



MISSION PROFILE – SL-3 EDUCATION LAUNCH – MAY 2, 2009

LAS CRUCES – The following information was provided by the New Mexico Space Grant Consortium to the New Mexico Spaceport Authority to detail the nature of the payloads that will be included in the First Annual Education Launch from Spaceport America.

FOR FURTHER INFORMATION ON NMSGC OR PAYLOADS, PLEASE GO TO:
<http://spacegrant.nmsu.edu/> OR CALL (575) 646-6414

Program Description

Spaceport America is providing the rocket and launch that will take a group of student experiments to space on Saturday, May 2, 2009. New Mexico Space Grant Consortium at New Mexico State University developed the program that funded 2 university classes, 3 community college classes and 5 high school classes to build electronic experiments over the past academic year. These experiments will be flown on a SpaceLoft XL rocket provided by UP Aerospace. The purpose of this program is to develop New Mexico's workforce by providing students access to space annually from Spaceport America.

University Payload Canister

New Mexico State University – PTS-10

Steve Horan – Faculty Advisor – sthoran@nmsu.edu

David Romero – Team Lead – daromero@nmsu.edu

Description of Payload: Payload will collect data in terms of altitude, acceleration, temperature, cosmic radiation and magnetic field in order to understand how the flight components operate in sub-orbital space. Name of payload is OSCER-Sat. Individual sensors shall be integrated into sensor package. Sensors measure and output data to memory as specified in requirements. Payload shall be powered on upon take-off/powered off prior to landing. Finished vehicle shall adhere to all UP Aerospace specifications. Assemble each subsystem and place in PTS-10 to verify form factor. Repeat bench testing procedures but and verify that data is being stored onto FLASH drives in proper format (time-stamped, CSV files, with same data). Power on each subsystem and record time for batteries to run down. Recharge battery and verify that this can be completed in specified time. Assemble test bench and integrate into pseudo-can (paint can). Drop pseudo-can off Goddard annex and verify that subsystems still operate properly. Conduct vibration testing (PSL) to verify that payload will stay intact when exposed to flight

environment. Adjust position of batteries in payload so as to ensure that payload meets centralization of mass requirements.

University of New Mexico – PTS-4

Olga Lavrova – Faculty Advisor – olavrova@ece.unm.edu

Jim Aarestad – Team Lead – four0gpa@unm.edu

Description of Payload: As this is the first year for this project at UNM, its primary goal is to provide a control platform, power subsystem, an instrumentation package, and associated hardware and software. Further, the team will demonstrate the ability to monitor and record a variety of physical parameters in an actual space flight environment. The performance of each part of this project, and the status of each subassembly, must be managed by a central control system. A microcontroller-based (PIC-based) solution in which the software and hardware solution could be developed to integrate all control and data function on a single PC board. The power to operate the components of this payload will consist of a set of rechargeable batteries, similar to those used in R/C aviation. A control/status module, which will monitor the batteries' condition and provide both a visual and an electrical indication of the condition of the power source. The instrumentation for this project will include sensors and any necessary signal conditioning needed to measure and record the following physical conditions during flight: Temperatures, Ambient light conditions, Atmospheric pressure and altitude measurements, Power demand vs. time, Vibration and acceleration, Stress/Strain, and Magnetosphere.

Community College Payload Canister PTS-10

Southwestern Indian Polytechnic Institute

Nader Vadiee – Faculty Advisor – nvadiee@sipi.bia.edu

Alicia Montoya – aliciacm13@live.com

Kasra Manavi – Team Lead – kmmanavi@gmail.com

ITT-Technical Institute

Bill Sutton – Faculty Advisor – bcsutton@itt-tech.edu

Marc Maximovich – Team Lead - mpm671@gmail.com

Doña Ana Community College

Marco Garay – Faculty Advisor – magaray@nmsu.edu

Edward Poole – Team Lead – poolepilot@aol.com

Description of Payload: Students in technical programs built and tested payloads as part of an undergraduate course. This payload was developed by Colorado Space Grant and is called the RocketSat. Instruments on this payload include pressure sensor, accelerometers, temperature sensor, and Geiger counter. These instruments are a baseline for future student experimentation and basic rocket characterization.

Rocket Description

The rocket provider is UP Aerospace out of Boulder, Colorado. The rocket is Spaceloft XL, which is a sounding or research rocket.

