Program of Research and Experiment Proposal

The purpose of the RADSat research project is to design and launch a miniature satellite with a payload into low Earth orbit. The 1U CubeSat will carry the Highly Miniaturized Radiation Monitor (HMRM) payload, which is a miniature monitor that will measure radiation in outer space. The flight will serve a technology demonstration of the payload, which could be used on larger missions if initial tests are successful.

Experiment Objectives

1. Successfully launch the experiment, RADSat, into the proper low-earth orbit
2. Successfully communicate (transmit and receive) with RADSat and receive appropriate telemetry
3. Receive radiation data from HMRM payload
4. Certify that the HMRM is effective in measuring radiation in low Earth orbit and can be relied upon for accurate data for use in future missions

Ground Station

The team will build their own ground station near the Spacecraft Development Laboratory at Embry-Riddle. The station will be mobile, and therefore able to receive transmissions at the optimal location. Ground station architecture at the university's new research park will also be used to communicate with the satellite. The team will communicate with the satellite using the frequencies of 449.75-450.25 MHz for transmitting and 400.15-401 MHz for receiving, which are in the space-research service.