Conclusions

Final comments
Reflectance-based results showed a solution

In situ approach that evolved since the 1980s to develop an SI-traceable harmonization

One sensor, one site

One sensor, two sites

Many sensors many sites

3 similar sensors multiple sites
Fortunately, cal/val has improved

Best sensors have reflectance accuracy of 3.6% (k=2) in mid-visible [4.2% in radiance]

Terra sensors linked vicarious, onboard, prelaunch calibrations to data products

Laboratory 4.2% (k=2) absolute

In situ 5% (k=2) absolute

Intercomparisons 1.0% (k=2) relative

Lunar 0.2% (k=2) relative
Pretty pictures may not be good enough

Sensors, measurement approaches and processing methods are all improving.

- Users are pushing sensors and vice versa
- Requiring better accuracy
- SI traceability is more important
Error budgets will solve many problems

Accurate error budgets will give us the information needed for improvement

- SI traceability
- Determine the cause of uncertainties
  - On-orbit sensors
  - Field instruments
  - Processing codes
Reflectance is dominant