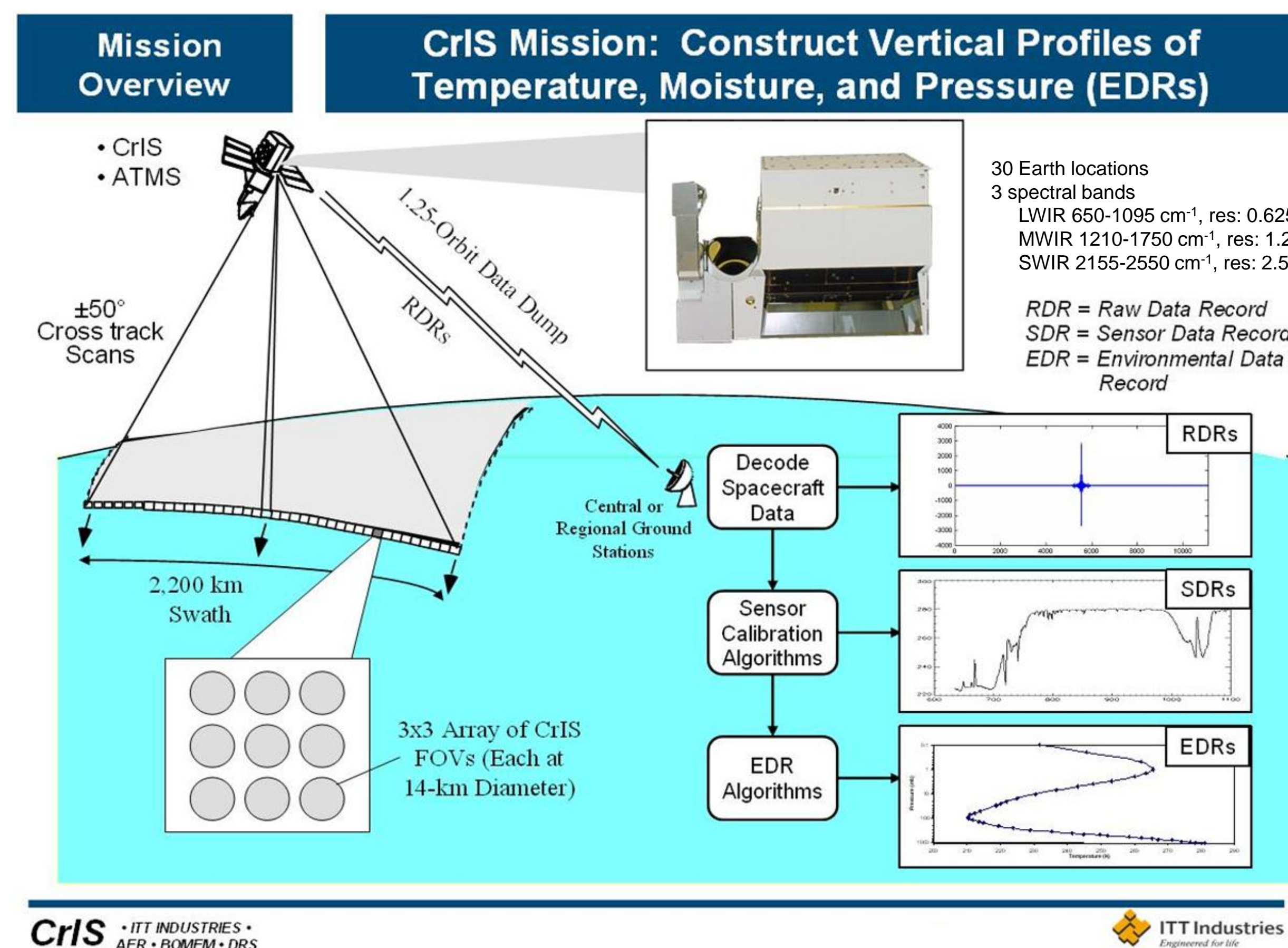


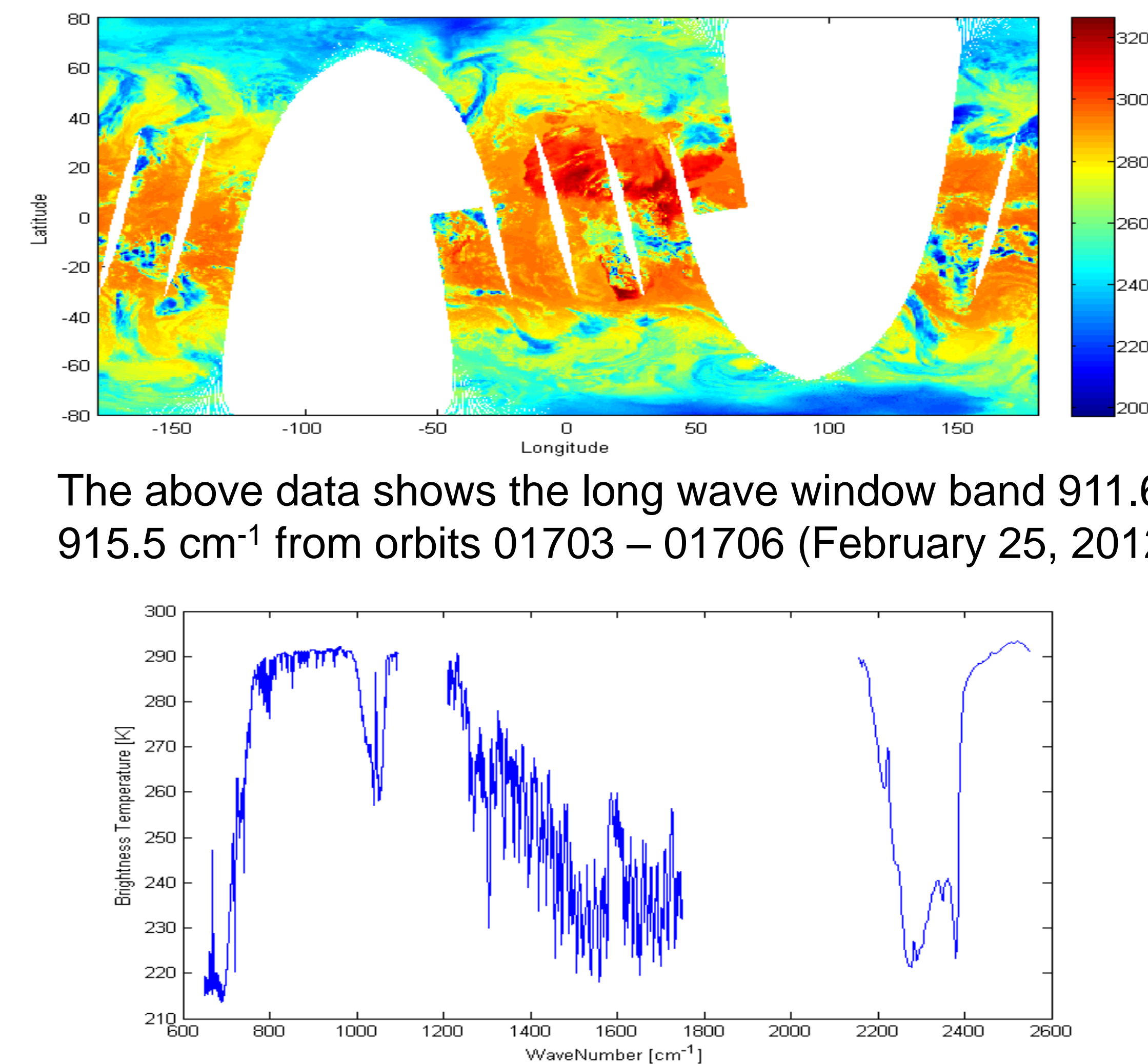
Mark Esplin, Vladimir Zavyalov, Deron Scott, Mark Greenman, Ben Esplin, Brandon Graham, Kevin Grant, Charles Major and Lee Phillips

