

Description of Research Project:

The University of Texas at Austin's Texas Spacecraft Lab and Caltech are working in conjunction to develop a low cost Earth science satellite mission. Caltech is developing a 2-channel radiometer to measure the 183 GHz radio spectrum, while the TSL is designing, building, and operating a spin stabilized 3-unit CubeSat to carry the instrument.

The TSL will develop and operate a software defined ground station for satellite controlling and science data downlink. The TSL already holds a license for its on-campus ground station. The satellite will utilize the He-100 radio created by Astronautical Development, LLC for downlinking data critical to mission success. The ground station's software defined radios will be used to uplink telecommand to the spacecraft at 9600 bps, and downlink science data at 38400 bps.