

## Description of Research Project – ANDESITE Satellite Mission

Space weather arises from interactions between the Earth's plasma environment and the impinging solar wind. These interactions can damage satellites, harm astronauts in space, render GPS information erratic and unreliable, disrupt ground-space communications, and even cause electricity blackouts on Earth.

ANDESITE is a small satellite swarm dispersed in orbit over tens of kilometers; it will measure relative variations of the Earth's magnetic field as it flies through the aurora. This will support mapping the current densities due to energetic charged particles moving into and out of the atmosphere, in the polar regions where the aurora occurs, to improve our understanding of space weather.

The communications requested to be licensed are necessary to collect data from the sensor nodes, and to relay the data to earth, and to send commands to the satellites.