## CrIS Sensor Overview

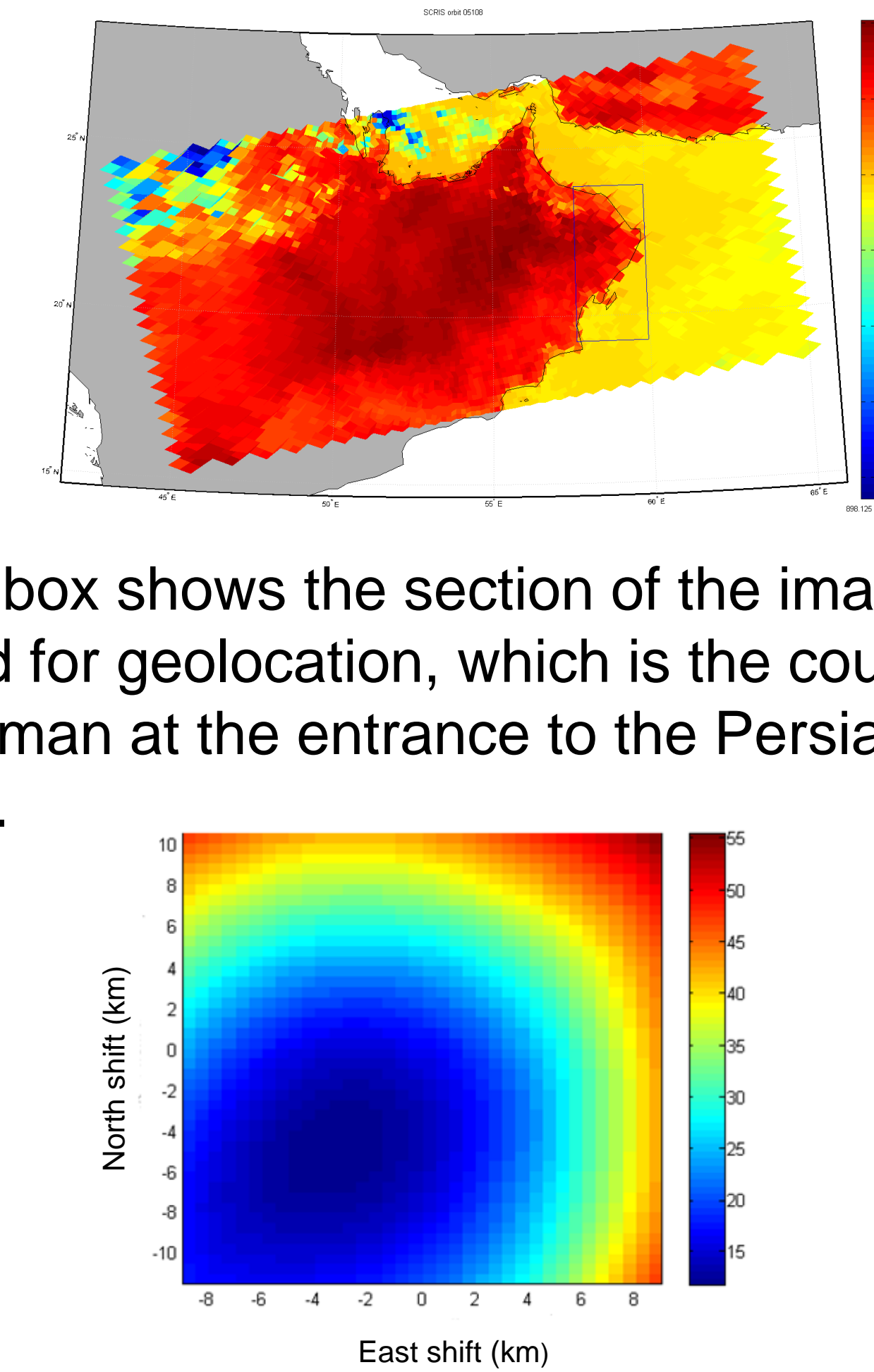


CrIS was launched October 28, 2011 on the Suomi-NPP spacecraft into a polar orbit. Other sensors on Suomi-NPP are VIIRS, ATMS, OMPS and CERES.

