

Contact List

Kitt Peak Visitor Center—318-8726
Nick Petrosino, Supervisor
npetrosino@noao.edu
318-8732

NOAO Public Outreach
Rich Fedele, Manager
rfedele@noao.edu
318-8163
Robert Wilson,
Sr. Program Coordinator
rwilson@noao.edu
318-8440

Kitt Peak Docent Program

950 N Cherry Ave
Tucson, AZ 85719

Docent Forum: <http://groups.yahoo.com/group/docentforum/>

Docent Calendar: <http://groups.yahoo.com/group/docentforum/>

Volunteering at Kitt

Peak: <http://www.noao.edu/outreach/kpoutreach.html>

www.noao.edu



Next Docent Meeting Monday, June 18

The next docent meeting will be held on Monday, June 18. The meeting will convene at 6:00 in the main conference room and will feature dinner and a speaker. Docents should visit the docent forum calendar to schedule their hours. Docents who do not have web access may contact Nick Petrosino. See the URL for the docent calendar at lower left.

«First Name» «Last Name»
«Mailing Address»
«City» «State» «Zip Code»

DOCENT NEWS



STARS AND MUSIC HITS HIGH NOTE IN MAY

Thirty-seven people reserved spots for the Stars and Music event on May 19 and another seven people showed up because they had read about the program and thought it would be fun to attend. They paid at the gate. Forty-four people is the largest crowd yet for this event.

Despite two minor glitches for the performers, the evening could not have been better. The Tucson Junior Strings Quartet performed beautifully, as always. Lighting had to be improvised, and the meals the musicians thought were waiting for them had to be purchased on the ride back to town. But the performance went on as scheduled to the delight of the audience.

The temperature remained moderate throughout the program, which may have prompted the entire audience to stay for the star party after the performance. Typically

many of those who attend leave when the music ends. This night was different. With only two telescopes available, guests had to stand in line for views of the many deep-sky wonders available that night, including a conjunction of the Moon and Venus. And stand in line they did until approximately 9:30 when the program officially ended.

Parting comments from guests indicated that the program in June might see similar participation. The performer that month is Megan Metheney - a classically trained harpist currently studying and performing in France. Returning home to Phoenix for the summer, she agreed to perform at Kitt Peak. Ms. Metheney's theme will be Harping on The Moon.

The program begins at 7:40 and docent assistance will be required. Anyone owning a telescope is welcome to share it.

NEW JUNIOR ASTRONOMER PROGRAM OFF TO IMPRESSIVE START

It took two outreach staff about five minutes to concoct a program aimed at those guests who are not allowed to attend the Nightly Observing Program, children less than eight years old. The effort to create the program, which had been pondered in the past, arose from a surprise phone call from a reporter at the New York Times inquiring about an alternative to the NOP.

The inaugural program on May 26 had thirty-five guests registered until the day of the program, when a group canceled and reduced the number to fifteen. After checking in, the group of children, ages five to nine, and their parents began the two hours of activities and observations.

Young children especially require active participation. So the Junior Astronomer pro-

gram offers the making of sun clocks, a comparison, using pennies, of the sizes of the Earth and Sun, an Earth-Moon system made of Play-Doh that explores the relative sizes and distance, simulated jumping in one-sixth gravity, and of course solar and lunar observing.

The program is timed to catch the Sun just high enough in the west to permit viewing with the Coronado. Toward the end of the program, the Sun is near setting and the Moon is high and bright in the eastern sky. For the lunar observations, the group goes to the 20-inch for an eyeful of the lunar surface.

The responses from the parents were very positive, and this program is likely to gain popularity. Docent involvement is welcome.

Points of Interest:

- The docent meeting is scheduled for Monday, June 18 and features dinner and a presentation on astrobiology by Dr. Nick Woolf.
- June 5: MESSENGER, 2nd Venus flyby
- June 6: Jupiter at opposition
- June 9: Just Look at Jupiter, Kitt Peak
- June 9: Venus at its greatest eastern elongation - 45 degrees
- June 14 to 15: Workshop on Research Enabled by the Lunar Environment, Washington DC
- June 18: Moon occults Venus
- June 19: Moon occults Saturn
- June 25: Asteroid 2005 AU3 near-Earth flyby at 0.057 AU

For additional information about these points of interest, visit <http://www2.jpl.nasa.gov/calendar/>.

MARS ROVER SPIRIT UNEARTHES SURPRISE EVIDENCE OF WETTER PAST

A patch of Martian soil analyzed by NASA's rover Spirit is so rich in silica that it may provide some of the strongest evidence yet that ancient Mars was much wetter than it is now. The processes that could have produced such a concentrated deposit of silica require the presence of water.

Members of the rover science team heard from a colleague during a recent teleconference that the alpha particle X-ray spectrometer, a chemical analyzer at the end of Spirit's arm, had measured a composition of about 90 percent pure silica for this soil.

"You could hear people gasp in astonishment," said Steve Squyres of Cornell University, Ithaca, N.Y., principal investigator for the Mars rovers' science instruments. "This is a remarkable discovery. And the fact that we found something this new and different after nearly 1,200 days on Mars makes it even more remarkable. It makes you wonder what else is still out there."

