

MODIS and VIIRS L1 Product Status

Sadashiva Devadiga

NASA GSFC

Terrestrial Information Systems Lab (Code 619)

MODIS L1 Product Status: C6 and C61

- **Forward processing at MODAPS includes C6 and C61 L1B generated using the forward LUTs delivered by MCST**
 - **C61 Atmosphere and C6 Land processing at leading edge**
 - **C61 Land reprocessing in progress, completed processing mission period 2000 – 2006, 2019 – current, and expected to complete processing 2007 – 2018 by Aug 2021.**
- **C6 L1 and Land processing to continue through end of year 2021**
 - **C6 products to be decommissioned in 2021 with consent from MCST and science teams.**

C7 Reprocessing

- All products to be produced in netCDF4/HDF5-EOS5 format
- Operational C61 PGEs will be updated to pre-C7 version to generate products in netCDF4
 - C61 PGEs to be seamlessly transitioned to early C7 version using the APIs developed in-house at LDOPE replacing the current SDP Toolkit.
 - Science teams to use these PGEs to implement C7 specific changes
 - C7 PGEs to be deployed and maintained through GitLab
- **Tentative Schedule**
 - **Spring 2021:** Initial delivery of C7 L1B with changes to calibration by MCST for evaluation by discipline teams
 - **Summer 2021:** Delivery of C7 operational versions of Geolocation and L1B
 - **Fall 2021:** Start of C7 L1 reprocessing
 - **Mid 2022:** Start C7 reprocessing of Atmosphere and Land

