



NASA Agency Report 2018

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Presentation Overview

- ❖ Agency's GSICS Activities, Action & Achievements Summary
- ❖ Agency's support to GDWG Activities
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- ❖ Agency's Instruments Updates & Planned launches – relevant to GSICS if any
- ❖ Introduce/Confirm the Agency's Personnel supporting GSICS
- ❖ Agency's GSICS activities to be discussed in this joint meeting.



Agency's GSICS Activities, Actions & Achievements Summary (1)

❖ *Activities and Achievements:*

- Pre-launch and on-orbit calibration improvements (GSFC)
 - Sensors on Terra/Aqua/Auro, S-NPP/JPSS, and Landsat
- Applications of lunar calibration (GSFC)
 - MODIS, OLI, VIIRS, ...
- Working with NIST on calibration methodologies and techniques, including developments and enhancements of testing equipment (see NIST report)
- VIIRS SDR/L1B calibration improvements (GSFC)
 - S-NPP to JPSS-1
- T/A Aqua MODIS C6.1 reprocessing – L1 and science products (GSFC)
- Provided MODIS/VIIRS calibrated lunar irradiance for GSICS users and related activities (GSFC)
- Documentation: conference proceedings and journal papers (GSFC/LaRC)



Agency's GSICS Activities, Actions & Achievements Summary (2)

❖ *Activities and Achievements:*

- Published the 2000-2017 GEO constellation VIS calibration coefficients that were referenced to A-MODIS C6 used in the CERES E4A products (LaRC)
 - The calibration of GEO sensors prior to 2000 is underway
- SBAF tool improvements (LaRC)
 - The GOME-2 and Hyperion SBAF tools have been upgraded to the level of the SCIAMACHY SBAF tool, including scene specific spectral plotting tools
- Multiple scaling factor methodologies are being validated to transfer the reference calibration through a sequence of MODIS and VIIRS sensors (LaRC/GSFC)
 - Continued DCC invariant target calibration method improvements for SWIR
 - Working on VIIRS IDPS scaling factors based on VIIRS L-SIPS (VCST CAL)

No Pending Action Items



Support to GDWG Activities

- ❖ *From last EP meeting: an action for Jim Butler to try to find a NASA rep to the GDWG (still underway).*



Support to GRWG Activities

❖ *Tasks NASA Supports*

- Reflective solar calibration reference transfer (MODIS to VIIRS on S-NPP and N-20), focusing on calibration traceability, uncertainty, and strategies
- Lunar calibration support for GSICS related activities and users
- Improvements and applications of various calibration inter-comparison methodologies
 - DCC, GEO DCC, LEO-GEO-LEO, GEO-LEO-GEO, SNO, PICS,
- Working with CLARREO Pathfinder Team to optimize inter-calibration opportunities with GSICS member sensors

