

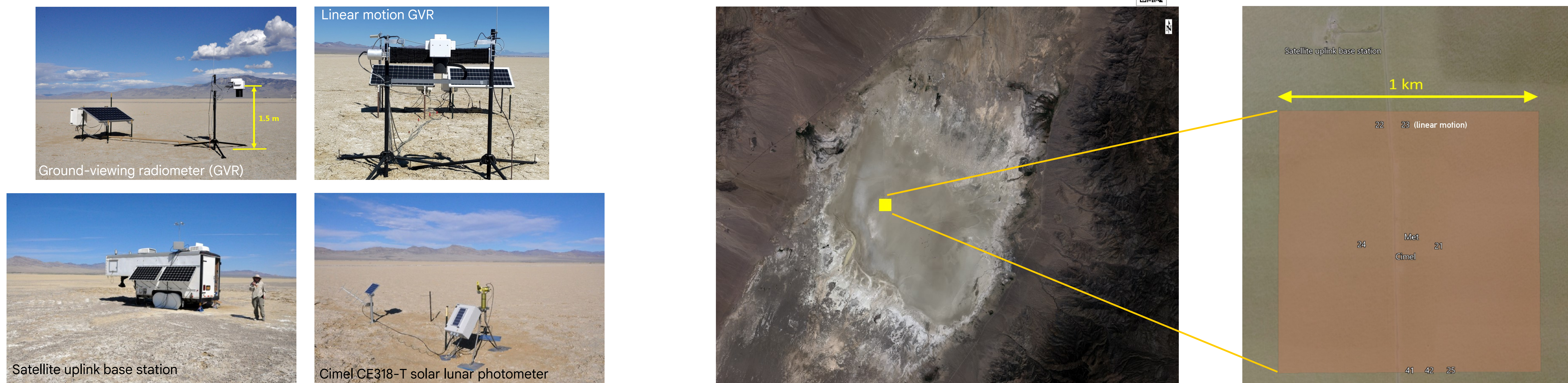
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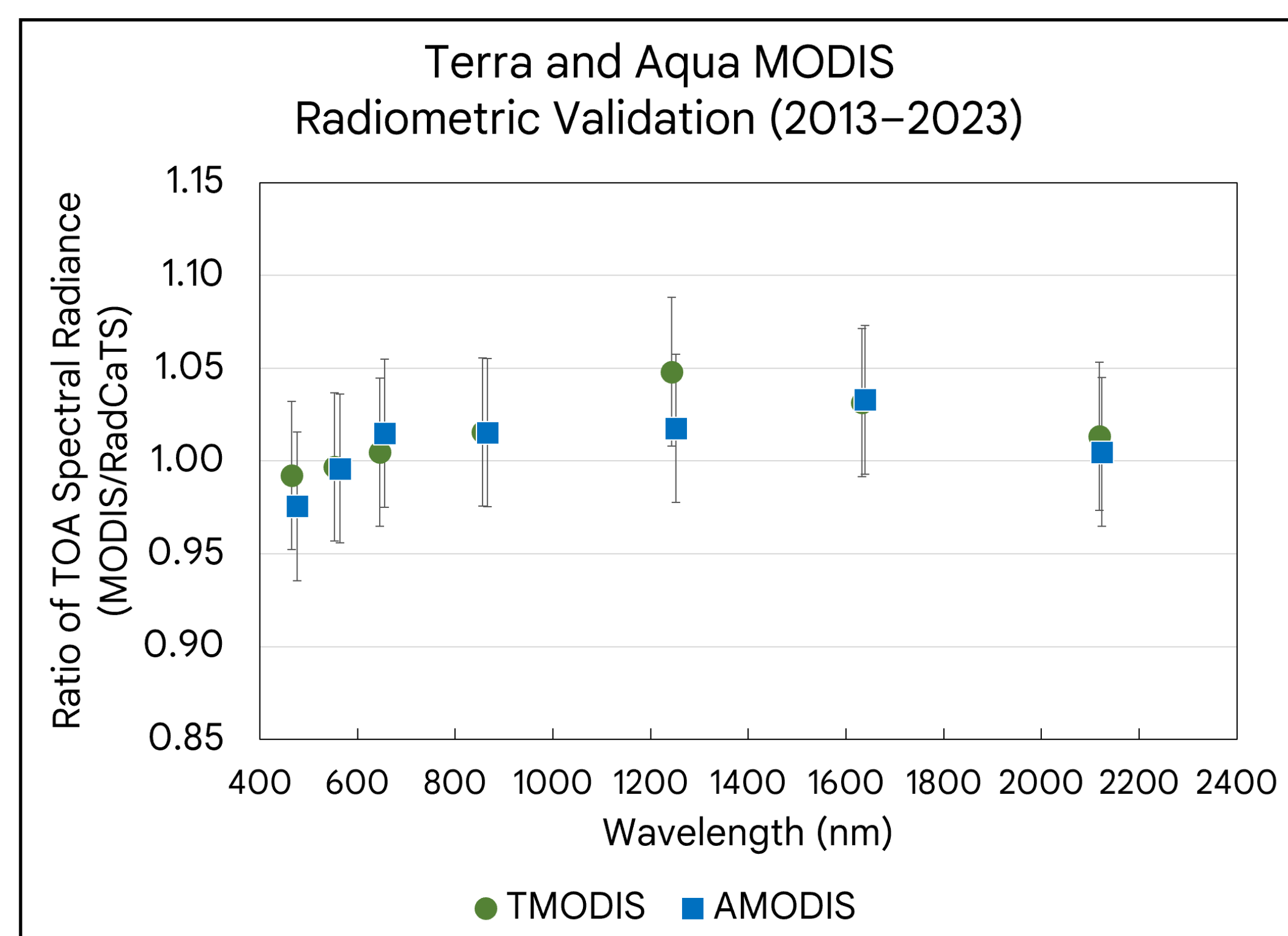


