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CALET: a calorimeter based orbital observatory for High Energy Astroparticle Physics

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CALET is a complex experiment that will be installed on the Exposure Facility of the Japanese Experiment Module (JEM-EF) on the International Space Station (ISS) with a launch window in the late 2013. The instrument consists of three modules: a charge module using plastic scintillator to identify the charge of the particle, a thin imaging calorimeter (3 r.l.) with tungsten plates interleaving scintillating fiber planes, and a thick calorimeter (27 r.l.) composed of lead tungstate logs. It has sufficient depth, imaging capabilities and adequate energy resolution to allow for an excellent separation between hadrons and electrons and between charged particles and gamma rays. The charge module will be able to identify cosmic nuclei up to Fe and to detect trans-Fe elements.
With extended observations, over a period of 5 years, CALET will be able to unveil the presence of possible nearby sources of high energy electrons, study the details of particle propagation in the galaxy and search for signatures of dark matter.
In this paper, we will review the main features of the CALET instrument and the present status of the mission.

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