



SJAA EPHEMERIS

SJAA Activities Calendar

Jim Van Nuland

late March

- 23 Astronomy Class at Houge Park. The subject will be the moon led by Akkana Peck. 7:30 p.m.
- 23 Houge Park star party. Sunset 7:22 p.m., 34% moon sets 1:31 a.m. Star party hours: 8:30 to 11:30
- 24 Mirror-making workshop at Houge Park. 7:30 p.m.

April

- 1 **SJAA/Bay Area Annual Auction XXVII.** Noon to late afternoon.
- 5 Mirror-making workshop at Houge Park. 7:30 p.m.
- 6 Astronomy Class at Houge Park. Dave North will tell us of more lunar observing projects. 7:30 p.m.
- 6 Houge Park star party. Sunset 7:35 p.m., 82% moon rise 11:54 p.m. Star party hours: 8:30 to 11:30
- 7 Dark sky weekend. Sunset 7:36 p.m., 74% moon rise 0:54 a.m.
- 14 Dark sky weekend. Sunset 7:42 p.m., 7% moon rise 4:57 a.m.
- 20 Houge Park Astro Day. Sunset 7:47 p.m., 20% moon sets 0:20 a.m. Star party hours: 8:30 to 11:30 p.m.
- 21 Mirror-making workshop at Houge Park. 7:30 p.m.
- 28 **General meeting at Houge Park.** Karrie Gilbert will speak on Studies of Andromeda Galaxy Halo Stars. 8 p.m.

May

- 5 Mirror-making workshop at Houge Park. 7:30 p.m.
- 11 Astronomy Class at Houge Park.
- 11 Houge Park star party. Sunset 8:06 p.m., 27% moon rise 3:23 a.m. Star party hours: 9:00 to midnight.
- 12 Dark sky weekend. Sunset 8:07 p.m., 17% moon rise 3:50 a.m.
- 17 Mirror-making workshop at Houge Park. 7:30 p.m.
- 19 Dark sky weekend. Sunset 8:13 p.m., 16% moon sets 11:57 p.m.
- 25 Houge Park star party. Sunset 8:17 p.m., 72% moon sets 2:52 p.m. Star party hours: 9:00 to midnight.
- 26 **General meeting at Houge Park.** 8 p.m.

The Board of Directors meets at 6:00 p.m. preceding each general meeting. All are welcome.

24 hour news and information hotline:

(408) 559-1221

Leadership Changes

At the March General meeting the SJAA officers were elected.

The results are as follows:

- Rob Hawley — President
- Rich Neuschaefer — Vice President
- Gary Mitchell — Treasurer
- Craig Scull — Secretary

Mike Koop Leaves Presidency

Michael Koop is no longer president of the SJAA. Mike has been the most visible face and voice of the San Jose Astronomical Association for several years. He joined the board of directors in 1998 and became president in 2001. He received the AANC Amateur Astronomer Award from the Astronomical Association of Northern California in 2005. It wasn't difficult to find reasons to give him this award.

He has run the loaner scope program since the 1990's. He usually does the "What's up in the sky tonight" portion of the star parties at Houge. He headed up the mirror-making workshop classes and he set up several meteor counting parties. In fact, Mike has helped raise the profile of the SJAA by taking part in projects such as the Leonid Multi-Instrument Aircraft Campaign. He has served as Vice-President of both SJAA and AANC. He also led the effort to make a compendium of Ephemeris newsletters available on CD-ROM.



His passion for astronomy is clear but less obvious is the way in which he guided the SJAA through difficult issues. His easy-going manner belies the fact that he always gets things done. We thank Mike Koop for all that he has done and will continue to do for the SJAA.

Hot News Links

The SJAA Auction starts at noon on April 1. See details at <http://ephemeris.sjaa.net/0703/e.html> or check out the website at <http://www.sjaa.net>.

The annual Yosemite trip is being planned. See Jim Van Nuland's article at <http://ephemeris.sjaa.net/0703/k.html>.

See information about our special speaker at the April 28 General Meeting on page 6 of this issue.