The Radiometric Calibration Test Site (RadCaTS) at Railroad Valley, Nevada, USA

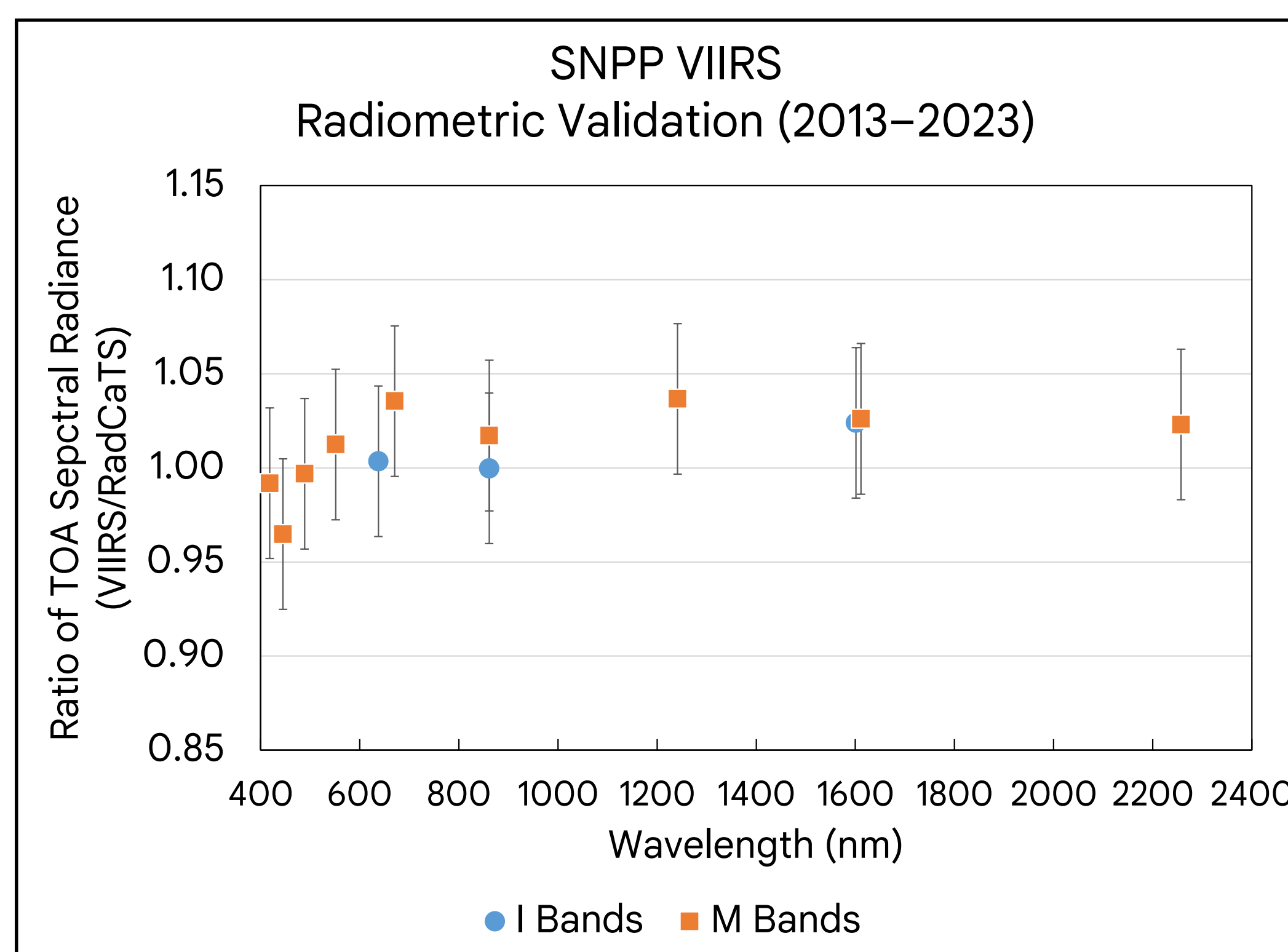
- RadCaTS was developed in response to the growing number of Earth-observing satellites on orbit. It has been in its current form since 2012.
- Instrumentation includes seven nadir-viewing ground-viewing radiometers (GVRs), including one with linear motion, a Cimel CE318-T solar lunar photometer, meteorological station, and a satellite uplink base station.
- Surface reflectance data are collected every two minutes throughout the day during clear-sky conditions. The Cimel collects data using the AERONET protocol.
- Data are uploaded to the University of Arizona daily and are released to the community through the Radiometric Calibration Network (www.radcalnet.org)