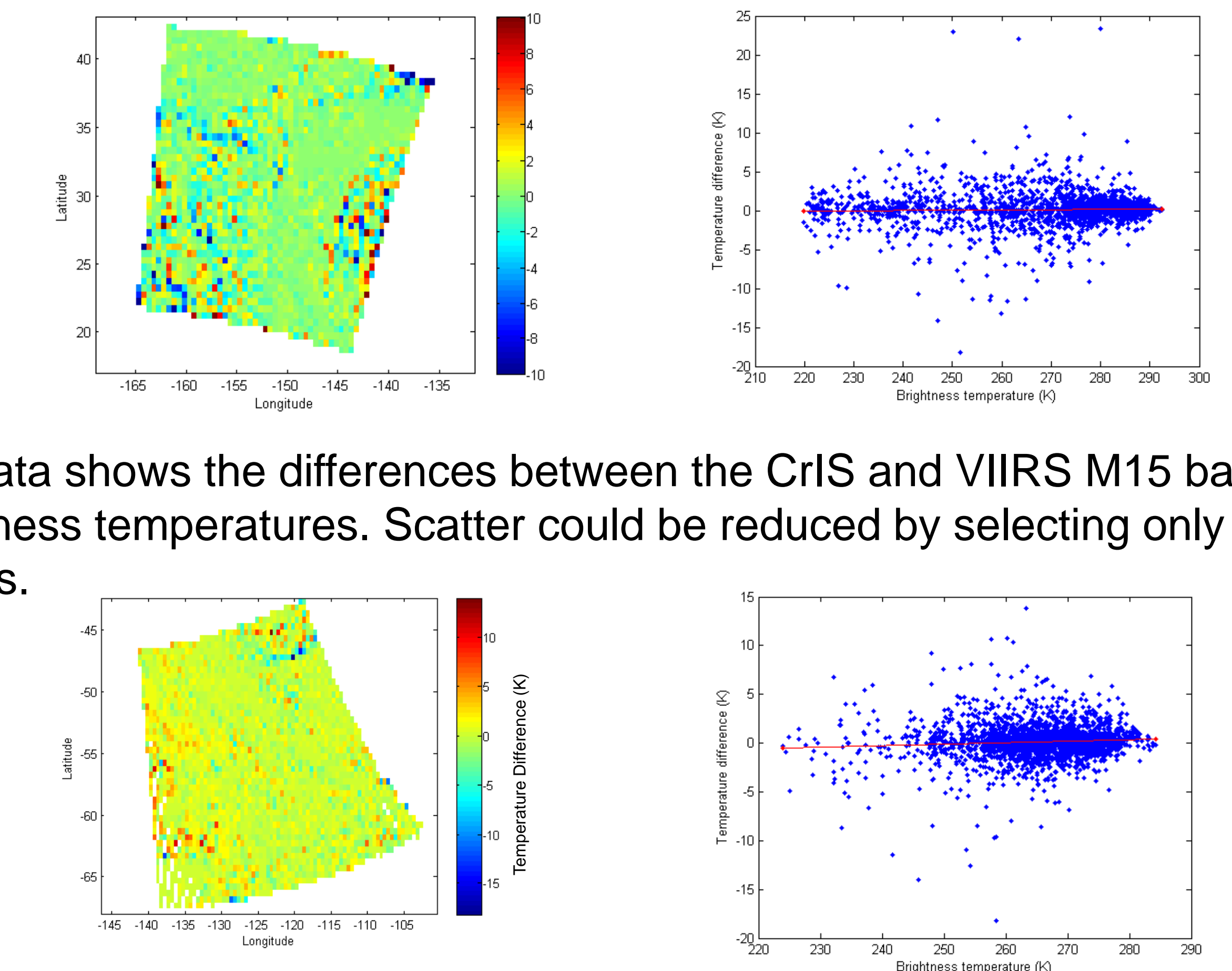
## Sample Earth Scene Data



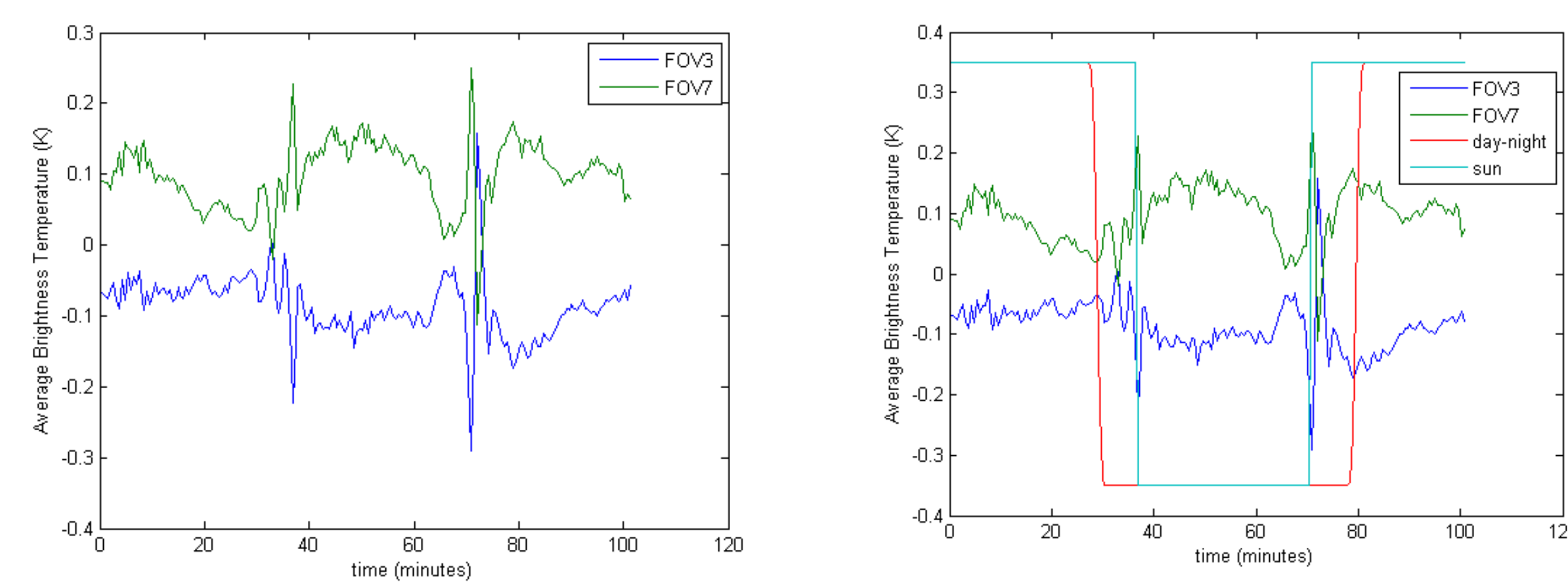
