

Verification of ABI Calibration Using CLARREO

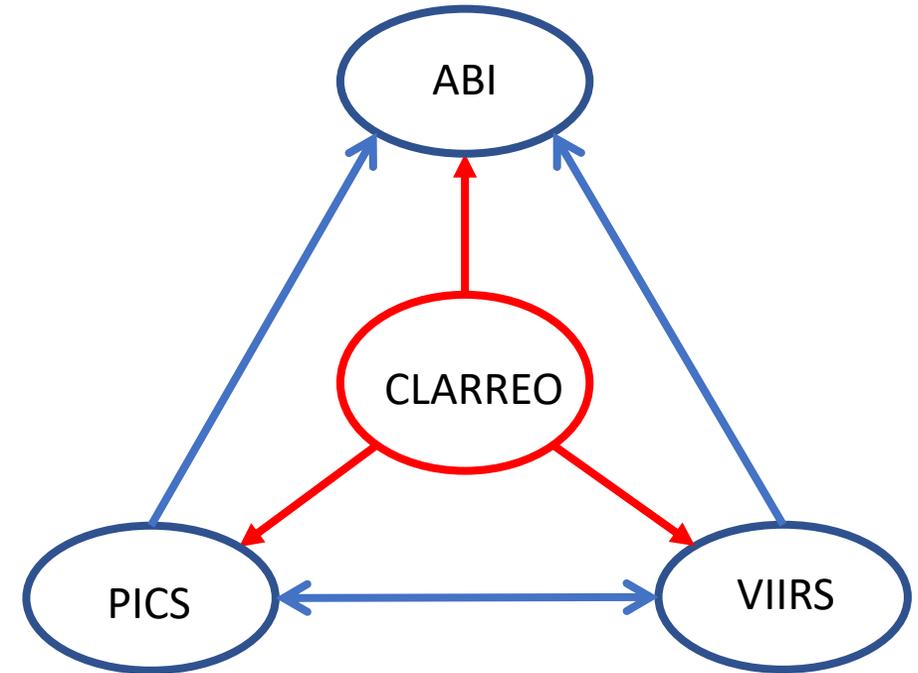
Xiangqian Wu

GOES-R Calibration Working Group (CWG) @ CLARREO Pathfinder Science Workshop

2-3 November 2021 (Virtual)

Overall Strategy

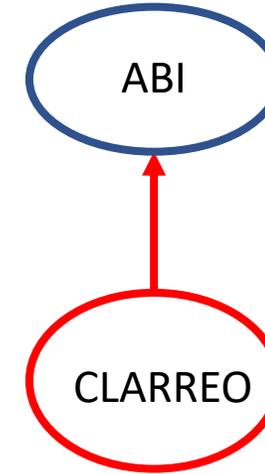
- ABI calibration can be traced to SI directly by comparing with CLARREO.
- Or indirectly via comparison with
 - Reference radiometers, such as VIIRS.
 - Pseudo Invariant Calibration Sites (PICS), such as desert or Deep Convective Clouds (DCC).



Adapted from T. Hewison

Overall Strategy

- ABI calibration can be traced to SI directly by comparing with CLARREO.
- Or indirectly via comparison with
 - Reference radiometers, such as VIIRS.
 - Pseudo Invariant Calibration Sites (PICS), such as desert or Deep Convective Clouds (DCC).
- We focus on direct comparison.
 - Calibration of reference radiometer and characterization of PICS are left for other teams.



