



SPACE PHYSICS SEMINAR

Dual presentation of
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“The Boston University student Satellite for
Applications and Training (BUSAT)”

Thursday, October 11, 2012
Refreshments at 3:30pm in CAS 500
Talk begins at 4:00pm in CAS 502

Abstract:

The Boston University student Satellite for Applications and Training (BUSAT) program is a grassroots spaceflight hardware development program entirely staffed and directed by students of engineering, physics, astronomy, and computer science. BUSAT was originally formed in response to an AFOSR Broad Agency Announcement (BAA) in 2007, and was tasked with the development of a nanosatellite for the scientific exploration of the near-polar regions of the earth's upper atmosphere for the Boston University Center for Space Physics.

The BUSAT satellite is an attempt to provide a rapidly reconfigurable satellite bus that lowers overall mission cost by driving down interface costs. The bus is intended to provide launch opportunities for up to 24 experiments and provides all the necessary support for each of these “black box” missions to succeed, including power, data handling, downlink data telemetry, uplink command telemetry, and diagnostics.

BUSAT's current scientific space weather payload complement seeks to characterize magnetosphere – ionosphere interactions from low-Earth orbit by simultaneously measuring energetic electron flux and subsequent auroral light emissions in the polar latitudes. Instruments include a geographically resolved pushbroom-style spectrographic imager based on terrestrial COTS components, a custom compact imaging electron spectrometer, and a COTS magnetometer.