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Low-cost science instruments onboard Korean microsattellites

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In this presentation we give an overview of onboard science instruments developed in Korea, which can be used for next-generation low-cost planetary exploration. For terrestrial missions the Korean space science society has steadily developed low-cost onboard science instruments such as thermal plasma probes to diagnose cold background electrons/ions, electro-static analyzers to measure flux of keV electrons, solid-state detectors of sub-MeV electrons, radiation dosimeters, and Hall plasma thrusters to boost satellite orbits. These payloads have been operating successfully on near-Earth orbits: e.g. Korea Institute of Technology Satellite-1 (KITSAT-1, 1992), KITSAT-2 (1993), KITSAT-3 (1999), Korea Multi-Purpose Satellite-1 (KOMPSAT-1, 1999), Science and Technology Satellite-1 (STSAT-1, 2003), STSAT-2 (2012), and STSAT-3 (2014). These Korean science payloads have the potential to be used for next-generation low-cost planetary explorations.