catch some ring photons before the month is out. Hooray! It's always nice to have Saturn back. And the outer planets, Uranus, Neptune, and Pluto, are also observable in the evening sky throughout September.

— Akkana Peck,
observer@shallowsky.org

Out there

CalStar arrives for deep sky observers

Mark Wagner

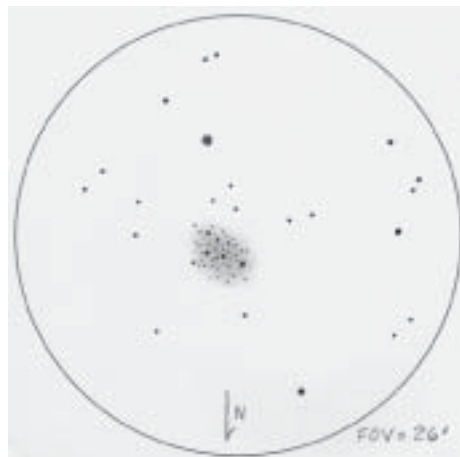
This month new moon falls mid-week on the 27th. The SJAA and other deep sky enthusiasts from all over California will gather for a few nights of observing at Lake San Antonio, when the club hosts the fourth annual CalStar. Will you be there? Skies are

great, the atmosphere relaxed and friendly. See <http://www.sjaa.net/calstar2003>

Here are some targets on the eastern edge of the Milky Way and beyond, into deep space, between RA 22:00 and 23:59.

Open cluster NGC 7510 in Cepheus is described by Matthew Buynoski as a really cute little cluster, bright and shaped rather like a miniature version of the "vee" in Taurus. Find it using Iota Cephei and Beta Cassiopeia to locate mag four star 4 Cass between them. M52 is just to the south. Just under two and one-half degrees SE toward mag five 1 Cass and you'll find our target.

Next is NGC 7380, and open cluster with nebulosity in Cepheus. Continue southwest just under four



NGC7296 by Peter Natscher

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Object	Type	R.A.	Dec.	Const.
NGC 7510	OC	23 11	+60 34	Cep
NGC 7380	C+N	22 47	+58 06	Cep
NGC 7789	OC	23 57	+56 44	Cas
Sigma Cas	DblSt	23 59	+55 46	Cas
NGC 7296	OC	22 28	+52 17	Lac
NGC 7686	OC	23 30	+49 08	And
NGC 7662	PN	23 25	+42 32	And
NGC 7448	Gx	23 00	+15 58	Peg
NGC 7479	Gx	23 05	+12 19	Peg
Zeta Aquarii	DblSt	22 29	-00 03	Aqr
NGC 7723	Gx	23 39	-12 58	Aqr

Out there

Continued from previous page

degrees. If you have a Telrad place it so an imaginary extra outer circle puts Delta Cephei on the eastern edge of the "extra" circle. Steve Gottlieb describes the object as "a snap to identify at 100x with both OIII and UHC filters as a bright triangular-shaped nebulosity superimposed on a rich grouping of stars within a striking milky way field."

NGC 7789 is one of my favorites. Locate it nine and one-half degrees east of our prior target, and three degrees southwest of Beta Cass, between mag four and a half star Rho and mag five Sigma Cass. Robert Leyland saw "an awful lot of faint stars, with a nice filled in circular shape in the center, and five 'leggy' extensions like a child's drawing of a star. Some brighter stars surround it, framing the cluster nicely."

Since we're right there, Tom Campbell describes Sigma Cass: "This is a tight double. The primary is a couple of magnitudes brighter than the secondary. Both stars are a blue-white color. In order to get a nice clean separation, I had to jump up to 305x.



NGC 7479 sketch by Mark Birkmann

There were only a couple of additional field stars at this magnification, and both were dimmer than the secondary."

Move into faint Lacerta to find open cluster NGC 7296. From Sigma Cass take a giant step, almost fourteen degrees, west to mag four and one half Beta Lacertae. Less than one degree east is the cluster. Matthew Marcus

found it "embedded in a very rich star field with a concentration of brighter stars overlain by a nebulous-looking haze," and that, "as OCs in the milky way go, this one was pretty conspicuous."

