



SJAA EPHEMERIS

The Messier Marathon at Henry Coe State Park

Vivek Mohan

It began, like almost all activities, with a groan. "Come on, it's a Saturday night, do we have to go to the Messier Marathon?" "Let's watch a movie instead." It ended, also, with a groan, but on a different note — "Are we leaving already?" "Can't we stay a little longer?" All in all, the Messier Marathon at Henry Coe State Park was a fun experience.

We loaded our 6" dob (on loan from SJAA) and drove over to our friend's house. Mr. Kumar brought his 6" equatorial and his 10 year old son,

and no amount of tweaking, prodding, or adjusting it could fix the problem.

Using the other scope, we quickly located the easiest of the Messier objects — M42 and M43, otherwise known as Orion's Nebula and de Mairan's Nebula (located slightly below Orion's belt.) Another easy-to-locate object, M36, in Auriga, was next. The other two Messier objects in Auriga, M37 and M38, were easy to find from there.

However, locating objects without a viewfinder was proving to be a difficult exercise. M81 was the next object on the list, and it was more difficult to locate than it should have been. We decided to take a walk around and look at the other telescopes there. Some of the very large scopes, a 20" scope and 18" scope, were next to us. We kept admiring the scopes themselves, which

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"When it was time to leave, my younger brother and I asked for the traditional 'five more minutes' ..."

and we were set to go. We ascended the mountain on a long and winding road. Twelve miles of twisting mountain road without guardrails was enough to make anyone wonder if this was going to be worth the while. When we reached the small parking lot at the peak in fading daylight, we drove past all kinds of amazing scopes ranging from 4" to 20" behemoths. Pulling into one of the few empty parking spots, we quickly unpacked our two small scopes. However, we soon realized that the viewfinder on our dob was broken,



Observers getting ready for the Messier Marathon at Henry Coe State Park. Photo by Paul Kohlmeier.

SJAA activities calendar

Jim Van Nuland

May

- 3** Deep sky weekend. Sunset 7:59 p.m., 7% Moon sets 10:23 p.m.
- 9** Houge Park star party, 9:00 p.m. to midnight. Sunset 8:04 p.m., 57% Moon sets 3:06 a.m.
- 10** ATM class. Houge Park, 7:30 p.m. Astronomy Day observed May 9
- 15** Lunar Eclipse. Sunset 8:09 p.m. Moon rises in eclipse 8:03 p.m.
- 17** **General meeting**, Houge Park. 8:00 p.m. Norm Sperling on his new book *What Your Astronomy Textbook Won't Tell You*
- 22** ATM class. Houge Park, 7:30 p.m.
- 23** Astronomy class. Houge Park, 7:30 p.m., subject TBA
- 23** Houge Park star party, 9:30 p.m. to midnight. Sunset 8:16 p.m., 39% Moon rises 2:56 a.m.
- 24** Deep sky weekend. Sunset 8:17 p.m., 27% Moon rises 3:21 a.m.
- 31** Deep sky weekend. Sunset 8:22 p.m., 1% Moon rises 9:15 p.m.

June

- 6** Houge Park star party, 9:30 p.m. to midnight. Sunset 8:25 p.m., 43% Moon sets 1:39 a.m.
- 7** ATM class. Houge Park, 7:30 p.m.
- 14** **General meeting**, Houge Park. 8:00 p.m. Scott Sandford, Stardust mission (to be confirmed)
- 19** ATM class. Houge Park, 7:30 p.m.
- 20** Astronomy class. Houge Park, 7:30 p.m. subject TBA
- 20** Houge Park star party. Sunset 8:31 p.m., 552% Moon rises 1:24 a.m. Star party hours 9:30 p.m. to midnight
- 21** Deep sky weekend. Sunset 8:31 p.m., 43% Moon rises 1:47 a.m.
- 28** Deep sky weekend. Sunset 8:32 p.m., 0% Moon rises 5:31 a.m.
- 25-30** Wednesday - Monday Shingletown Star party

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

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<http://www.sjaa.net>

involved precision work by their owners who built them. The gentlemen who had built these incredible scopes were very friendly and patient with us as they showed us several Messier objects. Using the 18" which was partially computer controlled, we focused on M81 and 82, Bode's Galaxy and the Cigar Galaxy. We took a look and were amazed. We saw M81 as a huge spiral, with a small elongated shape to the left — M82. Looking through that telescope was amazing — almost as if one was in an observatory.

