SJAA EPHEMERIS

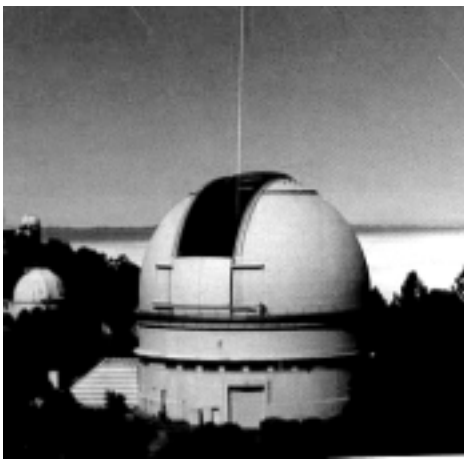
My first night laser spotting, July 27, 2002

Bob Havner

Tonight was my first night as a laser spotter for Lick Observatory. The adaptive optics system at the Shane 3 meter telescope utilizes a 20-watt sodium laser to put a false star in the sky. The system uses the star to compensate for atmospheric disturbances, creating sharper, clearer images of the objects observed.

The laser has the potential to temporarily blind a pilot should his aircraft accidentally fly into the beam. That's where laser spotters come in. It's our job to watch for low flying aircraft that frequently fly over the observatory. If a plane should come close to the beam we are responsible to notify the control room and if necessary shut down the beam.

I arrived at the Shane at 10:00 ready to go. Kostas Chloros is in charge of the laser team and who we are in contact with inside the telescope control room. Kostas gave me instructions on how to operate the communications system and the "kill" switch. After instructing Tina Kurth, the other spotter, we were ready to go. Kostas told us the direction that the beam would be pointing and, after we gave him the all clear, the yellow beam pierced the night sky.



The 20-watt sodium laser seen making a beam from the dome of the Shane 3-meter telescope.

The run lasts from 11:00 p.m. till 5:00 a.m. I brought my scope to take advantage of any down time and to see the guide star. As I looked along the beam I could see a tiny yellow "star" just beyond the end of it. To verify if it was actually the guide star, Kostas momentarily put the beam off-wavelength causing the star to blink out for a few seconds while the beam remained. Several people came over to see the guide star through the scope including Geoff Marcy who was speaking at the *Music of the Spheres* night at the main building. Geoff and his team are leaders in the discovery of extrasolar planets.

There were a few breaks throughout the night and the weather was fantastic. I was wearing only pants and a tee shirt till about 2:30 a.m. The observing was limited to only bright objects due to the bright Moon. At about 3:30 a.m. Saturn rose between Copernicus and Kepler Peaks.

Continued on next page

SJAA Activities Calendar

Jim Van Nuland

October

3-6 **CALSTAR** star party at Lake San Antonio County Park. *Details in the September Ephemeris or online at www.sjaa.net*

11 Houge Park star party. Sunset 6:36 p.m., 39% Moon sets 12:49 p.m.

12 ATM Class XVIII. Houge Park, 7:30 p.m.

19 **General Meeting**: Br. Guy Consolmagno, Vatican Observatory, Houge Park 8:00 p.m.

24 ATM Class XIX. Houge Park, 7:30 p.m.

26 Short deep sky weekend. Sunset 6:15 p.m., 71% Moon rises 10:01 p.m.

27 DST ends. Turn 2:00 a.m. back to 1:00 a.m., take extra hour observing.

November

1 Astronomy Class XI. Houge Park, 7:30 p.m.

1 Houge Park star party. Sunset 5:10 p.m., 11% Moon rises 3:48 a.m.

2 Deep sky weekend. Sunset 5:07 p.m., 4% Moon rises 5:01 a.m.

9 ATM Class XX. Houge Park, 7:30 p.m.

15 Houge Park star party. Sunset 4:58 p.m., 87% moon sets 3:32 a.m.

16 **General Meeting**, Tony Misch, Lick Obs., Houge Park. 8:00 p.m.