DEEP SKY OBSERVING

by Mark Wagner

April 2007 third quarter to new moon observing list The list begins in the north and moves southward. Objects are within roughly a two hour section of right ascension that is at a comfortable elevation to the east at astronomical dark. This list is just a sampling of the full list which is at <http://www.resource-intl.com/Deep.Sky.Apr.07.html>.

TARGET	CONST.	TYPE	SIZE	MAG.	RA	DEC
Arp 104	Ursa Major	Galaxy	2.9'x1.6'	12.3	13h 32m 08s	62° 45' 53"
<i>NGC 5218 in photos is connected by streamer to NGC 5126. NGC 5007 in field.</i>						
Arp 239	Ursa Major	Galaxy	0.8' x 0.6'	13.5	13h 41d 39s	55° 40' 12"
<i>NGC 5278 interacting with NGC 5279. Very close pair.</i>						
Arp 224	Ursa Major	Galaxy	2.1'x1.2'	13.1	11h 51m 06s	55° 04' 24"
<i>NGC 3921. Part of AGC 1400. Nice field for aperture.</i>						
NGC 5473	Ursa Major	Galaxy	2.3'x1.8'	12.4	14h 04m 43s	54° 53' 35"
<i>Next to M101</i>						
NGC 5474	Ursa Major	Galaxy	4.7'x4.7'	11.3	14h 05m 01s	53° 39' 38"
<i>Next to M101</i>						
Arp 18	Ursa Major	Galaxy	5.3'x2.1'	11.2	12h 05m 34s	50° 32' 23"
<i>NGC 4088</i>						
M51	Canes Venatici	Galaxy	10.3'x8.1'	9.01	13h 29m 53s	47° 11' 48"
<i>Arp 85 with M51B (NGC 5196). See the "Bridge?"</i>						
N5103	Canes Venatici	Galaxy	1.4'x0.9'	13.6	13h 20m 30s	45° 05' 01"
<i>NGC 4088</i>						
M63	Canes Venatici	Galaxy	13.7' x 7.3'	12.5	13h 15m 49s	42° 02' 06"
<i>NGC 5055</i>						
Arp 269	Canes Venatici	Galaxy	6.3'x2.7'	10.2	12h 30m 36s	41° 38' 33"
<i>NGC 4490 interacting with NGC 4485</i>						
Arp 23	Canes Venatici	Galaxy	4.2'x3.4'	12	12h 41m 32s	41° 09' 02"
<i>NGC 4618</i>						
NGC 5557	Bootes	Galaxy	3.6'x3.2'	11.9	14h 18m 25s	39° 29' 36"
<i>Near NGC 5529</i>						
NGC 5273	Canes Venatici	Galaxy	2.7'x2.4'	12.4	13h 42m 08s	35° 39' 19"
<i>Next to NGC 5276</i>						
Arp 313	Ursa Major	Galaxy	1.5'x1.0'	13.3	11h 57m 37s	32° 16' 39"
<i>NGC 3394 one of three elongated galaxies, bright knot at one end.</i>						
Arp 266	Canes Venatici	Galaxy	4.2'x1.5'	12.9	12h 59m 02s	31° 54' 46"
<i>NGC 4861 - bright know at end responds will to OIII</i>						
Arp 242	Coma Berenices	Galaxy	2.6'x0.5'	13.8	12h 46m 10s	30° 44' 49"
<i>NGC 4676B interacting with NGC 4676A. Nice edge on.</i>						
NGC 5466	Bootes	Globular Cluster	9.0'	9.2	14h 05m 27s	28° 32' 04"
<i>Very dim challenge globular.</i>						

Note: Source catalogs are Messier, Arp, Abell Planetary, Abell Galaxy Cluster (AGC), Hickson Compact Galaxy (HCG), Herschel 400-I, Herschel 400-II. Herschel 400-I are identified as NGCXXXX, Herschel 400-II as NXXXX.



PROJECT
ASTRO

Volunteer Astronomer Information 2007-2008



BE A VISITING ASTRONOMER IN A LOCAL SCHOOL Get Free Training and Materials with Project ASTRO™

Project ASTRO is looking for amateur and professional astronomers throughout the Bay Area interested in an incredible opportunity to work with teachers and students in 3rd - 9th grade classrooms. This is a great chance to help kids learn science, sharing your love of astronomy with the most enthusiastic audience you can find (and sharpening your teaching or communication skills in the process).