## Geolocation



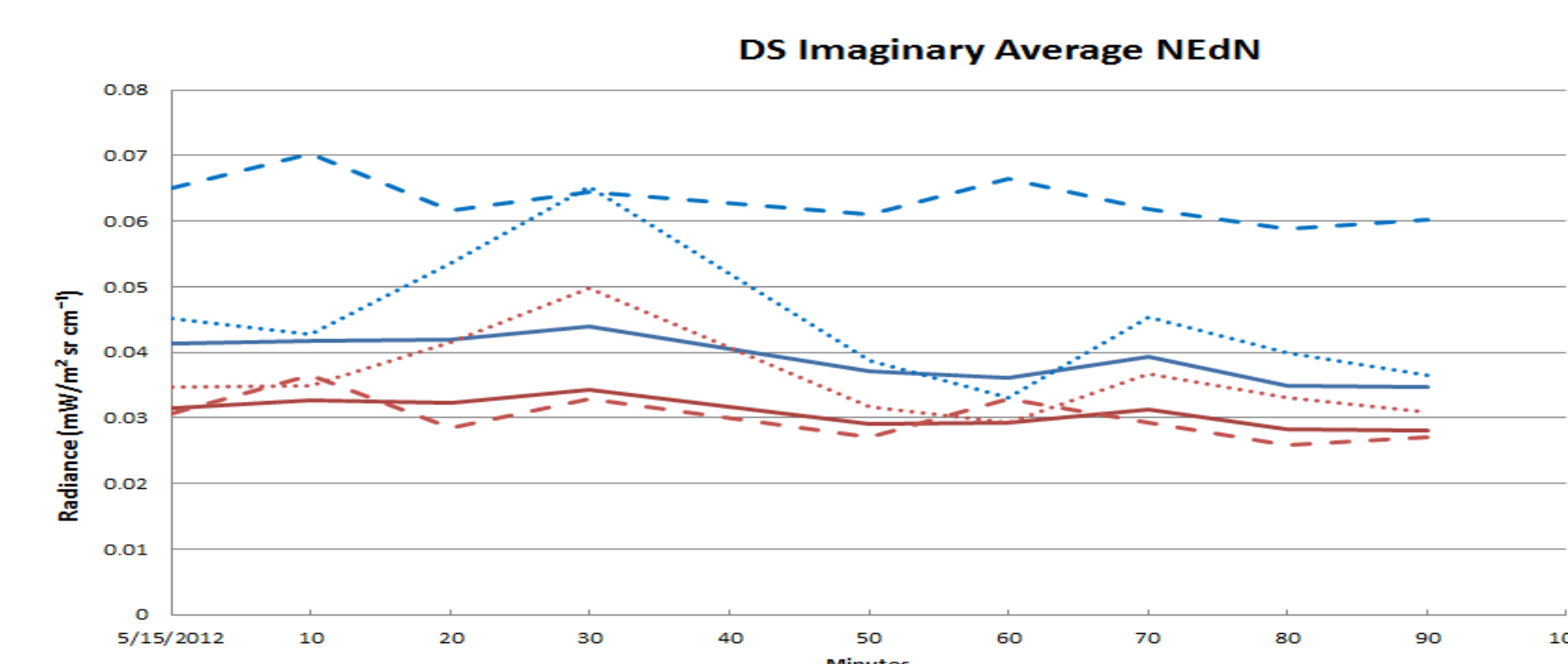
## Comparison of CrIS Radiances with Other Sensors