One of the gentlemen with the large scopes prompted us to bring the defective dob over and volunteered to locate M81 for us without the viewfinder. I brought the scope to him and he easily pointed it towards M81. Sure enough, it was just as amazing through our humble six-inch dob. Then we used the 18" scope to see an amazing combination — Saturn and M1, the Crab Nebula, in a single field of view in the 18" scope, as they happened to be very close together in the sky. What a contrast!

We moved to another telescope, this one a smaller ten-inch, and helped look for clusters. In Leo, we found the elusive (at least for us) galaxies of M95 and M96. Back at our base camp, we learned to use our other telescope, one on an equatorial mount with tracking. With a fair dose of luck and help, we located M45 in Taurus. By the time we had done all this, it was getting quite late and we were feeling somewhat cold.

When it was time to leave, my younger brother Vijay and I asked for the traditional "five more minutes," hoping to get my parents hooked for another half hour or so. However, we had to leave, as both of our families had commitments the next morning.

— Vivek Mohan,

sandhya.mohan@cvt.com (I am 15 years old, my brother Vijay is 10).

[Editors note: Vivek's first article, *The 6" dob*, was published in the March 2001 *Ephemeris* <http://ephemeris.sjaa.net/0103/b.html>]

A big "thank you" should go out to Bob Havner for organizing the 2003 SJAA Messier Marathon. His email notices got me eager to get out under the stars for a full night of observing.

The week leading up to our official marathon night featured some of the best clear skies I had seen in months, but it was not destined to last. Increasing haze and high thin clouds filled the sky by Saturday afternoon. Fortunately a strong north to south airflow kept dry air over our observing site all night long. Dew was not a problem.

I chose to use two refractors for my Messier observations. I bolted a 4.8-inch f/5 (Orion ST120) onto a 4-inch f/10 (Celestron C102), giving me a short, fast, widefield view side-by-side with a sharp, higher magnification view.

"This year added three nice planetary appearances to the Marthon ..."

The ST120 combined with a 40mm eyepiece and a Skyview filter gave around 3 degrees of field-of-view, which is well matched to the finder charts in the *Messier Marathon Observer's Guide* by Don Machholz.

As the evening darkened into night, haze on the western horizon blocked five of the first six search objects. Not the best way to start perhaps, but that's part of the challenge. By 9:30 p.m., I was well into the hunt.

The last time I tried the Messier Marathon, I got caught in a trap at Cygnus. When I finished M57 and M56 in Lyra, Don's search order indicates a move east to find M29 in Cygnus. At 2 a.m., Cygnus is low in the east and I made the mistake of taking a break and waiting for it to rise. This is a time trap since I could run out of time in the morning. This year I tried a slightly different search order which moves from M56 to M107 in Ophiuchus. After searching through Ophiuchus and Scorpius for 11 M-objects, I can go

back to pickup the 4 objects in Cygnus, Vulpecula, and Sagitta which have risen higher in the sky. (Search order: 71, 72, 77 to 87, then go back for 73 to 76, forward to 88, 89, and so forth.)

This year added three nice planetary appearances to the Marathon: Saturn was still quite close to M1; M44 & Jupiter practically merged into one cluster with all 4 Galilean moons stretched out between the planet and the cluster; and small but growing Mars in the morning sky. Vesta reached opposition the day before our marathon and delighted us with observable motion as it passed background stars in Virgo near 12:38 R.A. and +09 deg 38 min dec. from 12:30 a.m. to 3:30 a.m.

So how did I do? Well, when I lived back east, my Messier marthoning usually found 40 or 50 objects between and through the clouds. Out here in the west, my previous best total was 87. This year I found 103, missing M77, M74, M33, M32, M110, M79, and M30. Perhaps more impressive is that 4 observers stuck with the marathon through the entire night. It was fun.

