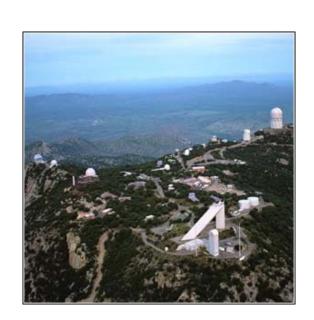


International Workshop Science Education in Schools



- Stephen M. Pompea
- National Optical Astronomy Observatory
- Tucson, Arizona
- USA



Overview of Talk





WELCOME TO FAMILY ASTRO

- Main focus of NOAO educational outreach programs
- Our main "EO" programs
- An exchange ideas



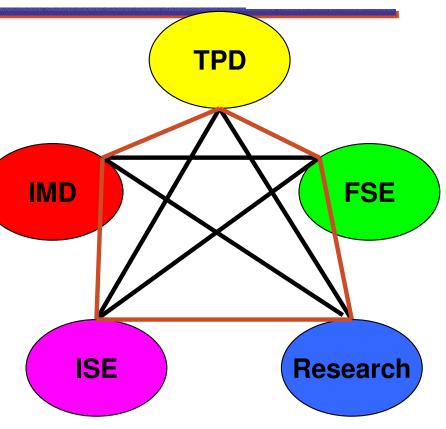


Spanning the Educational Spectrum



Current and future NOAO educational outreach efforts span the educational spectrum and focus on:

- Teacher professional development
- Instructional materials development
- Informal and community-based science education
- Teacher-astronomer partnerships in formal science education
- Research experiences for students and teachers











Astronomy Research-Based Science Education (A-RBSE)



Now in its 11th year at NOAO, A-RBSE introduces middle school and high school teachers from around the country to astronomy research and gives them guided projects for their students.







Kitt Peak National Observatory Research Experiences for Undergraduates (REU)



- One of the most soughtafter REU programs in the country
- Over 100 undergrads apply,
 6 are chosen to spend 10 12 weeks at NOAO, working with an astronomer mentor.

















- Collaborative program with NOAO, SPIE and OSA to provide underrepresented children with after-school activities related to optics
- NOAO developed six kits and runs workshops around the country to train leaders and volunteers
- New partnerships with Boys & Girls Clubs











Astronomy from the Ground Up



- An NSF supported project
- A new collaborative effort between the Astronomical Society of the Pacific, NOAO, and the Association of Science-Technology Centers
- Its purpose is to provide professional development in astronomy for informal science educators nationwide.





Project ASTRO: partnering astronomers with teachers



- National program started in 1993 by the Astronomical Society of the Pacific.
- It has been the flagship local program at NOAO for nearly 11 years.
- Astronomer-teacher partners meet at a 2-day fall workshop, try out selected activities, and plan 4 visits to a classroom over the school year.
- Both partners receive "Universe At Your Fingertips," a resource book containing 77 hands-on projects covering the solar system to galaxies.



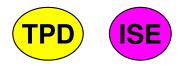
Astronomy from the Ground Up



- 4 year program
- Trains 300 museum educators
- Partners are ASTC and ASP







Family ASTRO



- National program started in 2001 by the Astronomical Society of the Pacific.
- It has been the flagship local program at NOAO for nearly 5 years.
- Workshops are held for people to learn how to lead family events on 4 different astronomical themes: on the Moon, on the solar system, on the night sky and on decoding various messages of light.
- Participants receive 4 hours of training on a particular theme, the leader kit and family kits with the materials to hold events.



Family ASTRO Goes to South America





Family ASTRO in Chile











ASTRO-Chile





The ASTRO-Chile Program started with an exchange of physics and astronomy activities between teachers in Chile and Tucson and has extended to...



