SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Innovative and Informal Space Education (4)

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AN INNOVATIVE APPROACH TO CONNECTING SCIENCE AND CULTURE

Abstract

We describe a unique partnership between two organizations—one dedicated to lunar exploration and educational outreach and the other dedicated to cultural explanation and educational outreach. The result will enhance science while strengthening public understanding and support of lunar exploration.

The University of Hawai'i at Hilo (UHH) is located at the base of Mauna Kea 4,205 meters above sea level and 10,000 meters above its base at the sea floor. In addition to its eminence as a site for astronomy, Mauna Kea's slopes boast some of the world's best lunar regolith simulant. These features have given rise to UHH's Pacific International Space Center for Exploration Systems (PISCES, see http://pisces.hilo.hawaii.edu). UHH is also home to the world's only College of Indigenous Languages and to 'Imiloa Astronomy Center (see http://www.imiloahawaii.org), which "tells the dual stories of the renowned Mauna Kea volcano, with its world-famous astronomy and the rich traditions of Hawaiian culture. ('Imiloa, 2009)"

PISCES is dedicated to the study of technologies which will be necessary for sustained human existence on the Moon and Mars for long periods of time. It works with the U.S. National Aeronautics and Space Administration (NASA), the Canadian Space Agency (CSA), the Deutsches Zentrum für Luft- und Raumfart (DLR) and other agencies and corporations to conduct test/demonstrations of devices designed for lunar or Martian exploration. Its most recent tests in November, 2009 successfully demonstrated advanced lunar rover design features and the creation of water from lunar regolith (David, 2008; Fujikawa, 2008).

In 2008, PISCES and 'Imiloa entered into a partnership to create "Ua Ao Hawaii: The Dawning of a New Era in Human Exploration." The premise of this project is described in one of its working documents:

"The world is about to embark on a voyage of historic proportions; a return to the Moon, with the intent to go beyond to explore the solar system. But there is a distinct difference between this space voyage and the first one that was the objective of the Apollo Program; this time we're going to stay. Like those first Polynesian voyagers who eventually discovered and settled the Hawaiian Islands, this time we can't take everything with us. We will have to learn how to "live off the land" on the Moon, just as those early voyagers did here on these islands. That means we will have to learn how to produce everything we need to sustain life: consumables such as air, water and food; energy collected from the sun and extracted from the chemicals in the regolith; and materials of all kinds, including metals, ceramics and composites, made from the resources found on the Moon. "

We describe the features of the project, the collaboration between PISCES, 'Imiloa, the planetarium with which education/outreach shows will be produced and shown, and other Hawaiian organizations interested in preserving the culture. We also discuss efforts at UHH to use the connections between traditional Hawaiian ocean wayfaring and current U.S. plans for spacefaring. We discuss the importance of education and public outreach in strengthening public support for science in times of economic stress.