— Bob Brauer,

Robert_N_Brauer@compuserve.com

Directions to Houge Park

Houge (rhymes with "Yogi") Park is in San Jose, near Campbell and Los Gatos. From Hwy. 17, take the Camden Avenue exit. Go east 0.4 miles, and turn right at the light, onto Bascom Avenue. At the next light, turn left onto Woodard Road. At the first stop sign, turn right onto Twilight Drive. Go three blocks, cross Sunrise Drive, then turn left into the park.

From Hwy. 85, take the Bascom Avenue exit. Go north, and turn right at the first traffic light, onto White Oaks Road. At the first stop sign, turn left onto Twilight Drive. You will now be passing the park. Turn right at the first driveway, into the parking lot.

Good news and bad news

Akkana Peck

I've got some good news and some bad news for the May shallow sky.

The good news: Mercury will transit the sun on May 7.

The bad news: we won't see it from here.

This transit is visible at sunrise from the east coast of North America, at sunset from Alaska, but to see it high in the sky you have to go to Eurasia or Africa.

I know I shouldn't complain, after we got such a good view of the transit in 1999, but that was so much fun that I'm tempted to schedule a trip to see this one. We found out that a small travel scope worked fine. Or wait 'til November 2006, when another Mercury transit will be visible from here. The transit of Venus next year (June 2004) has almost exactly the same visibility as this month's Mercury transit (that certainly sounds worth a trip!) but for the June 2012 Venus transit, San Jose gets a sunset view (sounds like a spectacular photo opportunity!)

More good news: there's still time to catch Jupiter in its current pass! It's still observable in the western sky during early evening. Try setting up right around sunset: sometimes the sky is extremely steady for an hour or so after sunset, and Jupiter is plenty bright enough to show detail even in a twilight sky.

Bad news: Saturn is going ... going ... not quite gone; you can still catch it low in the sunset twilight for part of the month. Never fear; the rings will still be fairly wide open when it returns this fall.

Mars rises around 1:00 a.m., and is gradually drawing closer to us, but it's still too far away to show much detail yet. But just wait a few months! Meanwhile, it's hanging out with Neptune in Capricornus, while Uranus tags a bit behind them in Aquarius.

Venus rises in the morning about an hour before the sun, and will be difficult to catch.

— Akkana Peck,
observer@shallowsky.org

respect to the sun.

But it does net out to a leading edge, and whether that has any effect on larger cratering numbers is a mystery to me.

We don't have such an "edge" of course because of spinning on our axis. But we sure do know the leading edge counts with meteor showers!

"Why not?" is practically an impossible question to answer with any meaning, of course. It's rhetorical, but if somebody higher up the research food chain decides this is a good idea, remember where you heard it first (and that it wasn't my idea).

If they're already doing it and we don't know about it, you can remember who doesn't know jack...

The other "why not" question is, why isn't Rukl's *Atlas Of The Moon* back in print yet?

Now there's a question I really don't know the answer to. It certainly has been popular, and there's definitely demand.

But it's missing in action.

Various rumors abound, and surface from time to time. The best I know is Kalmbach sold the rights to Sky Publications, who planned to issue a new edition (which I'm told Antonin Rukl was working on).

This seemed to be taking way too long years ago when I first started getting bugged by the missing book. I do recall being chastised by some SkyPub apologists who said matters were well in hand and a magnificent new atlas would soon be issued.

That was at least a year ago, probably more like two.

SkyPub has since published several inferior atlases, and when I say inferior I mean *way* inferior. It would seem simply reprinting the existing edition might have been a worthwhile effort, considering how long the market has been dead dry.

But no.

Then again, maybe they don't watch eBay or amazon where they are in hot demand, and often sell for somewhat more than the old list price.

Maybe they don't know it used to be the amateur Moon Bible.

Continued on next page

Mooning

We may not know

Dave North

Came down near the wire, but I finally got a couple of interesting questions for this month. Both share a characteristic in that they really ask, why not? And both share the same answer:

I don't know.

Which doesn't make them any less interesting.

The first comes from Bill Arnett, who wondered why there isn't anyone running a periodic survey of the Moon to see what new craters have appeared.

This is a darn good question.

Of course, even with adaptive optics, we wouldn't be able to see all the microcraters that appear, but we should be able to see some fairly small ones.

