NOAA JPSS Monthly Program Office

AMP/STAR
FY25

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November, 2025

Highlights from the Science Teams (October)

2025 Ozone Hole Press Release

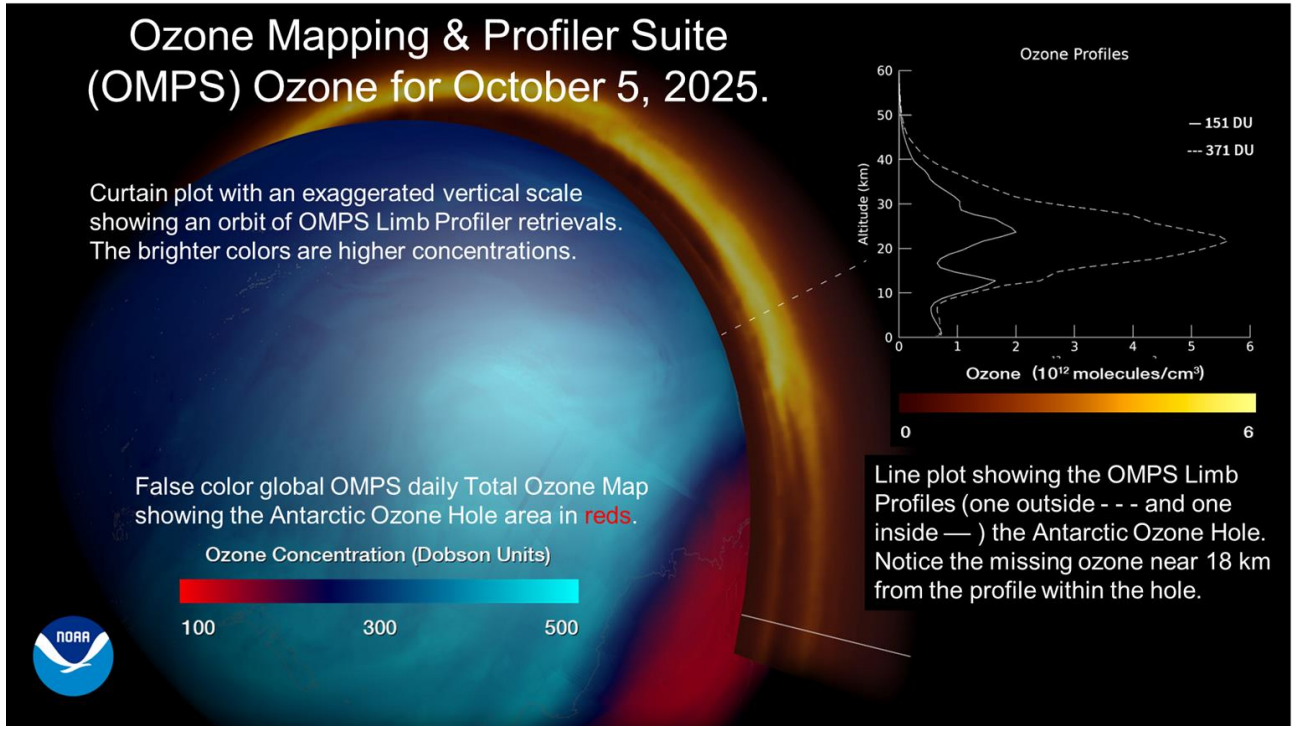


Figure. This image shows some examples of JPSS OMPS regarding the 2025 Ozone hole.

The press release regarding the 2025 Antarctic Ozone Hole has been released and can be found at - https://www.noaa.gov/news-release/noaa-nasa-2025-ozone-hole-is-5th-smallest-since-1992

Scientists with NOAA and NASA have ranked this year's ozone hole over the Antarctic as the fifth smallest since 1992 — the year that the Montreal Protocol, a landmark international agreement to phase out ozone-depleting chemicals began to take effect. The small size is due to a combination of dynamics, with a weaker than average polar vortex, and the continued decline of ozone depleting substances in the stratosphere thanks to international control of their production and release.

Highlights from the Science Teams (October)

Blowing Dust Climatology Paper published

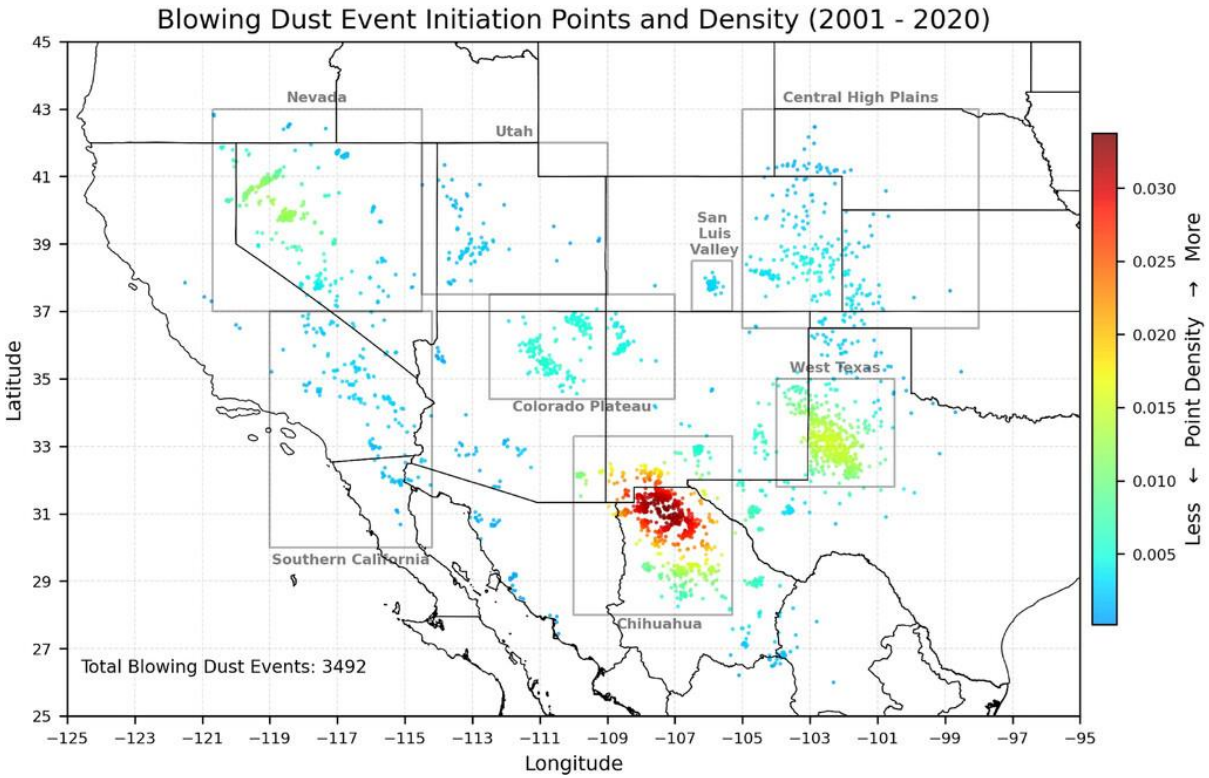


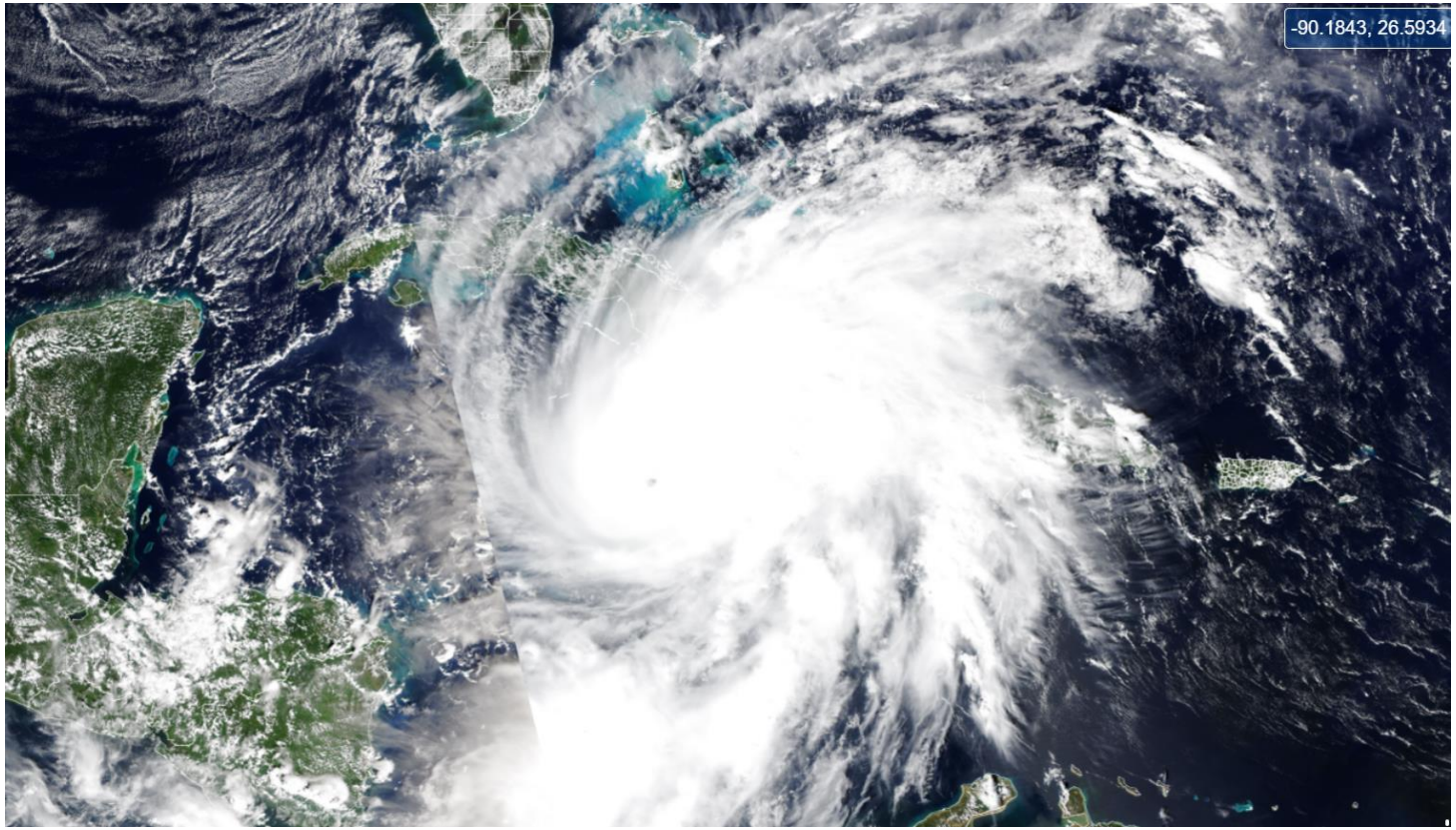
Figure. Spatial distribution of blowing dust initiation points (events) and their density across southwestern North America for the 2001–20 period. Density was calculated using Gaussian kernel density estimation (KDE) applied to manually identified plume initiation points from GOES imagery, with a bandwidth of 0.255 to emphasize broad regional patterns. Warm colors indicate higher concentrations of events. Boxes denote the eight regional domains used in the spatial analysis (section 3b) and correspond to areas of enhanced dust activity (see Table S1 for box definitions and summary statistics).

Bill Line and coauthors published a study that presents a 20-year (2001–2020) climatology of blowing dust events across southwestern North America, developed using GOES infrared and VIIRS/MODIS True Color satellite imagery. The work identifies key seasonal patterns, geographic hotspots, and links to drought periods. This satellite-based dataset provides valuable spatial and temporal context to complement existing dust records and supports improvements in air quality forecasting and hazard mitigation.

Line, W. E., J. D. Turner, M. P. Bleiweiss, and D. Hillger, 2025: GOES-Based Trends in Blowing Dust Initiation across Southwestern North America, 2001–20. J. Appl. Meteor. Climatol., 64, 1833–1850, https://doi.org/10.1175/JAMC-D-25-0035.1.