❖ *Resources and Effort (time taken)*

- NASA effort not directly funded for GSICS activities

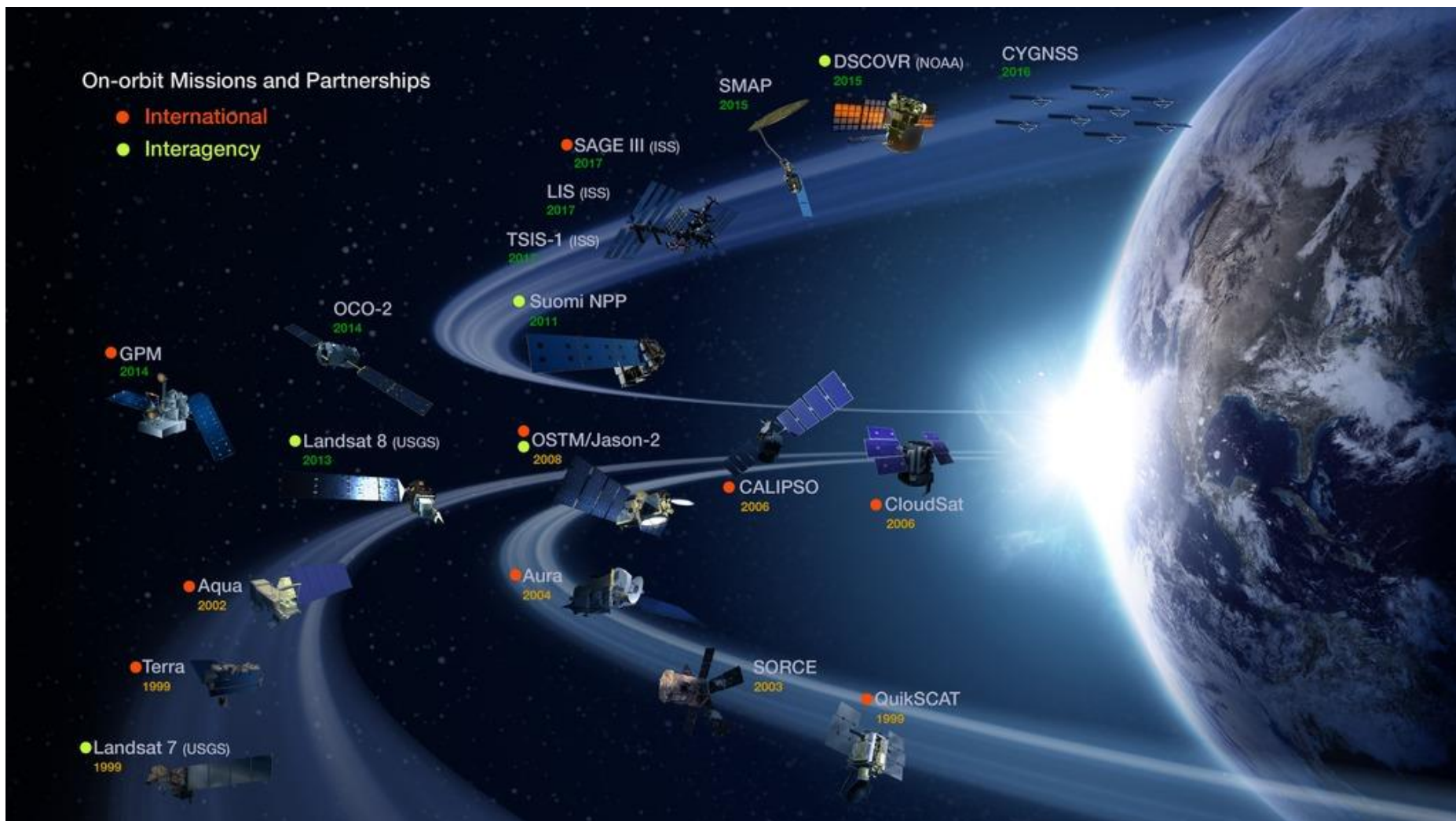
❖ *Issues*

- No dedicated resources



Agency's Instruments Updates & Planned launches

❖ Current *Earth Science* Missions/Instruments





Agency's Instruments Updates & Planned launches

❖ *Future Earth Science Satellites and Programs*

- TEMPO: 2019
- TSIS -2: 2020
- CLARREO Pathfinder: 2020
- Landsat 9 (USGS): 2021
- JPSS (NOAA): 2021 (J2)
- PACE: 2022

❖ *CubeSats and Small Satellite Program*

Successful launch of J-1 (N-20) in Nov 2017 and GOES-S (GOES-17) in March, 2018



Introduce/Confirm the Agency's Personnel supporting GSICS

❖ *GRWG Members*

- NASA GRWG members provide support to GSICS when their funded tasks are aligned with GSICS activities
- MCST and VCST at GSFC: Jack Xiong (lead), Amit Angal, Tim Chiang, Truman Wilson, and Aisheng Wu (pre-launch and on-orbit calibration, lunar calibration, calibration inter-comparison)
- CERES Cal Team at LaRC: Dave Doelling (lead), Raj Bhatt, Ben Scarino, Conor Haney, and Arun Gopalan (GEO visible channel calibration, DCC)
- Tom Pagano/JPL (AIRS), Gene Eplee/GSFC (SeaWiFS), and Lawrence Ong/GSFC (OLI)

❖ *GDWG Members (NA)*

❖ *Other Key Agency Personnel*

- Jim Butler (GSFC): GSICS EP and Kurt Thome (GSFC): CEOS WGCV



Agency's GSICS activities to be discussed in this joint meeting.

❖ *GSICS Activities of Agency Interests*

- Calibration reference sensors (MODIS to VIIRS on SNPP/N20)
- Calibration inter-comparison, inter-calibration, and calibration reference transfer approaches and strategies
- Lunar calibration related topics
- The NASA SBAF tool development and enhancement
 - Needs the latest calibrated GOME-2 (Lang) and SCIAMACHY (Krijger) datasets.
 - Needs updated or new sensor spectral response functions

❖ *Agency Activities of GSICS Interests*

- Pre-launch calibration and characterization (new approaches/testing equipment and techniques)
- Calibration traceability (pre-launch to on-orbit), uncertainty, and consistency
- Ground Cal/VAL activities



Thank you for your attention

WMO GSICS Portal

<http://gsics.wmo.int>

GSICS Coordination Centre

<http://www.star.nesdis.noaa.gov/smcd/GCC/index.php>

GSICS Product Catalog

<https://www.star.nesdis.noaa.gov/smcd/GCC/ProductCatalog.php>

GSICS Wiki

<http://gsics.atmos.umd.edu/wiki/Home>