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Kitt Peak Docent Program

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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, February 19

The next docent meeting will be held on Monday, February 19. 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»

Kitt Peak Docent Program

DOCENT NEWS

Number 112
February 2007



SCOPE OUT SATURN THIS MONTH

Saturn is coming around again and will reach opposition on February 10. To highlight this annual celestial event, Kitt Peak will host Scope Out Saturn and give the public a chance to learn about the solar system's most awe-inspiring planet.

The program is scheduled for Saturday, February 17 from 10:00 p.m. to 1:00 a.m. Guests arrive by 9:15 and park in the picnic area. From there they take the shuttle to the visitor center where they will enjoy a presentation by planetary scientist Kunio Sayanagi.

Following the presentation guests will have a chance to observe Saturn through one of the visitor center telescopes, along with other celestial objects that might be available. Recent images of Saturn taken by NOP staff will be available on CD as a souvenir for the participants.

When a planet comes to opposition, it is

directly opposite the Earth from the Sun and thus at its closest to the Earth. The planet rises at sunset and is high in the sky a few hours later.

Prime viewing time is around midnight when the planet is close to the meridian, the line running from north to south over the observer's head. At that point, the best point for viewing any celestial object, the least atmosphere separates the observer and the planet, and Saturn will be fully illuminated by sunlight, just like a full moon.

Although the program occurs one week after opposition, Saturn will still be nicely placed for observing. Docent assistance will be needed for parking, crown control, refreshments, and cleanup. Available docents should contact the docent coordinator. All docents should mention the program and direct visitors to the web site for details.

NEW DOCENT CLASS UNDERWAY

The winter 2007 docent training class got underway on Wednesday, January 24 with twelve trainees taking a tour of Kitt Peak. For some it was their first experience with the mountain and others had been up previously as tourists. But all received a thorough introduction to the telescopes and visitor center. Two have since dropped the class.

Unlike previous years, most of the training this year will occur on Kitt Peak, using the classroom in the new visitor center observatory with regular access to Kitt Peak facilities. Training in the environment in which they will be serving as docents will be more instructive and afford them greater opportunities to practice their presentations and become familiar with the observatory.

Because of the hours involved in training

and in transit, the days have been reduced to one per week. Consequently the number of weeks has doubled, so it will be May before the trainees assume their duties on the mountain and elsewhere.

Options for docent involvement in outreach have increased as well, and some members of the class may be spending less time conducting tours and more time assisting with events downtown, operating the Coronado telescopes, or developing activities for the demonstration cart.

Whatever their outreach activities ultimately, the department welcomes Paul Barby, David Goodall, Robert Irwin, Frank Jank, Everett Lindsay, Jack Juraco, Bill Sisco, Joseph Spittler, Paul Stromberg, and Joe Wilkins to the training class of 2007.

Points of Interest:

- The docent meeting is scheduled for Monday, February 19 and features dinner and a speaker.
- February 1: Asteroid 2006 AM4 near-Earth flyby at 0.013 AU
- February 7: Mercury at its greatest elongation
- February 10: Saturn at opposition
- February 21 to 22: Symposium: The Night—Why Dark Hours Are So Important, Washington D.C.
- February 22: Cassini, Titan flyby
- February 25: Sally Ride Science Festival, Tempe, AZ
- February 27 to March 2: Workshop on Science Associated with the Lunar Exploration Architecture, Tempe, AZ
- February 28: New Horizons, Jupiter flyby

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

ZOOMING TO PLUTO, APL-BUILT NEW HORIZONS SPACECRAFT APPROACHES JUPITER

Just a year after it was dispatched on the first mission to Pluto and the Kuiper Belt, the APL-built New Horizons spacecraft is on the doorstep of the solar systems largest planet about to swing past Jupiter and pick up even more speed on its voyage toward the unexplored regions of the planetary frontier.

The fastest spacecraft ever launched, New Horizons will make its closest pass to Jupiter on Feb. 28, threading its path through an aim point 1.4 million miles (2.3 million kilometers) from the center of Jupiter. Jupiters gravity will accelerate New Horizons away from the Sun by an additional 9,000 miles per hour half the speed of a space shuttle in orbit pushing it past 52,000 mph and hurling it toward a pass through the Pluto system in July 2015.

At the same time, the New Horizons mission team is taking the spacecraft on the ultimate test drive using the flyby to put the probes systems and seven science instruments through the paces of a planetary encounter. More than 700 observations of Jupiter and its four largest moons are planned from January through June, including scans of Jupiters turbulent, stormy atmosphere and dynamic magnetic cocoon (called a magnetosphere); the most detailed survey yet of its gossamer ring system; maps of the composition and topography of the large moons Io, Europa, Ganymede and Callisto; and an unprecedented look at volcanic activity on Io.

The flight plan also calls for the first-ever trip down the long tail of Jupiters magnetosphere, a wide stream of charged particles that extends tens of millions of miles beyond the planet, and the first close-up look at the Little Red Spot, a nascent storm south of Jupiters famous Great Red Spot.

Our highest priority is to get the spacecraft safely through the gravity assist and on its way to Pluto, says New Horizons Principal Investigator Dr. Alan Stern, of the Southwest Research Institute, Boulder, Colo. But we also have an incredible opportunity to conduct a real-world-encounter stress test to wring out our procedures and techniques for Pluto, and to collect some valuable science data.