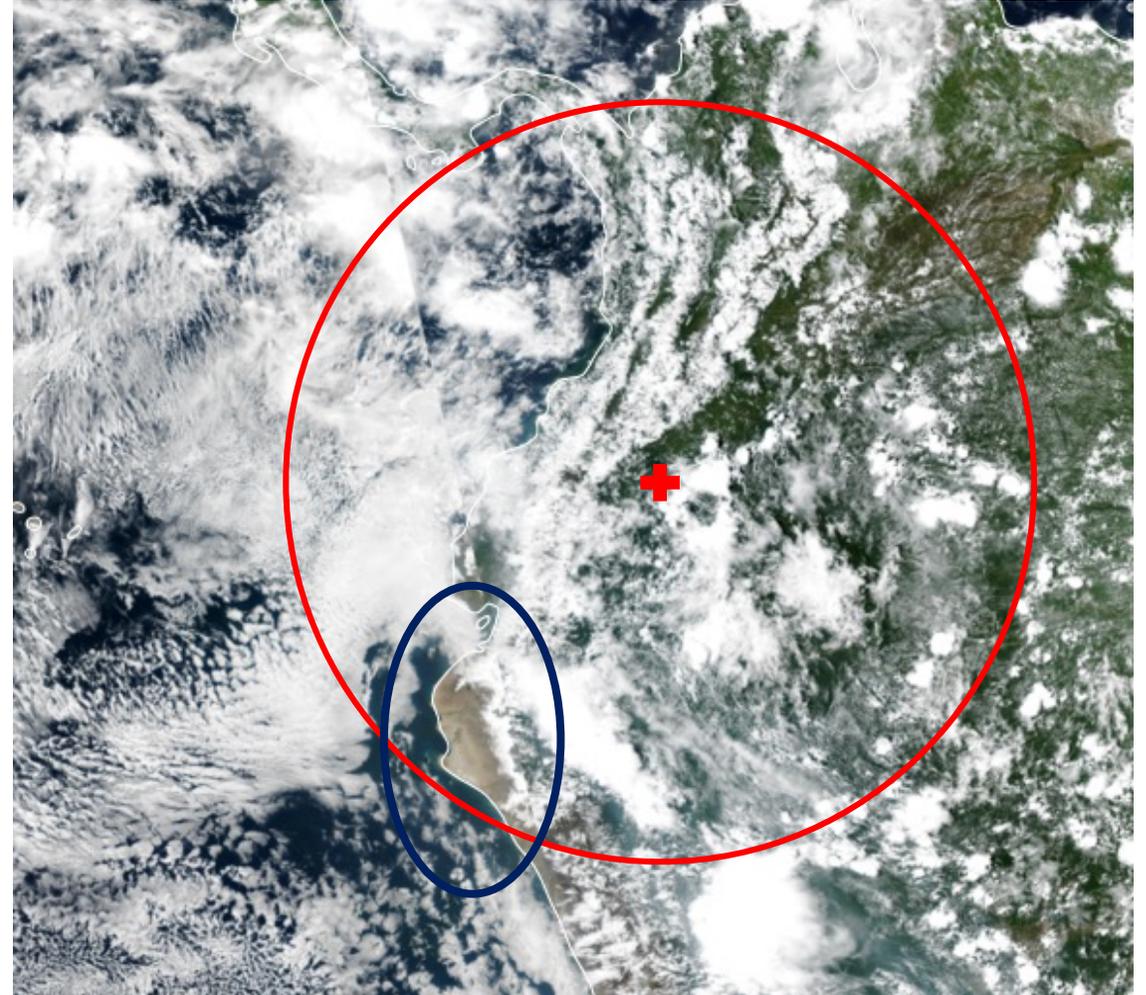
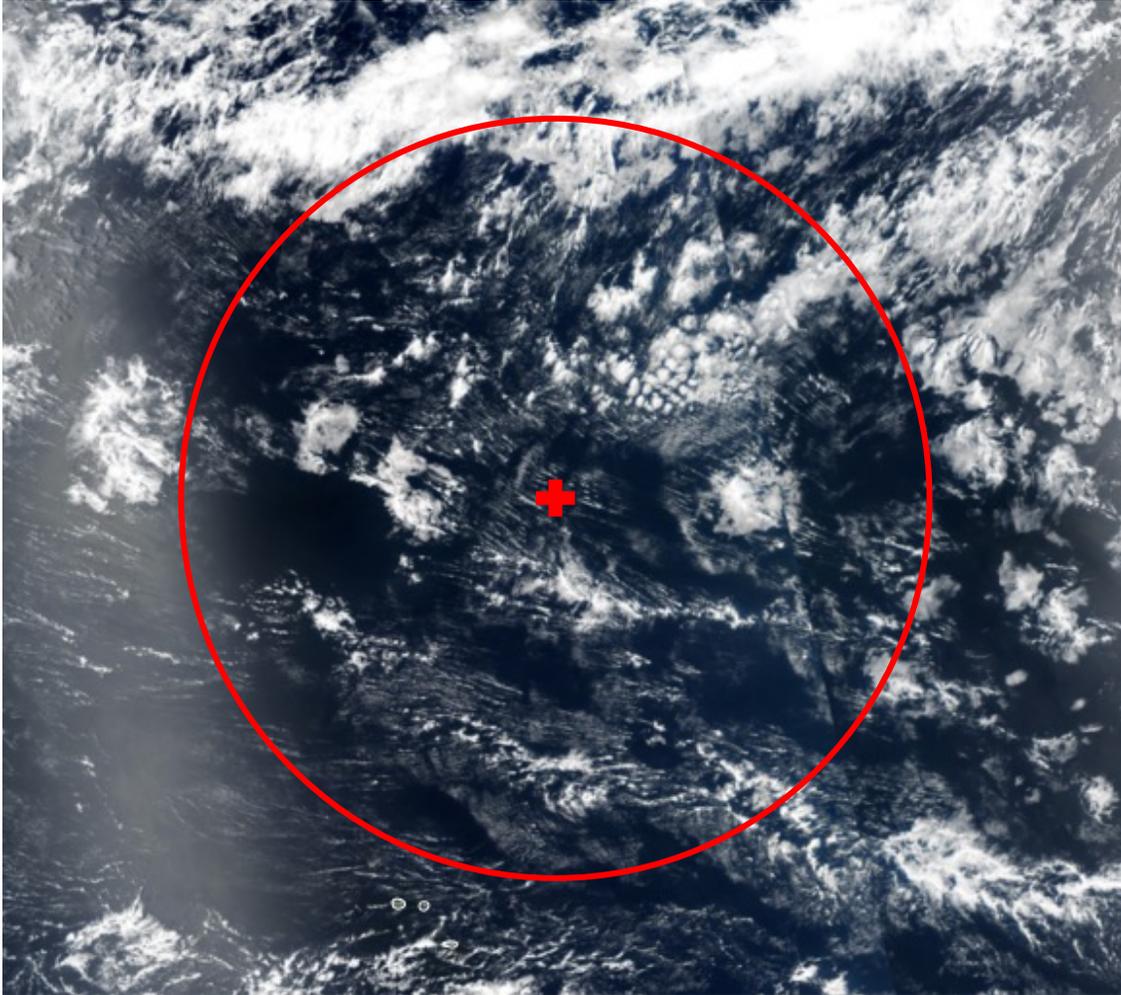
Adapted from T. Hewison



More Details

- Specifically, take as many nadir views as practical when the ISS is near the GOES nadir.
- ABI measurements can match CLARREO measurements:
 - Spatially with accurate navigation.
 - Temporally within 5 minutes.
 - Spectrally by convolution.
 - Geometrically because both are near nadir.
- Priority for GOES-EAST that is more likely to have usable targets.
- Special attention to Peru coast that is often clear, has high reflectance target, and has well defined coast line.

Illustration of GOES Nadir



STAR Ocean Color

Region of satellite zenith angle $< 8.2^\circ$ for GOES-WEST (left) and GOES-EAST (right).