

ENHANCING THE PUBLIC'S UNDERSTANDING OF SCIENCE

Education and Public Outreach at the Arecibo Observatory

NAIC



Daniel Altschuler

"Use astronomy as a gateway to enhance the public's understanding of science and as a catalyst to improve teachers' education in science and to advance interdisciplinary training of the technical work force."
- *Astronomy & Astrophysics Survey Committee, Decadal Review 2000*

The recently established Office for the Public Understanding of Science (OPUS) coordinates education and public outreach activities at the Arecibo Observatory. The location of the Arecibo Observatory, in an environment populated by 4 million Hispanic U.S. citizens, places it in a very special context.

The Angel Ramos Foundation Visitor Center and Conference Center

On the base of one of the three main towers supporting the telescope sits the Angel Ramos Foundation Visitor Center, with an observation platform offering a spectacular view of the 305-meter radio telescope. The center was established in 1997 as a joint effort of NAIC, the NSF, Cornell University, and the Angel Ramos Foundation, along with funds from various public and private institutions and individuals in Puerto Rico. The center houses science exhibits, a large auditorium, and a gift shop. It is the only facility of its kind in Puerto Rico.

The adjacent Angel Ramos Foundation Conference Center provides a modern classroom setting with appropriate multimedia resources. It provides a unique venue to host workshops and professional meetings.

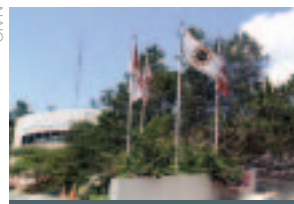
Exhibit Program

Displayed through a variety of interactive kiosks, audiovisual presentations, and informative panels, the *More than Meets the Eye* exhibit gives visitors an introduction to astronomy, atmospheric science, and the operation of the radio telescope. In the auditorium, visitors enjoy *A Day in the Life of the Arecibo Observatory*, a 20-minute presentation that provides a behind-the-scenes look at daily operations. The exhibits and the theater presentation are bilingual.

Visitors of all ages and from many countries visit the observatory every year. Since the opening of the Visitor Center in 1997, more than 750,000 visitors have toured the facility—an annual average of nearly 120,000 visitors. Children (mostly school groups and summer camps) account for 30 percent of the visitor flow.

A school visits program allows school groups from public and private institutions to visit the Arecibo Observatory by appointment and tour its Angel Ramos Foundation Visitor Center. Prior to the visits, teachers receive a printed guide to the exhibits and other supplementary materials that allow them to prepare the students for the field trip. About 500 school groups participate every year. The school visits program is supported by a grant from the Verizon International Foundation.

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The Angel Ramos Foundation Visitor Center

The Angel Ramos Foundation Science Teacher Workshops

Each year, about 50 science teachers from throughout the island participate in a five-day residential workshop at the Arecibo Observatory.

The program provides a unique opportunity for science teachers to enhance their conceptual understanding and teaching skills, and to experience the environment inside a research facility. In addition, participants are given materials and equipment to take back to their schools and incorporate into their courses. These donations are made possible through the generous support received.

The residential nature of the program familiarizes teachers with the daily operation of the research facility. Teachers tour the observatory, meet the scientific staff, and learn about their research efforts. A member of the scientific staff provides a special lecture for the participants.

Student Guide Program

A collaboration with the University of Puerto Rico at Arecibo (UPRA) brings a team of college students to work as tour guides at the center. Candidates are selected from among the best science students at UPRA.



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Community and Media Relations

Relations with the community of Puerto Rico have been greatly enhanced in recent years. New initiatives with the University of Puerto Rico (UPR), the Arecibo municipality, the Puerto Rico Tourism Company, the Department of Education, private groups and individuals, and the media are part of the quest for good community relations.

The observatory, through its Visitor Center, is an affiliate member of the NASA–Puerto Rico Space Grant Consortium (managed by the UPR). The observatory participates in joint activities and receives support for specific outreach initiatives.

The Tourism Company is the main government agency responsible for the development of tourism on the island. As part of the agency's efforts, promotional packages that include information about the observatory are prepared and posted in magazines and newspapers worldwide.

In addition to the science teacher workshops, the Department of Education partners with the observatory for various activities, including consultations with staff members about science education and curriculum development. The Department of Education encourages schools to visit the observatory. Staff members from the observatory participate as jurors at the state science fairs and provide support to teachers for special projects.

The observatory is a resource for information about scientific events for the media. During special events—solar eclipses, meteor showers, near-earth-crossing asteroids, comets—dozens of requests for information are processed. Staff members also give their time to appear on radio and TV shows, and to write articles for the press. Observatory science and events receive good media coverage.

Communicating Astronomy in Hispanic America

Participants from Spain, Hispanic America, and Hispanics working in the U.S. in the field of education and public outreach attended an international meeting, "Communicating Astronomy in Hispanic America," held in September 2003. Nine countries were represented.

Participants searched for, reviewed, and presented new strategies for astronomy and science popularization. The participants exchanged experiences in the area of science outreach and established



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representatives from nine countries, brought about discussions on new initiatives in science education and outreach for Hispanic populations.

collaborations. New initiatives in science education and outreach in the Hispanic world were presented and problems and possible solutions for effective outreach programs were discussed. One goal was to pursue a philosophy and methodology that would improve science knowledge within the Hispanic population.

Presentations ranged from "Popularization of Cognitive Science as a Response to Pseudoscience" to "Inreach Is also Necessary" to "Mars in Science Fiction Movies." The proceedings will be published.

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good community relations exist between the Arecibo observatory and the community of Puerto Rico.

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