Highlights from the Science Teams (October)

VIIRS captures powerful Hurricane Melissa



A relatively rare late October hurricane formed in the central Caribbean on October 21. It slowly became more organized during the following few days before undergoing rapid intensification on October 27. The storm, Hurricane Melissa, continued to strengthen into October 28, peaking with sustained winds of 185 mph and a pressure of 892 mb as it made landfall in western Jamaica. These readings made it the strongest landfalling hurricane on record in the Atlantic basin.

The above image shows a True Color imagery from NOAA-20 VIIRS, captured shortly before landfall on October 28.

Accomplishments

Delivery Date	Cloud Containerized Algorithm Packages (CCAPs) – Enterprise Products:	Recipient
10/01/25	**NHC-AWIPS-Converter_v1-1:** Patch delivery of the NHC-AWIPS-Converter_v1-1 CCAP to the NCCF s3 bucket. This patch updates tailored output file naming to follow CCAP conventions. Additionally, start/end coverage timestamps in the configuration YAML files are properly parsed and enforced.	NCCF
10/09/25	**SurfRefl_v2:** Surface Reflectance Preliminary CCAP delivery for software code review by OSPO.	OSPO
10/23/25	**NHC-AWIPS-Converter_v1-2:** Patch to fix an error where the second part of a multi-part GPM-GMI output was being missed.	NCCF
10/31/25	**eTRAP_v3-6:** Patch delivery of the eTRaP code that contains a number of bug fixes:	NCCF
11/03/25	**BlendedSST_v1-3:** This is the patch delivery of the Blended SST CCAP v1-3 to NCCF.	NCCF
11/05/25	**BlendedHydro_v2-1:** Simple patch to the gps_map_to_grid module which will allow it to handle bad TPW values. This should allow the processing to move along and output a warning message.	NCCF

Accomplishments – JPSS Cal Val Support

NOAA-20/21/S-NPP Operational Calibration Support:

S-NPP	Weekly OMPS TC/NP Dark Table Updates	**9/30/25, 10/7/25. 10/14/25, 10/21/25, 10/28/25, 11/4/25, 11/12/25**
NOAA-20	Weekly OMPS TC/NP Dark Table Updates	**9/30/25, 10/7/25, 10/14/25, 10/21/25, 10/28/25, 11/4/25, 11/12/25**
NOAA-21	Weekly OMPS TC/NP Dark Table Updates	**9/30/25, 10/7/25, 10/14/25, 10/21/25, 10/28/25, 11/4/25, 11/12/25**
S-NPP	Bi-Weekly OMPS NP Wavelength & Solar Flux Update	**9/23/25, 10/7/25, 10/21/25, 11/4/25**
NOAA-20	Bi-Weekly OMPS NP Wavelength & Solar Flux Update	**9/16/25, 9/30/25, 10/14/25, 10/28/25, 11/12/25**
NOAA-21	Bi-Weekly OMPS NP Wavelength & Solar Flux Update	**9/16/25, 9/30/25, 10/14/25, 10/28/25, 11/12/25**
S-NPP	Monthly VIIRS LUT Update of DNB Offsets and Gains	**9/29/25, 11/4/25**
NOAA-20	Monthly VIIRS LUT Update of DNB Offsets and Gains	**9/29/25, 11/4/25**
NOAA-21	Monthly VIIRS LUT Update of DNB Offsets and Gains	**9/29/25, 11/4/25**
NOAA-21	Monthly VIIRS DNB Straylight correction update	Reuse earlier correction LUTs based on the month)

Agile Release Train (ART)	NESDIS Level Requirement (NLR) Categories	Product Owner
Pink	Fire, Volcanoes, Radiation Budget, Space Weather, Surface Height, Water Temperature and Salinity	Kelly Cermak
Yellow	Atmospheric Composition and Air Quality, Surface Temperature, Vegetation	Li Bi
Orange	Tropical Cyclones, Winds, Clouds (only Fog Low Stratus), Atmospheric Temperature and Atmospheric Water Vapor	Gian Villamil-Otero
Blue	Imagery, Soil Moisture, Floods, Precipitation	Jianbin Yang
Purple	Cryosphere, Clouds	Ed Borders
Magenta	Ocean Biology, Water Temperature and Salinity, Tools	Curtiss Burnett
Green	Application and Dataset Migration Team (ADMT), Data and Metadata Integration Team (DMIT)	Inger Kittle

FY26 STAR JPSS Milestones (1 of 10)

Pink

Milestones/ Algorithm Updates	Original Date	Forecast Date	Actual Completion Date	Variance Explanation	FY26 Tracking Status/Details
VOLCAT_v1 (Phase 1): Transition to Algorithm Orchestration (AO)	Feb-26	Feb-26			New implementation for AO. Trigger Product Rule System (TPRS) delivery discontinued, VOLCAT T2O will proceed into AO Architecture.
Enterprise Fires: Transition to AO	Mar-26	Mar-26			Maintenance CCAP for AO. SCR to OSPO: Feb. 21, 2026 CCAP to NCCF: March 24,2026.
Surface Reflectance: Transition to AO	Apr-26	Apr-26			Maintenance CCAP for AO CCAP to NCCF: Apr 15, 2026.
RAVE Transition to AO, Upgrade for MTG	May-26	May-26			Maintenance CCAP for AO SCR to OSPO: Mar 30, 2026 CCAP to NCCF: March 30,2026.
Land Surface Albedo (LSA): Standalone LSA Package: Transition to AO	Jun-26	Jun-26			Maintenance CCAP for AO SCR to OSPO: Mar 18, 2026. CCAP to NCCF: Jun 19, 2026.
Image Tile Generator (New CCAP to work with VOLCAT and NGFS)	Jun-26	Jun-26			New implementation for AO SCR to OSPO: Apr 28, 2026. CCAP to NCCF: Jun 20, 2026.
Next Generation Fire System (NGFS) – New Implementation	Jun-26	Jun-26			New implementation for AO SCR to OSPO: Apr 20, 2026. CCAP to NCCF: Jun 15, 2026.
Gridded Land Surface Albedo (LSA): Transition to AO	Sep-26	Sep-26			Maintenance CCAP for AO SCR to OSPO: Jul 1, 2026. CCAP to NCCF: Sep 2, 2026

FY26 STAR JPSS Milestones (2 of 10)

Yellow

Milestones/ Algorithm Updates	Original Date	Forecast Date	Actual Completion Date	Variance Explanation	FY26 Tracking Status/Details
Enterprise Total Ozone: Transition to AO (includes both JPSS and MetOp)	Nov-25	Nov-25			Maintenance CCAP for AO. CCAP to NCCF: Nov 30, 2025. Static ancillary data will now be in EFS.
OMPS-NP: Transition to AO	Jun-26	Jun-26			Maintenance CCAP for AO. SCR to OSPO: Apr 20, 2026. CCAP to NCCF: Jun 15, 2026.
OMPS-V8TOs: Transition to AO	Jun-26	Jun-26			Maintenance CCAP for AO. SCR to OSPO: Apr 6, 2026. CCAP to NCCF: Jun 15, 2026.
Gridded Land preprocessor New pull out CCAP	Jul-26	Jul-26			Pull out preprocessor as a CCAP for AO. SCR to OSPO: May 1, 2026. CCAP to NCCF: Jul 6, 2026
OMPS-LP Products NOAA-21 Validated Version	Aug-26	Aug-26			Maintenance CCAP for AO. SCR to OSPO: Jun 1, 2026. CCAP to NCCF: Aug 20, 2026.
Aerosol Optical Depth (AOD): Transition to AO	Aug-26	Aug-26			Maintenance CCAP for AO Science updates
ADP: Transition to AO	Sep-26	Sep-26			Maintenance CCAP for AO
LST: Transition to AO	Oct-26	Oct-26			Maintenance CCAP for AO
Vegetation Index (VI) 1 Km VI updates for existing products	Nov-26	Nov-26			Maintenance CCAP for AO SCR to OSPO: Aug 21, 2026. CCAP to NCCF: Nov 5, 2026.
Global Biomass Burning Emissions Product (GBBEPx)	Nov-26	Nov-26			MetOp-SG upgrade Maintenance CCAP

FY26 STAR JPSS Milestones (3 of 10)

Orange

Milestones/ Algorithm Updates	Original Date	Forecast Date	Actual Completion Date	Variance Explanation	FY26 Tracking Status/Details
Derived Motion Winds	Feb-26	Feb-26			New implementation for AO. SCR to OSPO: Aug 21, 2025 CCAP to NCCF: Feb 26, 2026..
Hyperspectral Enterprise Algorithm Package (HEAP): Satellite update for MetOp-SG	Feb-26	Feb-26			Upgrade to MetOp-SG, CCAP for AO. SCR to OSPO: Jan 8, 2026. CCAP to NCCF: Feb 26, 2026.
Hurricane Intensity and Structure Algorithm (HISA): Transition to AO	Jun-26	Jun-26			Maintenance CCAP for AO SCR to OSPO: May 5, 2026. CCAP to NCCF: Jun 1, 2026.
Ensemble Tropical Rainfall Potential (eTRaP): Updates to MetOp-SG	Jun-26	Jun-26			Update to MetOp-SG, Maintenance CCAP for AO. SCR to OSPO: May 17, 2026. CCAP to NCCF: Jun 20, 2026.
VIIRS Radiance Cluster: Transition to AO	Jul-26	Jul-26			Maintenance CCAP for AO SCR to OSPO: May 11, 2026. CCAP to NCCF: Jul 24, 2026.
Imagery - Enterprise Arctic Composite Imagery (ACI)	Dec-26	Dec-26			Maintenance CCAP for AO. CCAP to NCCF: Dec 10, 2026.
Green Vegetation Fraction (GVF)	Dce-26	Dce-26			Maintenance CCAP for AO CCAP for SCR delivered: Aug 21, 2025. CCAP to NCCF: Dec 10, 2026.

FY26 STAR JPSS Milestones (4 of 10)

Blue

Milestones/ Algorithm Updates	Original Date	Forecast Date	Actual Completion Date	Variance Explanation	FY26 Tracking Status/Details
Microwave Integrated Retrieval System (MiRS): Satellite update for Quick Sounder,	Oct-25	Nov-25		Delivery expected on Oct 31. Delayed and moved to 11/5 to fix security vulnerabilities	Maintenance CCAP for AO. CCAP to NCCF Nov 5, 2025..
Snowfall Rate (SFR): Satellite update for Quick Sounder	Oct-25	Nov-25		Delivery expected on Oct 31. Delayed and moved to 11/5 to fix security vulnerabilities.	Maintenance CCAP for AO. CCAP to NCCF Nov 5, 2025..
GCOM AMSR Algorithm Software Package (GAASP) Preprocessor: Satellite update for GOSAT-GW	Dec-25	Dec-25			GOSAT-GW update and maintenance CCAP. CCAP to NCCF: Dec 11, 2025.
GCOM RDR to ASD Converter (GRAC) and JAXA-L1: AMSR3 upgrade	Dec-25	Dec-25			AMSR3 upgrade and maintenance CCAP AO. CCAP to NCCF: Dec 18, 2025.
Advected Layer Precipitable Water (ALPW)	Feb-26	Feb-26			GOSAT-GW update and maintenance CCAP. CCAP to NCCF: Feb 20, 2026.
GAASP Precipitation	Feb-26	Feb-26			Satellite update and maintenance CCAP. SCR to OSPO: Jan 8 2026. CCAP to NCCF: Feb 26, 2026.
GAASP Soil Moisture	May-26	May-26			Retrieval update with ML CCAP for AO. SCR to OSPO: Mar 10, 2026 CCAP to NCCF: May 28, 2026.
Flood Mapping: Transition to AO, VFM, ABI FM, Blended FM.	Jun-26	Jun-26			Maintenance CCAP for AO. SCR to OSPO: : Apr 28, 2026 CCAP to NCCF: Jun 10 2026.