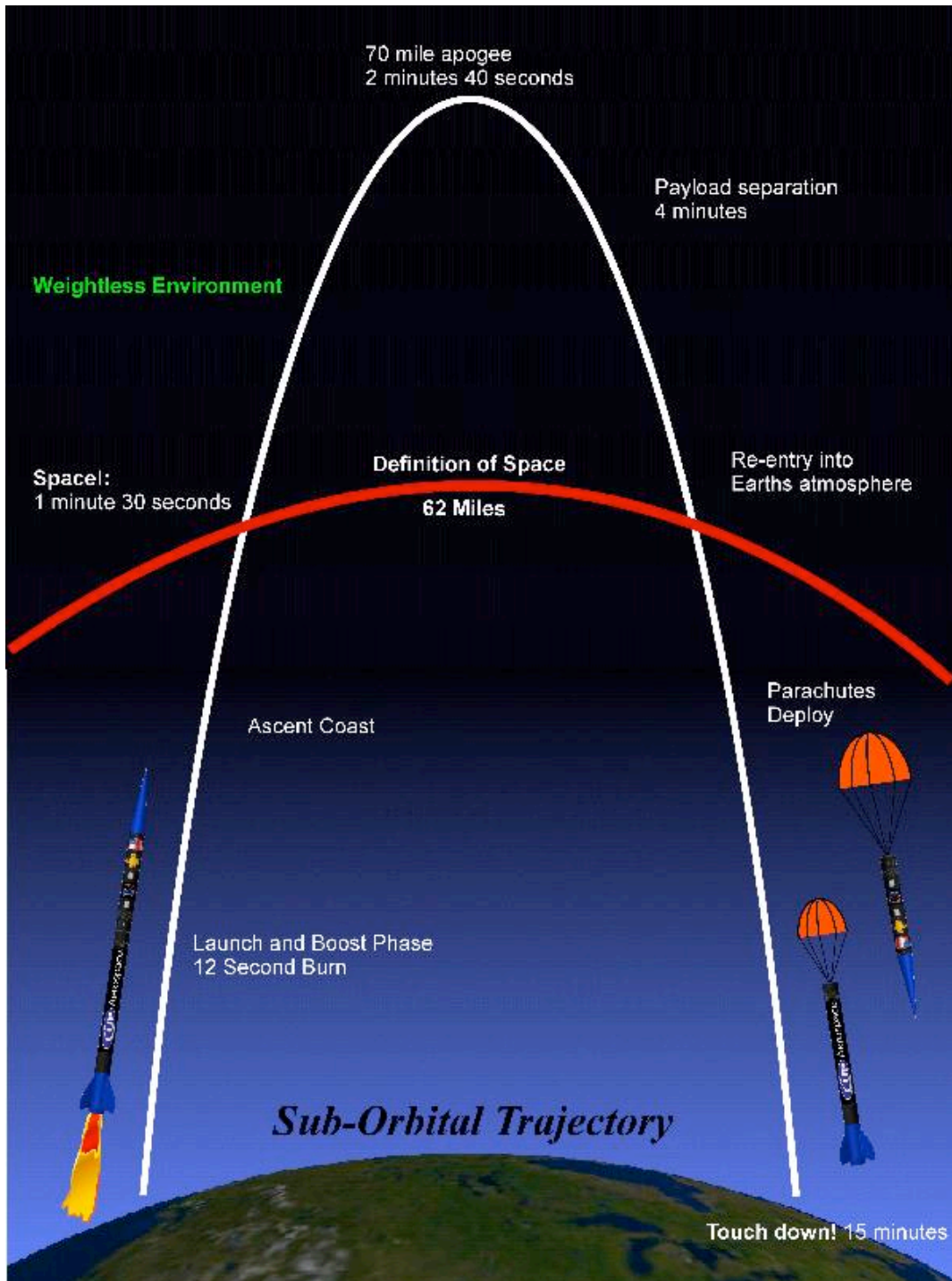
DIAMETER: 10.45"

HEIGHT: 20' when full

APOGEE: 70 miles

PAYLOAD SECTION: 52" long

PAYLOAD: Four 10-inch canisters support 10 lbs. ea.; three four-inch canisters supporting four lbs. ea.



**PLEASE GO TO WWW.SPACEPORTAMERICA.COM FOR LATEST LAUNCH INFORMATION
AND SCHEDULING DETAILS!**

For additional information and images of Spaceport America go to
www.spaceportamerica.com or contact David Wilson @ 575-524-8118 or email:
dwilson@wilson-binkley.com