

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,
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, April 21

The next docent meeting will be held on Monday, April 21. 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

HELP NEEDED WITH YURI'S NIGHT AT PIMA AIR AND SPACE MUSEUM

Points of Interest:

- The docent meeting is scheduled for Monday, April 21 and will feature dinner and a speaker .
- April 5 to 6: 2008 All Arizona Messier Marathon, Arizona City, AZ
- April 7: 40th anniversary (1968) Luna 14 launch (Soviet Moon Orbiter Mission)
- April 12: Yuri's Night 2008 World Space Party
- April 16: Asteroid 2008 EH near-Earth flyby at 0.033 AU
- April 22: Lyrids Meteor Shower peak
- April 28: Eugene Shoemaker's 80th birthday (1928)

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

On April 12 from 5:00 to 8:00 p.m., Pima Air and Space Museum will host Yuri's Night, a celebration of man's first flight into space by Yuri Gagarin on April 12, 1961. Yuri's Night is an annual event celebrated world wide. This year NOAO joins the celebrations at Pima Air and Space by staffing some Family ASTRO activities, primarily from Moon Mission.

Robert Irwin, who was trained in all four Family ASTRO events, has volunteered to represent NOAO and oversee the activities. Because Family ASTRO will be part of the larger event, the crowds will wander through at their leisure and sample the activities rather than participate in a facilitated two-hour event. Despite the informality of the event, a second volunteer would be useful.

Three other docents were trained in Moon Mission, and it would be preferable to have one of them on hand to assist, but given the nature of this event, anyone willing to volunteer can be instructed in the couple of activities that will be used that evening. In fact if three volunteers were on hand, then each could take an hour while the others enjoyed the celebration. The list of activities and

participating organizations follows:

Titan Missile Museum
Challenger Learning Center
UA Lunar and Planetary Laboratory
Flandrau Science Center
International Dark Sky Association
Tucson Amateur Astronomy Association
The Physics Factory
Stellar Vision Astronomy Shop
Google X-Prize
SEDS
AIAA Kids Club
National Space Society
Wildcat School
MESA

Speakers include Ewen Whitaker, considered a leading authority on the Moon and involved in the Ranger, Surveyor, and Lunar Orbiter programs, and Brian Ewenson, Director of Education and Programs at Pima A&S and Coordinator International Space Day in Washington, D.C. Additionally the movie October Sky will be shown in the Challenger Learning Center.

This promises to be a very entertaining and informative event. Please consider volunteering. Contact the docent coordinator.

CORONADO TELESCOPES ARE BACK IN OPERATION

Now that spring is here and the sky is frequently clear, it is time to get the Coronado telescopes back in action for the visitors. The telescopes currently operate on Wednesday and Friday from 10:15 to 11:30 and from 12:15 to 1:30.

The biggest obstacle to consistent operation has been the lack of docents willing to spend a couple of hours in the observatory. If more docents would volunteer then the number of days a month that a given docent would have to work the telescopes would be reduced. Staff will be on Kitt Peak Friday,

April 4 to train interested docents

For those who are now staffing the little observatory, there are a couple of things to remember. Operating instructions may be found on the files page of the docent forum. And when shutting down the telescopes, point them north to allow the cover to fit easily over the telescopes and the mount. The cover is already tearing from being forced over the equipment when not properly aligned.

Another issue that has caused some confusion to close the observatory if the visitor

MARS SALT DEPOSIT DISCOVERY POINTS TO A NEW PLACE TO HUNT FOR LIFE'S ANCIENT TRACES

Scientists using a Mars-orbiting camera designed and operated at Arizona State University's Mars Space Flight Facility have discovered the first evidence for deposits of chloride minerals - salts - in numerous places on Mars. These deposits, say the scientists, show where water was once abundant and may also provide evidence for the existence of former Martian life.

A team of scientists led by Mikki Osterloo, of the University of Hawaii, used data from the Thermal Emission Imaging System (THEMIS) on NASA's Mars Odyssey orbiter to discover and map the Martian chloride deposits. The Jet Propulsion Laboratory in Pasadena, Calif., manages the Mars Odyssey mission for NASA's Science Mission Directorate.

Developed at Arizona State University, THEMIS is a multi-wavelength camera that takes images in five visual bands and 10 infrared ones. At infrared wavelengths, the smallest details THEMIS can see on the Martian surface are 330 feet (100 meters) wide.

The scientists found about 200 individual places in the Martian southern hemisphere that show spectral characteristics consistent with chloride minerals. These salt deposits occur in the middle to low latitudes all around the planet within ancient, heavily cratered terrain. The team's report appears in the March 21, 2008 issue of the scientific journal Science.

In addition to Osterloo, the team includes Philip Christensen, Joshua Bandfield, and Alice Baldrige of Arizona State University; Victoria Hamilton and Scott Anderson of the University of Hawaii; Timothy Glotch of Stony Brook University; and Livio Tornabene of the University of Arizona.

Osterloo says that she found the sites by looking through thousands of THEMIS images processed to reveal, in false colors, compositional differences on the Martian surface. As she explains, "I started noting these sites because they showed up bright blue in one set of images, green in a second set, and yellow-orange in a third."