Through Project ASTRO, you will be paired in a one-on-one partnership with a Bay Area teacher at a school near you. Together, astronomer and teacher partners attend a free two-day summer training workshop where they learn effective hands-on astronomy activities. You will also be given a copy of Project ASTRO's rich curriculum resource book, "The Universe at Your Fingertips", materials to lead hands-on activities, invitations to additional workshops, and access to the Project ASTRO lending library.

The project emphasizes ongoing partnerships, not just one-time class visits.

During the school year, astronomers make at least four visits to their adopted classroom at mutually convenient times. The program has been operating for over 13 years in the Bay Area, and previous participants often report that it has been one of the most satisfying volunteer endeavors they have undertaken.

Astronomer applications are now being accepted for the 2007 - 2008 school year.

Application deadline is May 4. Space is limited to 30 partnerships.

All participants must attend a hands-on training workshop, which will be held August 3 & 4, 2007, at the San Mateo County Office of Education in Redwood City.

Although applications are sometimes accepted after the deadline, we encourage you to submit them on time for first consideration.

More information and astronomer application forms are available online:

www.astrosociety.org/baprojectastro.html

Questions? Contact Vivian White, our Bay Area Coordinator, at
(415) 337-1100 x101 or email to bayareaastro@astrosociety.org

Beware the Tides of March! (Well, April)

Akkana Peck

As we move into April, Saturn continues to dominate the evening sky. It has moved a bit farther north, so it's transiting higher now. You probably saw the weird and wonderful Cassini photo last month, where the spacecraft moved into a polar orbit and took a shot looking down on the planet, showing the shadow of the planet streaming out across the rings. You won't see anything quite like that with your telescope — but take a look anyway. There's plenty of detail to be seen!

If you get tired of the rings and want more of a challenge, try going after Saturn's weird and distant moon Iapetus. It's weird because one side is much darker than the other. When the bright side is facing us, Iapetus is an easy magnitude 10.1 object; but the dark side is only magnitude 11.9. April 14 is a good time to see the bright side. Grab a finder chart from Jane Houston Jones' page at <http://www.otastro.org/iapetus/> and compare its brightness to Saturn's other moons and some nearby stars. Then check back on May 24th, when Iapetus' dark side will be pointed our way.

Meanwhile, Venus continues its dazzling early evening run. On April 18 it skims past the Hyades cluster, overwhelming those relatively faint stars.

The rest of the planets are clustered in the morning sky. Mars and Mercury hover low in morning twilight — wait a few more months if you want to see much of them. Jupiter is better: it rises late in the evening and is visible until dawn. Pluto rises at about the same time as Jupiter, which means it will get high enough for a dedicated morning Plutocrat to find it — but most of us will do better waiting a few months. Uranus and Neptune hide down in the twilight with Mars.

Occultation watchers who have been frustrated at all the recent occultations elsewhere in the world finally get a break: a lunar occultation of Regulus on April 26. The bad news? It's in the wee hours of the morning, just short of 3 am. On the 16th, a slim crescent moon passes close to the Pleiades, continuing an ongoing series of pretty moon/Pleiades encounters.

Then the next day, April 17th, the moon crosses perigee — the point of its orbit

moon's gravity pulls hard on the near end of the Earth, and less hard on the far end. This causes a bulge pointing toward the moon, and another bulge pointing away. (That last part sounds counter intuitive at first, but think of the moon pulling harder on the center of the Earth than it does on the far end, so the whole thing gets stretched like a rubber band. It's not that the moon is pushing the water on the opposite side of the Earth, but that the moon is pulling the Earth more than it's pulling that far-away water).

Then add in the sun, which causes a similar effect, though only about half as strong as the moon's, because it's so much farther away. When the sun and moon are stretching the Earth in the same direction, like at new or full moons, you get a "spring" tide — as in "spring forth", not the season after winter. When they're pulling at right angles to each other, you get small tides, called "neap tides".

All very well, but why are the highest high tides and the lowest low tides several days after new moon? Even weirder, if you check tide tables for places around the world, you'll find a few places, like the Coral Sea, where the extreme tides actually happen *before* new moon! What's up?

