RESEARCH SUMMARY

RadSat-u

Submitting Organization

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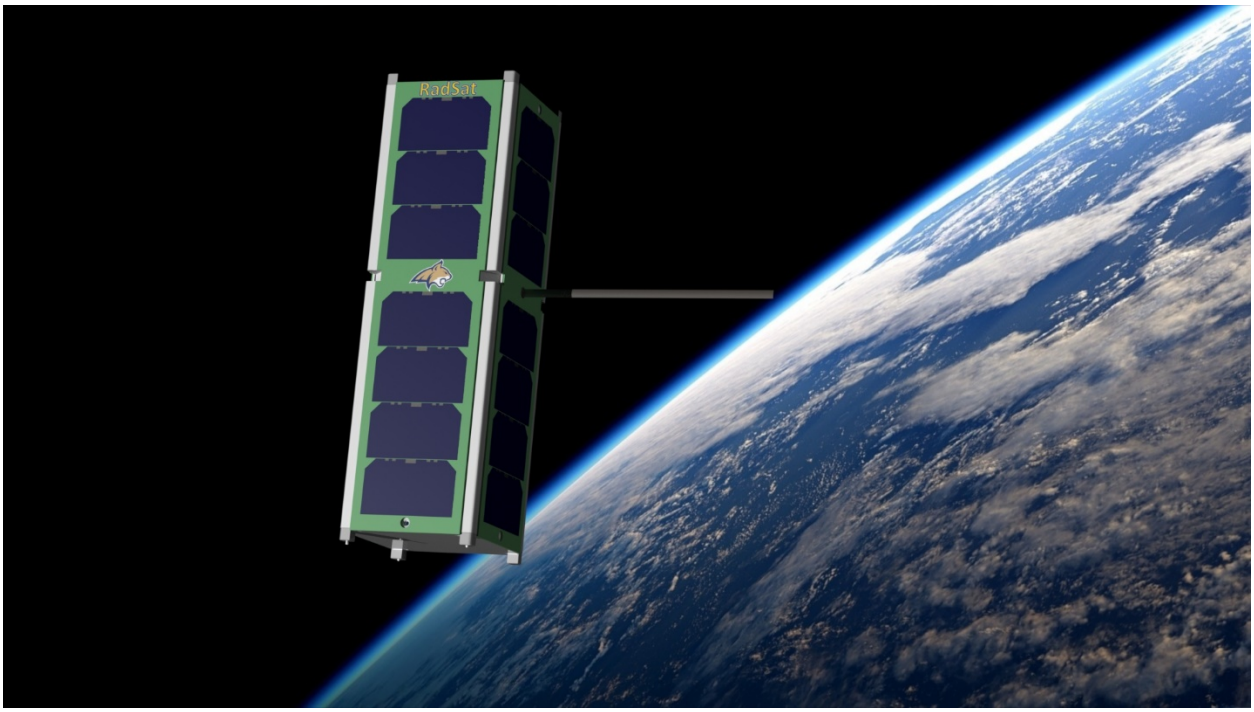

The primary goal of this research project is to test a new radiation tolerant computer system in a low earth orbit (LEO) satellite mission. This will test the reliability of the technology in a harsh radiation environment. The satellite has a 3U small satellite form factor (100mm x 100mm x 300mm) and will be deployed from the International Space Station (ISS). The satellite will follow a deorbiting orbit similar to the ISS with a mission lifetime between 6-12 months. The satellite will communicate with a ground station located at Montana State University using a half-duplex, GMSK signal operating in the UHF band (437.425 MHz). The satellite will download a small telemetry file (1 kbyte) every 5 minutes at a rate of 19.2 kbps. The telemetry file will contain state-of-health information about the radiation tolerant computer technology and the satellite. It is anticipated that the MSU ground station will get 1-2 passes per day to collect data. During these passes, MSU will be able to uplink to the satellite at 9.6kbps in order to change configurations of the satellite.