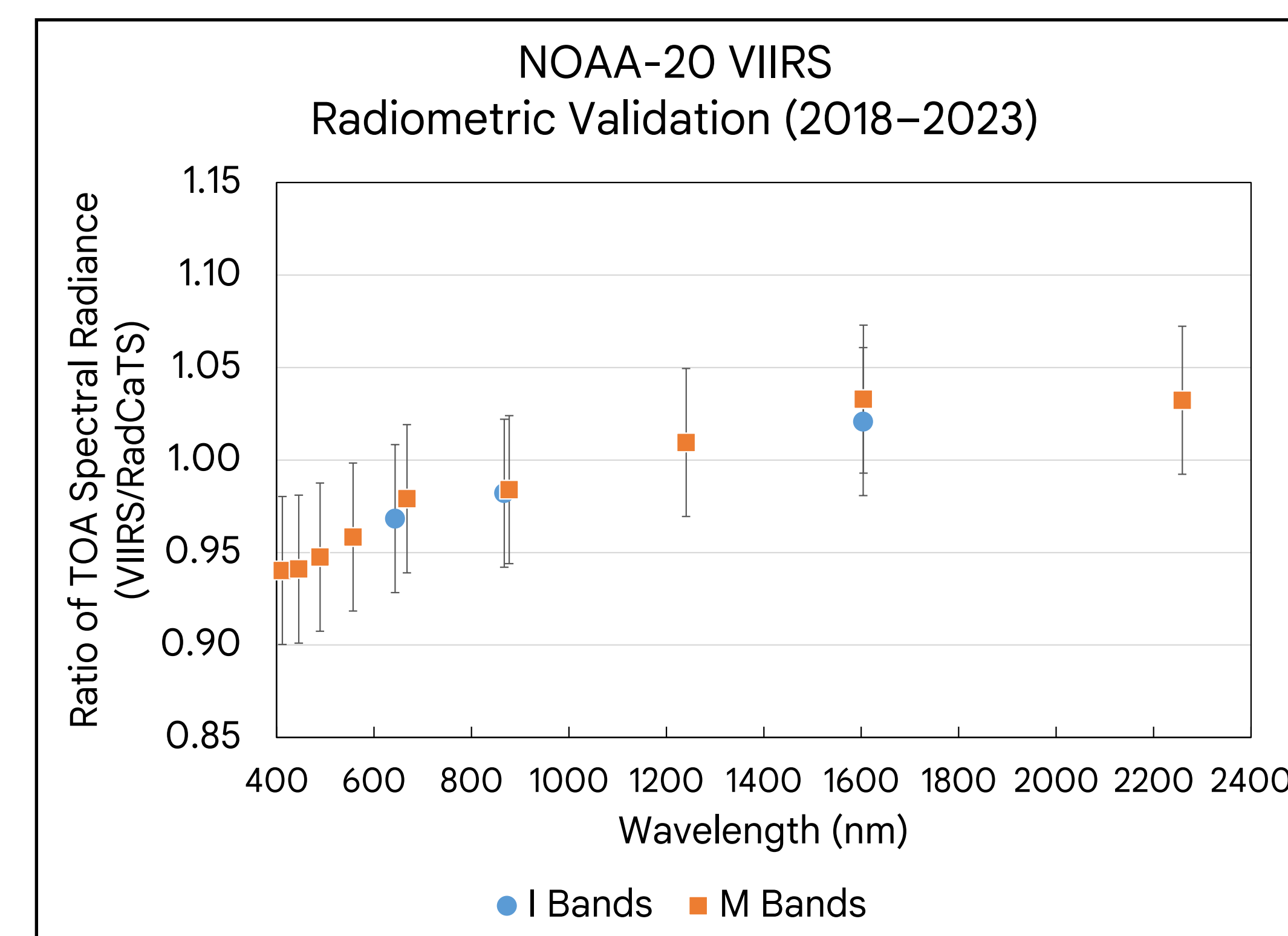
Radiometric Calibration Results for Terra and Aqua MODIS, SNPP and NOAA-20 VIIRS