FY26 STAR JPSS Milestones (5 of 10)

Purple

Milestones/ Algorithm Updates	Original Date	Forecast Date	Actual Completion Date	Variance Explanation	FY26 Tracking Status/Details
Cloud Mask: Transition to AO, updates	Nov-25	Nov-25			Maintenance CCAP for AO CCAP to NCCF: Nov 30, 2025. Include separate files for ancillary data
Cloud Height: Transition to AO, updates to software	Feb-26	Feb-26			Maintenance CCAP for AO. SCR to OSPO Delivered: Feb 13, 2025. CCAP to NCCF: Feb 26, 2026
Cloud Phase and Type: Transition to AO	Mar-26	Mar-26			Maintenance CCAP for AO. SCR to OSPO Delivered: Jun 27, 2025. CCAP to NCCF: Mar 16, 2026.
Fractional Snow Cover: Transition to AO	May-26	May-26			Maintenance CCAP for AO. SCR to OSPO: Mar 5, 2026. CCAP to NCCF: May 1, 2026.
Daytime Cloud Optical and Microphysical Properties (DCOMP)	May-26	May-26			Maintenance CCAP for AO. SCR to OSPO: Mar 18, 2026. CCAP to NCCF: May 31, 2026.
Cloud Base Height (CBH) and Cloud Cover Layer (CCL): Transition to AO	Aug-26	Aug-26			Maintenance CCAP for AO CCAP to NCCF: Aug 31, 2026.
GCOM AMSR Algorithm Software Package (GAASP) Snow	May-26	May-26			Maintenance CCAP for AO SCR to OSPO: April 22, 2026. CCAP to NCCF: May 27, 2026.

FY26 STAR JPSS Milestones (6 of 10)

Magenta

Milestones/ Algorithm Updates	Original Date	Forecast Date	Actual Completion Date	Variance Explanation	FY26 Tracking Status/Details
Blended Sea Surface Temperature (SST): Patch to address error	Nov-25	Nov-25	Nov 3, 25		The updated patch script was delivered to the NCCF PG team on November 3, 2025.
NetCDF4 Reformatting Toolkit (N4RT): Patch for meta data	Dec-25	Dec-25			Maintenance patch to NCCF CCAP to NCCF: Dec 2, 2025.
Snow Mask : Transition to AO, updates to OS9 and gcc 11.3	Dec-25	Dec-25			Maintenance CCAP for AO SCR to OSPO: Nov 19, 2025. CCAP to NCCF: Dec 29, 2025.
GCOM AMSR Algorithm Software Package (GAASP) Ocean	May-26	May-26			Update to AMSR3 and CCAP for AO. SCR to OSPO: Mar 12, 2026. CCAP to NCCF: May 5, 2026.
Advanced Clear Sky Processor for Ocean (ACSPO): Transition to AO	May-26	May-26			Maintenance CCAP for AO. SCR to OSPO: Mar 15, 2026. CCAP to NCCF: May 10, 2026.
NHC AWIPS Converter: Transition to AO	Jun-26	Jun-26			Maintenance CCAP for AO. SCR to OSPO: Apr 15, 2026. CCAP to NCCF: Jun 10, 2026.
NetCDF4 Reformatting Toolkit (N4RT)	Jun-26	Jun-26			Maintenance CCAP for AO. SCR to OSPO: Apr 15, 2026. CCAP to NCCF: Jun 10, 2026.
Blended Sea Surface Temperature (SST): Transition to AO, MTG update	Nov-26	Nov-26			MTG sat update, maintenance CCAP for AO. SCR to OSPO: Sep 1, 2026. CCAP to NCCF: Nov 15, 2026
Ocean Color: Transition to AO	Nov-26	Nov-26			Maintenance CCAP for AO. SCR to OSPO: Sep 1, 2026. CCAP to NCCF: Nov 20, 2026

FY26 STAR JPSS Milestones (7 of 10)

Milestones/ Algorithm Cal/Val and LTM	Original Date	Forecast Date	Actual Date of Completion	Variance Explanation	FY26 Tracking Status/Details
AST-2025 (VIIRS Annual Surface Type)	Sep-26	Sep-26			
NEON: Quick Sounder pre-launch and post-launch Cal/Val Plan	Jan-26	Jan-26			ATMS science team plans to update the cal/val plan by January 2026.
Quick Sounder Compatibility Test (QCT)	Jan-26	Jan-26			QCT 1: December, 2025 (UAT and IDPS TE) QCT 2: January, 2026 (PROD and IDPS OE)
FY27 Program Management Review (all teams)	Jun-26	Jun-26			Annual Review of FY25 Activities (Jan 2026) followed by PMRs FY27 in Jun 2026.
JPSS-4 Pre-launch PCT/LUTs Updates	Jun-26	Jun-26			JPSS-4 PCT/LUTs should be in IDPS build before JCT-3A (Sep 2026) ATMS J4 PCTs were delivered to Peraton and were implemented in MX13. CrIS J4 PCTs delivered to ASSISTT and ASSISTT plans a delivery to IDPS AIT. OMPS and VIIRS teams: LUTs Yet to deliver the J4 PCTs. Initial J4 VIIRS and OMPS PCTs are expected to be delivered in FY26 ahead of the Satellite TVAC and JCT-3. VIIRS delivered J3 LUTs and is baselined in MX13)
Reprocessing and transfer of EDRs to CLASS	Sep-26	Sep-26			JSTAR Team and CLASS members are working on modalities for transfer of data from NODD to CLASS.

FY26 STAR JPSS Milestones (8 of 10)

Milestones/ Algorithm Cal/Val and LTM	Original Date	Forecast Date	Actual Date of Completion	Variance Explanation	FY26 Tracking Status/Details
JPSS-3/JPSS-4 pre-launch test data review/analysis and activity support by SDR teams.	Sep-26	Sep-26			J3 JCT1/JCT2, J3 Spacecraft TVAC, and J4 instrument TVAC completed as part of FY24 milestones. No J3 JCT Activities at this time. J4 JCT 1 (Jun 2025– Jan, 2026) – No Science team Involvement. J4 JCT 2 (Dec 2025 – Mar 2026) – No Science team involvement. J4 JCT 3B (May 2026– Jul 2026) – No Science teams involvement J4 JCT 3A (TVAC) (July 2026 – Sep 2026) – With Science team involvement.
Proxy/Test data for J4-Ready EDR Algorithms	Sep-26	Sep-26			Milestone for SDR teams to generate proxy /synthetic data to test J4-Ready EDR algorithms
Reprocessing and transfer of EDRs to CLASS	Sep-26	Sep-26			JSTAR Team submitted a request to CLASS to archive reprocessed AOD/ADP. STAR and CLASS members are working on modalities for transfer of data from NODD to CLASS.

FY26 STAR JPSS Milestones (9 of 10)

Milestones/ Algorithm Cal/Val and LTM	Original Date	Forecast Date	Actual Date of Completion	Variance Explanation	FY26 Tracking Status/Details
Maintain / Update ICVS: Enhancements and augmentation of ICVS modules to support J4 activities (Inter-sensor comparison, etc.) for operational monitoring.	Sep-26	Sep-26			Follow FY26 PMR schedules/milestones. Teams submit monthly Quad Charts
Maintain / Expand (to include JPSS-4 products) JSTAR Mapper, adapting to STEMS	Sep-26	Sep-26			Follow FY26 PMR schedules/milestones. Teams submit monthly Quad Charts
Document processes for analyzing export control data	Sep-26	Sep-26			STAR, in collaboration with LEO Program will set up a STAR ITAR server. Initially, ITAR and export control data will be stored in a Google Drive with secured access set up by STAR IT adhering to ITAR/export control guidelines. The pathway to analyze export control data would be through Google Drive -> STAR Laptop -> STAR ITAR Server via SSH. Data is not to be stored on the STAR Laptop except for the transfer to the STAR ITAR Server. JSTAR science team leads who need to access/process export controlled data on the STAR ITAR Server need to fill out a request form for every STAR scientist that needs access to the server: https://forms.gle/2qqdDpkRM4K5DmAP8 Need to tag up with Melina Seelig - when the Govt reopens.

FY26 STAR JPSS Milestones (10 of 10)

Milestones/ Algorithm Cal/Val and LTM	Original Date	Forecast Date	Actual Date of Completion	Variance Explanation	FY26 Tracking Status/Details
Provisional Maturity of AMSR3 products	Jun-26	Jun-26			The AMSR3 L0 data is flowing into NCCF Dev environment and the ASSISTT team has just now started working on the GRAC package (September 3, 2025) that prepares input for the JAXA L0 to L1 executable. ASSISTT team will install further updates from JAXA as and when received. JAXA initiated GOSAT-AMSR3 data collection on August 11. Routine observations JAXA Level 1 Ver 0.1 release to partner agencies anticipated at the end of October. This release will include the updated JAXA L0 to L1 processing code. JAXA will have additional updates to their L0 to L1 processing software scheduled for February 2026. Currently, STAR science teams should be able to ftp L1 data directly from JAXA as was done with AMSR2 in the early stages
GCOM AMSR3 Algorithm Software Package (GAASP) for GOSAT-GW	Sep-26	Sep-26			Follow science team to ASSISTT and ASSISTT to NCCF schedules

IDPS Mx Build Status

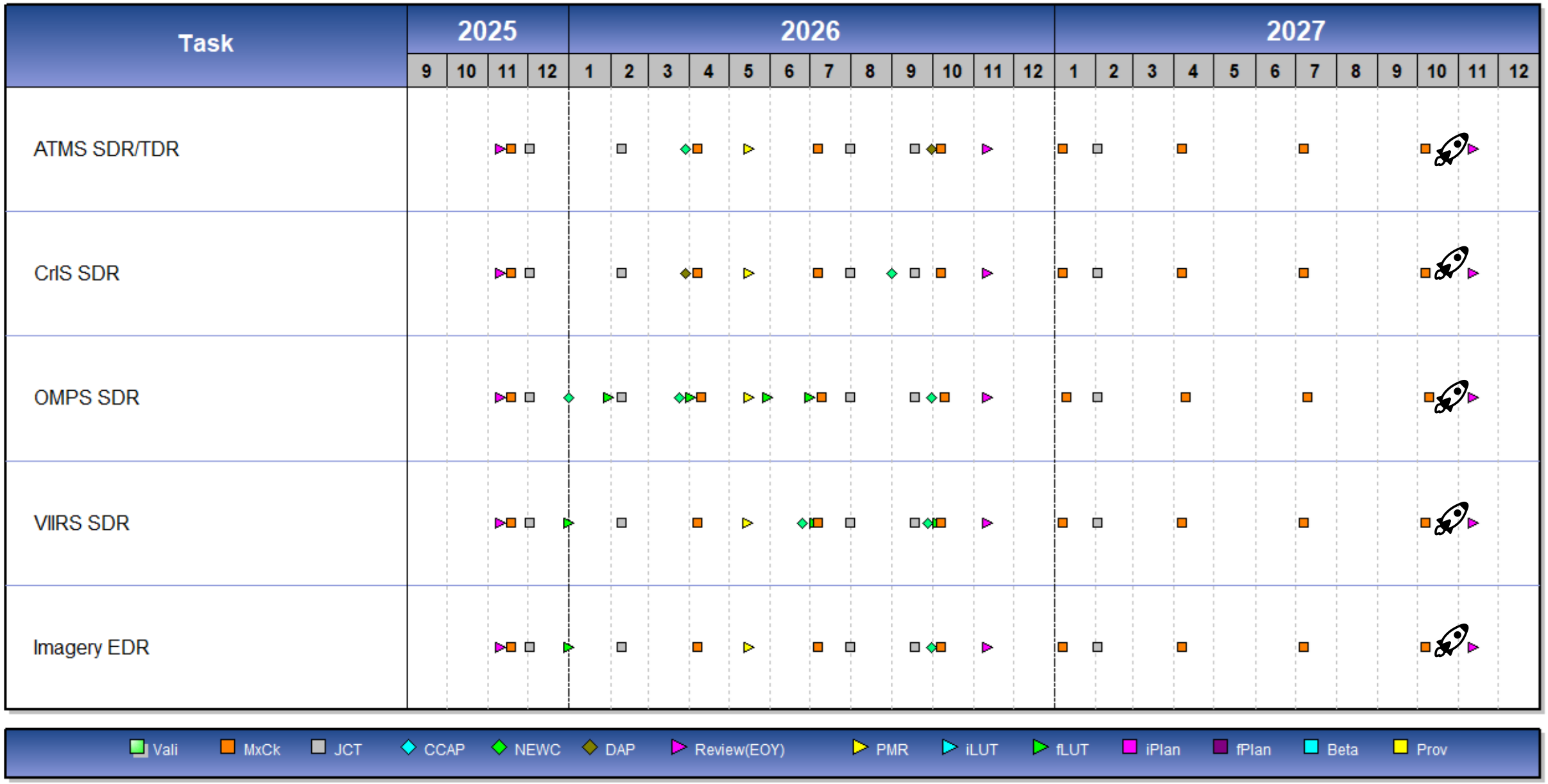
Current: Block 2.3 Mx14

- TTO: 8/27/2025 1535 UTC
- Mx14 ADL should be used for all algorithm change package deliveries

