Impact Summary: The Spitzer Space Telescope Research Program for Teachers and Students

32 Teachers Trained in Doing Real Astronomy Research

Abstract: The Spitzer Space Telescope Research Program for Teachers and Students was a four-year joint project between the Spitzer Science Center (SSC) and the National Optical Astronomy Observatory (NOAO) that concluded in 2009. Through the program, teams of teachers and students were provided with unique opportunities to observe with the Spitzer Space Telescope and work with Spitzer and NOAO scientists. This study finds evidence of significant success. From the eleven major research projects supported by the program, 33 scientific posters have been presented, and a number of scientific papers have been published. Records indicate there have been nearly 100 newspaper, radio, and TV reports, and numerous Internet articles reporting on various aspects of teacher and student involvement in the project, and over 100 students feel the program has influenced them to pursue careers in science. This highly successful program has now become the NASA/IPAC Teacher Archive Research Project (NITARP), with funding from the NASA ADP program and the archives at IPAC.

High School Students using Spitzer Data/Research Receive Regional and International Science Awards

- 120+ students use Spitzer data through the program,
- 105 students feel the program has influenced them to pursue careers in science,
- 45 students select careers in science spaces,
- 42 students involved in the project have entered science fairs across the United States, and they are bringing home top prizes.

12 Research Articles Published

Astronomy Research Articles:

Articles Published in the 2009 RBSE Journal:
- Identifying T Tauri Stars Using Small Optical Telescopes by Jennifer Butchart, Oil City Area Senior High School, Oil City, PA, Teacher: Mr. Tim Spuck, pages 24-32
- Investigating Star Formation in Luminous Clouds by Raelle M. Siegel Oil City Area Senior High School, Oil City, PA, Teacher: Tim Spuck, pages 33-45
- Star Formation in Isolated Dark Nebulae: YSOs in LDN 981 by Justin Boerner, Stephen Brock, and Teresa DeWolf Chippewa Hills High School, Remus, MI, Teacher: Chris DeWolf - pages 46-56
- Articles Published in the 2007 RBSE Journal:
- Spectral Analysis of Blazar SS 0718+714 using Spitzer Infrared Space Telescope and New Mexico Skies Telescopes by Alejandro Morton, Monatzi Molnervaz, and Thomas Travagli, Deer Valley High School, Antioch, CA (Teacher Jeff Adkins) - pages 49 - 56
- Galaxy Cluster: The Local Effects on Star Synthesis by Zachary Schneiders, Zions Point North High School (Teacher Andy Hendriks) - pages 66-79
- Star Formation Rate in Three High-Redshift Galaxy Clusters: A Contribution to the Study of Galactic Evolution by Yvonne Patel and Matt Pereira, Great Falls Public Schools/NITARP. For additional information please contact Tim Spuck at tspuck@hotmail.com - pages 12-21

79 High School Students Visit the Spitzer Science Center and/or Attend AAS Meetings

Teachers and students involved in the project have been sharing their experience with other educators, scientists, amateur astronomers, and members of the general public. These presentations have taken place in their local areas, as well as in the state, national, and international arena. Some examples of forum locations include:

- American Astronomical Society meetings
- National Science Teachers Association conferences
- State Science Teachers conferences
- Christa McAuliffe Planetarium
- Carnegie Science Center
- Hands-On Universe Conference in France
- INTEL Science Fair
- ASTROBLAST Regional Star Party
- American Institute of Aeronautics and Astronautics

TOP-LEFT: Student Jessica Herrera, San Antonio, TX, interviewed SSC Director Dr. Tim Spuck for a story about authentic science research in the classroom for Texas Public Radio. Her interview was broadcast on station KSTX in San Antonio. TOP-BRIGHT: Oil City students and teacher Tim Spuck get first page in the Sunday paper. Forty-eight-page newspaper, 37 radio broadcasts, 14 magazine/newspaper articles, two TV broadcasts, and numerous Internet articles and stories from the USA reporting on various aspects of teacher and student involvement reached an estimated 6 million viewers.