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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, September 18

The next docent meeting will be held on Monday, September 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



CORONADO TRAINING

Points of Interest:

- The docent meeting is discontinued for the summer, resuming Monday, September 18 and featuring dinner and a speaker.
- July 3: Earth at aphelion, 1.017 AU
- July 3: Asteroid 2004 XP14 near-Earth flyby at 0.003 AU
- July 20: 30th anniversary of Viking I Mars landing
- July 22 to 29: International Astronomy Week, Arosa, Switzerland
- July 26: 35th anniversary of Apollo 15 launch, the 4th manned moon landing
- July 29: South Delta-Aquarids Meteor Shower peak
- July 29: Asteroid 2006 BQ6 near-Earth flyby at 0.037 AU

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

A total of eleven docents have volunteered to staff the new Coronado/Meade/PAEO solar observatory, formerly known as the Razdow. Training is underway with most of the volunteers having been indoctrinated into the ways of the Meade mount, a very simple affair that takes just a few minutes to master.

To date Doug Robertson, Richard Grimaldi, Mark Chambers, Aubrey Mendelow, Paul Brown, and Bill Dupee have received instruction. Left to complete training are Joyce Park, Jerry Scott, Vance Tanner, Laura Woods, and Anna Panka. Some of these docents are out of town for the summer and others are waiting for staff to become available to resume training.

Once all eleven docents are trained, it remains to work out a schedule for keeping the telescopes open to the public. Initially the observatory will likely be open from 10:00 to

1:00. In determining the schedule, docents will have to consider how often they are willing to be on the mountain, whether they wish to continue conducting afternoon tours, and what sort of rotation to employ since there are more volunteers than days of the week.

An important point to remember is that the department will advertise solar observing to the public. This means that the telescopes have to be available regularly, weather permitting, or the advertising is of little use. And it will not take long before word of mouth has people expecting a peek through a solar telescope when they take that morning tour.

For scheduling purposes on the forum, Coronado operators should identify themselves with a C beside their names so other docents know who is doing what and can plan accordingly.

PLANETS, SPACECRAFT, AND FIREWORKS

This drives astronomers crazy. Every summer, on the one night when millions of Americans are guaranteed to be outside at nightfall, necks craned upward watching the sky, almost no one pays attention to the heavens. It's all fireworks, fireworks, fireworks. Stars and planets don't stand a chance.

But this 4th of July is different. At sunset, just as the fireworks are about to begin, the Moon and Jupiter will pop out of the twilight side-by-side: Sky Map. These are the brightest objects in the night sky, easily beaming through the flash and smoke of a fireworks display.

Sidewalk astronomers, deploy your telescopes! Here is a wonderful opportunity to show off Jupiter's moons, the Great Red Spot, lunar craters and mountain ranges, and

the long creeping shadows at the Moon's day-night divide. Bonus: Point your telescope at blank sky and wait for some fireworks. A good starburst at 25x magnification can be very entertaining.

And don't forget to watch out for spaceships.

During the first week of July, the International Space Station (ISS) passes over many US cities in plain view of evening sky watchers. July 4th is one of the best nights of all. Visit NASA's Sky Watch web site to find out exactly when the station will appear over your hometown.

To see the ISS, simply look up at the appointed time. The station moves slowly across the sky, glowing about as brightly as Jupiter. It does not blink like an airplane or

THE EARLY UNIVERSE IS DUSTY, AND ASTRONOMERS FINALLY KNOW WHY

Massive star supernovae have been major "dust factories" ever since the first generations of stars formed several hundred million years after the Big Bang, according to an international study published in Science Express on June 8th.

The scientific team trained their telescopes on Supernova 2003gd, which exploded in the NGC 628 spiral galaxy 30 million light-years from Earth. The light from the 2003gd first reached Earth on March 17, 2003. At its brightest, it could be seen in an amateur astronomer's telescope. While many supernovae are discovered each year, this particular one stood out because it was relatively nearby and could be followed for a long-than-usual time by the specialized infrared detectors of the Spitzer Space Telescope, and by an optical spectrograph on the Gemini North telescope.

"2003gd is, quite literally, the smoking gun," says Doug Welch, professor, physics & astronomy at McMaster University, and one of 17 astronomers involved in the study. "These carbon and silicon dust particles which form from the supernovae blast make possible the many generations of high-mass stars and all the heavy elements they produce. These are elements which make up the bulk of everything around us on Earth, including you and me."