Hop-scotch east to mag four point six 9 Lacertae. Follow a chain of four mag four and a half to mag five stars

"The SJAA and other deep sky enthusiasts will gather for a few nights of observing at Lake San Antonio"

leading east, terminating on 8 Andromeda. Two degrees east is NGC 7686. Campbell writes, "This is a loose and sparse open cluster shaped like a Christmas tree or dunce cap. No more than a couple dozen stars are scattered throughout. The brightest stars are along the outer edges of the cluster. Two real bright stars are along one edge."

Six and one half degrees south is NGC 7662, a bright planetary called the "Blue Snowball." At 103x it was very

bright and distinct turquoise blue. Its central star was visible occasionally with direct and more frequently averted vision. Get to a dark site and keep increasing your magnification — how many shells can you see around the



NGC7448 by Andreas Domenico

central star?

Look at the Great Square of Pegasus and find mag two and a half Markab (Alpha Peg). Less than one and a half degrees northwest is the galaxy NGC 7448. This galaxy is in a great field for dark sky observing, but more of a challenge from a backyard. Its glow was even across the core without a bright nucleus, and the glow evened out gradually toward its edges at the NNW and SSE.

Head three degrees south of Markab to the galaxy NGC 7479. Marsha Robinson described one of its spiral arms wrapping "under and around" the star closest to it, then back toward the "top" of it, making the upper arm parallel to the lower. Sounds like a good target!

Just over fifteen degrees south-southwest is the "Y" of Aquarius, resembling a Mercedes emblem. The center star is Zeta Aquarii. Tom Campbell writes, "This is a really close double. At 305x, they could be cleanly split."

We'll finish with another giant step, twenty one and a half degrees southeast to galaxy NGC 7723, which Richard Navarrete describes as "big and bright, brighter towards the middle, a bit of an odd shape."

— Mark Wagner, mgw@resource-intl.com



NGC7662 sketched by Mark Birkmann

EVC MHO grand opening

The Montgomery Hill Observatory at Evergreen Valley College is finally completed. Just in time for the closest Mars opposition in centuries! Come participate in the grand opening ceremonies on Thursday Sept. 4, starting at 3:30 p.m., in the Sequoia Auditorium S140.

The activities will move to Acacia room A6212 for the ribbon cutting along with light refreshments. Observatory tours will occur from 4:30 to 5:30 p.m. Later that evening, enjoy "first light" through the TMB 180mm f/9 EDstar APO refractor or the roll-off roof observatory's C-14, starting about 9:00 p.m.

Please call (408) 223-6784 to reserve a time to view through the new scopes or drop by to view Mars through fellow SJAA members' scopes at this beautiful site. There will also be a star party at EVC on Saturday, Sept. 6. See www.sjaa.net for more details and directions.

CalStar September 25-27, 2003

This year's CalStar, hosted by the SJAA, takes place September 25, 26, 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 your 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. \$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.

Sky & Telescope cost going up

As most of you know, SJAA members can get a substantial discount on *Sky & Telescope* magazine by subscribing through the club. The club rate has been \$30 for a long time. Unfortunately, Sky Publishing is raising the cost to \$33. The good news is this

continues to be \$10 off their retail rate (which is going up too).

So, effective with S&T subscriptions that expire in 2004, club membership with S&T will be \$48, up from \$45. Renewing early won't matter — if your S&T subscription expires (or starts) January 1, 2004 or later, you get the new rate. (SJAA membership alone will remain at \$15.)

Astronomy magazine renewal time

It's time to renew our group subscription to *Astronomy* magazine. The rate for 2004 is again \$29, or \$55 for two years. Please send a check payable to Jim Van Nuland, 3509 Calico Ave., San Jose CA 95124.

If you subscribe independently, and your subscription ends during 2004, you may convert to the group rate. Send a check and the renewal card or a mailing label to Jim, and you'll be added to the group for an additional 12/24 months.

If you do not subscribe and wish to do so, send the \$29/55 and your subscription will begin with the January 2004 issue.

I will hold your checks until early October when the renewal package is sent in. Don't worry that your check doesn't clear promptly.

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.

