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OreSat CubeSat System Overview

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This talk will give an overview of the OreSat CubeSat system, a fully open source 1U - 3U CubeSat system meant to be built, modified, and flown by student teams. OreSat has everything you would expect from a CubeSat system: a scalable 1 - 3U structure, multi-band deployable antenna, solar array, battery pack, on-board computer, radio system, star tracker, reaction wheels, magnetorquers, SDR GPS receiver, and capability for a high speed S band radio system. OreSat is built around a high density card-cage system with a 40% higher packing density than PC-104. Each system is a "card" based on inexpensive 2 and 4 layer PCBs that uses a common CAN and Ethernet-based backplane with RF, data, and power. Existing cards use standardized processors, ranging from small pin count, low power Cortex M0 microcontrollers up to a full Linux installation running on a Cortex A8. The first OreSat CubeSat is scheduled for first flight in early-2022 (OreSat0, a 1U technology demonstrator), and will be fully deployed in mid-2022 as the 2U OreSat mission, accepted into the 2017 NASA CSLI. For more information, please see https://www.oresat.org/

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