

TES-8: Advanced Exo-Brake, VR and COM Experiments

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The TES-8 was jettisoned from the International Space Station on January 31, 2019. As an orbital laboratory and 8th in on-going series, the design makes use of a standard set of interfaces and safety features that permit rapid re-flight. On this flight, an advanced Exo-Brake is flown with de-orbit targeting capability that will engender sample return capability from LEO platforms. A Virtual Reality data recording system uses stereo imaging and efficient data-compression with an NVIDIA GPU (Graphics Processing Unit) to permit compression and transmission of very large data files. An SDR (Software Defined Radio) will download data to the NEN (Near Earth Network) for the first time - demonstrating potential use in cis-lunar space using S-band. For the first time, a comparison will be made regarding the functionality of the Iridium and Globalstar short burst data modems - as essential communication tools for future nano-sat projects. Lastly, the 7 micro-processors and 4 cameras provide an excellent learning platform for university students and NASA young professionals.