

## **Description of Research Project**

The overall goal of Hera Systems' 1HOPSAT-TD spacecraft, is on-orbit demonstration, risk reduction, test, and characterization of key avionics and optical components. Many of the key hardware functions of the 1HOPSat-1 will be demonstrated and flown in their objective design configurations.

The satellite contains an imaging telescope payload for recording images and video of the Earth. Images will be transmitted to a ground station in Miami, FL over a single carrier X-band radio downlink. Image data can also be transmitted to a single C-band ground station at Santa Clara University in Santa Clara, CA over the spacecraft's C-band transceiver. Commanding and telemetry will be implemented with the same C-band transceiver and ground station. Commanding and telemetry are supplemented with an Iridium™ short burst data (SBD) radio providing two-way low rate commanding and data via the Iridium constellation.

The Special Temporary Authority License requested, is necessary to authorize radio transmission of data between the satellite and the ground stations, and the Iridium constellation.