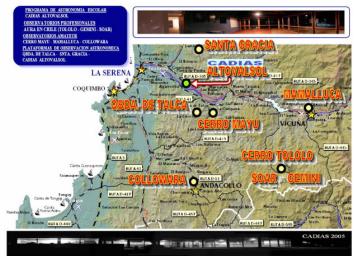
Student-to-student videoconferences on studies of:

Light pollution
Lunar eclipse
Remote sensing



Centro de Apoyo a la Didáctica de la Astronomía (CADIAS)

















GLOBE at Night



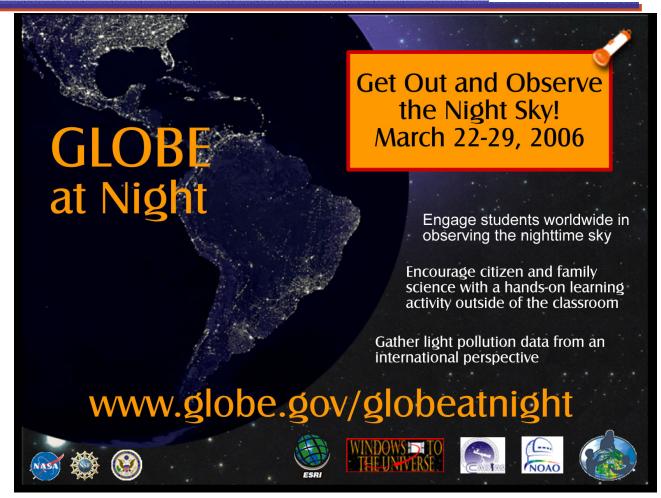
NOAO

GLOBE

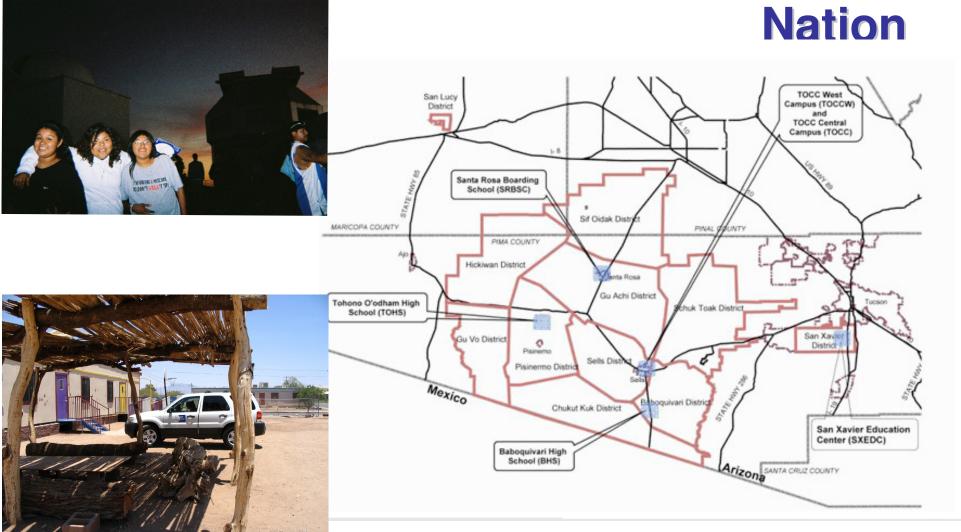
Windows to the Universe

CADIAS (Centro de Apoyo A la Didáctica de la Astronomía) &

ERSI (Environmental Systems Research Institute, Inc)



The Tohono O'Odham Nation





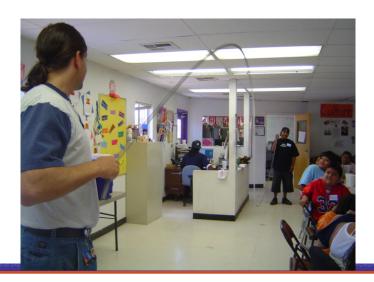




NOAO Outreach to the Tohono O'Odham Nation



- ASTRO 101 at the Community College in Sells
- Boys & Girls Club in Sells
- Other activities: star parties
- Nightly Observing Programs on Kitt Peak















Exchange of Ideas?



- Are there any programs here that apply to your experiences?
- Do you have any ideas for potential collaborations?



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