21 ATM Class XXI. Houge Park, 7:30 p.m.

29 Houge Park star party. Sunset 4:51 p.m., 23% Moon rises 2:40 a.m.

30 Deep sky weekend. Sunset 4:50 p.m., 14% Moon rises 3:50 a.m.

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

Laser spotting

Continued from previous page

At the next break Kostas and Tina came over to see it. There was a very short run after that and it was time to shut down. The night flew by and dawn was beginning to show in the east. There was a room reserved for me at one of the dorms where I got a few hours sleep before heading down the mountain.

It was a great night.

— *Bob Havner*, bhavner@earthlink.net

Garfinkle speaks at Chabot

Chabot Space & Science Center's Distinguished Speaker Series features SJAA member Robert Garfinkle, F.R.A.S. on November 21, 2002.

Local amateur astronomer, Fellow of the Royal Astronomical Society of London, and internationally renowned author, Mr. Robert A. Garfinkle will talk about the famous Mimbres pottery that appears to depict the Moon as a stylized rabbit and the Supernova explosion of July 1054 (now known as the Crab Nebula). He will also discuss additional samples of Mimbres pottery that appear to depict the phases of the Moon. The Mimbres Indians were a pueblo-dwelling tribe in the area of modern day New Mexico.

Each lecture in the speaker series will be preceded by an overture of classical music chosen by that evening's lecturer. A dessert reception with refreshments follows each event.

Lectures begin at 7:30 p.m. in the Tien MegaDome Theater. Tickets are $5.00 each, available through CSSC's box office, (510) 336-7373 or through TicketWeb.com, (510) 601-TWEB. Seating is limited and advance purchase is recommended. For more information, the 2002/2003 speaker schedule is here: http://www.chabotspace.org/visit/programs/lecture.asp

Starry starry nights with Don Machholz

Jane Houston Jones

I participated in the first two of seven nights of astronomy in the Sierra and foothills, a fantastic public astronomy event organized by SJAA member, comet discoverer and Messier marathon co-creater Don Machholz on August 28th and 29th.

Starry Starry Nights — Seven Nights at Seven Sites kicked off Wednesday night, August 28, at elevation 6,930 foot Sugar Bowl ski resort, long. 120.2 W, lat. 39.3 N. Don was able to have all indoor and outdoor lights turned off for the whole night, which made for an incredible observing location. It was warm enough that a sweatshirt was all I needed for comfort. He even brought in a clean porta potty, compliments of his employer, and observers could stay as long as they wanted after the public star party.

There were about eight telescopes there including a 6-inch f/12 Astro-Physics Starfire refractor (one of only 10 made) and some 6-inch Takahashi binos (this Tak guy also has one of those 6-inch f/12 Starfires too). Just imagine the views we all got to see through these instruments! I brought my 12.5-inch f/5.75 Litebox reflector, Strider, and it was one of two similar sized instruments on both nights. None of the observers brought larger equipment, though many owned 18 - 25-inch reflectors, too.

About 50 or so people from the Sugarbowl/Norden/Truckee/Donner Lake community came to the star party, and not one of them had white flashlights! The skies were amazing, about LM 6.8 or better. I stayed after the public star party to observe on my own and watch and sketch the moon rise in the high sierra sky.

Don called the astronomers together at 8:00 p.m. and handed out five heavy card stock observing chart lists. The first chart had Venus, six bright stars, six double or multiple stars, the Double Cluster and the Garnet Star listed.

Each astronomer took one object from each category based on their preference or their telescope aperture. The handouts showed where each object was located, and provided detailed charts for some of the objects. The second chart showed two multiple star systems and two good variables, 61 Cygni and Omicron Cygni, V Aquilae and T Lyrae, complete with good finder charts for easy starhopping to these objects.

When it was dark enough to move away from stars and bright planets we moved to the Milky Way and some interesting galaxies and we received a chart listing them. We all selected a couple objects. I won't dwell on this but again each observer selected a couple objects from among 25 Milky Way objects and three

The visitors all got to see 40 objects in less than an hour and a half using Don's method ...

galaxies. Don gave each astronomer his book: *Messier Marathon Observers Guide* to use as a star chart for these objects. Some observers chose to add their own favorite objects to the star-hop pot.

Next, we moved on to comets and Map 4. Comets Hoenig and Swan were mapped for the duration of the seven night event, and another good red star WZ Cass, and nearby open cluster NGC7789 were mapped out. I showed Hoenig both nights.

