



RadCalNet in WGCV - Way forward

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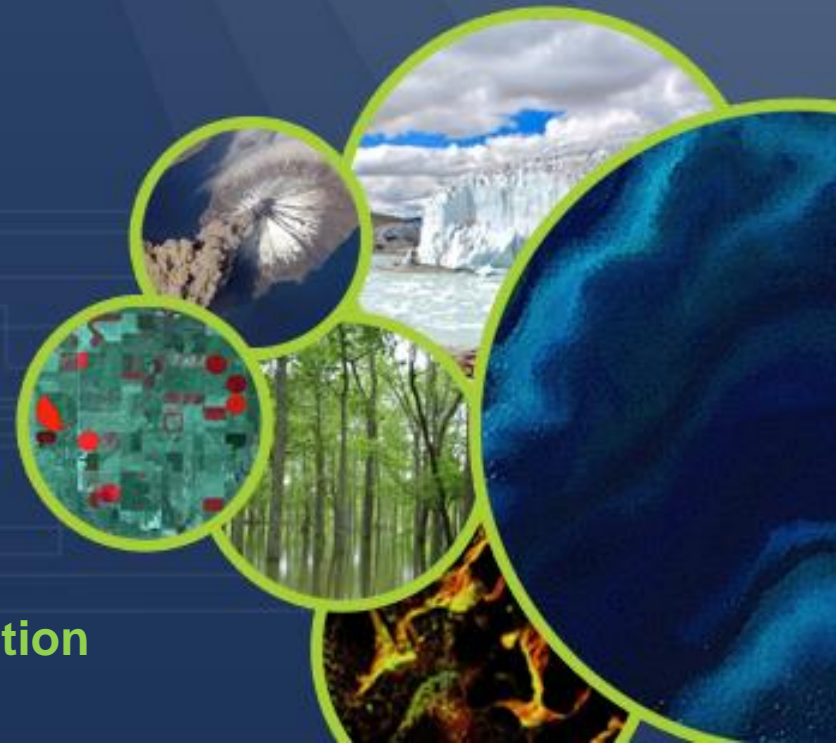
NASA/GSFC

Land Surface Remote Sensing

WGCV Plenary # 40

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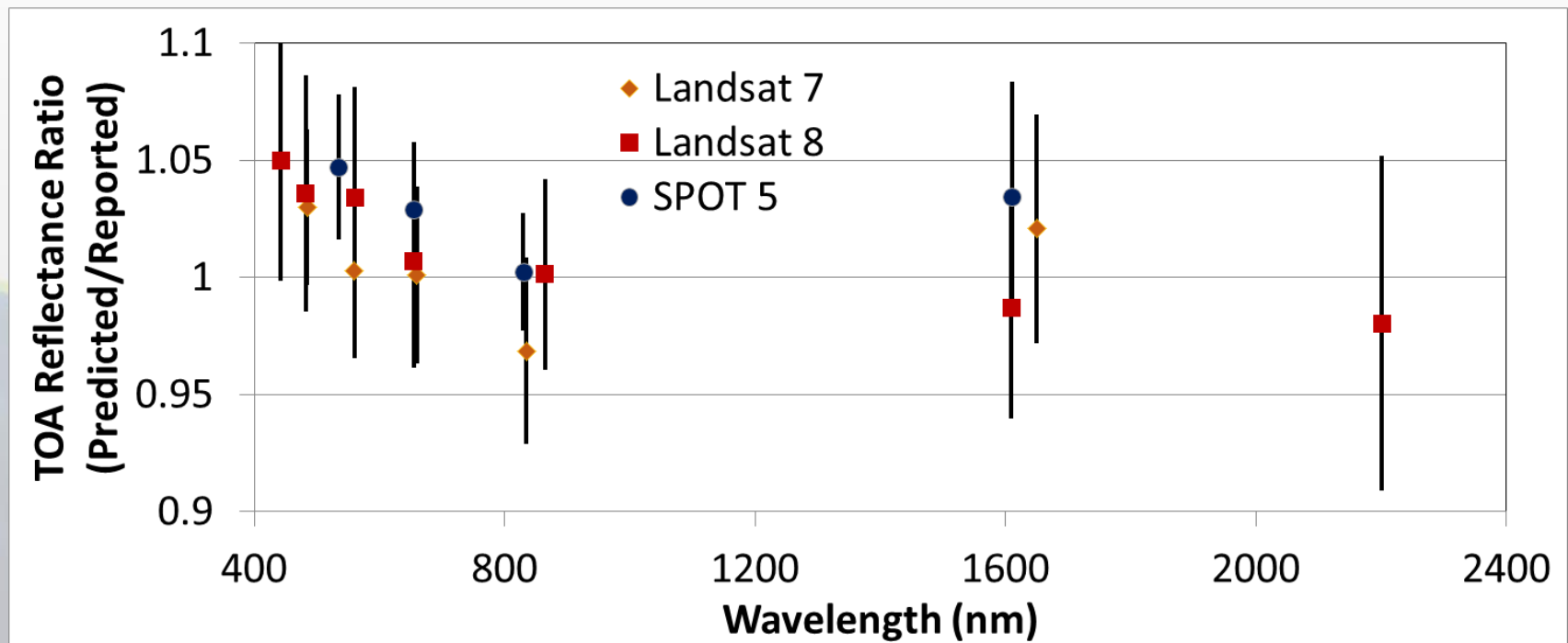
Working Group on Calibration and Validation