Celestial calendar September 2003 Richard Stanton

Lunar Phases:	Date	Rise	Trans	Set
FQ	04:34 PDT	03	14:35	19:25 00:08
FM	08:36 PDT	10	19:51	00:56 06:35
LQ	11:03 PDT	18	23:54	06:47 14:29
NM	19:09 PDT	25	06:19	12:50 19:11

Nearer Planets:	R. A.	Dec.
Mercury, 0.71 A.U. Mag. -0.5		
07 07:27 13:28 19:29	11:22	-00:32
17 06:02 12:20 18:39	10:54	+05:09
27 05:33 11:56 18:19	11:09	+06:33

Venus, 1.70 A.U., Mag. -3.9		
07 07:10 13:29 19:49	11:23	+05:25
17 07:31 13:35 19:39	12:09	+00:23
27 07:53 13:41 19:30	12:54	-04:41

Mars, 0.40 A.U., Mag. -2.2		
07 19:21 00:33 05:44	22:27	-16:23
17 18:34 23:45 04:56	22:19	-16:27
27 17:50 23:02 04:15	22:15	-15:59

Jupiter, 6.31 A.U., Mag. -1.8		
07 05:45 12:24 19:02	10:18	+11:25
17 05:17 11:52 18:28	10:26	+10:40
27 04:47 11:21 17:54	10:34	+09:55

Saturn, 9.28 A.U., Mag. +0.8		
07 01:38 08:53 16:09	06:48	+22:14
17 01:02 08:17 15:33	06:51	+22:10
27 00:25 07:40 14:56	06:53	+22:07

SOL	Star	Type	G2V	Intelligent Life in System ?
Hours of Darkness				
08:13	07	06:44	13:07	19:30 11:01 +06:12
08:41	17	06:52	13:04	19:15 11:37 +02:24
09:07	27	07:00	13:00	19:00 12:13 -01:28

Astronomical twilight:	Begin	End
JD 2,452,889	07	05:17 21:00
899	17	05:27 20:43
909	27	05:36 20:26

Sidereal Time:	
Transit right ascension at local midnight	
07	00:00 = 21:56
17	00:00 = 22:35
27	00:00 = 23:14

Darkest Saturday Night: 27 Sep 2003	
Sunset	18:58
Twilight	20:25
Moon Set	20:10
Dawn Begin	05:32
Hours Dark	09:07

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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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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
7	12.5" Dobson	Michael Lagae
16	Solar Scope	Bob Havner
19	6" Newt/P Mount	Daryn Baker
24	60mm Refractor	Al Kestler
34	Dynamax 8" S/C	Mike Macedo
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
3	4" Quantum S/C	Eric Anderson	9/16/03
8	14" Dobson	Craig Colvin	8/17/03
12	Orion XT8 Dob	Jan Lynch	10/3/03
13	Orion XT6 Dob	Kosha Ganatra	11/1/03
14	8" f/8.5 Dob	E. Clay Buchanan	8/23/03
26	11" Dobson	John Bunyan	9/9/03
27	13" Dobson	Steve Houlihan	10/5/03
32	6" f/7 Dobson	Lia Klofas	9/6/03
33	10" Deep Space Explorer	Michael Hewett	8/23/03
39	17" Dobson	Ron Gross	11/3/03

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	?
6	8" Celestron S/C	Carl Ching	11/9/03
9	C-11 Compustar	Paul Barton	Indefinite
10	Star Spectroscope	Keng Teh	10/19/03
11	Orion XT6 Dob	Tina Mia Kurth	8/22/03
15	8" Dobson	Gary Hansen	11/9/03
21	10" Dobson	Michael Dajewski	Repair
23	6" Newt/P Mount	Wei Cheng	11/9/03
28	13" Dobson	Jim Albers	10/20/03
29	C8, Astrophotography	Frank Williamson	11/9/03
35	Meade 8" Equatorial	Patrick Lewis	11/9/03
36	Celestron 8" f/6 Skyhopper	Dennis Hong	8/23/03
37	4" Fluorite Refractor	Jeff Crilly	9/3/03

Waiting list:

7	12.5" Dobson	Tom Frerickson
8	14" Dobson	Craig Colvin
36	Celestron 8" f/6 Skyhopper	Jason Yoon

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