To understand that, first imagine the Earth as if it were completely covered with water, no continents at all. As the planet rotates beneath the moon during the course of a day, whatever's under the moon is always being pulled upward to a high tide. But that point changes as the Earth rotates. The result, in our ocean-only Earth, is a huge traveling wave of water — a tidal wave (and no, for once that doesn't mean tsunami) — that follows the moon around the earth at just under a thousand miles an hour.

“The RASC handbook notes, ‘Large tides’ ... I’ve been doing some tide pool exploring recently, so I had planned to end this column with a suggestion that you play hooky from work and go check out some starfish.”

where it's closest to Earth — just a few hours before new moon. The RASC handbook notes, "Large tides". That note caught my eye because I've been doing some tide pool exploring recently, so I had planned to end this column with a suggestion that you play hooky from work and go check out some starfish.

Then I checked a tide table. First problem: that low tide is at 5 am, and most of us aren't quite up for tide pooling at that hour. But the second problem was the kicker: the low tide isn't all that low on the 17th. But it gets lower the following day, and even lower two days after perigee. No April fooling!

How can that be? Well, tides are a lot more complicated than the simple equatorial bulge you learned about in Astronomy 101.

I'm sure you know the basics. The

Continued on page 5

But in practice, that can't happen in most of the real world's oceans: the wave smashes into a continent before it can get very far. In addition, the oceans aren't deep enough to allow for a wave that big and that fast. So in practice, you get waves reflecting off continents, and interference with features on the ocean floor. Throw in a handful of other variables like the Coriolis effect and you get a complicated mess.

Long ago, oceanography books used to teach that the tides all originated in a band around 50 degrees south in the Southern Ocean, the only place where a tidal wave can roll around the earth unimpeded with no continents to get in the way. The delay between new moon and the highest high tide — called "the age of the tide" — was said to be due to the time it took for the tidal wave to propagate from the Southern Ocean.

You'll still find that theory in a few places — like wikipedia. But most newer sources seem to discredit the theory. And indeed, it's hard to imagine that the tides we see here aren't at least partly due to the influence of the moon and sun on the Pacific Ocean. It also doesn't explain the Coral Sea.

So what's the modern theory explaining the age of the tide? As far as I've been able to tell, there isn't one.

You can measure the age of the tide for specific locations, and you can even try to calculate the contributions of the various components: the diurnal variation caused by the declinations of the moon and sun, the contributions from reflections off the coast, the local ocean floor profile, and a host of other factors. But as far as a general theory for the age of the tide ... most sources just avoid the question.

So when you see "large tides" mentioned in the RASC handbook, don't take it too seriously! And if you want to go tide-pooling, use a tide table ... not a moon chart.



Even Solar Sails Need a Mast

Patrick L. Barry

Like the explorers of centuries past who set sail for new lands, humans may someday sail across deep space to visit other stars. Only it won't be wind pushing their sails, but the slight pressure of sunlight.

Solar sails, as they're called, hold great promise for providing propulsion in space without the need for heavy propellant. But building a solar sail will be hard; to make the most of sunlight's tiny push, the sail must be as large as several football fields, yet weigh next to nothing. Creating a super-lightweight material for the sail itself is tricky enough, but how do you build a "mast" for that sail that's equally light and strong?

Enter SAILMAST, a program to build and test-fly a mast light enough for future solar sails. With support from NASA's In-Space Propulsion Program to mature the technology and perform ground demonstrator tests, SAILMAST's engineers were ready to produce a truss suitable for validation in space that's 40 meters (about 130 feet) long, yet weighs only 1.4 kilograms (about 3 pounds)!

In spite of its light weight, this truss is surprisingly rigid. "It's a revelation when people come in and actually play with one of the demo versions—it's like, whoa, this is really strong!" says Michael McEachen, principal investigator for SAILMAST at ATK Space Systems in Goleta, California.

SAILMAST will fly aboard NASA's Space Technology 8 (ST8) mission, scheduled to launch in February 2009. The mission

is part of NASA's New Millennium Program, which flight tests cutting-edge technologies so that they can be used

reliably for future space exploration. While actually flying to nearby stars is probably decades away, solar sails may come in handy close to home. Engineers are eyeing this technology for "solar sentinels," spacecraft that orbit the Sun to provide early warning of solar flares.