Near-term activities – sensor intercomparisons

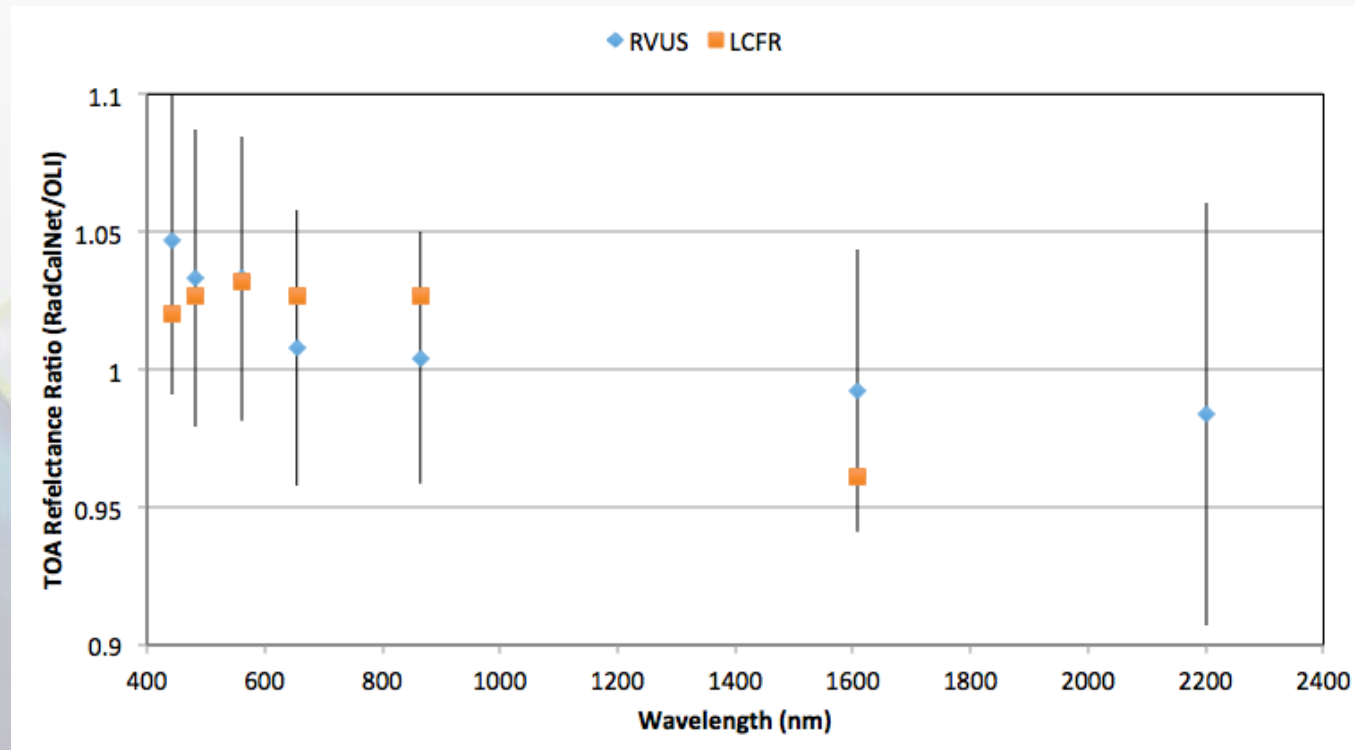
- Intercomparison between sensors at given sites
 - Well-understood sensors
 - Evaluate key differences to determine site-related impacts





