



MOON RIDERS HAWAII HIGH SCHOOL STUDENT LUNAR FLIGHT EXPERIMENT | **FAST FAQ'S**

Q. What is MoonRIDERS?

A. It's a PISCES STEM (Science, Technology, Engineering, and Mathematics) project that will give Hawaii high school students the opportunity to develop a space experiment and launch it to the surface of the Moon. "RIDERS" in the name "MoonRIDERS" stands for "Research Investigating Dust Expulsion Removal Systems".

Q. What kind of experiment will the students be working on?

A. The students will test NASA's new electrodynamic dust shield (EDS) technology. The EDS is designed to repel planetary dust (Moon, Mars, asteroids) off of space gear and equipment by using a high voltage, low current electrostatic grid to remove particles off of surfaces.

Q. Why dust?

A. The dust found on Mars and the Moon is a major problem during space missions because it is very fine and abrasive. The dust stubbornly clings to space hardware and interferes with the functioning of solar panels, robotics, space suits, camera lenses and optics, and other systems. During the Apollo missions, space suits were partially unusable after only three days of exposure to the lunar environment. The Lunar Flight Experiment could solve this problem.

Q. Why is MoonRIDERS important?

A. This project is designed to give Hawaii students valuable STEM education and real-world aerospace experience. The EDS has been tested on Earth but has never been tested in space, so the design and test data the students gather from this experiment could help with real-life future space missions.

Q. Will the MoonRIDERS experiment be used on a real mission to the Moon?

A. Yes! The experiment will be flown to the lunar surface on a Google Lunar XPRIZE (GLXP) mission in 2016. To our knowledge, this will be the first time in history a high school will participate in an experiment conducted on the *surface* of the moon! (There have been student experiments sent to the International Space Station as well as conducted in lunar orbit, but not on the lunar surface).

Q. How exactly will students put this NASA technology to the test?

A. NASA Kennedy Space Center will loan the schools a prototype of the EDS and mentor the students. This includes educating them on the physics of the experiment. Students will build a mock up lunar lander spacecraft, fabricate the actual flight frame for the mission, mount the EDS on it, install a camera, design a lunar re-duster, then test the entire system at one of PISCES' planetary analogue sites on the Big Island of Hawaii to see how well it'll remove dust off of the camera lens before sending the experiment to the Moon.

Q. Which Hawaii schools are participating in MoonRIDERS?

A. Kealahou High School, a public school on the Big Island of Hawaii, and `Iolani School, a private school on Oahu.

Q. When did the students start working on the experiment?

A. Fall Semester of 2014.

Q. How is the project funded?

A. Each of the partners (PISCES, NASA, Hawaii high schools) fund their own portion of the project. Money doesn't trade hands, just hardware.

Q. When will the experiment be launched to the Moon?

A. The target date is the end of 2016.

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