

Astronomers at the Society of Hispanic Professional Engineers (SHPE) Conference

By David Sprayberry & Dara Norman, NOAO

Dara Norman and David Sprayberry, both astronomers at the National Optical Astronomy Observatory, attended the 2009 conference of the Society of Hispanic Professional Engineers (SHPE), held in Washington, DC from October 29-31, 2009. This conference was the largest SHPE yet held with more than 3000 students and about 500 professional participants. So why send a couple of astronomers into a den of engineers? The goals of NOAO's participation were to inform a group of young engineers about astronomical technology as a career path, to gauge the usefulness of societal meetings like this for recruiting engineering talent, and to reach out in general to a group that is underrepresented in the nation's STEM enterprise and in the field of astronomy in particular. NOAO registered for a booth during the job fair and was also granted time for a one-hour workshop presentation.

Thursday October 29 was devoted entirely to the workshop sessions. There were sessions throughout the day, of one to two hours long, with breaks in the morning, lunch hour, and afternoon. NOAO's workshop was held during the second afternoon session. It was classed as an "information" workshop, meaning that it was in the format of a traditional lecture, with slides, followed by a question and answer session. The majority of the workshops followed this format, but there were others that involved some role-playing or hands-on problem solving activities. The workshop session was well-attended, which was especially gratifying given that conference participants had to choose



Students arrive before the NOAO workshop at SHPE



David Sprayberry speaks at the NOAO workshop lecture

among about a dozen different workshops during each parallel session.

David Sprayberry presented NOAO's workshop lecture entitled, "Planets, Stars, Galaxies and Engineers: Astronomy Instrumentation and You." The lecture was intended to inform the participants about how important good engineering and advanced technology are to astronomical research, and to excite them about the kinds of engineering work that is necessary to build and support astronomy facilities. The presentation began by highlighting two recent astronomical discoveries and the technology that made them possible. The examples chosen were the discovery of seasonal methane plumes in the Martian atmosphere, which was enabled by ground-based IR spectroscopy, and the proof of the existence of a supermassive black hole at the center of the Milky Way, which served as a springboard for discussing adaptive optics and laser guide stars. The lecture then presented two very different projects currently under development—the Gemini Planetary Imager, and the Large Synoptic Survey Telescope—by describing their scientific goals and the major technological challenges of each. The lecture then moved into a more specific recitation of the different kinds of engineering disciplines engaged in astronomy, and it closed with a short discussion of the tangible and intangible rewards that engineers usually find in this field.

There was a considerable amount of interest from the audience. Sprayberry and Norman, assisted by Marcel Agüeros of Columbia University,

(Continued on page 17)



David Sprayberry talks to students at the NOAO booth



Students take a look at the NOAO booth

(Continued from page 17)

fielded questions from the floor for about 25 minutes. In addition, about ten people approached them afterwards with private questions after the nominal end of the workshop.

The job fair took place at the Washington Convention Center on Friday and Saturday, October 30 and 31. Norman and Sprayberry set up the NOAO booth Friday morning, and the fair opened in the afternoon. The booth consisted of a small space with a table and two chairs, enhanced by a graphical “NOAO” banner and a couple of posters highlighting recent (NEWFIRM) and current (WIYN-ODI) instrumentation projects. There were handouts available about NOAO in general, ODI, the Dark Energy Camera, and LSST. Posters of Kitt Peak National Observatory, and ball-point pens with the name of the workshop and the NOAO logo on them, were free for the taking to help visitors remember NOAO. In cooperation with Gemini Observatory, information about job openings for engineering and software staff at Gemini was handed out.

Traffic at the booth was very high, exceeding expectations of either Norman or Sprayberry. There was almost always at least one visitor at the booth, often more. Norman and Sprayberry estimate that there were at least twice as many visitors to this booth in 1.5 days as there are in 4 days to the NOAO booth at a typical winter AAS meeting. The high traffic was especially gratifying in light of the competition from the large number of much bigger, flashier booths set up by for-profit technology companies.

Many of the visitors were interested in learning more about astronomy as a career path for engineers, and most asked whether there were any spe-

cific positions for which NOAO was hiring in the near future. The engineering experience of the visitors (both students and professionals) included mechanical, aerospace, electrical, optical and software. Also, a number of the visitors were undergraduate students who wanted information about engineering internship opportunities and the Research Experiences for Undergraduates program. A few of these students were physics majors and at least one was pursuing a concentration in astronomy. One student had previously participated in an REU project at Fermi lab on particle physics and cosmology. Several students expressed interest particularly in working for a non-profit organization instead of a large for-profit company. A few others mentioned that, as first generation college attendees, they were discouraged from pursuing their interest in astronomy as a career in favor of engineering. These students were excited to hear that there are still opportunities for them in the field that had been their first love.

As always, there was a great deal of interest in astronomy in general; many visitors simply had fun learning more about current research and recent discoveries.

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