It was time for more planets now and Don also provided star charts for Uranus, Neptune, and object #40 on the list, Pluto. Yes, Don assigned Pluto to one or two star-hopping observers each night, with excellent charts showing the planet motion over the 7 nights and with predictable excellent results — the assigned observer was able to locate and describe Pluto to the gathering. Pluto was easy to spot

Continued on next page

Starry starry nights

Continued from previous page

in a 13.1-inch f/4.5 Coulter reflector one night, and two 12.5 inchers the second night, including my own Strider.

The visitors all got to see 40 objects in less than an hour and a half using Don's method of assigning objects and switching to another target after about ten minutes. His handouts gave just enough factoids about each object to fill one line of text. Each observer had a sound bite to say for each object. The small group of telescopes were arranged in a loose circle so people could walk from telescope to telescope. This method worked well for our size of crowd and our number of telescopes and astronomer experience level. On each night there was an observer who didn't or couldn't get his go-to to "go to", but they were brave for coming to a public event and enjoyed themselves. They both learned a lot from the other observers.

The second night's star party was at elevation 3,600 foot long. 120.6 W lat 39.2 N China Wall, 12 miles past Foresthill, which is 18 miles past historic Auburn in the Sierra foothills. Sacramento is about 50 miles away, but trees obscured most of the light dome, and the other directions were very dark. There were some clouds which made for a short but successful night of observing. A local astronomer from the Foresthill area was the one who pointed out that the clouds were black due to the lack of light pollution.

This particular observer is usually imaging these objects in his nearby observatory and relished some starhopping for a couple nights. You night recognize his name — Tony Hallas — who was borrowing one of Don Machholz's two 6-inchers for the night.

Again there were about eight telescopes and about 75 attendees at this event, despite the approaching cloud cover. Most of these folks knew Tony Hallas and Don Machholz — they are well known in these communities in the Sierra foothills. It was a real community happening at another incredible observing location, one which is available for amateurs to use when it is not covered with snow. I would have stayed later but by 11:30 p.m. most of the sky was obscured by black clouds.

Friday night the traveling star show went to nearby Colfax High School and I headed for a vacation elsewhere. Saturday night the site was Big Bend, about 30 miles from Colfax. Sunday night Don set up at Sugar Pine Reservoir boat parking lot near Foresthill. This spot is reputed to be among the best of the seven. It's not too far from the China Wall spot I observed from on Thursday night.

Monday night the setup was at Dutch Flat and the last night, Tuesday night's finale was at the Soda Springs Ski Resort parking lot. This whole seven-night event was co-sponsored by the Colfax Chamber of Commerce, and Don did an incredible job of promoting it. He had red flashlights for everybody too.

I saw the event mentioned in a large article in the *Auburn Sentinel* newspaper Friday morning and Don appeared daily on local radio shows (perhaps TV too) giving "observing reports" of each night's activity.

I am really glad I made the scenic drive to the Sierra for this special event. I woke up Thursday morning with a view of Donner Lake from my camping spot, and in the cool Sierra air had fresh brewed coffee and raspberries and cream. Plus I got to observe with some of the great amateur astronomers from the region.

I also brought my roadside geology books and took a scenic drive between the two star parties on Thursday afternoon. I drove the 67 miles of California 20 from Marysville to Emigrant Gap, Highway 49 from Grass Valley to Auburn, and Interstate 80 from Sacramento to Truckee, noting interesting geology and history at every turn of the road.

http://www.geocities.com/donmachholz/StarryStarryNights.html

— *Jane Houston Jones*, jane@whiteoaks.com

Out There

October deep sky from Montebello

Mark Wagner

How many of you are backyard astronomers, taking your telescope outside for an hour once in a while? Peek here and there, see hints of this or that, and you decide planets and the moon are all that's worth looking at? There's much more to see from a place virtually in your backyard, an observing site used by dozens of experienced deep sky observers. A place that you can use too! While not actually in your backyard, within about 30 minutes drive is a site that's a huge improvement over most suburban backyards. It is called Montebello Open Space Preserve, atop Page Mill Road in Palo Alto. Nice, close, good skies, pretty drive, good company, lots to see at sunset and after dark.