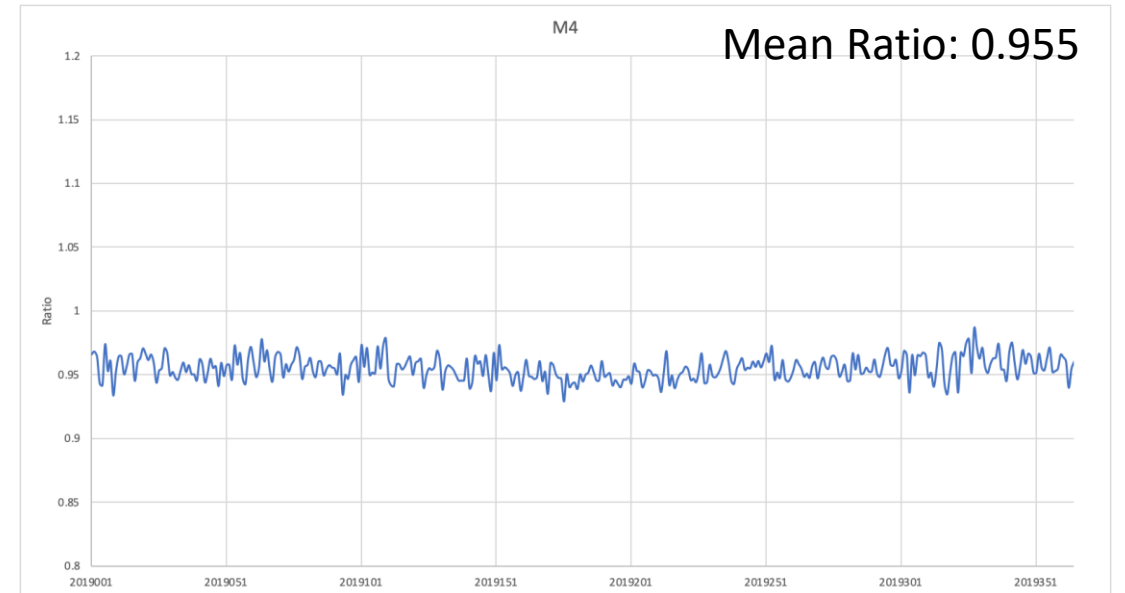
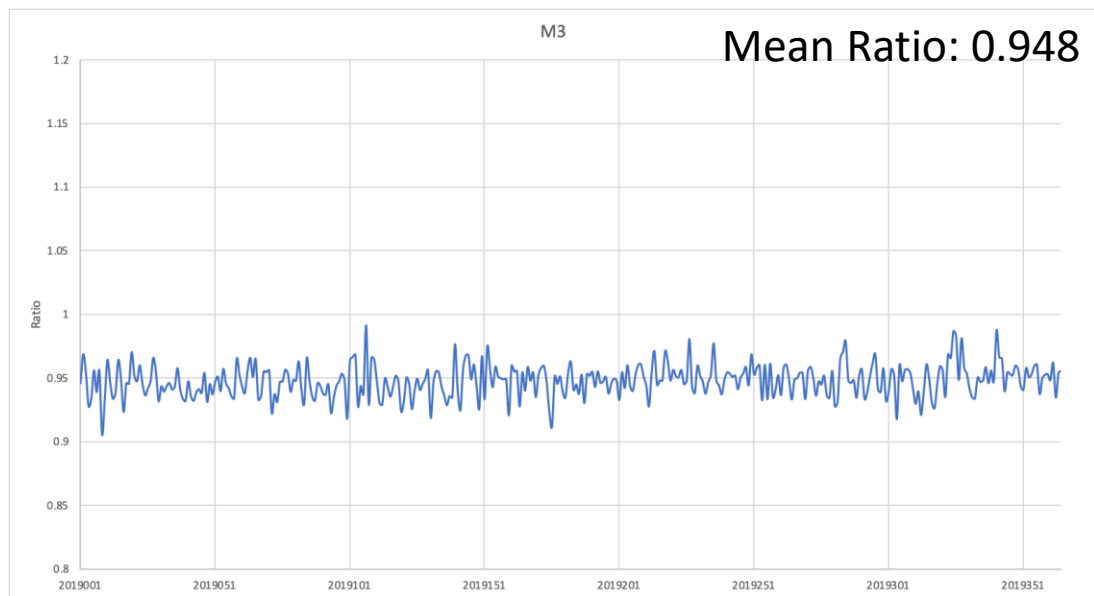
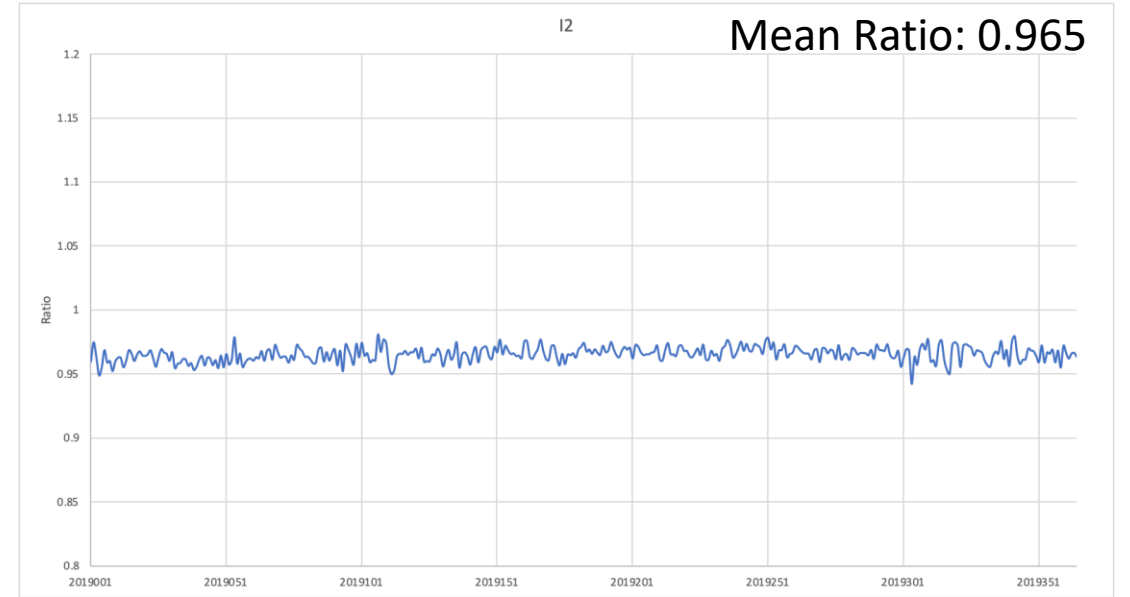
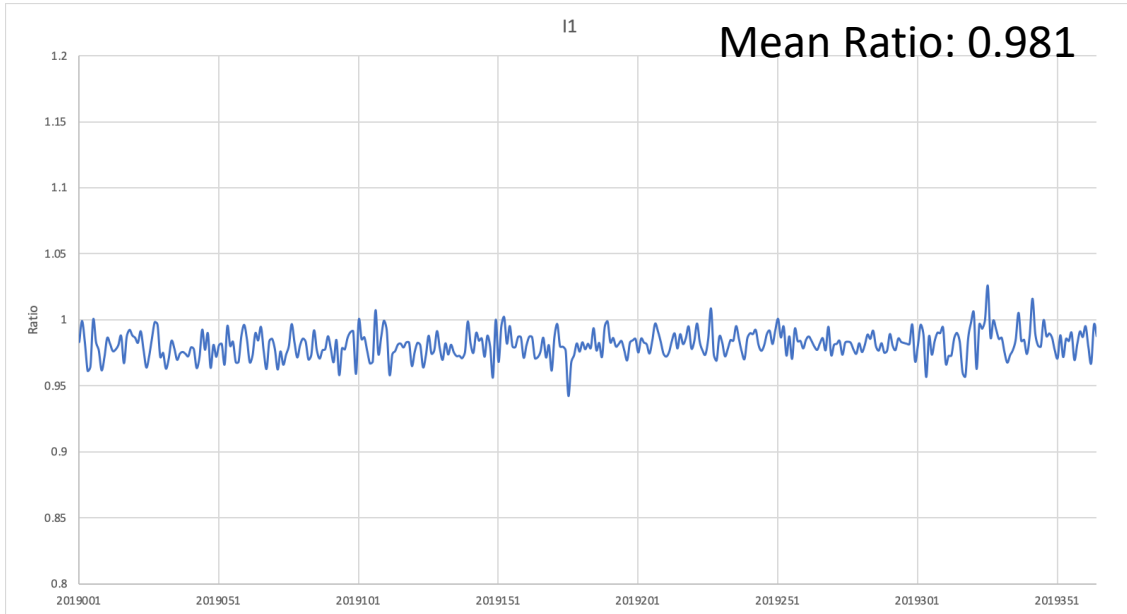
C1 SNPP VIIRS L1 Products