Bill speculated "There must be lots of them every year a few 10s of meters in diameter." May be right, maybe not, but in any event we just don't know!

It would be great to be able to cover the prime zones of the visible side, but even if just some smaller sample areas were covered, we could get a count of some sort.

One thing I don't know is whether it makes any significant difference if one is counting on the "leading" edge or the "trailing" edge. Since the Moon is tidally locked, it has a leading edge in its orbit around us ... but of course it follows our orbit too, which means some fraction of the month it has a net velocity along its trailing edge with

We may not know

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But of course the various Big Decision Makers at SkyPub all read this column every month, and when you see Rukl's great book back in print, you'll know which agitator finally got them to wake up.

Sure.

I guess this is just kind of an "I don't know" month.

Oh, by the way: there will be a "moonrise" lunar eclipse May 15; be set up around 8:30 and you'll be able to

watch an eclipsed Moon rise somewhere above the east hills (depends on where you are, of course).

Best to make sure you have a clear horizon. Should be fun to watch, since it will remain eclipsed as twilight sets in, plus there will be the unnatural coloration of both the eclipse and the horizon.

There's also an annular solar eclipse on May 31, but as best I can bone out from the numbers, we won't see it at all.

Oh well!

— *Dave North*, north@znet.com

Out there

Between the serpents

Mark Wagner

Last month's "Out there" centered on April 26. New moon has gradually shifted to the beginning/end of the month, so let's "re-time" things to coincide with the arrival of your newsletter.

This article is for May 3rd new moon weekend. I've selected a two-hour observing window between R.A. 13:38 and 15:38, rising in the east at astronomical dark. We'll travel from the serpent of the north — Draco — to the southern serpent — Hydra.

Begin with NGC 5907 (15 15.0 +56 19) in Draco. Locate Thuban between Alcor in the Big Dipper and the end bowl stars in the Little Dipper. Follow Draco toward the Keystone in Hercules to mag 3.3 star Edasich then hop just under 3° WSW. This mag 10.3 edge on galaxy (12.6'x1.4') is sharp and shows a great dust lane.

NGC 5473 (14 04.7 +54 54) — find Alcor and Alkaid, the two end stars of the Big Dipper's handle. Imagine a right angle east of these stars, placing you close to M101. If you land on M101 move about 1/2° north. At mag 11.4 this 2.3'x1.7' elliptical galaxy should be easy to see. From the Shingletown Star Party last year, observers were picking off a number of fainter galaxies in this area.

Continue about 6-1/2° southeast, in Bootes. If you use a Telrad, get mag 4.4 Theta Bootis on the northwest outer

circle. A pair of mid-mag 5 stars will be near the center, and NGC 5676 (14 32.0 +49 27) should be between them. This mag 11.2 type C spiral is 4.0'x1.9' was easily visible from my Los Gatos backyard in mag 4.2 skies with a 14.5" dob.

Just under 1° SSE you will find NGC 5689 (14 35.0 +48 44). In a good dark sky this area is rich in galaxies. On the same night from my backyard it too was fairly obvious, which it should

"The effort to get to darker skies is small and the rewarding views so many."

be since at mag 11.9 it is nearly as bright as 5676. My notes say it is smaller (3.5'x1.0') than 5676, and elongated E/W with a bright core.

Next is NGC 5557 (14 18.0 +36 29), a nice mag 11 elliptical galaxy. Easy to locate using in northern Bootes with mag 3.9 Nekkar (the top of the kite) imagine a line to mag 3 Seginus (the western star in the kite) and continue 6° further. From Lake Sonoma's dark skies with her 17.5" dob, Jane Houston Jones writes "NGC 5544, 5545 and 5557... a nice trio... all three fit in the field of view at 125x with a 16 Nagler. They barely squeeze into the 9 Nagler view."

Edge on galaxy in Virgo, NGC 5746 by Andreas Domenico

7° to the west is NGC 5273 (13 42.0 +35 39) a 2.8'x2.5' elliptical galaxy in Canes Venatici. There are three stars under mag 5 in the area, two close together. The outer circle on a Telrad will just touch the two outer stars, and put the galaxy nearby. From my backyard with a 14.5" dob I wrote "The galaxy is between the mag 4.8 and mag 6 star, just to the east. Its dim glow is round and featureless, but it is there, and fun to find."