Here is where it is convenient to dip your toes into the deep end and leave wanting more! Directions to "Montebello" can be found at http://www.sjaa.net or http://www.observers.org on the internet. While Montebello is a popular and excellent resource for local amateur astronomers, use is limited to permit holders and their guests (you). Check on the observers.org mailing list where permit holders regularly post their plans to go.

There is plenty to see from Montebello during the moonless night this first month of fall. Let's concentrate on some selected objects between R.A. 22:00 and 00:00, well placed rising in the east for the first two hours after astronomical twilight around new moon.

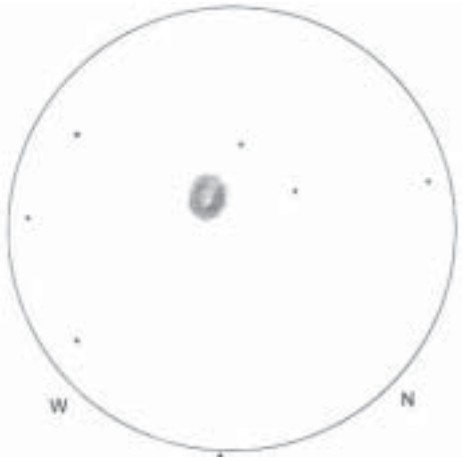
NGC7662 may look like nothing more than a bright ball upon casual inspection. But there is much more to it if you take time to study. The com-

Continued on next page

Out there

Continued from previous page

mon name is The Blue Snowball, a bright turquoise mag 8.3 planetary nebula in Andromeda. The central star is in and out with averted vision. Can you see it? As you increase magnification the object transforms into two if not three concentric rings. My most pleasing view was through an 18-inch



NGC 7662, the Blue Snowball planetary nebula in Andromeda at 305X with O-III filter, sketched by Iiro Sairanen, Finland

Newtonian at 294X from a good dark sky site in the Sierra foothills. The planetary resolved into a grey ring with another glowing green ring overlaying it 2/3rd out to the edge. At the edges were small "sparks" — or parts of the glowing ring jutting out toward the perimeter of the gray disc. This was a beautiful object with lots of detail at higher power. The neon green glow of the middle ring was mesmerizing.

NGC40 is a mag 12.3 planetary nebula in Cepheus. It is nearly identical in size to the Blue Snowball, but that's where the similarities end. NGC40 contains a bright central star surrounded by a dimly lit shell. With sufficient magnification two dim shells show with a pair of darker lanes inside the inner shell curving slightly inward, cupping the central star and extending north and south. Look carefully to pick out a star involved at the southern tip of the outer shell, and another dimmer star involved in the eastern edge. With some imagination, the dark lanes and bright central star reminded me of a spiral galaxy with arms tightly winding around it.

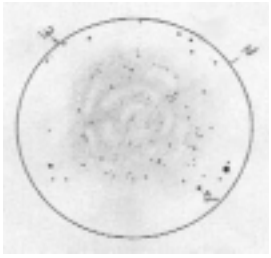
So how about a galaxy with its arms showing? Find NGC7479 in Pegasus. This mag 10.8 galaxy is a great barred spiral. A stellar core lies buried dimly in the bar that thins toward its northern and southern extremes. The brighter arm sweeps around off the southern end bending around to the west. The northern arm is thicker but much dimmer, just revealing some hints as it turns east then back closely alongside the central bar. This is an object for dark skies and higher magnification.

Get out of your backyard; you'll find a big sky, friendly and knowledgeable observers, and plenty to see.

The last two objects are open clusters, both in Cassiopeia, both large and rich, but visually very different from each other.

M52 is about 15 arc minutes in diameter and shines at mag 6.9. My notes refer to it as a bright version of NGC7789, which happens to be the next target. M52 has a bright star at its western edge, leading it as it drifts through an undriven eyepiece. The brightest stars are in the "leading" western two-thirds of the cluster. Two long streamers of stars flow back, extending out to the east. A third streamer trails off to the north. Many dim stars fill the cluster, with extensive dim outliers to the north east. M52 is a study in diversity — note the wide magnitude range of its components.

