Flight Opportunities Program
Office of the Chief Technologist

UP Aerospace SL9 Sub Orbital Flight

Launch Date: October 20, 2014
Spaceport America, New Mexico
Total payloads: 4
Campaign Manager: Paul De Leon

#	Title/ Payload #	PI/Organization	Description/Objective
1	**Payload #1: 080-S JPL Advanced Micro Sun Sensor**	Payload POC: Christian Liebe (818) 354.7837, carl.c.liebe@jpl.nasa.gov	The Advanced Micro Sun Sensor (AMSS) is a state of the art miniaturized digital sun sensor, that has been a pathfinder for a new generation of sun sensors and will be useful on future RSLVs. Flight data will be collected and analyzed to determine the AMMS performance during a suborbital flight. This technology will enable a new suite of 3-axis pointed science applications for suborbital payloads such as astronomy missions that require accurate pointing to specific celestial objects or to occlude the sun for surface observations and for accurate pointing at terrestrial objects / regions for agricultural or geological observations.
2	**Payload #2: 021-S Application of Controlled Vibrations to Multiphase Systems for Space Applications.**	Payload POC: Dr. Ricard González-Cinca (34) 934134153 Ricard.gonzalez@upc.edu	Test of a technology for the generation of controlled harmonic translational vibrations in multiphase systems in microgravity conditions. Multiphase flows are present in a wide variety of space systems, such as thermal control, propulsion, waste water treatment, and many other Environmental Control and Life Support Systems (ECLSS) required for the development of space exploration.
3	**Payload #3: 077-S Facility for Microgravity Research & Submicroradian Stabilization**	Payload POC: Scott Green (562) 735-3065, sgreen@controlled-dynamics.com	Microgravity research on sRLVs requires isolation of the experiment from the milli-g flight environment of the host vehicle during free-fall. The Vibration Isolation Platform (VIP) isolates the research experiment from vibrations & disturbances of the crew, host vehicle, or other experiments. The VIP is a capabilities enhancement for sRLVs, providing economical access to a high-quality microgravity environment. This enables a robust expansion of space research, commercialization, and scientific discovery.
4	**Payload #4: 088-S FPGA-Based, Radiation Tolerant Computer System.**	Payload POC: Dr. Brock J. LaMeres (406) 994-5987, lameres@ece.montana.edu	Future NASA missions require increased on-board computing capability beyond what is available today; these computers must operate in a harsh radiation environment, which causes system failures if not mitigated. This flight will demonstrate a novel computer architecture that provides increased performance and radiation tolerance for space computing.