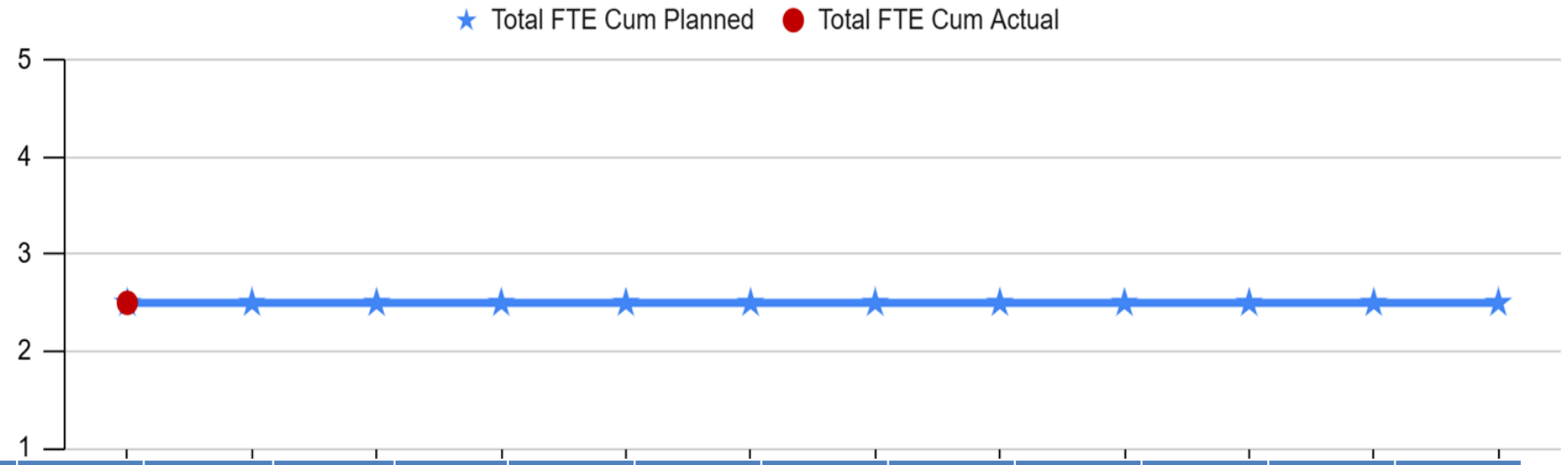
- Mx15 Algorithm related updates:
  - CCR-7383 QuickSounder ATMS SN30 initial pre-launch PCT (001) Delivery - ADR 11006
  - CCR-7803 ATMS beam alignment correction rotation matrix code update - ADR 11197
  - S-NPP ATMS PCT updates baselined (CCR-7814/ADR-11366)
  - NQS (QuickSounder) baselined
- Mx16 includes following science teams delivered updates/changes:
  - CCR-7592 Correcting the build warning in the VIIRS SDR code - ADR 11192
- CCR-7890/ADR-11193 139 CT Medium-Resolution NOAA-20 OMPS NM SDR and GEO operational: No earlier than Dec. 9, 2025 (Out of Cycle LUTs update)

IDPS Mx Schedule	Mx15	Mx16
Code change cutoff (STAR to ASSISTT)	May. 10, 2025	Oct. 3, 2025
Code change cutoff (IDPS AIT to Peraton)	Jun. 24, 2025	Nov. 14, 2025
SOL (DP_FE) regression test	Aug. 21 – Sep. 23, 2025	Jan. 27 – Feb. 27, 2026
STAR SOL review/checkout feedback (Go/No-Go & Report)	Sep. 23, 2025 (JSTAR provided the summary report & “GO” on 9/22/2025)	Feb. 27, 2026
ADL IDPS handoff	Sep. 19, 2025	Feb. 24, 2026
ADL publication	Oct. 31, 2025 (10/8/25: Mx15 ADL is available at the FTS website)	Mart. 19, 2026
Handoff to OMS (taken to OCCB (Operational Configuration Control Board))	Oct. 9, 2025 (OCCB cancelled)	Mar. 19, 2026
I&T (DP-TE) regression test	Oct. 23 – Nov. 19, 2025	Mar. 19 – Apr. 3, 2026
STAR I&T review/checkout feedback (Go/No-Go & Report)	Nov 19, 2025	Apr 3, 2026
TTO	Dec. 9, 2025	Apr. 23, 2026

STAR JPSS Schedule: Recommended TTA Milestones



J-STAR FY26 Planned Program Management Staffing Plan v Actuals



J-STAR FTEs	Oct'25	Nov '25	Dec '25	Jan '26	Feb '26	Mar'26	Apr'26	May'26	Jun'26	Jul '26	Aug '26	Sep '26
Cum Planned (CS)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cum Actual (CS)	0.00											
Cum Planned (WYE)	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Cum Actual (WYE)	2.50											
Total FTE Cum Planned	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50
Total FTE Cum Actual	2.50											

CS: Vacant (prev. Alisa Young)
WYE: *Murty Divakarla, Tom Atkins, Jeffrey Weinrich, Tess Valenzuela*

Color code:

Green: **Completed Milestones**

Gray: **Ongoing FY26 Milestones**

October 2025

Active Fires

October 2025

Accomplishments / Events:

- Processed NGFS VIIRS for the Williams Flats Fire for Suomi NPP and NOAA-20 for EFIRE-NGFS intercomparison
  - The analysis was performed on a pix-by-pixel basis and for contiguous clusters of the fire complex
  - Detections and FRP were analyzed
- Continued time series analysis of persistent anomalies

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Implement global NGFS processing capability	Dec-25	Dec-25		
Generate eFire – NGFS matchups from global sample	Mar-26	Mar-26		
Generate eFire – NGFS matchup statistics	Sep-26	Sep-26		
Generate validation datasets from opportunistic in-situ reference data	Dec-25	Dec-25		
Generate statistical analysis for eFire – NGFS detection performance	Mar-26	Mar-26		
Direct Broadcast support	Sep-26	Sep-26		
Maintenance, LTM and anomaly resolution	Sep-26	Sep-26		

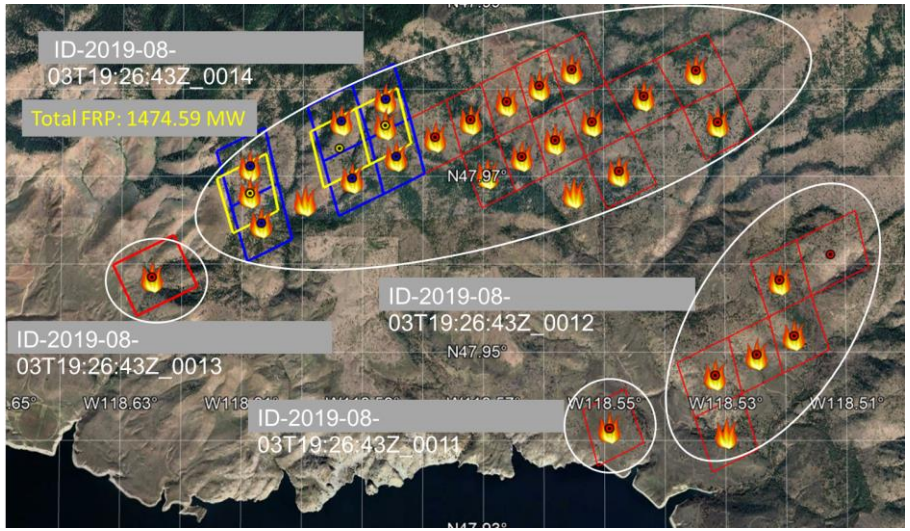
Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

Highlight: NGFS vs. EFIRE VIIRS detections



Next Generation Fire System (NGFS; rectangles) and operational Enterprise Fire (EFIRE; fire icons) NOAA-20 VIIRS I-band fire detections on August 3, 2019 at 19:26 UTC

Aerosol

October 2025

Accomplishments / Events:

- Using post-processing, VIIRS high-quality AOD retrievals were increased by 30% without a large negative impact on validation statistics.
- The team's AI/ML-based AOD and aerosol particle size algorithm was transitioned to run on the NOAA Ursa supercomputer, resulting in >100x increase in throughput, which will allow for future NRT applications of the algorithm.
- Training of the summer 2026 NERTO intern undergraduate from the University of Maryland, Baltimore County is underway; covered topics include using Python to search for, access, process, and visualize VIIRS EDR aerosol files.
- The team participated as trainers and SMEs in the 2025 NOAA Satellites Hackathon (SatHack) virtual competition for undergraduate and graduate students.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Subtask 2.1: *Identify source of high latitude false dust detections, especially clouds mis-identified as smoke*	Mar 2025	Mar 2025	July 2025	
Subtask 2.2: *Work with Volcanic Ash team to import the ash detection into ADP*	Jun 2025	Jun 2025	Jun 2025	
Subtask 2.3: *Make code updates to ADP algorithm to implement "smoke call back"*	Sep 2025	Sep 2025	Sep 2025	
Subtask 2.4: *Adapt ADP algorithm to NOAA-21 OMPS*	Dec 2025	Dec 2025		
Subtask 2.5: *Begin the process to transition VIIRS PM2.5 algorithm to operations*	Mar 2026	Mar 2026		
Adapt the VIIRS AOD algorithm to use PACE OCI data	Feb 2025	Feb 2025	Feb 2025	
Develop new LUTs and PCTs for over bright-land retrieval June 2025	Jun 2025	Jun 2025	Jun 2025	
Evaluate Metop-SG AOD retrievals using seasonal samples of VIIRS proxy data	Jul 2025	Jul 2025	Jul 2025	Delayed due to Metop-SG launch
Complete design, coding and testing of simultaneous multi-spectral reflectance fitting for AOD retrieval	Aug 2925	Aug 2925	Jul 2025	
Complete assessment of a multi-year VIIRS EPS SNPP, NOAA-20 and NOAA-21 AOD	Aug 2025	Aug 2025	Aug 2025	
Deliver updated bright-land AOD algorithm to ASSISTT	Sep 2025	Sep 2025	Sep 2025	

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

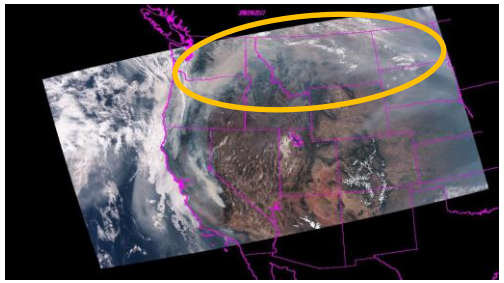
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

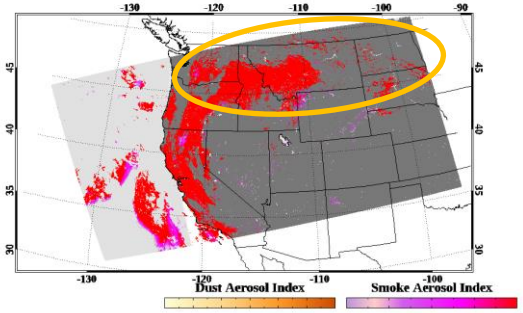
No risks.

