Characterization was conducted under the Memorandum of Understanding among Orbital Sciences Corp., ORBIMAGE, Inc., and NASA Applied Sciences Directorate.

Acquired five OrbView-3 panchromatic images of the permanent Stennis Space Center edge targets painted on a concrete surface.

Each image is available at two processing levels: Georaw and Basic.
- Georaw is an intermediate image in which individual pixels are aligned by a nominal shift in the along-scan direction to adjust for the staggered layout of the panchromatic detectors along the focal plane array. Georaw images are engineering data and are not delivered to customers.
- The Basic product includes a cubic interpolation to align the pixels better along the focal plane and to correct for sensor artifacts, such as smile and attitude smoothing. This product retains satellite geometry - no rectification is performed.

Processing of the characterized images did not include image sharpening, which is applied by default to OrbView-3 image products delivered by ORBIMAGE to customers.

Edge responses were extracted from images of tilted edges in two directions: along-scan and cross-scan.
- Each edge response was approximated with a superposition of three sigmoidal functions through a nonlinear least-squares curve-fitting.
- Line Spread Functions (LSF) were derived by differentiation of the analytical approximation.
- Modulation Transfer Functions (MTF) were obtained after applying the discrete Fourier transform to the LSF.

Average values of MTF at the Nyquist spatial frequency for five panchromatic acquisitions are as follows:
- 0.12 ± 0.04 for the Georaw images, and
- 0.09 ± 0.04 for the Basic image products.