Terra MODIS: N=192 Aqua MODIS: N=138
MODIS Bands 1-7
Collection 6.1

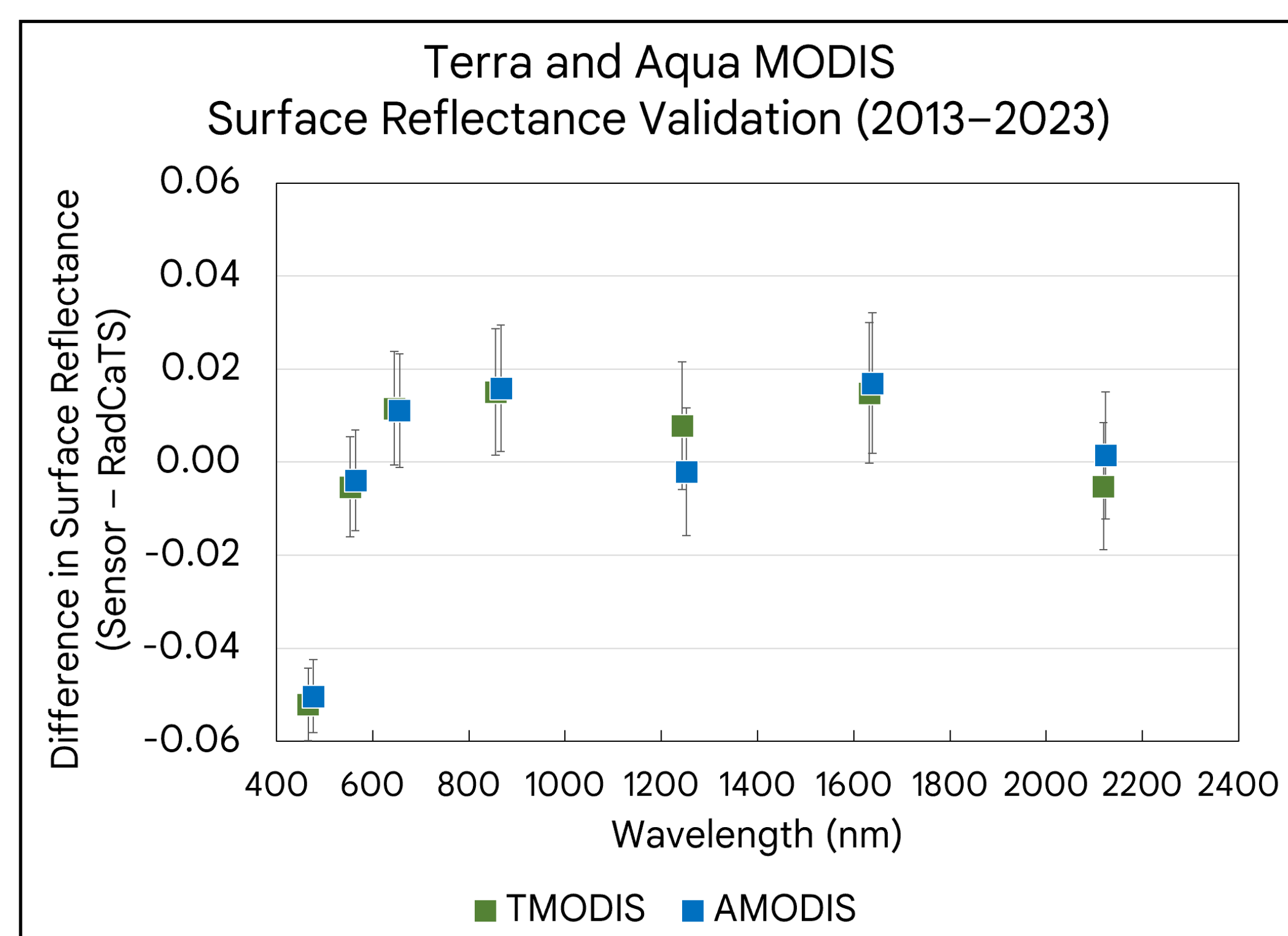


SNPP VIIRS: N=225
VIIRS Bands I1-I3, M1-M5, M7, M8, M10, M11
Collection 1 (Archive 5000)