Spirit's miniature thermal emission spectrometer observed the patch, and Steve Ruff of Arizona State University, Tempe, noticed that its spectrum showed a high silica content. The team has laid out plans for further study of the soil patch and surrounding deposits.

Exploring a low range of hills inside a Connecticut-sized basin named Gusev Crater, Spirit had previously found other indicators of long-ago water at the site, such as patches of water-bearing, sulfur-rich soil; alteration of minerals; and evidence of explosive volcanism.

"This is some of the best evidence Spirit has found for water at Gusev," said Albert Yen, a geochemist at NASA's Jet Propulsion Laboratory, Pasadena, Calif. One possible origin for the silica could have been interaction of soil with acid vapors produced by volcanic activity in the presence of water. Another could have been from water in a hot spring environment. The latest discovery adds compelling new evidence for ancient conditions that might have been favorable for life, according to members of the rover science team.

David Des Marais, an astrobiologist at NASA's Ames Research Center, Moffett Field, Calif., said, "What's so exciting is that this could tell us about environments that have similarities to places on Earth that are clement for organisms."

Spirit and its twin rover Opportunity completed their original three-month prime missions in April 2004. Both are still operating, though showing signs of age. One of Spirit's six wheels no longer rotates, so it leaves a deep track as it drags through soil. That churning has exposed several patches of bright soil, leading to some of Spirit's biggest discoveries at Gusev, including this recent discovery.

Doug McCuiston, director of NASA's Mars Exploration Program, said, "This unexpected new discovery is a reminder that Spirit and Opportunity are still doing cutting-edge exploration more than three years into their extended missions. It also reinforces the fact that significant amounts of water were pre-

sent in Mars' past, which continues to spur the hope that we can show that Mars was once habitable and possibly supported life."

The newly discovered patch of soil has been given the informal name "Gertrude Weise," after a player in the All-American Girls Professional Baseball League, according to Ray Arvidson of Washington University in St. Louis, deputy principal investigator for the rovers.

"We've looked at dozens of disturbed soil targets in the rover tracks, and this is the first one that shows a high silica signature," said Ruff, who last month proposed using Spirit's miniature thermal emission spectrometer to observe this soil. That instrument provides mineral composition information about targets viewed from a distance. The indications it found for silica in the overturned soil prompted a decision this month to drive Spirit close enough to touch the soil with the alpha particle X-ray spectrometer. Silica commonly occurs on Earth as the crystalline mineral quartz and is the main ingredient in window glass. The Martian silica at the Gertrude Weise patch is non-crystalline, with no detectable quartz.

Spirit worked within about 50 yards of the Gertrude Weise area for more than 18 months before the discovery was made. "This discovery has driven home to me the value of in-depth, careful exploration," Squyres said. "This is a target-rich environment, and it is a good thing we didn't go hurrying through it."

Meanwhile, on the other side of the planet, Opportunity has been exploring Victoria Crater for about eight months. "Opportunity has completed the initial survey of the crater's rim and is now headed back to the area called Duck Bay, which may provide a safe path down into the crater," said John Callas, project manager for the rovers at the Jet Propulsion Laboratory.



NASA's Mars Exploration Rover Spirit has found a patch of bright-toned soil so rich in silica that scientists propose water must have been involved in concentrating it. Image credit: NASA/JPL/Cornell.

CONTACT:

Dwayne Brown
1-202-358-1726
dwayne.c.brown@nasa.gov

Tabatha Thompson
1-202-358-3895
tabatha.thompson-1@nasa.gov

June 2007

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1 Vance (C), Doug Moon Mission	2 Jim O., Jack (T)
3 Larry L.	4 Paul, Laura Day-Care Sch 30	5 Joyce, Robert (T)	6 Sheila Native kids/ Adults 40	7 Need Docent	8 Vance (C), Doug, Richard San Simon 70	9 Jim O., Eugene, Joe (T)
10 Paul	11 Need Docent	12 Joyce, Robert (T)	13 Punch, Sheila	14 Paul, Barbara PAL Prg. 60	15 Doug	16 Jim O., Joe (T) Stars & Music
17 Paul	18 Joyce, Robert (T) Docent Meeting	19 Barbara	20 Sheila, Eugene (C) Native Grp. 40	21 Need Docent	22 Vance (C), Doug Worthington 32	23 Larry L., Jim O. Jr. Astronomer Prg.
24 Paul	25 Need Docent	26 Need Docent	27 Sheila, Punch	28 Need Docent	29 Doug Vail School 40	30 Jim O., Eugene

PLAN TO ATTEND THE JUNE DOCENT MEETING

The meeting in June will be the last until September. It features not only a speaker but the awarding of service pins and other items of recognition for the docents. Anyone who can make this meeting should make this meeting.

The speaker for June is Dr. Neville Woolf, principal investigator and director of LAPLACE (Life and Planets Astrobiology Center) at the University of Arizona. LAPLACE is a partnership between Stewart Observatory and Lunar and Planetary Laboratory at the University of Arizona, and NOAO. The center began in 2003 and in 2005 became a Center within the College of Science at the university.

Dr. Woolf lectured at a meeting of the Tucson Amateur Astronomy Association and commanded the attendees full attention with his thought-provoking remarks and engaging style. So put the June meeting on your calendar and plan to attend.

