Many NASA future Earth science remote sensing programs and missions require microwave to submillimeter wavelength antennas, transmitters, and receivers operating in the 1-cm to 100-μm wavelength range (or a frequency range of 30 GHz to 3 THz). General requirements for these instruments include large-aperture (possibly deployable) antenna systems with RMS surface accuracy of...
spectrum.

- Lightweight and compact radiometer calibration references covering 100–800 GHz frequency range.

- Lightweight, field portable, compact radiometer calibration references covering frequencies up to 200 GHz. The reference must be temperature stable to within 1 K with a minimum of three temperature settings between 250 and 350 K.

- Low cost special purpose ground-based receivers to detect signals radiated from active satellites that are in orbit, for estimating rain rate, water vapor, and cloud liquid water.

- Calibrated radiometer systems that can achieve accuracy and stability of 0.1 K.

- Astrophysics receiver-detector technology proposals are also solicited, specifically under topic S2.01, Sensors and Detectors for Astrophysics.