NGC7479, barred spiral in Pegasus at 276, sketched by Andreas Domenico, Germany



NHC7789, the Magnificent Cluster, open cluster in Cassiopeia, sketched by Bill Ferris using an 18mm SWA, TeleVue 3X Barlow combination through a 10-inch Newtonian

NGC7789 seems much dimmer, and you'll immediately note that virtually all the stars are quite similar in magnitude. How different from M52 it looks, but interestingly it is virtually the same size and magintude! At about 100x I am always struck by the dark channels that wind north/south. There are two of them, dividing outliers from and somewhat cradling the central ball of stars. With enough study, I see another channel curving around the core from west to east. The stars along the western edge seem brighter than the others, almost glowing like they are heated by friction as they move through space to the west. Some tail off the chain at its southern edge toward the east. Make sure to use a low power eyepiece to offset the cluster against the emptiness of surrounding fields. I am sure once you view this one, you'll return many times.

Other objects to hunt down this month are NGCs 6934, 7448, 7492, 7541, 9619, 7723, 7727, 7815, 7457, 7640 and 7678. A few noteworthy double stars are Struve 2816 (SAO 33626) in Cepheus, 41, 53 and Zeta Aquarii.

All objects described this month are visible from Montebello. Get out of your backyard; you'll find a big sky, friendly and knowledgeable observers, and plenty to see. What a difference just a short drive from home makes!

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

Mooning

Impactors

Dave North

Only one question came up this month (at least that I remember) and it's a good one: what's the relationship between the size of a crater (or mare, for that matter) and the thing that caused it (the "impactor")?

For quite some time, I've been quoting an old paper I read that claimed the impactor size clustered around approximately 10 percent of the diameter of the result.

The general argument was, the bigger the impactor, the bigger it was in relationship to the diameter of the result.

Or look at it like this: if the crater were 100 meters across, maybe the slammer was 7 meters. If it were 1000 meters, maybe the impactor was 100 meters. If the crater were 10Km, perhaps a 1.5 meter object hit there.

But it looks like all that is wrong-o.

Definitely for earth, anyway. Here are some examples from Dr. Dan Durda:

Meteor Crater in Arizona has a diameter of 1.6Km, and the impactor was probably 25 meters in diameter. Chesapeake Bay: 85/4. Chicxulub, 175/10.

The percentages work out to: about 1.6, 4.7, and 5.7 percent. So the cluster is actually around 5 percent, and the scale of their relationship sure looks like a flattening curve (though that's a pretty small sample).

Now it may seem that the Moon should be a different case. Why? At least two reasons occur immediately: there is no atmosphere, and there is less gravity.

It turns out, however, those are probably unimportant. The first is simply skewed by the fact that the impactor's size is calculated from the time of impact, not while it was in space. So if part of it burned off in the atmosphere, that part just wouldn't count toward the total diameter.

But what about the energy lost to the atmosphere? True, there is some, but it's not significant compared to the overall velocity of an impactor large enough to make a crater we'd be interested in.

Gravity is also not much of an issue in the size of a primary crater. Very little (if any) of the energy of the impactor comes from gravitational attraction to the "target body" (the Moon, in this case). Mostly it's the energy already inherent in their differing velocities in the solar system, much as your gravity has little effect on the bullet that hits you. Or, hopefully, not.

There is some argument about whether the gravity plays a role in the size of the resultant crater because there is less compaction of the soil, and "stuff" is more easily tossed about. This may be — in part — where the original 10 percent figure I tossed about was sourced.

But no, that appears to be more important in the placement of secondary craters and the dispersal of fine ejecta resulting in, among other things, rays.

Overall, the current consensus is the cluster point for size of impactor vs size of crater, both here and on the Moon, is around five percent by diameter, not ten as I have been citing.

My apologies to all those I've unwittingly misled.

Of course, all this is based on some limited experimentation and attempts to measure residual mass from known craters, and extrapolating from there.

The term for this kind of thing is "on the order of," which means the expected five percent could be off by double or more in either direction without surprising anybody.

I won't, however, hide behind that. Best data is somewhere around 20-1 on average, dropping to 40-1 on smaller bodies, and getting to 10-1 only on the very largest.