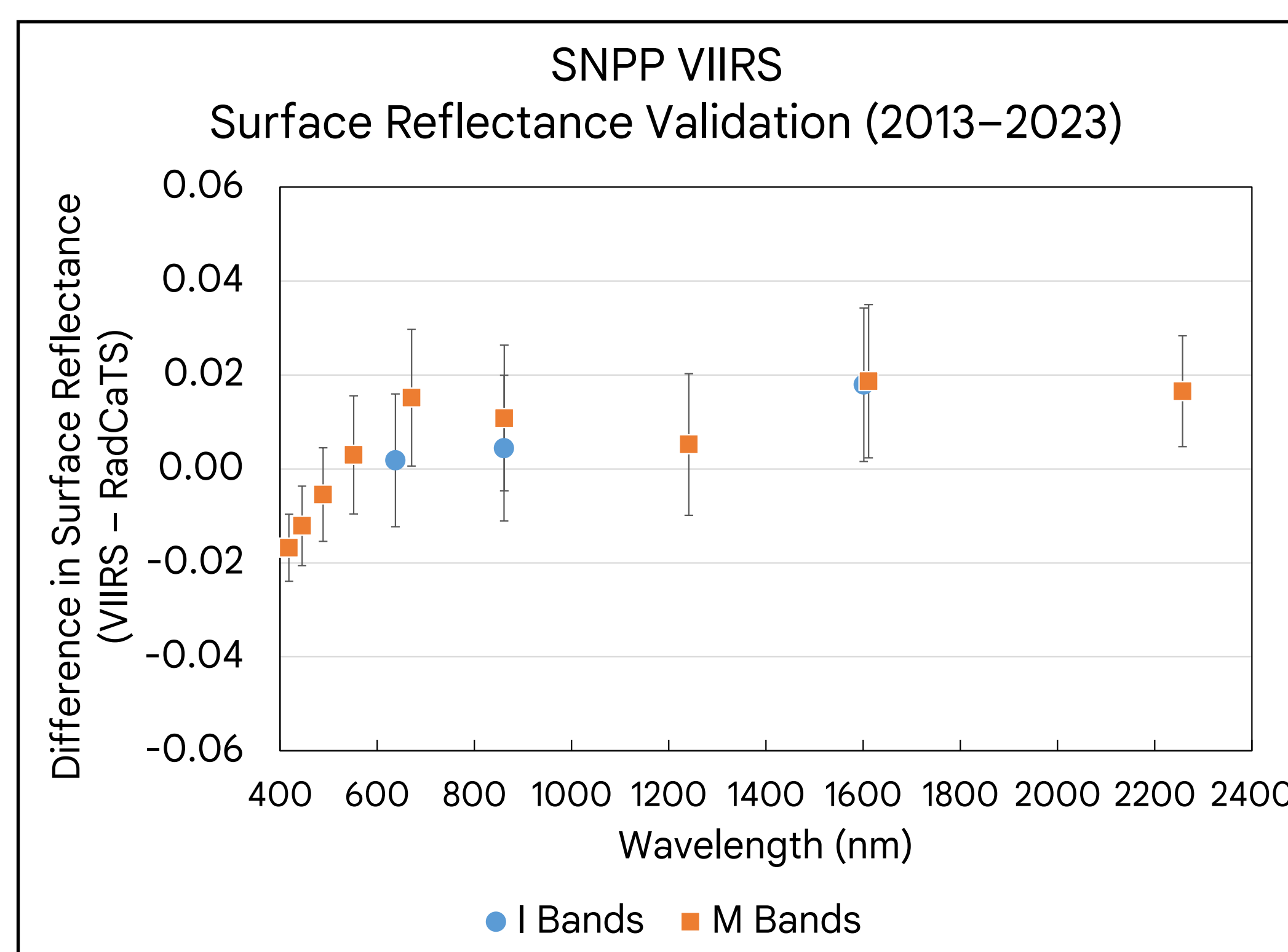


NOAA-20 VIIRS: N=72
VIIRS Bands I1-I3, M1-M5, M7, M8, M10, M11
Collection 2 (Archive 5200)