Highlight: Updated VIIRS ADP algorithm "calls-back" thick, brown-colored smoke plumes missed by the original algorithm, thereby increasing the accuracy of ADP for smoke detections.

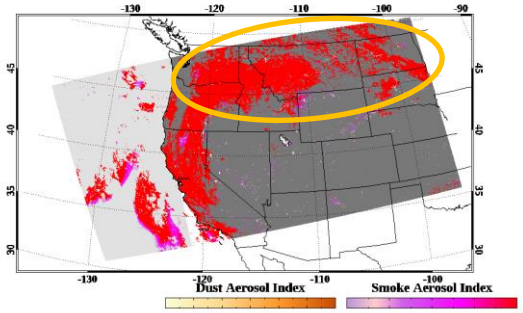
SNPP VIIRS true color RGB 13 Sep 2020



Original ADP



Updated ADP with "Smoke Call-Back"



ATMS SDR

October 2025

Accomplishments / Events:

- Finished the ATMS pre-launch and on-orbit NEdT comparison study and prepared a comparison report to support ATMS on-orbit performance evaluation activities. Shown in Figure 1 is the NOAA-21 ATMS on-orbit, pre-launch@300K, and on-orbit@300K NEdt comparison chart.
- Finished ATMS Side-A and Side-B PCT comparison study and prepared analysis report to support ATMS operational data generation missions. Additional study is still on-going to identify if there is any other PCT calibration coefficients that are side dependent. Shown in Figure 2 is the NPP ATMS Side-A receiver power supply temperature in telemetry RDR data. The data quality ranges for Side-A (green) and Side-B (red) are different in the PCTs.
- Prepared S-NPP ATMS scan drive anomaly history and science data impact report to support STAR radiance calibration activity briefing.
- Started the JPSS-3 ATMS SN 306 initial operational PCT development planning.
- Reviewed and revised JPSS-3/4 post-launch Cal/Val plan document.
- Worked with STAR SDR team NCCF transition POC to provide ATMS input data, package list, and output data information to support STAR SDR team NCCF Cloud transition project. Finished the Docker container version ADL compilation and ATMS SDR generation experiments.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		x			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

Milestones	Original Date	Forecast Date	Actual Completion	Variance Explanation
Report SNPP ATMS End of Life Test Results during SNPP Decommissioning	Dec-25			
Delivery of the JPSS-3 ATMS Initial PCT LUT	Jan-26			
Update ATMS ATBD and User Guide	Mar-26			
Coordiante Impact Assessment of Measured NOAA-21 ATMS SRF with User Support	May-26			
Extend Inter-comparisons to ESA AWS Data	Jun-26			
Support JPSS-3 and JPSS-4 JCT and Test Events	Aug-26			
Initial Extension of Inter-comparisons to Metop-SG MWS data	Sep-26			
Review/Checkout of IDPS Mx Builds SOL and I&T Deploy Regression data	Sep-26			
Conduct Maintenance Including Investigation and Anomaly Resolution of On-orbit ATMS sensors	Sep-26			
Perform the transition of Cal/Val activities to the Cloud environment	Sep-26			

Highlights:

Figure 1 NOAA-21 ATMS on-orbit vs pre-launch TVac NEdT comparison at different target temperatures

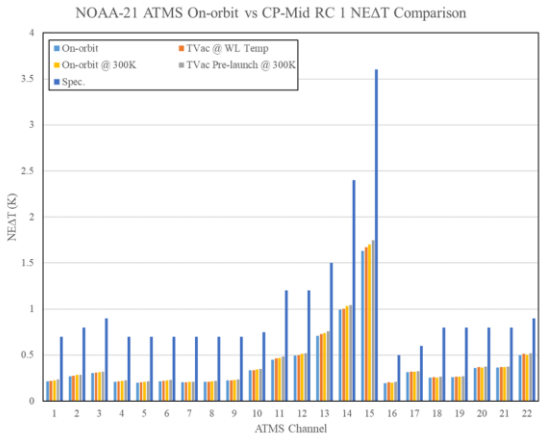
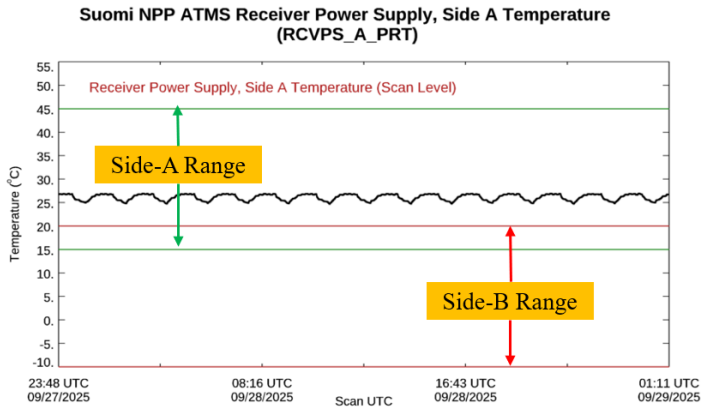


Figure 2 S-NPP ATMS on-orbit side-a receiver power supply temperature on September 28, 2025, with different side-a and side-b data quality ranges



Clouds

October 2025

Accomplishments / Events:

- Application of AI/ML techniques to improve training and performance of the cloud mask (ECM2) is complete. Benefits for calibration and performance were achieved. Future ECM LUT deliveries will be generated using these techniques, which will also benefit downstream products. This month we successfully created ECM LUTs for testing.
- The exploration of the use of probabilistic ECM phase information to improve downstream algorithms (e.g. Height) This is proposed as a replacement for the Enterprise Cloud Phase algorithm. Performance evaluation against the Enterprise Cloud Phase algorithm is complete with the probabilistic phase performing as well as the Enterprise phase in almost all analyses. Previous benchmarks for this were accomplished earlier in the year, but this month we completed all analyses.
- Due to the end of the CALIPSO mission several new validation tools were developed. These include tools to warp the VIIRS footprint into the ABI footprint. This tool was used in the GOES-19 provisional review. Statistical comparisons between multiple VIIRS sensor are also being performed (See Figure 1). EarthCare collocations with VIIRS have been performed. The accuracy of the 1st generation EarthCare products are being evaluated.

Milestones - 1-4Q in the above table denotes that the specific milestone listed is ongoing algorithm developmental work that will likely span the entire year. Quarterly updates will be provided as needed.	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Investigate DCOMP sensitivity to ice crystal habit and channel-set for cirrus clouds	Sep-25	4Q		Due to a backwards compatibility issue with the DCOMP development code this is still in progress
Enhance and maintain websites as a public interface to access product imagery	Sep-25	1-4Q	Sept-25	
In collaboration with Polar Winds team, investigate ACHA performance as it relates to Atmospheric Motion Vector (AMV) height assignment	Sep-25	1-4Q	Sept-25	
Prepare CLAVRx cloud top phase algorithm to replace current operational cloud phase algorithm	Sep-25	4Q	Jul-25	
Investigate new AI/ML techniques to improve multiple products (e.g., ECM, DCOMP/NCOMP)	Sep-25	2Q	Mar-25	
Investigate DCOMP precipitation applications	Sep-25	3Q	Jun-25	
Prepare tools that leverage new datasets for algorithm development and validation (e.g., EarthCARE/VIIRS/ABI/AHI)	Sep-25	4Q	Aug-25	
Implement a warning-based monitoring system like is done for GOES-16/18 and provide support for cloud product performance assessments.	Sep-25	2Q	Mar-25	

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

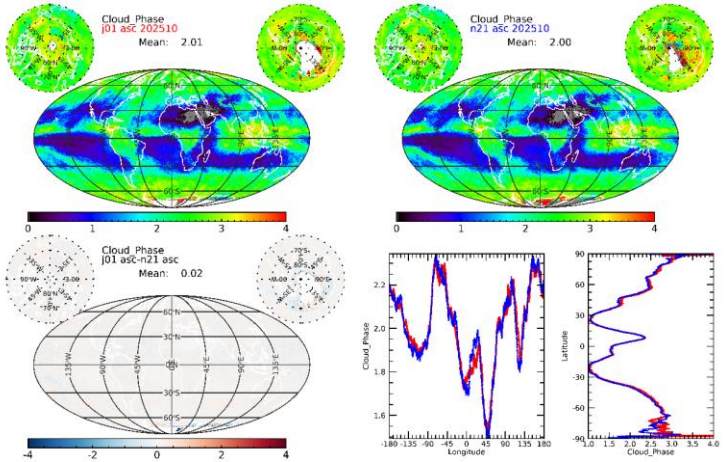
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Highlights:

Figure 1
The cloud team relied on CALIPSO collocations for training and product evaluation. CALIPSO ended its science mission on August 1, 2023. One milestone is identifying alternative methods for algorithm validation, and another is enhancing monitoring capabilities. Here we leverage multiple operational VIIRS sensors to perform statistical validation. In this example, we compare cloud phase for October ascending orbits between NOAA-20 and NOAA-21. The results indicate a high level of consistency between the two sensors. This image was generated from the monitoring site (https://cimss.ssec.wisc.edu/clavrx/trends/).



CrIS SDR

October 2025

Accomplishments / Events:

- A noise increase event occurred on 10/1/2025 for NOAA-20 CrIS SWIR/FOV2. (**Fig.1**).
- CrIS and simulated (B) from GRUAN radiosonde work is under way. GRUAN sites with radio sondes ground sites (**Fig. 2**). From the collocated observations, the O-B is calculated over land. O-B analysis statistics is shown (**Fig. 3**).
- CrIS and VIIRS intercomparison tool is being developed after BT transformation suitable for comparison. The transformed measurements are compared (**Fig. 4**).
- The NOAA-21 eclipse exit code change is progressing. Part 2 code change is being written.
- Transition to the Cloud is progressing. The "docker" was modified by W. McCullough and ADL was successfully compiled on the STAR server.
- Manuscripts write up are progressing(NOAA-21 performance, Neon lamp misfiring NOAA-21 CrIS-ABI intercomparison). The spectral redundancy paper was resubmitted.
- S-NPP End-Of-Life proposed activities were discussed by the science team. Additional questions by OSPO has since been addressed in early 11/2025.

Milestones	Category	Original Date	Actual Completion Date	Variance Explanation
Delivery of JPSS-3 CrIS Initial PCT LUT	Sustain	Dec-25		
Report S-NPP EOL Test Results during S-NPP Decommissioning	Sustain	Dec-25		
Update CrIS SDR ATBD and User Guide	Sustain	Mar-26		
Demonstrate Single Scan Calibration in NOAA-21 and Mitigate Impact of JPSS3/4 CrIS SDR Data	Sustain	May-25		
Initial Extension of Intercomparisons to MTG-IRS	Sustain	Jul-26		
Support JPSS-3 and JPSS-4 JCT and Test Events	Sustain	Aug-26		
Initial Extension of Intercomparisons to Metop-SG IASI NG	Sustain	Sep-26		
Radiometric Intercomparison of Operation CrIS SDR data against other observations (e.g. GNSS-RO)	Sustain	Sep-26		
Develop Tools of CrIS Spectral Calibration for Post-Launch of JPSS3/4	Sustain	Sep-26		
Review/Checkout of IDPS Mx Builds SOL and I&T Deploy Regression Data	Maintain	Sep-26		
Conduct Maintenance (Investigation/Anomaly Resolution) of CrIS On-Orbit CrIS Sensors	Maintain	Sep-26		
Perform the Transition of Cal/Val Activities to the Cloud Environment	Maintain	Sep-26		

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X	X	X	See Issues/Risks
Schedule			X		See Issues/Risks

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

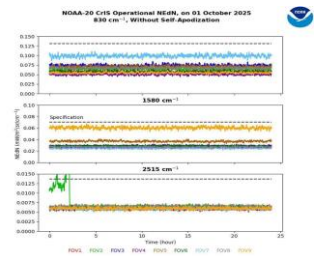
Red: It has been announced that JPSS-4 TVAC data and documents are now ITAR. STAR IT does not have a secured environment to host or process ITAR data.