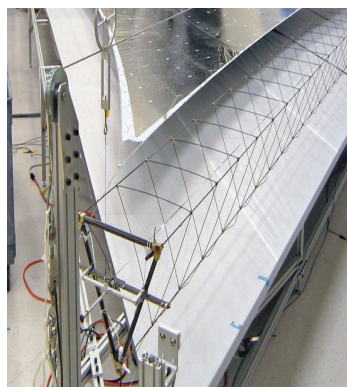
Once in space, ST8 will slowly deploy SAILMAST by uncoiling it. The truss consists of three

very thin, 40-meter-long rods connected by short cross-members. The engineers used high-strength graphite for these structural members so that they could make them very thin and light.

The key question is how straight SAILMAST will be after it deploys in space. The smaller the curve of the mast the more load it can support. "That's really why we need to fly it in space, to see how straight it is when it's floating weightlessly," McEachen says.

It's an important step toward building a sail for the space-mariners of the future.

Find out more about SAILMAST at <http://nmp.nasa.gov/st8>. Kids can visit <http://spaceplace.nasa.gov/en/kids/st8/sailmast> to see how SAILMAST is like a Slinky® toy in space.



SAILMAST is the thin triangular truss in front of the picture. It is attached to a section of a silver foil solar sail section shown here in a laboratory test. The mast in the picture is 2m (6 ft) long. The Space Technology 8 mission will test the SAILMAST, which is 20 times longer.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

David Grinspoon on Climate Catastrophes Among the Planets on April 11, 2007

7 p.m. at Foothill College

Andrew Fraknoi

On Wednesday, Apr. 11, 2007, at 7 p.m., Astronomer David Grinspoon (of the Denver Museum of Nature and Science) will give a non-technical, illustrated talk on: "Comparing Worlds: Climate Catastrophes in the Solar System" as part of the Silicon Valley Astronomy Lectures in the Smithwick Theater, Foothill College, El Monte Road and Freeway 280, in Los Altos Hills, California.

Free and open to the public. Parking on campus costs \$2.

Call the series hot-line at 650-949-7888 for more information and driving directions.

No background in science will be required for this talk. This will be the Carl Sagan Medal Lecture of the American Astronomical Society.

What happened to the lost oceans of Mars and Venus? What have scientists

been discovering about the thick atmosphere on Saturn's moon Titan? How has the climate changed on each of these worlds, and could what happened to them happen to our Earth? Take an entertaining and enlightening journey through the history of our solar system, discovering runaway greenhouses and snowball planets. And, most important, learn how studying the evolution of other planets can help us understand and predict climate change on Earth.

Dr. David Grinspoon is the recipient of the 2006 Carl Sagan Medal for Excellence in Public Communication, awarded by the Division for Planetary Sciences of the American Astronomical Society. Among his many accomplishments, the awards committee cited his ability "to make science hip." He will receive his medal at the beginning of the program.

Dr. Grinspoon is the Curator of Astrobiology at the Denver Museum of Nature & Science, having previously been a Professor of Astronomy at the University of Colorado. He is Interdisciplinary Scientist on the European Venus Express mission, serves as an advisor to NASA on space exploration strategy, and studies the possible evolution of Earth-like planets elsewhere in the universe. He is the author of two popular books, "Lonely Planets" and "Venus Revealed" and gives many public lectures on planetary science around the country. Dr. Grinspoon appears regularly on television and radio, explaining planetary developments. He also played lead guitar for a band called "The Geeks."

Past Silicon Valley Astronomy Lectures are now available in MP3 format at: <http://www.astrosociety.org/education/podcast/index.html>.

April General Meeting

Karrie Gilbert and Galactic Archaeology

April 28, 8 p.m. at Hogue Park

David Smith

April 28 general meeting featured presentation is: "The Life of a Galactic Archaeologist: Learning about Galaxy Formation through Studies of the Milky Way and Andromeda Galaxies" by Karrie Gilbert.

