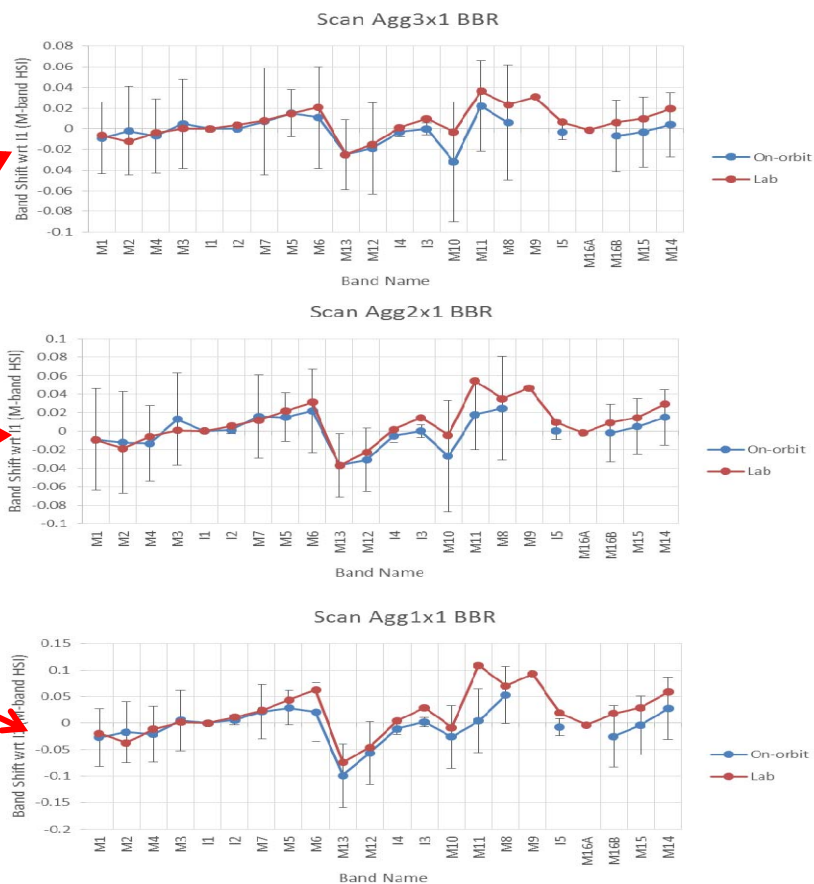
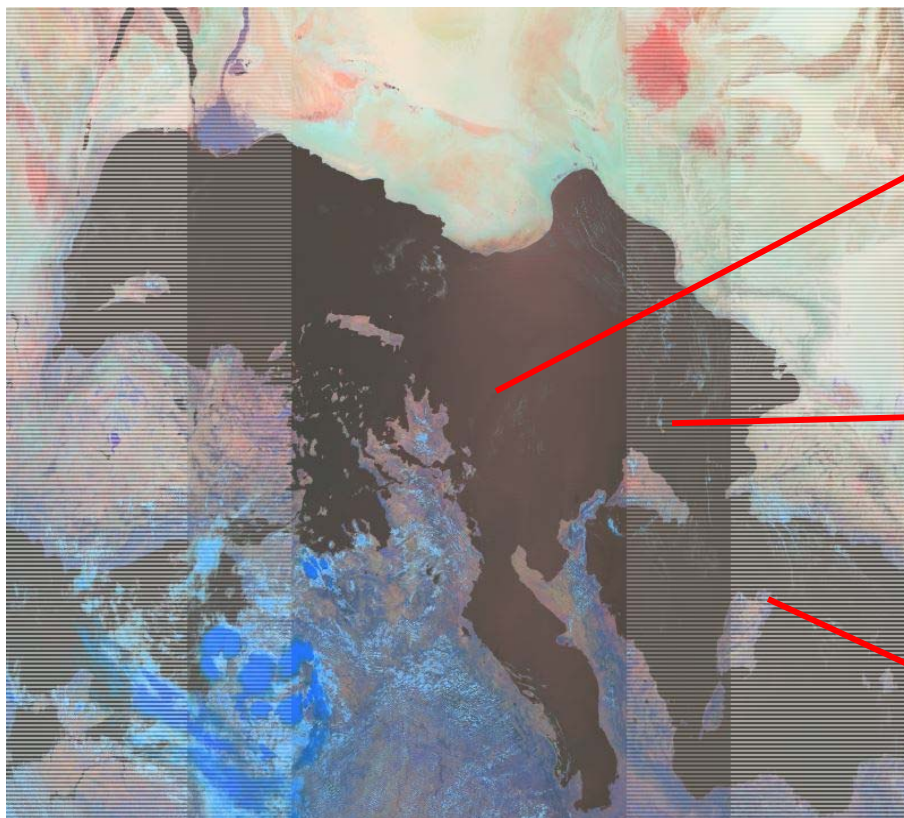




Measurement of the Band-to-Band Registration of the SNPP VIIRS Imaging System from On-Orbit Data

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The on-orbit Band-to-Band measurements are generally in close agreement with pre-launch Band-to-Band measurements performed in a laboratory





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Data Sources: VIIRS image from over the Mediterranean Sea collected on July 31, 2013.

Technical Description of Figures:

Left Graphic: Imagery Resolution 5-Min L1 Swath Radiance data (bands I4, I3 and I2 shown as red, green and blue, respectively, with histogram equalization enhancement) for a VIIRS image from over the Mediterranean Sea collected on July 31, 2013. (Note: Since this image was acquired from an ascending orbit, the southeast corner is at the top-left corner as displayed.)

Right Graphics: Plots of pre-launch (lab) and on-orbit measured BBR shifts for all bands versus band I1. One standard deviation error bars are included with the on-orbit measurements. (a) Along scan shifts in the 3x1 aggregation zone. (b) Along scan shifts in the 2x1 aggregation zone. (c) Along scan shifts in the no aggregation zone.

Scientific significance, societal relevance, and relationships to future missions: This is the first study to measure the band-to-band registration with on-orbit satellite data. The comparison to in-lab pre-launch BBR measurements shows that this set of algorithm, which include normalized mutual information and bicubic interpolation, produces accurate band-to-band registration assessment. The result also indicates that the VIIRS sensor is in good shape and performs as expected on band-to-band registration.