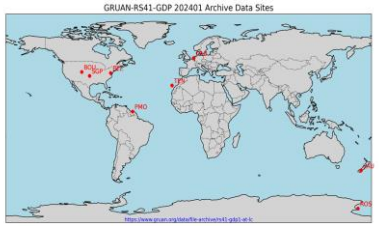
Yellow: The CrIS Team is still in need of hardware resources. Presently, there is only two servers dedicated to 5 CrIS Team members. Access to additional servers is still desirable. There is a risk for the CrIS SDR Team to continue on such a dual-server environment for the operational CrIS Cal/Val activities that include 5 CrIS sensors (SNPP, JPSS-1 to -4). This may affect the timely completion of deliverables and program milestones. The recommendation is to have one additional server as soon as possible (< 2 months) and add another server in the next months. Corresponding hardware quotations and SNO have been submitted. Corresponding JSTAR CrIS Risk/Issue on Hardware and Software have been submitted for JSTAR interval review on Jan. 6, 2023. UPDATE: The purchasing of the corresponding hardware is currently in progress, in coordination with STAR IT. A new MATLAB license has been delivered and installed properly. There was a SCDR data disruption starting June 30 and ending July 11. Data gaps are unfilled 30 days later due to NOAA-20/NASA/NPP GPS Anomaly investigations. SCDR outages may be increasing.

Blue: ASSIST NOAA-20 Ephemeris update, ADL code change tested on CentOS 9.

Highlights:

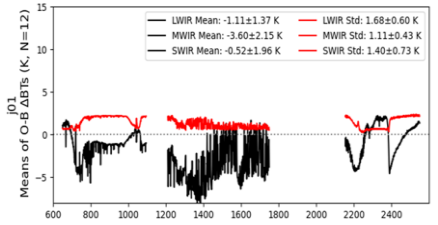
(1) NOAA-20 CrIS SWIR/FOV2 noise increase event.



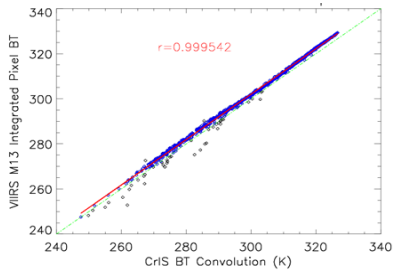


(2) GRUAN radio sondes measurements sites.

(3) O-B of CrIS observations minus the B derived from CRTM v3.0 simulations with GRUAN radiosondes ECMWF ERA5 inputs.



(4) CrIS and VIIRS BT comparison showing good correlation.



Cryosphere FY25 Milestones/Deliverables (in general)

October 2025

Task Category	Task/ Description	Start	Finish	Deliverable	Requirement (Dev Only)
Development (D)	Blend AMSR2 into the VIIRS binary snow product, finalize the algorithm, Begin routine offline generation.	10/2024	9/2025	Routinely generated daily blended gap-free snow map based on combined VIIRS and microwave data	Same as snow product EDRs
Development (D)	Melting/frozen snow pack discrimination. Algorithm and software development	10/2024		Daily map of the snowpack state (melting/frozen)	Same as snow cover EDR
Development (D)	Upgrade web-page displaying VIIRS snow cover product. Enable viewing and gridded snow prod spatial resolution		025	Enhanced web page	N/A
Development (D)	Finalize supplementa ud mask for daily VIIRS snow products: Compensate for weaknesses of the cloud mask	10/2024	9/2025	Final algorithm and software to generate VIIRS supplemental cloud mask	N/A
Development (D)	Melt/freeze discrimination and degrees above melting.(Daytime only)	10/2024	12/2025	Expansion of IST product	Enhanced usability by analysts and forecasters.

Status Delayed Due to Government Shutdown

GCOM-W/AMSR2, GOSAT-GW AMSR3, and WSF-M/MWI Precipitation

October 2025

Accomplishments / Events:

- The work on the precipitation algorithm package for the WSF-M MWI instrument progressing as planned; Quality Control flags are analyzed and the retrieval package is adopted to work with new QC parameters
- A prototype machine learning-based AMSR2 GPROF Precipitation algorithm shows tendency to retrieve rain over ice-covered surfaces under certain conditions (polar regions); the cause of this behavior is under investigation; initial analyses suggest that while undesirable, this feature is does not have pose a problem and should be easy to screen for.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Transition and support of Day-1 WSF-M Rain Rate and Type product	1/2026	1/2026		
Long-term validation of Precipitation Products	5/2026	5/2026		
Update and validation of Day-1 AMSR3 Precipitation Rate and Type algorithm	5/2026	5/2026		
Transition and support of Day-1 AMSR3 Precipitation Rate and Type product	6/2026	L1b availability+6 mo		
Initiate research on neural network algorithm	9/2026	9/2026		

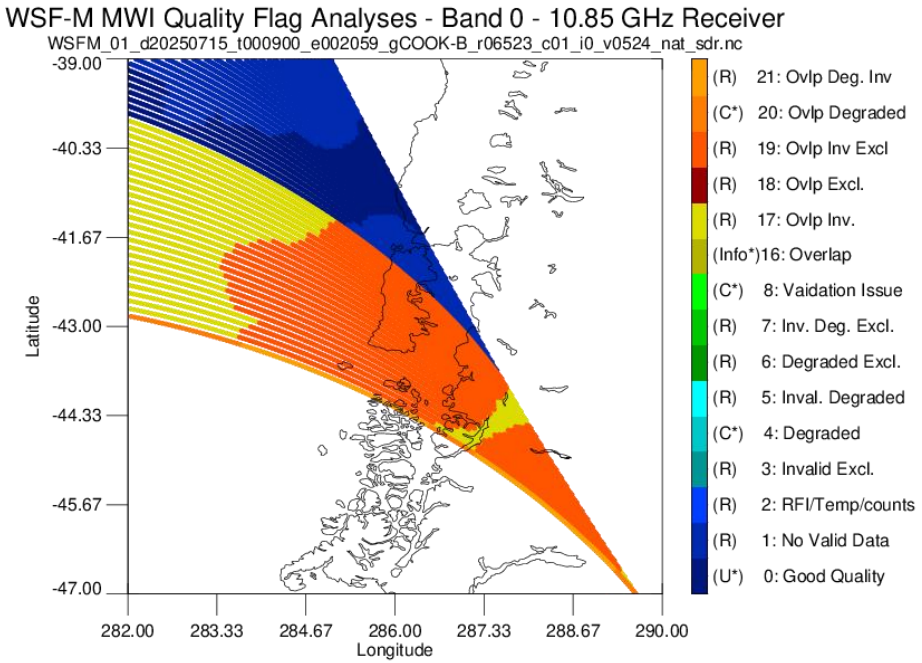
Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

Highlights:



Example of WFS-M MWI 10.85 GHz QC distribution; Precipitation rate and type will be retrieved at FOVs with U, C* and Info* QC Flags*

GCOM-W/AMSR2 & GOSAT-GW AMSR3 Soil Moisture

October 2025

Accomplishments / Events:

- Finalized the AMSR2 Soil Moisture (SM) Machine Learning (ML) package based on the code standards and requirements delivered to ASSISTT.
- Ran some test cases using the final package for comparison purposes.
- Reprocessed SMOPS with all AMSR2 SM input (lower right panel)
- Continued working on the very first version of AMSR3 SM

Major Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NDE on-prem retirement and distribution cut-off	4/4/2025	4/4/2025	On Time	
AMSR2 SM EDR software package using ML algorithm	8/2025	8/2025	9/2025	Delivered for testing as the very first version of AMSR3 package
Reprocessing of L2 SM EDR's and its validations using in-situ soil moisture measurements	5/12/2025	8/2025	Completed	BAMS paper published
Evaluation of AMSR3 brightness temperature data – if available, and check the its consistency with AMSR2 brightness temperature data	2026			
Implementation of AMSR2 SM EDR algorithm using AMSR3 TB inputs	2026			

Overall Status:

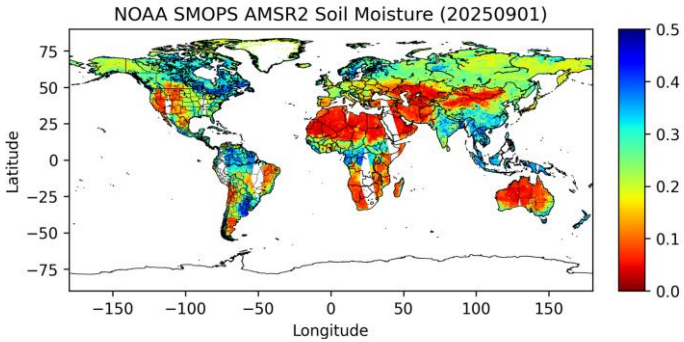
	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

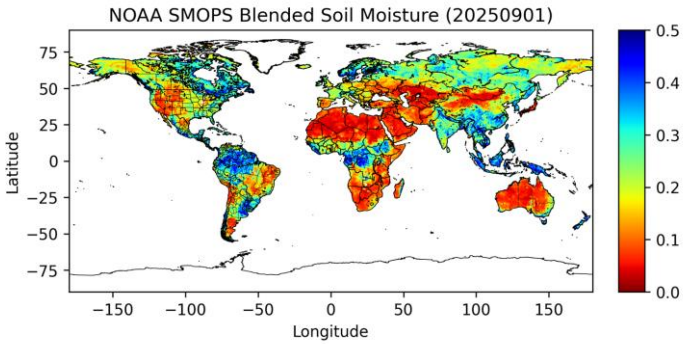
Issues/Risks:

Highlights:

GAASP AMSR2 SM EDR



SMOPS Blended SM with AMSR2



GCOM-W/AMSR2 & AMSR3 Sea ice

August 2025

Accomplishments / Events:

- Delivered initial version of algorithm code for an L2 sea ice concentration product rather than the current swath-updated L3 gridded product
  - Using NASA Team 2 algorithm as it is most easily adaptable to swath data
  - Bootstrap will be investigate further in the future
- Continued validation and maintenance of operational algorithm
  - 24-hour field, updated with most recent swath
  - Total and multi-year concentration
- Helped investigate source of error in AMSR2 processing
  bad sea ice retrievals
- Validation data being prepared for further
  ICESat-2 concentration, mooring dat
- Preparation for AMSR3 – algorit
  with AMSR2

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic			x		Code delivered 10 March
Schedule		X			

1. *Project has completed.*
2. *Pre*
3.

budget.

Status Delayed Due to Government Shutdown

Milestones			Date	Variance Explanation
Continuing assessment of AMSR2			Ongoing	
Recoding/refactoring software	9/2024		9/2024	
Initial software delivery for AMSR3	12/2024	2/2025	3/2025	
Delivery of further algorithm updates	5/2025	11/2025		

egan
ing erroneous sea ice. This was investigated and found to be due to missing quality flags for the L1R input data.

A fix is being implemented by NOAA to screen out bad swaths.