In the current paradigm of galaxy formation, large galaxies are built up through mergers of smaller galaxies. There are two main ways to test theories of galaxy formation: (1) by observing galaxies at high redshift that are in the process of forming, and (2) by investigating the properties of fully formed galaxies and looking for fossil evidence of past merger events. Since stellar halos of galaxies are believed to be formed through mergers of galaxies and are sparse environments,

they provide a unique opportunity for studying galaxy formation. There are only two large spiral galaxies that we can study in detail with our current instruments: our own Milky Way and the Andromeda galaxy. She will discuss what current observations of the stellar halos of these two galaxies are teaching us about galaxy formation.

Karrie says, "The sources of inspiration that shape our futures can be strange — I grew up in Ohio, reading fiction voraciously and exclusively, until I read James Michener's 'Space'. This book sparked my interest in astronomy, and started me down the road to a career in this exciting field."

Karrie obtained her undergraduate

degree in Astronomy and Physics from the Ohio State University in Columbus, Ohio, and then moved out to Santa Cruz to pursue her PhD. She currently works with her advisor Puragra Guhathakurta on studies of the Andromeda galaxy, with the goal of placing tighter observational constraints on theories of galaxy formation.

Outside of astronomy, she enjoys the Sierras: rock climbing, hiking, and as much downhill skiing (including racing) as she can manage. She also plays the piano.



The Last 28 Days In Astronomy

The news seen between Feb. 10 and Mar. 10, 2007.

FEB-19-07 **Heliophysical Year Begins** The International Heliophysical Year has started. A ceremony in Austria kicked off this year of study of space weather. Comparisons are being made to the International Geophysical Year in 1957-58 which saw the first artificial satellites. <http://www.ihy2007.org/>

FEB-26-07 **Shuttle Hailed the Bad Way** A hail storm damaged the space shuttle Atlantis and it's fuel tank. As we go to the printer it isn't known when the shuttle will be able to fly but mid-April is the earliest and June is a possibility. http://www.space.com/missionlaunches/070308_sts117_tank_updt.html

MAR-01-07 **New Views of Saturn** "Finally, here are the views that we've waited years for ... it's so utterly breath-taking, it almost gives you vertigo." That's how Dr. Carolyn Porco, the Cassini imaging team leader, described new pictures of Saturn taken from above and below the plane of Saturn's rings. If you haven't done so already, you simply must check out the Cassini photo essay. Go to http://www.nasa.gov/mission_pages/cassini/main/index.html and click on Cassini Photo Essay in the upper right hand part of that web page. To get more info on these latest images see <http://saturn.jpl.nasa.gov/news/press-release-details.cfm?newsID=725>

MAR-05-07 **Meteorite Hits Home** A meteorite crashed into a house in Bloomington, Illinois. Initial reports indicate that it was a true meteorite about the size of a deck of cards. Further testing will be done to prove its origins. http://www.space.com/news/070307_ap_meteorite_strike.html

MAR-07-07 **YORP Proven** An astronomical effect that causes asteroids to spin faster because of sunlight has now been directly shown and measured. The effect is sometimes called the Yarkovsky effect (named after one of the researchers to describe it) or the YORP effect (an acronym formed from all 4 researchers who are credited with discovering this effect). The effect is not completely unlike that of a radiometer - a children's toy consisting of black and white vanes spinning inside of a vacuum chamber shaped like a light bulb and slightly larger. But YORP can also cause asteroids to change orbits - enough to move an asteroid into an Earth-orbit crossing threat. The effect was measured on asteroid 2000 PH5. The measured spin increase is just a fraction of a second per year. But asteroid 1862 Apollo has been YORP-ed up to one extra spin per orbit over a 40 year period. http://www.space.com/scienceastronomy/070307_asteroid_yorp.html

MAR-09-07 **Pluto Replanetization in New Mexico** A representative of the New Mexico State House has introduced a resolution to declare Pluto to be a planet. Why New Mexico? Clyde Tombaugh went to New Mexico University (after discovering Pluto) and he lived much of his life in that state. http://www.space.com/news/070309_pluto_resolution.html

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.

Letters to the Editor

We don't get many letters crossing the editors desk here at the Ephemeris but this one from the folks who bring us the Space Place articles was nice.