The Jupiter test matches or exceeds the missions Pluto study in duration, data volume sent back to Earth, and operational intensity. Much of the data from the Jupiter flyby wont be sent back to Earth until after closest approach, because the spacecrafts main priority is to observe the planet and store data on its recorders before transmitting information home.

We designed the Jupiter encounter to prove out our planning tools, our simulation capabilities, our spacecraft and our instrument sensors on a real planetary target, well before the Pluto encounter, says Glen Fountain, New Horizons project manager at the Johns Hopkins University Applied Physics Laboratory (APL), Laurel, Md., which built and operates the spacecraft. If the team needs to adjust anything before Pluto, we'll find out about it now.

The mission team at APL, SwRI and other institutions has learned much in a hectic year since New Horizons lifted off

from Cape Canaveral Air Force Station, Fla., last Jan. 19. The spacecraft has undergone a full range of system and instrument checkouts, instrument calibrations and commissioning, some flight software enhancements, and three small propulsive maneuvers to adjust its trajectory. Operational highlights of the past year included long-distance snapshots of both Jupiter and Pluto, and a flyby of asteroid 2002 JF56 (recently named APL by the International Astronomical Union).

With closest approach to Jupiter coming 13 months after launch, New Horizons will reach the planet faster than any of its seven previous visitors. Pioneers 10 and 11, Voyagers 1 and 2, Ulysses and Cassini all used Jupiters gravity to reach other destinations; NASAs Galileo orbited the planet from 1995-2003.

New Horizons also provides the first close-up look at the Jovian system since Galileo, and the last until NASAs Juno mission arrives in 2016. The Jupiter system is incredibly dynamic, says New Horizons Jupiter Encounter Science Team lead Dr. Jeff Moore, of NASA Ames Research Center, Moffett Field, Calif. From constant changes in Jupiters magnetosphere and atmosphere, to the evolving surfaces of moons such as Io, you get a new snapshot every time you go there.

After an eight-year cruise from Jupiter across the expanse of the solar system, New Horizons will conduct a five-month-long study of Pluto and its three moons in 2015, characterizing their global geology and geomorphology, mapping their surface compositions and temperatures, and examining Plutos atmospheric composition and structure. Then, as part of a potential extended mission, New Horizons would conduct similar studies of one or more smaller worlds in the Kuiper Belt, the region of ancient, rocky and icy bodies far beyond Neptunes orbit.

The New Horizons science payload includes imaging infrared and ultraviolet spectrometers, a multi-color camera, a long-range telescopic camera, two particle spectrometers, a space-dust detector and a radio science experiment. The compact, 1,050-pound spacecraft, drawing electricity from a single radioisotope thermoelectric generator, currently operates on slightly more power than a pair of 100-watt light bulbs.

New Horizons is the first mission in NASAs New Frontiers Program of medium-class spacecraft exploration projects. Stern leads the mission and science team as principal investigator; APL manages the mission for NASAs Science Mission Directorate. For more information on New Horizons, visit: <http://pluto.jhuapl.edu>.

The Applied Physics Laboratory is a not for profit laboratory and division of the Johns Hopkins University: www.jhuapl.edu

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Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 <i>Jerry, Gerald</i>	2 <i>Doug, Don</i>	3 <i>Jerry, Jim O.</i>
4 <i>Larry L., Gerald</i>	5 <i>Larry E.</i>	6 <i>Joyce, Mike</i>	7 <i>Sheila, Punch, Richard (C)</i>	8 <i>Jerry, Gerald</i>	9 <i>Doug, Don, Eugene (C)</i>	10 <i>Jim O., Ken, Mike</i>
11 <i>Jerry, Ken</i>	12 <i>Aubrey</i>	13 <i>Joyce, Bill</i>	14 <i>Sheila, Richard (C) Pima C.C.</i>	15 <i>Jerry, Mike Pima C.C. Kids 44</i>	16 <i>Gerald, Don</i>	17 <i>Jerry, Eugene</i>
18 <i>Gerald, Mike</i>	19 <i>Ken, Aubrey Docent Meeting</i>	20 <i>Bill, Mike</i>	21 <i>Sheila, Gerald, Punch Richard (C)</i>	22 <i>Jerry, Mike</i>	23 <i>Don, Doug</i>	24 <i>Larry L., Jim, Mike, Vance Tau-Beta-Pi</i>
25 <i>Jerry, Gerald</i>	26 <i>Bill</i>	27 <i>Joyce</i>	28 <i>Sheila Eugene (C)</i>			

IMAGING WORKSHOP SCHEDULE EXPANDING

It has been a goal of public outreach to establish a series of workshops on imaging. Currently there are three events planned for 2007, presented by Robert Reeves who has written books on film, web cam, and digital astrophotography. His two-day workshops are scheduled for March 24 and 25, June 23 and 24, and September 15 and 16. The workshops will cover imaging with web cams and digital SLRs.

Recently James McGaha of Grasslands Observatory has agreed to conduct a two-day workshop for CCD imaging in conjunction with NOAO. Details have not been finalized, but a date should be set soon and information posted to the web site.

Docents should be familiar with all the programs offered by public outreach and pitch them to the public whenever possible. See <http://www.noao.edu/outreach/kpoutreach.html> for the program schedule through June 2007.



Images: left, craters Clavius (bottom) and Tycho; right, sunrise over Mare Imbrium. Credit: Robert Wilson (C6-RGT and Celestron NexImage Solar System Imager)