## FOV to FOV Radiance Difference Seen in Cold Earth Scenes

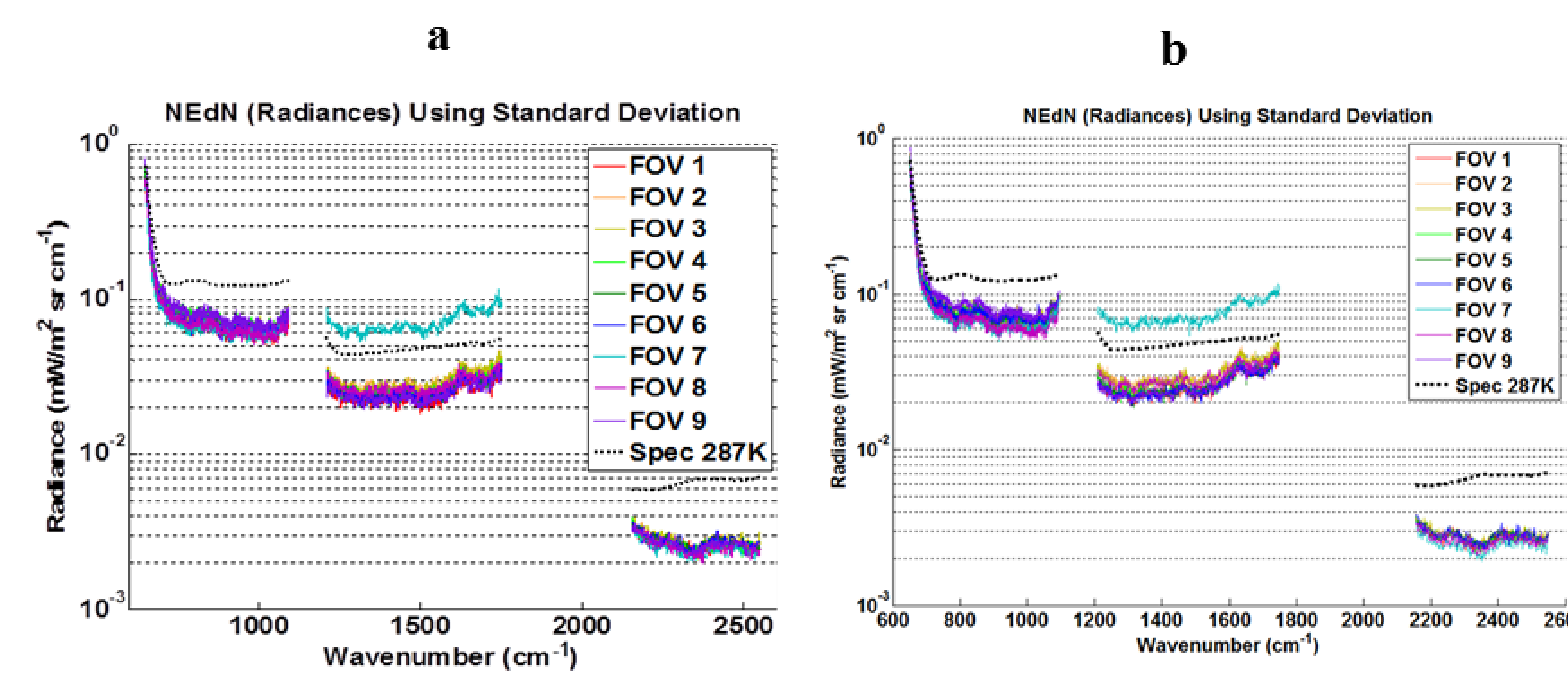


Spikes in FOV3 to FOV7 difference correlate with the sun hitting the Suomi-NPP spacecraft. Brightness temperature data has been averaged over one day. Plot "day-night" is sunlight on the ground. Plot "sun" is sunlight on the spacecraft. The average over all FOVs has been subtracted from the FOV data to show the differences. This band is at 2256 to 2302  $\text{cm}^{-1}$  where the  $\text{CO}_2$  absorption is high so the sensor does not see through the atmosphere to the ground.