Those, of course, are the most interesting, and yield up results like Mare Orientale and Mare Imbrium. The latter is roughly 800 miles across, and could be expected to have been produced by something around 80 miles across. That's still a boggling idea.

Of course, in trying to straighten this matter out, I came across a few other interesting factoids.

One is something I've noticed before, but never seen codified by someone who actually knows something: almost all the bodies in the solar system show cratering considerably more heavily in one hemisphere than the other. This is simply anomalous at this time: unexplained.

Further (and this was not included in the paper for some reason) one hemisphere tends to be "higher" (further above the datum) than the other. Notable examples are the Moon and Mars. In both cases, the "higher" hemisphere is also the more heavily marked "highland" area.

I have no explanation. I do speculate that it may be a case of simply showing less markings because the crust is thinner and more basaltic flows occured to cover the craters on one side.

Why would it be thinner on one side? Again, I don't know. Possibly the last extremely major impacts happened on that side, blowing off differentiated crust and at the same time leaving a heavy mass deposit underneath.

Just guessing.

The other interesting thing was various speculations about the "Big Impact" theory of the formation of the Moon. In a nutshell, the idea is something about the size of Mars hit Earth, blew off a bunch of stuff, and some of that accreted to form the Moon.

The major objection is, it requires gyrations almost as obtuse as the Ptolemaic/Copernican epicycles to make the numbers work out, and any such theory lacks both likelihood and elegance.

I prefer to personally file that one under "unknown" and let it go at that for the moment.

— *Dave North*, north@znet.com

AANC Awards for 2002

The AANC recognizes oustanding and continuous support in distinguishing and fostering amateur astronomy by presenting four awards each year. These are the Amateur, Professional, Commercial and Special awards. Any AANC member club may nominate a group, individual or business for one of the awards. This year three SJAA members received awards.

Jim Van Nuland was awarded the Special award. Jim is the voice on the SJAA message board and the monthly in-town Houge Park star parties. He's the secretary of the club, and organizes the school star party program. The SJAA conducts 10 or more school star parties a month during peak star party time. You can always tell when there has been a school star party, because the SJAA receives so many "thank you" notes addressed to Mr. Van Nuland and "the other astronomers," the group of dedicated SJAA members who help out at these important events.

Jane Houston Jones was awarded the John Hewitt Memorial Award for Amateur Astronomy, named for long time AANC VP and Lawrence Hall of Science staffer who died in 1999. The professional award went to ASP's Mercury magazine editor Bob Naeye, who is also a new SJAA member. And Bob Fies, Aluminum Coating, was awarded the commercial award this year.

A full list of the awardees, going back to 1976 when the first awards were given are here: http://www.aanc-astronomy.org/AANCawards.html

Jim Van Nuland accepts his AANC Award from AANC President and fellow awardee Jane Houston Jones.

Celestial Calendar
October 2002
Richard Stanton

Lunar Phases:		Date	Rise	Trans	Set
NM	04:17 PDT	06	07:16	13:22	19:18
FQ	22:32 PDT	12	14:14	19:01	23:49
FM	00:19 PDT	21	18:55	00:58	07:36
LQ	21:27 PST	28	23:06	05:40	13:13

Nearer Planets:				R. A.	Dec.
Mercury, 1.07 A.U., Mag. -1.9					
07	05:51	11:58	18:05	11:54.5	+01:05
17	05:52	11:53	17:54	12:27.1	-00:47
27	06:30	12:12	17:53	13:24.7	-07:03
Venus, 0.30 A.U., Mag. -3.1					
07	09:59	14:45	19:32	14:42.8	-22:59
17	09:16	14:02	18:48	14:39.9	-23:06
27	08:12	13:06	18:00	14:23.2	-21:00
Mars, 2.53 A.U., Mag. 1.6					
07	05:33	11:46	17:59	11:41.8	+03:10
17	05:25	11:30	17:35	12:05.2	+00:36
27	05:17	11:14	17:11	12:28.6	-01:57
Jupiter, 5.54 A.U., Mag. -2.1					
07	02:07	09:06	16:06	09:02.8	+17:20
17	01:34	08:33	15:31	09:08.7	+16:57
27	01:01	07:59	14:56	09:13.7	+16:37
Saturn, 8.57 A.U., Mag. 0.5					
07	22:38	06:00	13:17	05:55.8	+22:07
17	21:59	05:20	12:38	05:55.7	+22:07
27	21:19	04:40	11:57	05:54.9	+22:06

SOL Star Type G2V Intelligent Life in System ?

