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## The Capabilities of the Geostationary Operational Environmental Satellite-16 (GOES-16)

### Abstract

This report investigates the capability of the new Geostationary Operational Environmental Satellite-16 (GOES-16) satellite to display 16 channels of the electromagnetic spectrum, to produce images at a higher resolution at increased intervals, and to detect and display lightning. This report also discusses the main instrumentation aboard the new geostationary satellite and how it aids in creating accurate data collection, which in turn, produces quicker weather forecasts and warnings. The 16 different channels produced by the Advanced Baseline Imager aboard the new satellite are analyzed in detail as to the functions and wavelengths on which the channels operate. The image resolution and time intervals of the GOES-16 is compared to current geostationary satellites to distinguish the technological improvements fashioned on the new satellite. Lastly, the lightning detection feature of the Geostationary Lightning Mapper on the GOES-16 is examined to understand the benefits that the revolutionary technology places on the meteorological community.