Modulation Transfer Function (MTF)
Fundamental measure of imaging system quality (sharpness)

**MTF Methodology**
Classical Slant-edge measurement is employed
Fixed high contrast targets are used to obtain the MTF measurements in the center of the array
Measurements from specialized targets are used to confirm the measurements from the operational imagery

**MTF Results**
MTF = .14 +/- .01 (1σ)
There was no statistical difference between the OV-3 initial on orbit measurement of .15 +/- 0.01 (1σ) and the MTF measured in 2005 (MTF = .14 +/- .01 (1σ))
The current result is within the measurement error of the previous result, therefore no change in MTF was detected.
MTF measurements were taken from high contrast edges in the stereo T&E images.
In an effort to minimize atmospheric refraction the collection strategy will be adjusted in future collections to acquire near nadir imagery for MTF analysis.

**Radiometric Calibration Methodology**

**Relative Radiometric Calibration**
Reduces pixel to pixel variation (streaking and banding)

**Absolute Radiometric Calibration**
Defines the relationship between the focal plane digital numbers to the physical units of spectral radiance (mW/cm²/str/µm)

**Radiometric Correction**
Second-order fit to detector response for calibration coefficients
Absolute component based upon laboratory measurements
Relative component based upon on-orbit measurements
Second-order fit improves relative performance
Verification
Absolute: Vicarious calibration
Relative: Streaking / Banding metrics

**Streaking and Banding**
Relative radiometric assessment
Streaking
% diff. between a pixel response and the average response of adjacent pixels
Banding
% diff. between a group of pixels and the average response of adjacent groups

**Relative Radiometric Assessment Results**

**PAN Streaking**
![Graph](image)

**MSI Streaking**
![Graph](image)

**PAN Banding**
![Graph](image)