Jump south over 23° into Virgo. From 5273, find mag 2.7 star Murphid, the bright one just west of Arcturus. Continue toward mag 4.2 Tau Virginis. Located between two mag 6 stars north of Tau is NGC 5363 (13 56.0 +05 15) a mag 10.1 irregular galaxy measuring 4.1'x2.6' and NGC 5364 (13 56.0 +05 00) a mag 10.5 6.8'x4.4' spiral galaxy.

Continued on next page

Elliptical galaxy NGC 5846 and one of three others nearby by Andreas Domenico

Between the serpents

Continued from previous page

There are five galaxies here under mag 13.5 that will fit into one eyepiece field. Matthew Marcus with a C8 writes from Lake Sonoma "A nice trio. 63 is the brightest. 64 is fainter but larger, round and with no obvious core. 60 is much smaller and fainter. I couldn't find 5373 which should be there."

13° east is the mag 3.7 star 109 Virginis and NGC 5746 (14 44.0 +01 57). At 7.4'x1.3' this pretty edge on mag 10.3 spiral is described by William Schultz from Henry Coe State Park "This edge-on galaxy is superb! The dust lane was quite evident and the overall texture of the object appeared granular through the C-11."

Move 4-1/2° east of 109 Virginis, just past mag 4.4 110 Virginis to find the mag 10 4.1'x3.8' elliptical galaxy NGC 5846 (15 06.0 +01 36). Randy Muller, observing under Mt. Lassen's mag 7 skies writes about "a small group of 4 galaxies in a row: NGC 5850, 5846, 5845, and 5839. These are each about 10 arcminutes apart and are regularly spaced almost on a line. Two of them are very bright, and two are fairly dim, though still easy to see."

From 109 Virginis drop due south to mag 3.9 107 Virginis, and then imagine a line west to mag 4.1 99 Virginis. Halfway between is a mag 6 star, just to its east is NGC 5634 (29

cluster. Only 4.9' in size, this mag 9.4 object should be easy. From Henry Coe, Jamie Dillon writes "Off in SE Virgo is an interesting globular, NGC 5634. At 210x it showed a ragged edge, bright core, didn't resolve, so it really did look like a galaxy. Looked distant, and sure enough it's marked as 70 kly away."

Jump almost 19° southeast into the center of Libra. We're after globular cluster NGC 5897 (15 17.0 -21 00), three times the size as the previous globular at 12.6', but not much brighter at mag 8.6.

Look for mag 3.9 Gamma Librae and to its south, mag 3.2 Sigma Librae. The globular is

slightly toward Sigma between the two stars. It is interesting comparing it to globulars of similar size. Look at nearby M5, then at 5897. Others you may want to view are NGC 5053 (next to M53) in Coma Berenices and NGC 5466 (compare it to nearby M3) near where our tour began, up in Bootes.

Our last object this month is another globular cluster which makes sense. As we approach summer skies and the plane of our galaxy, we are bound to see more of this class of object. NGC 5694 (14 39.36 -26.32) is a mottled globular at 4.2', its mag 10 should give a reasonable surface brightness. Easy to locate in eastern-most Hydra, start at Sigma Librae, moving 4° SSW to 58 Hydrae and

following the chain of stars north. Placing the chain of stars inside the western edge of your Telrad should put the globular in view. Bob Jardine observed it from Montebello OSP, in the hills above Palo Alto, and writes "a very distant globular in Hydra; according to one book I have, it is fully 110,000 LY away! No surprise, it was smaller and dimmer than your average GCs."

If you are interested in experiencing the magic of real dark skies this summer, two upcoming star parties fit the bill, with lots of fun with plenty of

Web site addresses:

Shingletown Star Party: <http://www.shingletownstarparty.org>

CalStar: <http://www.sjaa.net/calstar2003.html>

TAC: <http://www.observers.org>

friendly observers. The Shingletown Star Party near Mount Lassen in late June and CalStar at Lake San Antonio in late September. You need not be an experienced deep sky observer to enjoy these events ... they are geared for ages 8 to 80. Remember too, there are many good observing sites within an hour drive of the bay area. Look at TAC's website to see where observers you read about in these articles are going.