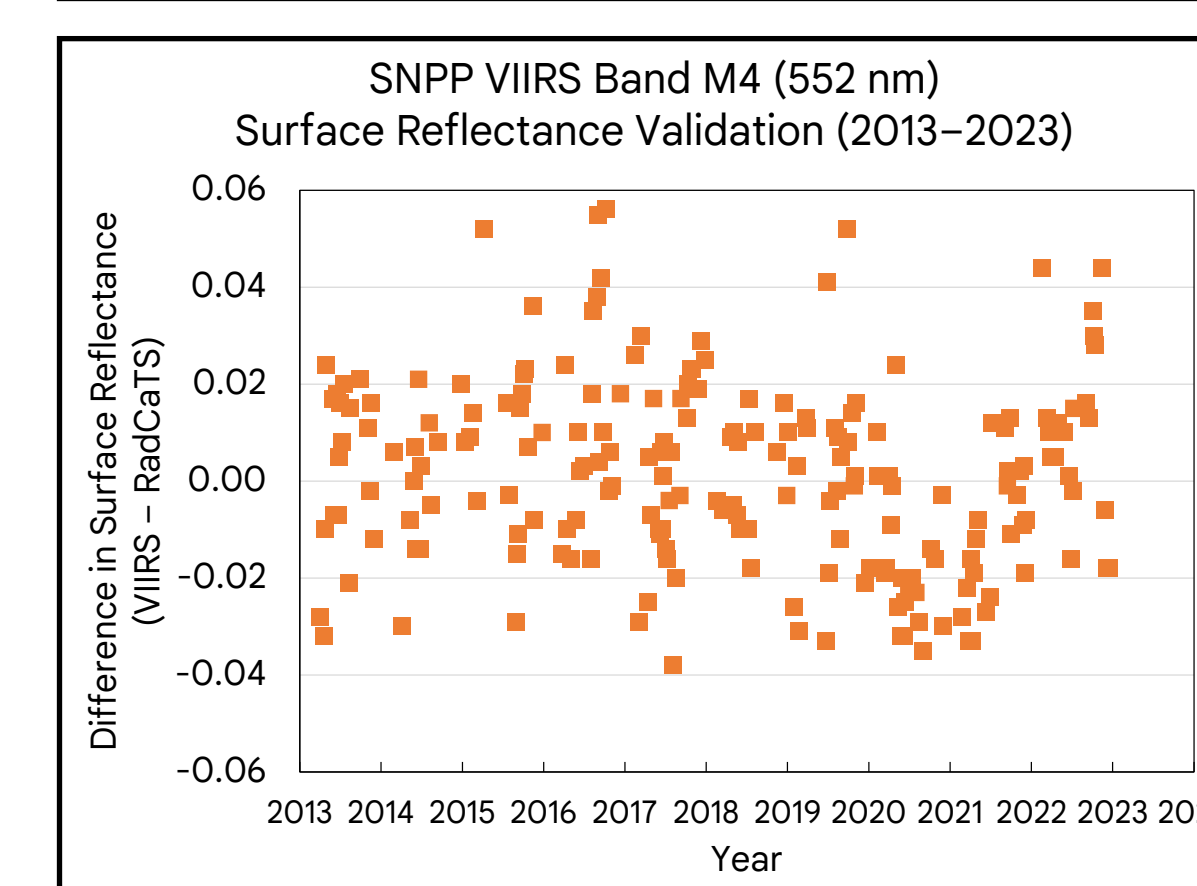
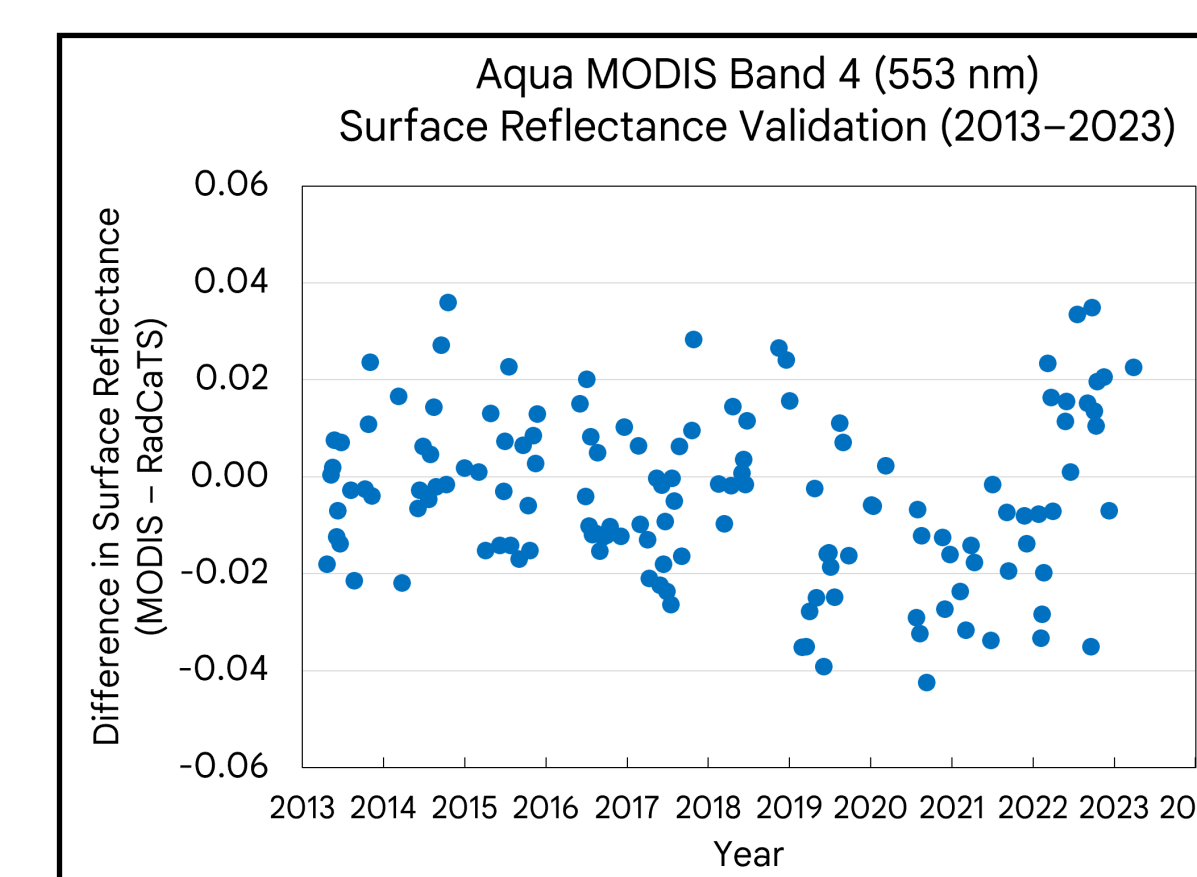
Surface Reflectance Validation Results for Terra and Aqua MODIS, and SNPP VIIRS



Terra MODIS: N=192 Aqua MODIS: N=138
MODIS Bands 1-7
Collection 6.1



SNPP VIIRS: N=225
VIIRS Bands I1-I3, M1-M5, M7, M8, M10, M11
Collection 1 (Archive 5000)



Example of Temporal Results

Conclusions

- Radiometric validation: all sensors agree with RadCaTS to within its uncertainties ($\pm 4\%$), except NOAA-20 blue bands M1-3, which are slightly lower.
- Surface reflectance validation: there is a bias between Terra and Aqua MODIS Band 3 (466 nm) and RadCaTS.

Future Work

- Continue with surface reflectance comparison and validation.
- Update NOAA-20 VIIRS results to include surface reflectance validation when data are available.
- Continue comparison with other LEO sensors such as Landsat 9 OLI, Sentinel-2 MSI, and Sentinel-3 OLCI.