- **C1 L1 products**
 - **LAADS AS 5000: Generated using Mx8 version of the operational IDPS L1B SDR algorithm and the NASA VCST delivered calibration LUTs.**
 - **LAADS AS 5110: Generated using the NASA VCST delivered Calibration algorithm and LUT.**
- **C1 Land products are generated using the Mx8 version of the operational IDPS L1B SDR algorithm and the NASA VCST delivered calibration LUTs. (AS 5000)**

C2 SNPP and J1 VIIRS L1

- **C2 SNPP VIIRS L1 Reprocessing in progress (LAADS AS 5200)**
 - Uses the latest version of the VCST delivered calibration algorithm and LUT
 - Processing complete through mid-2016
 - Expect to complete reprocessing the mission period by April/May 2021.
- **C2 J1/NOAA-20 VIIRS L1 Reprocessing**
 - C2 reprocessing of L1B and geolocation products for the mission period completed in Aug 2019 (AS 5200)
 - J1 VIIRS experimental land products generated using the NASA J1 VIIRS L1B and C2 VIIRS land algorithms are made available to science teams only (AS 3194).
- **C2.1 J1/NOAA-20 VIIRS L1 Reprocessing**
 - C2.1 reprocessing of L1B and geolocation product using the latest version 3.1 algorithm and calibration LUT started in Jan 2021.
 - Currently processing Oct 2019. Expect to complete reprocessing the mission period in March 2021.
- **C2 VIIRS SNPP and J1/NOAA-20 Land reprocessing expected to start by Spring 2021**

Cross Comparison of SNPP and J1 VIIRS



Conclusion

- MODAPS currently generating both C61 and C6 MODIS L1 products. C6 to be discontinued at the end of this year.
- C7 MODIS products to be in netCDF4. C7 reprocessing of MODIS L1 expected to start in Fall 2021.
- C2 reprocessing of SNPP VIIRS L1 to complete in April/May 2021 and C2.1 NOAA-20 VIIRS L1 to complete in March 2021.
- Persistent bias of ~2% - 6% between the S-NPP and J1/N20 L1B TOA values, for most RSB noticed in the operational C2 L1 products
- C2 VIIRS land reprocessing to start in Spring 2021.