The effort to get to darker skies is small and the rewarding views so many. So, get up, and get "Out there."

— Mark Wagner, mgw@resource-intl.com

May program: Norm Sperling

What your astronomy textbook won't tell you

Looking at the night sky often inspires us to learn more about the universe in general, and astronomy in particular. Unfortunately, an Astronomy textbook can sometimes be more of a hindrance to learning than a useful resource. Norm Sperling has been teaching Astronomy for a long time, and he believes he has gotten to the

root of this problem.

Norm aims wit and wisdom at popular textbook oxymorons such as "frozen gases." He points out that spiral galaxies are not typical, but "With galaxies, as with people, pictures show the most attractive, not the most typical." He also points out several areas of research in Astronomy that are mostly overlooked.



NGC 5907 — the classic edge-on galaxy in Draco by Andreas Domenico

CAM and KAO

Hsin I Huang

"Speed Limit 17,500 MPH," a sign is posted on the inside wall of the Centrifuge Accommodation Module (CAM), a mock-up for the International Space Station. I wonder if you get a ticket if you fire an extra thrust, or the space cops will give you a 5 MPH courtesy.

The students in the Project Astro Program at Peterson Middle School, Sunnyvale got a special treat on March 18. Through a special arrangement by fellow astronomer in the project, Brian Day, they toured the NASA/Ames Research Center in Mountain View. Everyone was excited about the biological research programs performed in the CAM.

Later, they were led to Kuiper Airborne Observatory (KAO). KAO, a C-141 military cargo plane, began its operation in February 1974. Flying at 41,000 feet, this unique observatory allowed astronomical observations above the cloud cover. With its 36-inch infrared cassegrain reflecting scope, it claims the fame of finding the rings around Uranus, among many other discoveries. You may wonder how the scope keeps fixed on a target when the plane is in flight. With a special design, the scope essentially floats in the air, according to the crew. It takes a lot of bumping, but keeps on steady observing.

The plane is no longer in operation. It is parked near the huge Muffett Hanger, visible from Freeway 101.

Before heading back to school,



Two students from Peterson Middle School check the accommodations in the flight deck for KAO. Photo by the author.

the students saw the tiny back-up space capsule Alan Shepard was supposed to use in his Freedom flight.

I keep hoping that this trip will entice some of the students to become future astronomers or even astronauts.

— Hsin I Huang,
hsin_i_huang@yahoo.com



Peterson Middle School students boarding the Kuiper Airborne Observatory. Photo by the author.

Be a visiting astronomer in a local school

Kristin Nelson, Project Astro

Project ASTRO is looking for amateur or professional astronomers who would like to work with teachers and students in 4th - 9th grade classrooms. This is a great opportunity to help kids learn science, sharing your love of astronomy with the most enthusiastic audience you can find.

Astronomer applications are now being accepted for the 2003 - 2004 school year. The deadline is May 9. Space is limited to 25 partnerships. All participants must attend a hands-on training workshop, which will be held August 15 & 16, 2003, at the San Mateo County Office of Education in Redwood City.

More information and astronomer application forms are available from:
Kristin Nelson, Project ASTRO,
Tel. 415-337-1100 ext. 101; E-mail:
astro@astrosociety.org

Forms can also be downloaded from: <http://www.astrosociety.org/education/astro/bayarea/volunteer.html>

Celestial calendar

May 2003

Richard Stanton

Lunar Phases:	Date	Rise	Trans	Set
NM 05:14 PDT	01	05:51	13:09	20:45
FQ 04:52 PDT	09	11:30	19:47	03:22
FM 20:35 PDT	15	20:25	00:02	04:58
LQ 17:30 PDT	22	02:45	11:51	19:01
NM 21:31 PDT	30	04:28	12:35	21:00

Nearer Planets:	R. A.	Dec.
Mercury, 0.58 A.U., Mag. 1.4		
07 06:04 13:01 19:57	02:55.1	+16:42
17 05:22 12:06 18:50	02:39.0	+12:56
27 04:53 11:36 18:19	02:46.3	+12:13

