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Next Docent Meeting
September 19

The next docent meeting will be held on Monday, September 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 for July and August. Docents who do not have web access may contact Nick Petrosino See the URL for the docent calendar at lower left.

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

KITT PEAK DOCENT

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

Kitt Peak Docent Program

DOCENT NEWS

Number 95
September 2005

KITT PEAK DOCENT

Points of Interest:

- The docent meetings will resume September 19, featuring dinner and a presentation about the Phoenix mission by Doug Lombardi of LPL.
- September 1: Venus passes 1.2° from Jupiter.
- September 7: Moon occults Venus.
- September 14: John Dobson's 90th birthday.
- September 14 to 16: Astronomical Society of The Pacific's 117th annual meeting, Tucson.
- September 20: Asteroid 1999 RQ36 near-Earth flyby at 0.033 AU.
- September 22: Autumnal Equinox, 22:23 UT.
- September 29 to October 2: 3rd Annual Lowell Star Party, Flagstaff.
- September 30 to October 1: All-Arizona Star Party near Arizona City.

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

ASTRO TIME GETTING NEAR

The Project and Family Astro workshops are getting nearer and as always volunteers are needed to support these very worthwhile programs. Both programs were developed by the Astronomical Society of The Pacific and are administered in Tucson by NOAO.

Project Astro is starting its tenth year with a two-day workshop on October 7th and 8th. At this workshop new teacher-astronomer partnerships will be forged. Approximately one hundred fifty partnerships are currently benefiting students in grades three through nine in Tucson area schools. Over the past nine years, thousands of students have experienced the inquiry-based, hands-on activities of Project Astro.

Project Astro astronomer partners agree to make at least four visits to their teachers' classrooms during an academic year. If only four visits occur, it works out to about one visit every other month.

Family Astro is a more recent development but retains all the attributes of Project Astro. The concept is that families will benefit from being involved in their children's astronomy education and that astronomy can become a fun family pastime. The program features four thematic events that focus on the Moon, the planets, the night sky, and light. Families enjoy the activities and leave the two-hour events with take-home kits.

The dates for event-leader training are September 10 and 23 and October 1 and 28. Volunteers may choose to attend any or all of the workshops.

In both programs all the work has been done in the form of lesson plans and instructions. Volunteers need not have substantial backgrounds in astronomy, but some knowledge is certainly beneficial. Plus there is plenty of time to study up on the topic at hand prior to doing the lesson or the event.

Applications for both programs are available at www.noao.edu/education/. Consider supporting astronomy education by getting involved in either of these great programs.

STARS AND MUSIC IN SEPTEMBER

Back in July Public Outreach tried something a bit different: a combined music recital and star party in the picnic area. As is usual with new programs there were a few glitches, but the program went well. The music was performed by the Tucson Junior String Quartet and was incredibly well done.

Just prior to that event, the department received a call from the Tucson Jazz Society asking about the possibility of a jazz program on the mountain. Encouraged by the success of the first program, the department called back and set a date of September 24 for another event.

As with the last program, the music will began at sunset as participants watch the Sun dip below the horizon. The band will be set up under the ramada and will play for an hour. By the end of the performance, it will be dark and the star party will begin, also lasting for an hour.

Participants may bring their own chairs and are encouraged to bring a picnic lunch as well. The cost is yet to be determined but will likely be $8 to $10 per person. Reservations will be required and a deposit will be charged to no-shows. Music will begin at 6:30, and the program will conclude at 8:30. Guest are asked to arrive by 6:00. Docents interested in helping should contact Robert Wilson.

A CHINESE DRAGON AND A KNOTTED GALACTIC EMBRACE

The Gemini Observatory released a pair of images recently that capture the dynamics of two very different interactions in space. One is a cold, dark dust cloud that resembles an ethereal-looking Chinese dragon. The other shows a distant duo of galaxies locked in a knot-like embrace that could portend the long-term future of our own Milky Way galaxy.

The processes shown in these views occur on a tremendous range of size scales. NGC 6559 is a relatively small, nearby dust cloud in our Milky Way galaxy that measures about seven light-years across, while NGC 520 features two completely entwined galaxies that stretch across 150,000 light-years. While both images hint at how dynamic and active these objects can be, their evolution occurs on astronomical timescales. According to Ian Robson, Director of the UK's Astronomy Technology Center, "If we could see either of these objects as an extreme time-lapse movie made over millions of years, the galaxy pair would dance in a graceful orbital embrace that is likely similar to the fate between our Milky Way and the great Andromeda Galaxy, while the dusty cloud would probably resemble waving smoke from an extinguished candle."

Together, these Gemini images illustrate another point about the universe: its dusty. The main features of NGC 6559 that lend this nebula its Chinese dragon appearance are dark clouds of backlit dust. The merging galaxies also show a prominent dust lane running diagonally across the image. In both cases this dust is visible because it blocks the light from behind it much like a cloud obscures sunlight here on Earth.

The two images were selected based on observations made during the first half of 2005 at each of the twin Gemini telescopes.

