

1 Technical Description - Argus

Argus is a 3-kg space experiment to improve the modeling of the effects of space radiation on electronics. The spacecraft is a 2U CubeSat that will monitor the error rates of memory devices in Low-Earth orbit; statistical data about on-orbit events will be collected and downlinked. The statistics of on-orbit events will be compared against the predictive models, to better calibrate these models. The end result of this experiment will be calibrated models, which can then be used to qualify modern electronics for space flight.

The Radiation Modeling Experiment will be developed in partnership with the Institute for Space and Defense Electronics (ISDE) at Vanderbilt University; ISDE will provide the science instrument and data analysis; SSRL will integrate the electronics, operate the satellite, and relay the science data to ISDE. Argus carries two flight experiments (latchup and SRAM-based bit-flip) and a payload interface control. The spacecraft bus consists of a single-board UHF/VHF transceiver, a power management system with Lithium-polymer batteries, a PIC24-based microcontroller, and an aluminum frame. Argus is solar powered and passively stabilized, using permanent magnets.