

Development of Terrestrial Gamma-ray Counter (TGC) on the small spacecraft

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Terrestrial gamma-ray flashes were first observed in 1994 by BATSE on the Compton Gamma-Ray Observatory. Recently observations, the RHESSI satellite has observed TGFs with much higher energies than those by BATS. Some of theoretical discussions have been borrowed from other lightning-associated discharges like sprites, blue jets, and elves. For instance, that field may be due to the separation of charges in a thundercloud (DC field) often associated with sprites, or due to the electromagnetic pulse produced by a lightning discharge, often associated with elves.

We will use a terrestrial gamma-ray counter (TGC) that consists of CsIs with APDs on board a small satellite, Sprite sat, made by Tohoku Univ. The goal of scientific target is concentrated to the timing between lighting and gamma ray flushes because of the limited resources for the small satellite.

We report the status of development TGC and its operation plan.