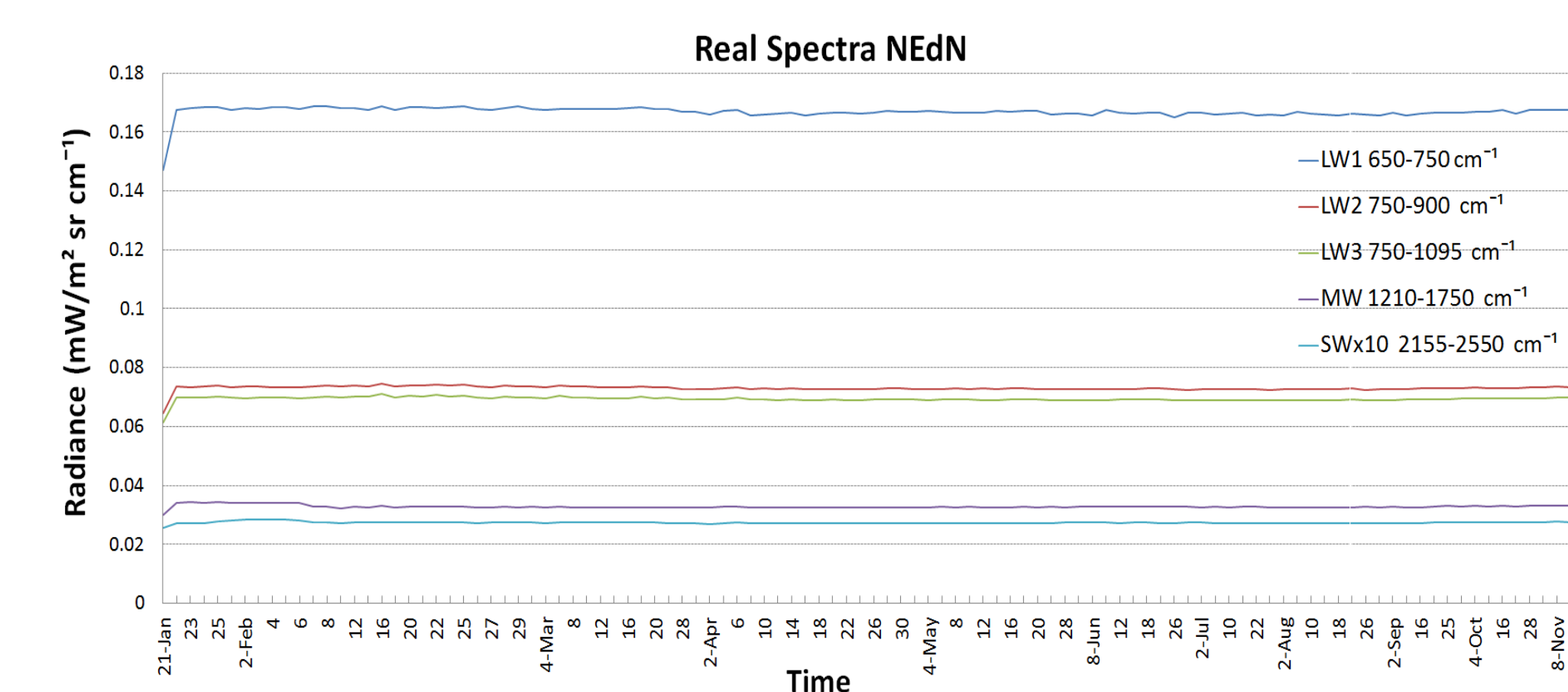


NEdN also shows an orbital depended FOV3 variation with orbital position. (Orbit 02840 May 15, 2012).

## NEdN Monitoring

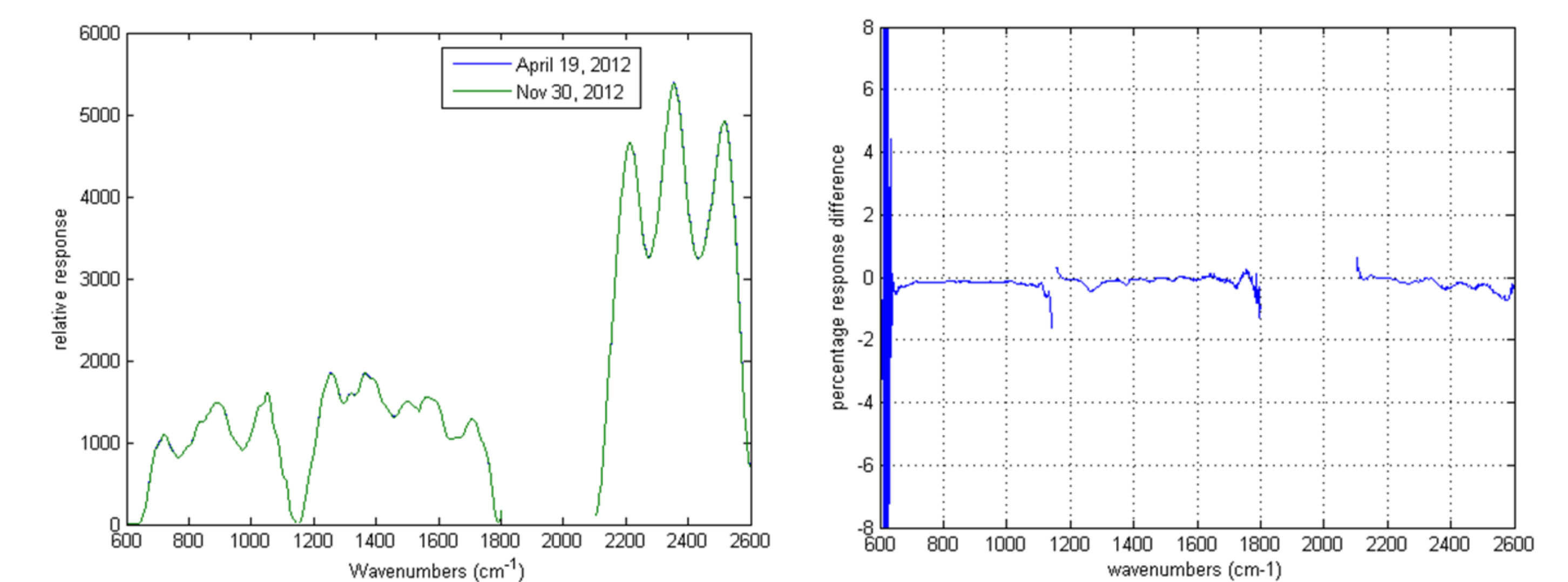


NEdN is the Noise Equivalent Radiance Difference, or total noise level in units of radiance. NEdN was estimated from ICT data acquired on January 23, 2012, Orbit 1241 (a) and on November 25, 2012, Orbit 5592 (b).