Says team member Christensen, "THEMIS gives us a good look at the thermal infrared, the best part of the spectrum for identifying salt minerals by remote sensing from orbit."

When plotted on a global map of Mars, the chloride sites appeared only in the southern highlands, the most ancient rocks on Mars.

Christensen goes on to characterize the sites' geological setting. "Many of the deposits lie in basins with channels leading into them," he says. "This is the kind of feature, like salt-pan deposits on Earth, that's consistent with water flowing in over a long time."

Christensen, a Regents' Professor of Geological Sciences at ASU's School of Earth and Space Exploration in the College of Liberal Arts and Sciences, designed THEMIS and is the instrument's principal investigator.

Says Osterloo, "The deposits range in area from about one square kilometer to about 25 square kilometers," or about 0.4

square mile to about 10 square miles. She adds, "Because the deposits appear to be disconnected from each other, we don't think they all came from one big, global body of surface water." Instead, she says, "They could come from groundwater reaching the surface in low spots. The water would evaporate and leave mineral deposits, which build up over years."

The scientists think the salt deposits formed mostly in the middle to late Noachian epoch, a time that researchers have dated to about 3.9 to 3.5 billion years ago. Several lines of evidence suggest Mars then had intermittent periods of substantially wetter and warmer conditions than today's dry, frigid climate.

Up to now, scientists looking for evidence of past life on Mars have focused mainly on a handful of places that show evidence of clay or sulfate minerals. The reasoning is that clays indicate weathering by water and that sulfates may form by water evaporation.

The new research, however, suggests an alternative mineral target to explore for biological remains. Says Christensen, "By their nature, salt deposits point to a lot of water, which could potentially remain standing in pools as it evaporates." That's crucial, he says. "For life, it's all about a habitat that endures for some time."

There may also be a concentrating effect, Christensen adds. "The deposits lie in what are probably sedimentary basins. If you look upstream, you might find only a trace of organic materials because they're thinly dispersed." But over a long period of time, he explains, "The water flowing into a basin can concentrate the organic materials and they could be well preserved in the salt."

Whether or not the Red Planet ever had life is the biggest scientific question driving Mars research. On Earth, salt has proven remarkably good at preserving organic material. For example, bacteria have been revived in the laboratory after being preserved in salt deposits for millions of years.

NASA is currently studying potential landing sites for its Mars Science Laboratory (MSL), a new-generation rover due for launch in fall 2009. Sites featuring clay deposits number heavily in the short-list of candidate places to send the rover.

Christensen says, "Scientists have studied Martian clay mineral sites for years now, and it's natural they should be considered as targets for the Mars Science Laboratory rover. However, the discovery of chloride minerals in topographic basins within the oldest rocks on Mars should also be considered as an alternative mineralogy for MSL or future rovers to explore."

"This discovery demonstrates the continuing value of the Odyssey science mission, now entering its seventh year," says Jeffrey Plaut, Odyssey project scientist at the Jet Propulsion Laboratory. "The more we look at Mars, the more fascinating a place it becomes."

High-resolution photos plus captions and credits are available at <http://themis.asu.edu/news-saltsites>.

April 2008

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1 Gerald, Joe W. Granite Mtn. Sch. 20	2 Need Docent	3 Jerry, Joe S.	4 John C., Don	5 Jim, Jerry
6 Larry L, Ken	7 Gerald, Jack	8 Joyce, Joe S.	9 Need Docent	10 Ken, Jerry	11 Don, Robert	12 Jim, Eugene
13 Jerry, Ken	14 Aubrey	15 Gerald Early Child 25	16 Jack	17 Jerry, Joe S.	18 Don, John C.	19 Jim, Eugene
20 Jerry	21 Joyce, Robert Docent Meeting	22 Gerald St. Abrome 30	23 Need Docent	24 Jerry, Joe S. T.O. Head Start	25 Don, Vance (C)	26 Larry L., Jim
27 Gerald	28 Aubrey	29 Gerald, Joyce	30 Need Docent			

CONTINUED FROM PAGE 2

TELESCOPES NEEDED FOR STARS AND MUSIC

Science contact: Philip Christensen
phil.christensen@asu.edu, 1-480-965-7105

CONTINUED FROM PAGE 1

center docent has a large tour. Because the tours are paramount, the Coronado operator should shut down if requested to assist in the visitor center by either the other docent or the staff. Since the largest tours often occur in the afternoon, the situation may not interfere with observing because it shuts down at 1:30 anyway, leaving the operator free to help.

Visitors truly enjoy observing the sun. Become a Coronado operator and keep this exciting activity available to them.

The first event in the Stars and Music series happens on Saturday, April 12. The event features the Tucson Junior Strings Quartet, a staple of the program since its inception in 2005.

When the music ends and the stars have come out, guests are treated to a star party with telescopes set up on concrete pads near the ramada. Staff will have one telescope set up but more will be required. Members of Tucson Amateur Astronomy Association sometimes help out, but this is a busy time of year for that organization, so help may not be available. Docents, therefore, are encouraged to support the event.

Any docent having a telescope is welcome to attend. There are four pads without power. Attendance of forty to fifty persons is not unusual so four telescopes in all would be ideal. Astronomers are welcome to remain in the picnic area to observe after the event. Please contact Robert Wilson for details.