

NASA TESTED AND
APPROVED



Pacific International
Space Center for
Exploration Systems

99 Aupuni Street Ste. 212-213
Hilo, HI 96720
808.935.8270 ph
pisces@dbedt.hawaii.gov
www.pacificspacecenter.com

PLANETARY
ANALOGUE TEST
SITES



PACIFIC INTERNATIONAL
SPACE CENTER FOR
EXPLORATION SYSTEMS
(PISCES)

PISCES is a Hawaii State Government Aerospace Agency located in Hilo, Hawaii that conducts environmentally-safe field tests on Hawaii's volcanic terrain to test and validate advanced space technologies. These space technologies include robotics, advanced manufacturing, and advanced communications - all with dual purposes: for use in space as well as here on Earth.

PISCES Projects

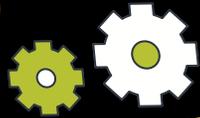
- Lunar Concrete
- Women's STARS Program
- 3-D Laser Printing Project
- Moon RIDERS
- PISCES Planetary Analogue Test Sites
- NASA Laser Communication Ground Station
- PISCES Robotic Village
- PRISM (PISCES Robotic International Space Mining) Competition



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PISCES PLANETARY ANALOGUE TEST SITES

(PPATS)



What are the PISCES Planetary Analogue Test Sites (PPATS)?

PPATS are world-class testing grounds located on Hawaii's Big Island. The unique composition and volcanic terrain of these sites mimics that of the Moon and Mars, making them ideal environments for testing robotics and other exploration systems before launch.

What kinds of tests are conducted at PPATS?

The planetary analogue sites can be used to test resource and exploration mapping, navigation, access techniques, habitation studies, robot rover endurance and maneuverability, and *in-situ* resource utilization – a process that extracts usable resources like oxygen and water from the regolith (soil) that would otherwise be unusable.

Tests conducted at PPATS

PISCES has conducted several successful campaigns with international agencies at a test site on the mid-slopes of Mauna Kea, including the Moon and Mars Analog Mission Activities (MMAMA) in 2012, where NASA researchers tested the Juno II Rover. In 2013, the "Puli" Google Lunar X-Prize Team from Hungary successfully tested their innovative lunar rover at a similar location.



Above: A PISCES Planetary Analogue Site located on the Big Island of Hawaii.

What kind of terrains and environments do the testing sites offer?

The test sites consist of diverse terrains and climates, from large, open tracts of volcanic cinder and basalt, with features like slopes, valleys, and hills, to lava tubes, caves, and pit craters.

Are the sites environmentally safe?

Yes. PISCES works to protect the diverse physical and cultural landscape of Hawaii, as well as the large population of endangered and/or threatened plants and animals of the Islands. Tests on-site are conducted with minimal impact to the environment, and all sites are restored upon completion. PISCES also works closely with a cultural advisory committee to ensure proper respect towards the Hawaiian culture and continued use of lands.

Contact

For more information, or to make arrangements for utilizing one of PISCES' test sites, contact:

John Hamilton
Test Logistics/Education & Public Outreach Manager
Phone: (808) 896-6550
jch@hawaii.edu

Below: PISCES' Alpha Argo Planetary during testing at a planetary analogue site.