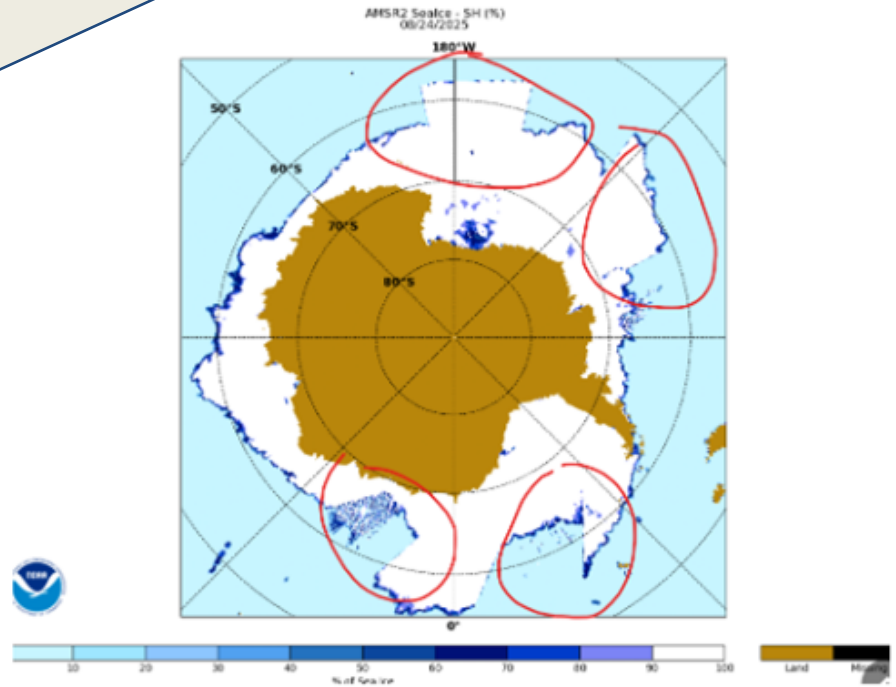


Image from Aiwu Li, NOAA, showing bad swaths with sea ice.

GCOM-W/AMSR2 & AMSR3 Oceans and Imagery

August 2025

Accomplishments / Events:

- All-weather SST development and validation work ongoing
- Finalizing CRTM setup in preparation for double difference analysis of AMSR3 brightness temperatures
- Preparing for collection of additional ancillary data such as GMI brightness temperature to use for the higher frequency channels on AMSR3

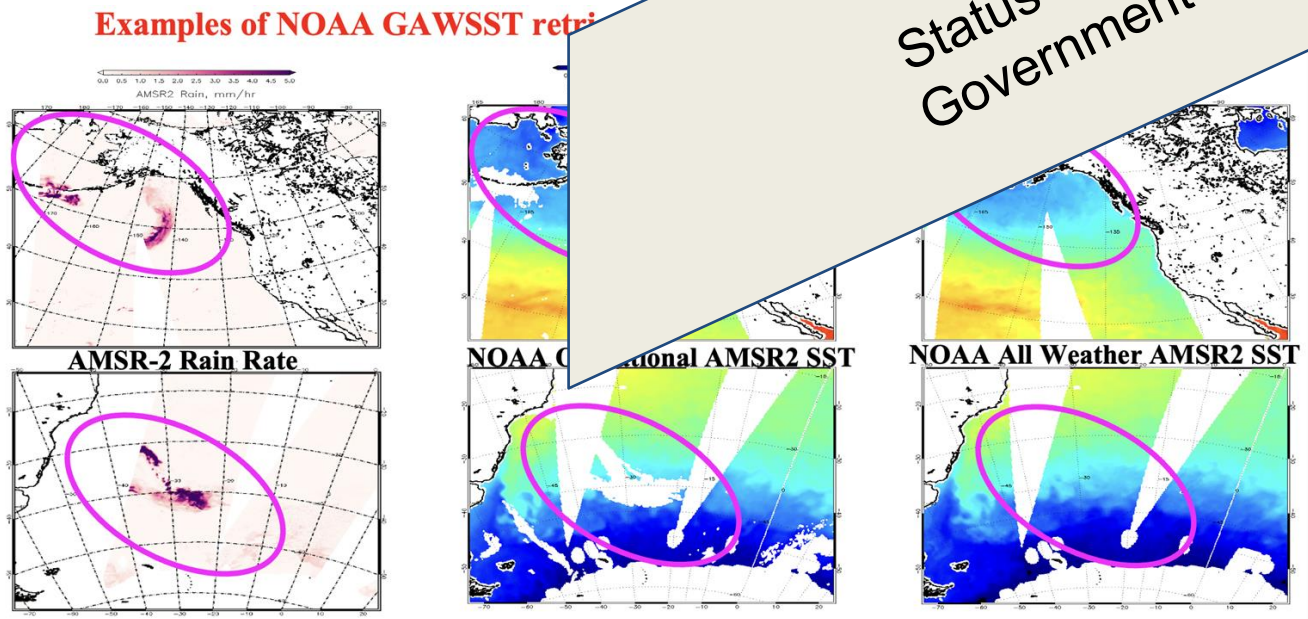
Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

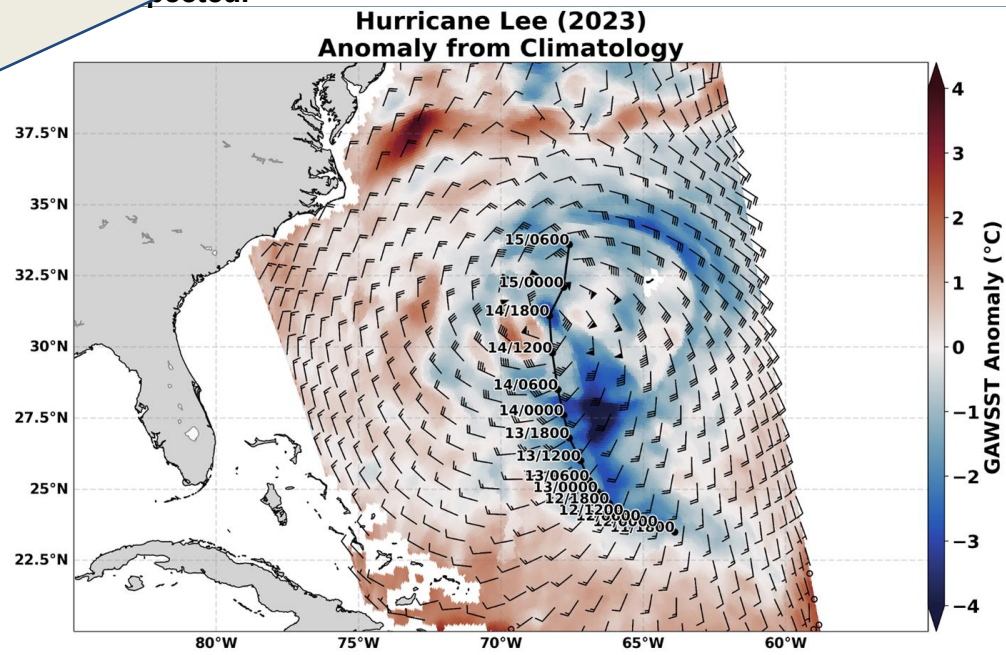
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *[illegible] get.*

Status Delayed Due to Government Shutdown

Examples illustrating the new AMSR2 all-weather SST (under [illegible] current operational AMSR2 SST Product



[illegible]ew AMSR2 all-weather SST showiing clear cooling [illegible]e Lee. The cooling is predominately to the right of the [illegible]pected.



GCOM-W/AMSR2 & AMSR3 Snow Products

August 2025

Accomplishments / Events:

- Continued progress towards determining spatially variable regression coefficients for an Enterprise Snow Depth Retrieval Algorithm to replace the current ones.
- Improved the satellite-reanalysis training dataset and code by incorporating filters to remove false snow cover microwave signatures due to rain and other potential confounders.
- Developed code for the processing of in situ snow data to generate daily validation statistics and monitoring of cover, snow depth and Snow Water Equivale
- Upgraded codes for AMSR2 and AMS

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *[illegible] get.*

Status Delayed Due to Government Shutdown

Major Milestones				
Initial training and validation statistics for th new snow depth retrieval algorithm				
Complete training of the new snow depth algorithm			On-going	
Complete testing of the new suite of Snow Cover, Snow Depth and Snow Water Equivalent algorithms	026		On-going	
Expansion of daily monitoring and software upgrades before transitioning to operations	04/2026		On-Going	
Snow package delivery to ASSIST	05/2026		On-Going	

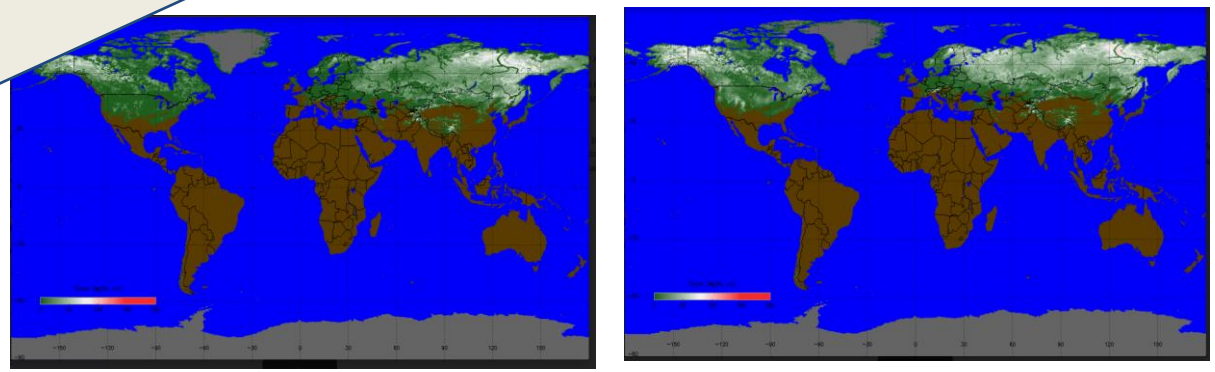


Figure 1. Snow Depth on January 18, 2024 from operational AMSR2 (left) and an experimental 4-km blended GMASI in--situ snow depth algorithm (right).

GOSAT-GW Schedule

Date	Event
June 9-13, 2025	Pre-launch testing on ASSIST side with the JAXA Executable. *If time allows they will also run current AMSR2/3 code. Either way STAR will pull the pre-launch output from ASSIST to SCDR for testing offline with their AMSR2/3 code.*
June 24, 2025	Launch - *ASSIST will have a version of the JAXA executable running in real time with results available to pull over to SCDR for core cal/val team members.*
September 2025	AMSR3 starts nominal operational mode (3 month commissioning phase for GOSAT-GW)
October 2025	CCAP delivery from ASSISTT to NCCF. *This is the point where the JAXA Executable and current AMSR2/3 Code will be available on NCCF Dev to start the move to NCCF UAT. The process to finish the promotion could take 1-4 months (1 month if the new Algorithm Orchestration functionality is working as anticipated and longer if it is not - this is a new capability)*
November 2025	Algorithms expected to be declared Beta and products can be made available to a wider cal/val team if JAXA concurs (otherwise products will stay with original core cal/val team).
December 2025	Initial L1 (brightness temperature) characterization against AMSR2 and GMI complete - *this is required for L2 algorithms to generate high quality products*
June 2026	Provisional Review for GOSAT-GW continuity products and products can be made available to user community. *Any updated Executables/LUTs will be provided from STAR to ASSIST*
July 2026	Implementation of provisional executables/LUTs on NCCF DEV by ASSIST
Aug 2026	Implementation of provisional executable/LUTs on NCCF UAT
Sep 2026	Implementation of provisional executables/LUTs on NCCF Ops, products made available operationally to user community

Maturity Review Schedule for GOSAT-GW satellite which is currently targeted for Monday, June 23, 2025, at 4:33 PM UTC (1:33 AM JST on June 24).