Hours of Darkness						
09:33	07	07:08	12:55	18:43	12:50.8	-05:27
09:56	17	07:17	12:53	18:28	13:27.7	-09:12
10:17	27	07:27	12:52	18:16	14:05.6	-12:44

Astronomical Twilight:		Begin	End
JD 2,452,554	07	05:41	20:09
564	17	05:51	19:55
574	27	06:00	19:43

Sidereal Time:
Transit Right Ascension at Local Midnight

07	00:00 = 23:55
17	00:00 = 00:34
27	00:00 = 01:14

Darkest Saturday Night: 5 Oct 2002

Sunset	18:46
Twilight	20:12
Moon Set	18:47
Dawn Begin	05:40
Hours Dark	09:28

The Shallow Sky

Planets in October
Akkana Peck

In October, we finally welcome the big gas giants back into our evening skies.

Saturn rises in mid-evening and is visible for most of the night, a few months before its December opposition. Its rings still show the generous tilt they've displayed for the past few years; expect another good year of observing its beautiful ring system.

Jupiter rises around midnight and will be low in the sky for observing this month ... but at least Jupiter fans can whet their appetites for the coming months.

Neptune and Uranus are both still in Capricornus, a couple of months past opposition, and visible most of the night to any observer with a small telescope or binoculars.

Both Mars and Mercury are visible with difficulty in the predawn sky for most of the month, but will be too small to show any detail to the telescopic observer. Venus has ended its nice evening apparition, and is now too close to the sun to be visible this month; Pluto, in the early evening sky, is possible but difficult.

— Akkana Peck

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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
10	Star Spectroscope	Lew Kurtz
24	60mm Refractor	Al Kestler
27	13" Dobson	Gene Schmidt
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	Anand Acharya	12/13/02
8	14" Dobson	Jan Lynch	9/15/02
11	Orion XT6 Dob	Krishna Seshan	11/16/02
12	Orion XT8 Dob	Rajeev Joshi	10/19/02
13	Orion XT6 Dob	Mark Ziebarth	10/19/02
15	8" Dobson	Vikram Keshavamurthy	12/13/02
19	6" Newt/P Mount	Asim Parekh	11/30/02
23	6" Newt/P Mount	John Bunyan	11/30/02
26	11" Dobson	Ron Gross	11/17/02
33	10" Deep Space Explorer	Tod Irwin	11/28/02
34	Dynamax 8" S/C	Lee Barford	11/16/02
35	Meade 8" Equatorial	Carl Ching	12/13/02
36	Celestron 8" f/6 Skyhopper	Tajinder Singh	9/27/02
37	4" Fluorite Refractor	Steve Sergeant	11/16/02

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	?
3	4" Quantum S/C	Hsin I Huang	10/8/02
7	12.5" Dobson	Michael Lagae	10/19/02
9	C-11 Compustar	Paul Barton	Indefinite
14	8" f/8.5 Dob	John Templeton	10/5/02
16	Solar Scope	Bob Havner	9/18/02
21	10" Dobson	Ralph Seguin	Repair
28	13" Dobson	Michael Dajewski	10/31/02
29	C8, Astrophotography	Mike Macedo	11/17/02

Waiting List:

3	4" Quantum S/C	Eric Anderson
8	14" Dobson	Ron Gross
13	Orion XT6 Dob	Lakshminarasimhan Venkatavaradan
16	Solar Scope	Suzanne P.
27	13" Dobson	Richard Savage
29	C8, Astrophotography	Murali Balasubramaniam
32	6" f/7 Dobson	Vinod Nagarajan

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)

Please write one check for the total payable to "SJAA"

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

San Jose Astronomical Association
P.O. Box 28243
San Jose, CA 95159-8243

Name: _____

Address: _____

_____

Phone: _____

e-mail address: _____

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SAN JOSE, CALIFORNIA

Br. Guy Consolmagno
October 19 General Meeting