Near-term activities – site to site comparisons

- Identify site-to-site differences using the space sensors as transfer radiometers
- Demonstrate the RadCalNet concept





Near-term activities: Uncertainty studies

- Recommend a goal of understanding the at-sensor reflectance uncertainty to 0.5%
- Will Rely on a look-up table approach developed for each site based on expected inputs
- Use Monte Carlo approach to develop LUT
- Cases outside LUT would be reported as uncertainty greater than some threshold
- Still need to
 - Define probability distribution function of uncertainties
 - Need to evaluate how far back to go in the uncertainties
- End result is that each RadCalNet prediction will have an uncertainty given for a specific case



Near-term activities

- Consolidate RadCalNet building blocks of RadCalNet
 - 4th site
 - Processing schemes
 - Data circulation and portal
- Consolidated documentation for
 - Site description
 - Processing description
 - Data format and policy
 - Membership criteria
 - Reference RadCalNet paper
- **Open portal to beta users (Q4 2016)**
- **Go operational (Q1 2017)**
- Open the network to new sites



Near term activities – Proposed approach for admission of new sites

- 1) Prospective site manager documents that they meet requirements for membership (next charts)
- 2) Submission of documentation to a RadCalNet Admission Review Panel
 - Panel made up of five WGCV members
 - Panel members distributed geographically
- 3) Panel formulates a recommendation to be carried forward to the WGCV plenary
 - Much of the evaluation process can take place via telecon/email
 - A recommendation for approval requires concurrence by majority of panel
- 4) WGCV plenary acts on the recommendation



Proposed membership criteria

- Surface and atmosphere measurements shall be carried out operationally for at least six months of each year.
- Sites should be at least 50 m x 50 m
- Site providers must provide documented description of their characteristics, and ideally should follow examples on the RadCalNet site: measurement protocols, instrument description, calibration (SI traceability) strategy and detailed uncertainty
- Site providers should be prepared to have documents subjected to peer review and also to ensure consistency with other RadCalNet sites by participation in comparisons through use of travelling reference standards (e.g. reflectance panels)
- Site providers must adhere to the data format specified by RadCalNet (available on the portal)
- Sites must be offered to RadCalNet for a minimum of 5 yrs.



Proposed membership criteria

- Instrumentation: must enable representative hyper-spectral surface reflectance @ 10 nm intervals, at nadir, on a 30 minute cycle (+/- 3 hrs of local noon) over at least the spectral range 400 to 1000 nm and delivered at least daily to the RadCalNet FTP site
- Instrumentation (continued): aerosol optical thickness and Angstrom exponent, air temperature, pressure, total column water vapour and total column ozone
- Site providers must adhere to the data policy of RadCalNet
- On acceptance as a member site providers may declare and make reference to their membership of RadCalNet on material they see fit. However, it should be made clear that any uncertainty/quality review has only been carried out for RadCalNet specific parameters and conditions and it not necessarily transferable to other products and services operated by site owner