"I coordinated observations in Chile when the dragon-like images of NGC 6559 were obtained," said Gemini South Astronomer Rodrigo Carrasco. "I could tell this was going to make a fantastic color image with lots of details never resolved before in this cloud of dust. Other astronomers will appreciate this data now that it is in the Gemini Data Archive."

Gemini North on Mauna Kea captured the image of NGC 520, showing two interacting galaxies against a backdrop of dimmer much more distant galaxies. Gemini Astronomer Kathy Roth oversaw the observations and shared her reactions. "Watching images like these come off the telescope is always a thrill. It is very satisfying to have everything working perfectly and to be able to take advantage of the great conditions on Mauna Kea," she said. "This particular image not only makes a pretty picture but I expect it will be useful to astronomers who model interacting galaxies and how these interactions trigger star formation."

The pair of images were obtained using the Gemini Multi-Object Spectrograph (GMOS). It provides high-resolution imaging on both of the twin Gemini 8-meter telescopes. The observations are part of the ongoing Gemini Legacy Imaging program that shares striking views of the universe made possible with the new generation of large ground-based telescopes. Travis Rector of the University of Alaska combined the raw data to create the color images.

Additional technical and background information and full-resolution image downloads are provided from a link at: www.gemini.edu

The Gemini Observatory is an international collaboration that has built two identical 8-meter telescopes. The Frederick C. Gillett Gemini Telescope is located at Mauna Kea, Hawai'i (Gemini North) and the other telescope at Cerro Pach□n central Chile (Gemini South), and hence provide full coverage of both hemispheres of the sky. Both telescopes incorporate new technologies that allow large, relatively thin mirrors under active control to collect and focus both optical and infrared radiation from space.

The Gemini Observatory provides the astronomical communities in each partner country with state-of-the-art astronomical facilities that allocate observing time in proportion to each country's contribution. In addition to financial support, each country also contributes significant scientific and technical resources. The national research agencies that form the Gemini partnership include: the US National Science Foundation (NSF), the UK Particle Physics and Astronomy Research Council (PPARC), the Canadian National Research Council (NRC), the Chilean Comision Nacional de Investigacion Cientifica y Tecnologica (CONICYT), the Australian Research Council (ARC), the Argentinean Consejo Nacional de Investigaciones Cientificas y Tecnicas (CONICET) and the Brazilian Conselho Nacional de Desenvolvimento Cientifico e Tecnologico (CNPq).

The Observatory is managed by the Association of Universities for Research in Astronomy, Inc. (AURA) under a cooperative agreement with the NSF. The NSF also serves as the executive agency for the international partnership.

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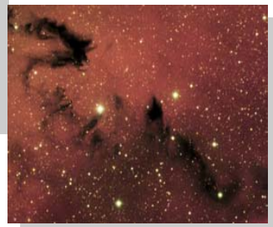
Above: NGC 520.
Gemini Observatory Image

Below: NGC 6559
Gemini Observatory Image



September 2005

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 *John, Gene*	2 *Pat*	3 *Jim O.*
4 *Mark*	5 *Jim M.*	6 *Joyce*	7 *Sheila*	8 *Larry, Gene*	9 *Barbara, Pat*	10 *Jim O., Mark*
11 *Anna*	12 *Jim M. AZ Virtual Acad. 50*	13 *Larry, Laura*	14 *Sheila 25 students*	15 *Eugene*	16 *Barbara, Pat*	17 *Ken, Jim O. ASP conference 50*
18 *Anna, Ken*	19 *Jim M. Docent Meeting*	20 *Laura, Joyce*	21 *Sheila*	22 *Larry*	23 *Pat*	24 *Ken, Jim O.*
25 *Eugene*	26 *Larry*	27 *Joyce*	28 *Sheila*	29 *Larry*	30 *Pat Sonoran Sci. Acad. 26*	

COELOSTAT OPERATORS NEEDED

Now that monsoon is on the way out, it is time to bring the Sun in - to the visitor center that is. But when the coelostat is made operational again, the usual problems will arise concerning turning it on, monitoring the image, and turning it off at the end of the day. Recently those tasks have fallen to the program coordinator, who uses VNC to gain access to the coelostat computer from downtown. But having only one person controlling the instrument from fifty-six miles away is not optimal.

Some docents, though, do not feel comfortable operating the instrument, which precludes just assigning it as a regular docent duty. So the department would like to have about six or seven volunteers to train in the operation of the coelostat and who will be charged with assisting in its operation.

These volunteers will work in concert with the program coordinator, who will continue to use VNC to provide access from downtown, to insure that the Sun's image is one the screen daily and that the coelostat is not left running after closing.

The software is easy to use and just requires that a series of steps be completed in the proper order, all a matter of pointing and clicking with the mouse. The coelostat points accurately when used daily, so the image of the Sun is easy to acquire. Because of the web cam mounted facing the projection screen, the operator can see the image without leaving the computer. This simplifies matters when trying to keep the image centered.

Any docent who would like to be trained should contact Robert Wilson at 318-8440 or rwilson@noao.edu. The sooner training begins the sooner the Sun returns.