With nearly 4 million visits per year, we knew The Space Place web site was popular. But we had a different kind of evidence for our impact the week of Oct. 2, when the TV game show Jeopardy featured "Kids' Week." All the contestants were very bright, well-informed, elementary-school age kids. And the questions were written just for them. To our surprise and delight, one of the questions (in the form of an answer, of course) was:

"The popular web sites Space Place and StarChild are sponsored by this organization."

The buzzer sounded immediately, as the child with the fastest reflexes got the chance to answer.

"What is NASA?"

Right on!

You, our partners, have done a great deal to make The Space Place so well known. By your dedication to the education and motivation of our youth, and your support and promotion of resources such as The Space Place, you have helped us to spread our messages about the importance and excitement of space and Earth science, technology, and discovery.

We are glad for our partnership with you and anticipate a long-continuing, mutually beneficial relationship.

All the best,

Nancy Leon and The Space Place Team

Officers and Board of Directors

Pres Rob Hawley (408) 997-6526
VP Rich Neuschaefer
Sec Craig Scull (408) 292-9317
Tres Gary Mitchell (408) 265-2336
Dir David Smith (408) 978-5503
Dir Mike Koop (408) 446-0310
Dir Lee Hogle
Dir Gordon Reade
Dir Steven Nelson (650) 968-4733

Ephemeris Staff

Editors Paul & Mary Kohlmler
 (408) 848-9701

Circulation
 (Volunteers needed.)

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

Paul Kohlmler pkohlml@best.com

SJAA Email Addresses

Board of Directors board@sjaa.net
 Membership ?'s membership@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>

Publication Statement

SJAA *Ephemeris*, newsletter of the San Jose Astronomical Association, is published monthly.

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. **Deadline, 10th of previous month.**

SJAA loaner scope status

All scopes are available to any SJAA member; contact Mike Koop by email (koopm@best.com) or by phone at work (408) 473-6315 or home (408) 446-0310 (Please leave message, phone screened).

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" Tasco Newt/ EQ Mount	Annette Reyes
3	4" f/15 Quantum S/C	Hsin I. Huang
6	8" f/10 Celestron S/C	Karthik Ramamurthy
7	12.5" f/7 Dobson	Craig Scull
8	14" f/5 Truss Dobson	Charles Santori
11	f/8 Orion XT6 Dob	West Valley College
13	f/8 Orion XT6 Dob	Rajiv Vora
14	8" f/8.5 Dob	Bill Kerns
15	8" f/9 Dobson	Mike Koop
19	6" f/8 Meade Newt/P Mount	Daryn Baker
23	6" f/8 Edmund Newt/EQ Mount	Wei Cheng
24	60mm f/15 Meade Refractor	Al Kestler
26	11" f/4 Dobson	Vivek Kumar
27	13" f/4.5 Dobson	Steve Houlihan
28	13" f/4.5 Dobson	Craig Scull
32	5.5" f/7.6 Dobson	Sandy Mohan
33	10" Deep Space Explorer	Art Kalb
34	8" f/10 Dynamax S/C	Yuan-Tung Chin
38	4.5" f/8.5 Meade Digital Newt	Tej Kohli
39	17" f/4.5 Truss Dobson	Steve Nelson
40	Super C8+	Srinath Krishnan
41	18" Sky Designs Dob	Kevin Roberts
42	11x80 Binoculars	Ritesh Vishwakarma
44	4.5" f/8 Orion Skyview	Mantle Yu

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
12	8" f/6 Orion XT Dob	John Schulein	3/7/07
35	8" f/6 Meade Newt/EQ Mount	Lee Barford	4/25/07
36	Celestron 8" f/6 Skyhopper	Steve Quigley	4/12/07
43	4.5" f/8 Orion XT Dob	John Walker	4/6/07

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 f/10 Compustar	Bill Maney	Indefinite
10	Star Spectroscope	Greg Bradburn	3/15/07
16	60mm H-Alpha Solar Scope	Mike Koop	Repair
21	10" Dobson	Michael Dajewski	Repair
29	8" Celestron S/C Astrophoto	Rodney Moorehead	2/18/07
37	4" Celestron Fluorite Refractor	David Smith	5/4/07

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