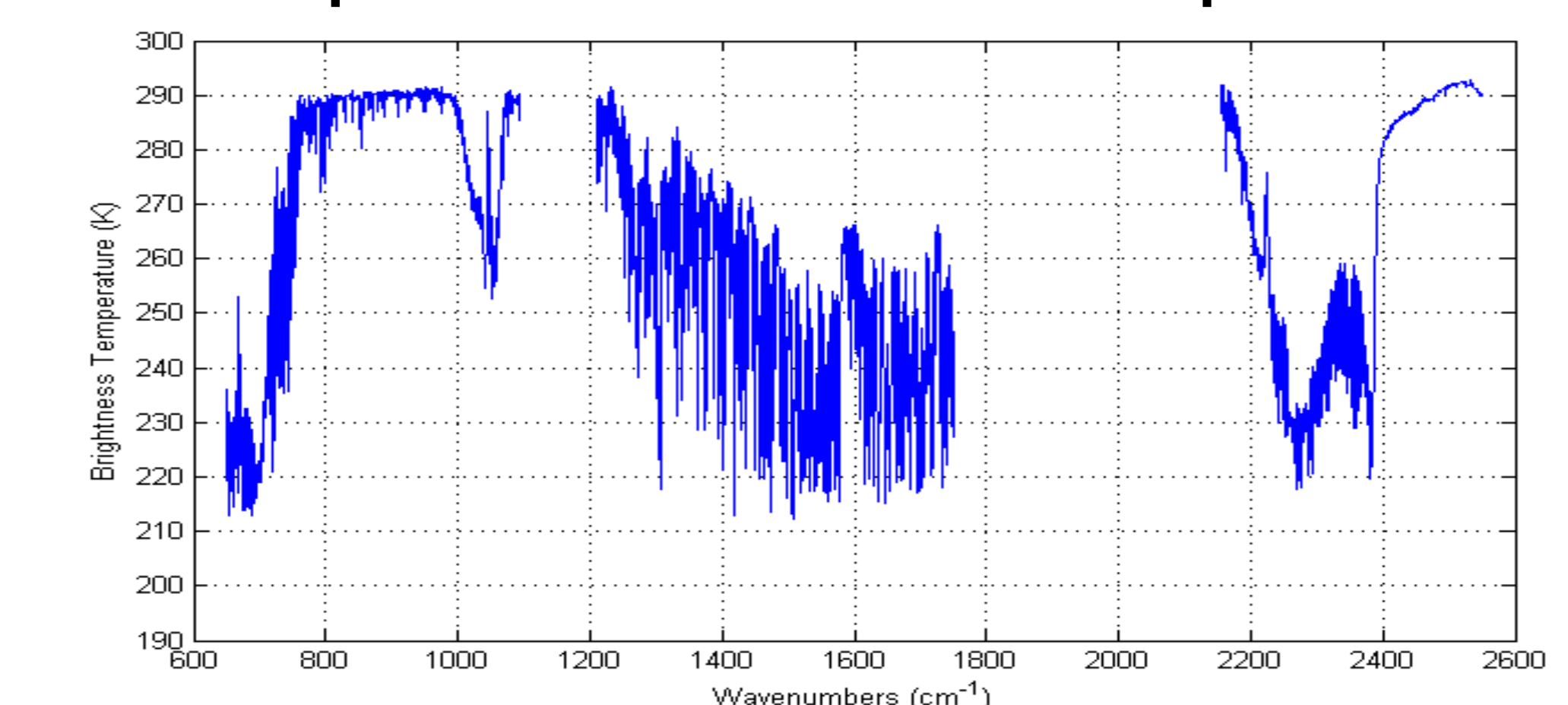
NEdN has been very stable with time. This plot shows the average NEdN trended from January 21, 2012 to November 30, 2012.

## CrIS Radiometric Response



The CrIS response has been very stable over time since the latest update to the digital filter coefficients. The response is defined as the difference in counts between the spectra of the Internal Calibration Target (ICT) and the Deep Space (DS) view divided by the change in radiance.

## Full Spectral Resolution Spectrum



The full spectral resolution operation is planned for Suomi-NPP starting in the spring of 2013.