Venus, 1.50 A.U., Mag. 4.1	R. A.	Dec.
07 04:59 11:21 17:45	01:12.1	+05:49
17 04:50 11:28 18:06	01:57.6	+10:17
27 04:44 11:35 18:27	02:44.4	+14:11

Mars, 0.86 A.U., Mag. +1.1	R. A.	Dec.
07 01:57 06:56 11:56	20:47.6	-19:39
17 01:36 06:40 11:44	21:10.9	-18:26
27 01:15 06:23 11:31	21:33.0	-17:11

Jupiter, 5.52 A.U., Mag. 2.0	R. A.	Dec.
07 11:51 18:56 02:04	08:49.4	+18:38
17 11:17 18:21 01:28	08:53.8	+18:20
27 10:45 17:47 00:52	08:59.0	+17:58

Saturn, 9.87 A.U., Mag. +0.9	R. A.	Dec.
07 08:33 15:52 23:11	05:45.4	+22:30
17 07:58 15:18 22:37	05:50.3	+22:33
27 07:24 14:44 22:03	05:55.5	+22:35

SOL Star Type G2V	Intelligent Life in System ?
Hours of Darkness	
06:38 07 06:04 13:04 20:05 02:55.2	-16:42
06:11 17 05:55 13:04 20:14 03:34.3	-19:14
05:48 27 05:48 13:05 20:22 04:14.5	-21:14

Astronomical Twilight:	Begin	End
JD 2,452,766 07	04:24	21:46
776 17	04:10	21:59
786 27	03:39	22:11

Sidereal Time:
Transit Right Ascension at Local Midnight
07 00:00 = 13:51
17 00:00 = 14:30
27 00:00 = 15:10

Darkest Saturday Night: 31 May 2003
Sunset 20:25
Twilight 22:16
Moon Set 21:19
Dawn Begin 03:56
Hours Dark 05:40

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Publication Statement

SJAA Ephemeris, newsletter of the San Jose Astronomical Association, is published monthly, 12 times a year, January through December.
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
15	8" Dobson	Vikram Keshavamurthy
16	Solar Scope	Bob Havner
23	6" Newt/P Mount	John Bunyan
24	60mm Refractor	Al Kestler
28	13" Dobson	Michael Dajewski
32	6" f/7 Dobson	Sandy Mohan
35	Meade 8" Equatorial	Carl Ching
38	Meade 4.5" Digital Newt	Tej Kohli

Scope loans

These are scopes that have been recently loaned out. If you are interested in borrowing one of these scopes, you will be placed on the waiting list until the scope becomes available after the due date.

# Scope	Description	Borrower	Due Date
6	8" Celestron S/C	Ashwath Kakhandiki	5/7/03
8	14" Dobson	Ron Gross	4/3/03
11	Orion XT6 Dob	Tina Mia Kurth	5/22/03
12	Orion XT8 Dob	Vinod Nagarajan	4/8/03
13	Orion XT6 Dob	Jay Natarajan	5/10/03
26	11" Dobson	Jan Lynch	4/3/03
29	C8, Astrophotography	Alfred Vicalar	5/9/03
34	Dynamax 8" S/C	Mike Macedo	5/7/03
36	Celestron 8" f/6 Skyhopper	Dennis Hong	5/23/03
37	4" Fluorite Refractor	Jeff Crilly	6/3/03

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	?
9	C-11 Compustar	Paul Barton	Indefinite
14	8" f/8.5 Dob	Tom Frerickson	4/19/03
19	6" Newt/P Mount	Daryn Baker	3/27/03
21	10" Dobson	Ralph Seguin	Repair
27	13" Dobson	Richard Savage	3/21/03
33	10" Deep Space Explorer	Michael Wright	2/15/03
39	17" Dobson	Patrick Lewis	Repair

Waiting list:

6	8" Celestron S/C	Carl Ching
10	Star Spectroscope	David Kingsley, Keng The
12	Orion XT8 Dob	Rob Hawley
	A Big Dobsonian	Craig Colvin

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 accept multi-year subscriptions through the club program. Allow 2 months lead time.)

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

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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