Welch and co-author Geoff Clayton of Louisiana State University, visited the Gemini North telescope in Hawaii to take spectra of ancient massive star supernovae in their hunt for the formation of dust.

Making space dust requires elements heavier than hydrogen and helium - the only elements in existence after the Big Bang. Once dust is available stars form much more quickly and efficiently. Up until now, the efficiency and rapidity of the creation of dust by massive star supernovae has been unknown.

"We have finally shown that supernovae could have been major contributors to the dust present in the early Universe," said Ben Sugerman, of the Space Telescope Science Institute in Baltimore, MD. "Until now, the available evidence has pointed to the contrary."

Supernovae expand and dissipate into space quickly, so scientists require extremely sensitive telescopes to study them even a few months after the initial explosion. Dust does not begin to form until two years after an explosion, so while astronomers have suspected that most supernovae do produce dust, their ability to confirm this stellar dust production in the past was limited by the available technology.

The study utilized Hubble Space Telescope data as well as new observations from the Spitzer Space Telescope (currently trailing the Earth along its orbit) and the Gemini North telescope of the Gemini Observatory on Mauna Kea, Hawaii.

"This work demonstrates the enormous value of working in different parts of the spectrum and the critical need for both ground-based and space-based facilities," says Welch.

Funding for the research was provided in part by the Natural Sciences and Engineering Research Council. Canada's partici-

pation in the Gemini Observatory is funded by the National Research Council of Canada's Herzberg Institute for Astrophysics. The Gemini Observatory consists of twin 8-meter telescopes in Hawai'i and Chile funded by an international partnership that includes: US, UK, Canada, Australia, Brazil, Argentina and Chile.

McMaster University, a world-renowned, research-intensive university, fosters a culture of innovation, and a commitment to discovery and learning in teaching, research and scholarship. Based in Hamilton, the University, one of only four Canadian universities to be listed on the Top 100 universities in the world, has a student population of more than 23,000, and an alumni population of more than 115,000 in 128 countries.



Composite by Richard Sword, IoA/Gemini Observatory GMOS images, except right inset by Isaac Newton Telescope.

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July 2006

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1 <i>Vance, Kelly</i>
2 <i>Larry L.</i>	3 <i>Joyce</i>	4 <i>Kelly</i>	5 <i>Punch, Sheila</i>	6 <i>Aubrey, Jon</i>	7 <i>Doug, Vance</i>	8 <i>Jim O., Eugene</i>
9 <i>Anna</i>	10 <i>Joyce, Jon</i>	11 <i>Aubrey</i>	12 <i>Punch, Sheila</i>	13 <i>Bob</i>	14 <i>Doug, Vance</i>	15 <i>Jim O.</i>
16 <i>Eugene</i>	17 <i>Aubrey</i>	18 <i>Joyce</i>	19 <i>Punch, Sheila</i>	20 <i>Aubrey</i>	21 <i>Doug Oro Valley Rec.</i>	22 <i>Jim O., Larry L.</i>
23 <i>Anna</i>	24 <i>Joyce</i>	25 <i>Bob</i>	26 <i>Punch, Sheila</i>	27 <i>Jon</i>	28 <i>Doug, Vance</i>	29 <i>Jim O., Eugene</i>
30 <i>Need Docent</i>	31 <i>Jon</i>					

PLANETS, CONTINUED FROM PAGE ONE.

twinkle like a star. It is, in short, unmistakable.

Some of the most important sites of the American Revolution are favored with 4th of July flybys: At 9:40 p.m. EDT on July 4th, the ISS glides almost directly over Valley Forge, campsite of George Washington's army. Less than a minute later it passes over Philadelphia, where the Declaration of Independence was signed, and then New York City.

In Boston, where the revolution was instigated, and Lexington, where the first shots were fired, the ISS does something special. Instead of passing directly overhead, it dips a little lower, gliding right by the Moon and Jupiter. The time to watch is between 9:40 and 9:41 p.m. EDT.

NASA did not plan these flybys. Chalk it up to good luck and orbital mechanics.

If the space shuttle Discovery launches as planned on July

1st, it will be docked to the ISS on July 4th, boosting the brightness of the ensemble. If you can't see one spaceship through the fireworks, maybe you'll be able to see two.

*Dr. Tony Phillips, author
Credit: Science@NASA*