Sensor	Algorithm	Beta	Provisional	Validated
AMSR-3	GOSAT-GW: Microwave Imagery	Nov-2025	June-2026	Jun-2027
AMSR-3	GOSAT-GW: Sea Surface Temperature	Nov-2025	June-2026	Jun-2027
AMSR-3	GOSAT-GW:Sea Surface Wind Speed	Nov-2025	June-2026	Jun-2027
AMSR-3	GOSAT-GW:Total Precipitable Water	Nov-2025	June-2026	Jun-2027
AMSR-3	GOSAT-GW:Precipitation Type/Rate	Nov-2025	June-2026	Jun-2027
AMSR-3	GOSAT-GW:Cloud Liquid Water	Nov-2025	June-2026	Jun-2027
AMSR-3	GOSAT-GW:Sea Ice Concentration	Nov-2025	June-2026	Jun-2027
AMSR-3	GOSAT-GW:Sea Ice Type	Nov-2025	June-2026	Jun-2027
AMSR-3	GOSAT-GW:Snow Cover/Depth	Nov-2025	June-2026	Jun-2027
AMSR-3	GOSAT-GW:Snow-Water Equivalent	Nov-2025	June-2026	Jun-2027
AMSR-3	GOSAT-GW:Soil Moisture	Nov-2025	June-2026	Jun-2027
AMSR-3	GOSAT-GW:Snowfall Rate-new	Nov-2025	June-2026	Jun-2027

ICVS

October 2025

Accomplishments / Events:

- Finished the development of JPSS spacecraft geolocation stability monitoring package using spacecraft diary ephemeris and Two-Line Element (TLE) data. The historical orbital mean data have been retro-reprocessed to the start of the mission. Shown in Figure 1 is the NOAA-21 spacecraft geolocation stability monitoring figure.
- Reported a NOAA-20 CrIS SWIR band NEdN anomaly from September 3o to October 1, as shown in Figure 2.
- Started the longer term HGB based NOAA-21 ATMS CRTM AI emulator data training to improve the emulator accuracy. Communicated with other STAR SDR team members to compare the HGB and MLP model results to identify the Pro and Con of different AI/ML modules.
- Add S-NPP and NOAA-21 OMPS LP daily residuals A priori monitoring product to ICVS web site to support OMPS SDR team LP product generations.
- Worked with STAR SDR team NCCF transition POC to provide ICVS input data, package list, and output data information to support ICVS Cloud transition project.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		x			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

Milestones	Original Date	Forecast Date	Actual Completion	Variance Explanation
Complete the transition of the ICVS-lite modules from STAR to OSPO (NEWC)	Dec-25			
Quarterly briefings about JPSS (SNPP, NOAA-20, and NOAA-21) spacecraft, instrument and data performance monitoring results	Dec-25			
Update the ICVS prototype in support of STAR SDR JPSS-4 prelaunch Cal/Val activities (NEWC)	Mar-26			
R2O transition of OMPS-NM-wildfire-feature-visual observation	Mar-26			
Explore potential of monitoring geolocation performance upon individual instrument SDR data in preparation of JPSS-04 missions	Jun-26			
Develop new algorithms and modules to support JPSS-04 JCT(3) cal./val. activities in STAR SDR teams	Sep-26			

Highlights:

Figure 1 NOAA-21 spacecraft geolocation stability monitoring at each ephemeris sample (top) and lifetime orbital mean timeseries (bottom)

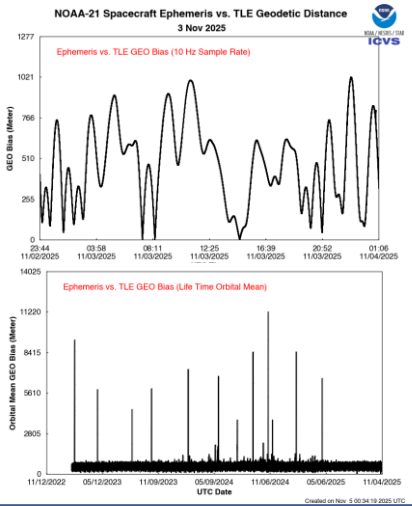
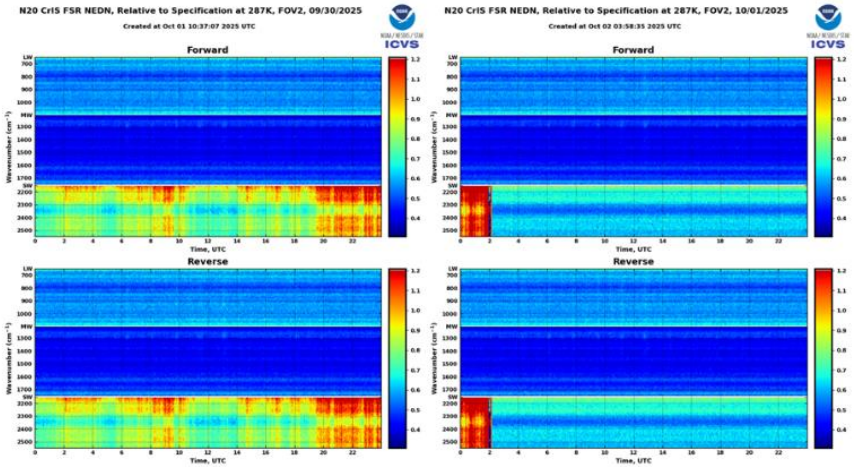


Figure 2 NOAA-20 CrIS SWIR FOV2 spectral NEDN from 9/30 to 10/1



ICVS QuickSounder

September 2025

Accomplishments / Events:

- Continue to update ICVS ATMS and spacecraft data processing packages to include QuickSounder support.
- Worked with QuickSounder proxy data generation team to obtain the latest spacecraft and ATMS proxy data format book. Discussed the operational data types and transfer plan to STAR.
- Displayed in Figure 1 is the QuickSounder ATMS shelf temperature counts from APID 531 and APID 518 before the format update (left) and after the update (right). The updated one is obtained after adding 10-byte padding in decoding.

Overall Status:

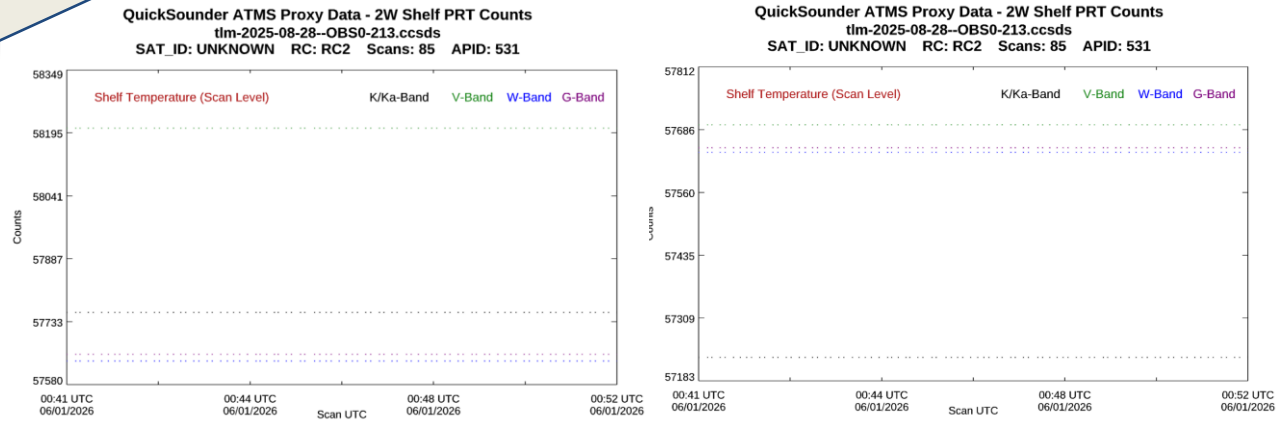
	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2.
3.
4. *ly over budget.*

Status Delayed Due to Government Shutdown

Task/Milestone Description			
QuickSounder proxy data initial check out			
Work with OCS NCCF team to verify the QS operatio transferred to STAR			
Develop a prototype about QS ICVS monitoring basel			
Generate QS ICVS monitoring sample products using rt and ATMS proxy data and demonstrate the maturity of ICV eb pages	Apr-25		
Add user name/password protection function in ICVS QS monitoring web site to support the external user access by NASA team and spacecraft/instrument vendors during the post-launch early orbit checkout and intensive cal/val stages.	May-25		

e 1 QuickSounder ATMS proxy data shelf temperature counts before (left) and after (right) adding 10-byte padding in data reader



LEO QuickSounder ATMS SDR

October 2025

Accomplishments / Events:

- Developed a standalone ATMS Look-Up Table editor for ADL testing of QuickSounder (QS) calibration parameters including nonlinearity, emissivity, beam efficiency correction, and scan bias.
- Performed analysis of TDR and SDR outputs of ADL runs using both the operational PCT S-NPP ATMS reflector emissivities and S-NPP ATMS reflector emissivities calculated using a tool developed to estimate ATMS reflector emissivities from pitch maneuver data. Comparisons between the TDR data calculated from the PCT emissivities and calculated using the reflector emissivity tool emissivities are shown for the S-NPP pitch maneuver and a day of orbital data in Figures 1 and 2, respectively, for a single S-NPP ATMS channel.
- Performed extensive work cleaning up the current ATMS TDR-to-SDR conversion code and expanding its capabilities to allow for scan/FOV-dependent calculations of the beam efficiencies for the TDR-to-SDR coefficient calculations. An example showing beam efficiency coefficients at ATMS FOV 45 vs. the minima per channel vs. what was derived using the STAR tool is given in Figure 3.
- Continued work on editing and updating the NEON QS ATMS SDR Post-launch Calibration/Validation Plan, which has an expected delivery date of January 2026.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		x			
Schedule			x		See Issues/Risks

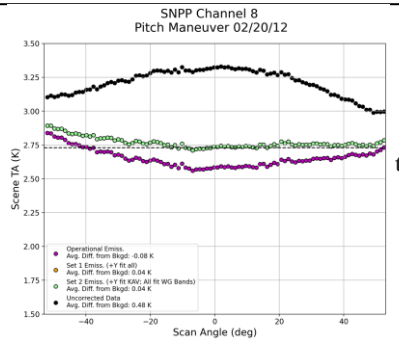
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks: **A computer environment that can handle CUI information has been successfully set up to assist STAR in supporting QS pre-flight activities. However, further testing and software installation is needed.**

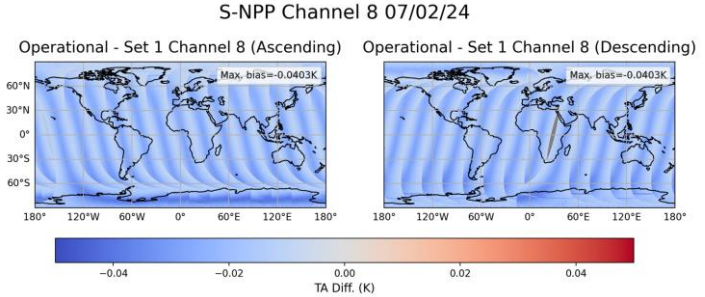
Milestones	Original Date	Actual Date	Variance Explanation
Delivery of QS Calibration PCT with Nonlinearity and Band Correction Coefficients	Nov-25		
Delivery of the QS Post-launch Cal/Val Plan	Jan-26		
Report QS Pre-launch Test Checkout Results	Jan-26		
Delivery of QS Calibration PCT with Mounting Matrix	Mar-26		
Delivery of QS ATMS Pre-launch Characterization Report	Jun-26		
Update QS ATMS ATBD	Aug-26		
Post-launch QS Calibration PCT update	Sep-26		

Highlights:

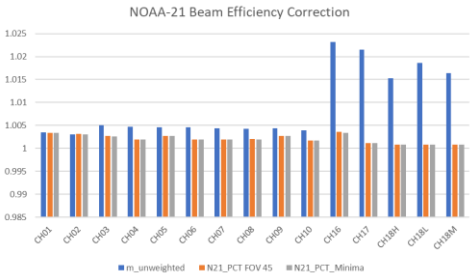
(2; below) TDR data calculated from operational emissivity minus TDR data derived from newly calculated emissivity for S-NPP ATMS Channel 8, ascending and descending passes, on July 2nd, 2024.



(1; left) S-NPP ATMS average pitch maneuver TDR data vs. scan angle calculated using PCT emissivities (purple), newly calculated reflector emissivities from the ATMS reflector emissivity tool (green), and uncorrected (black) S-NPP Ch. 8.



(3; below) beam efficiency coefficients at ATMS FOV 45 (orange) vs. the minima per channel (grey) vs. what was derived using the STAR tool (blue).



Leaf Area Index

October 2025

Accomplishments / Events:

- Generated two years (2023–2024) of LAI test data for NOAA/OAR users using the updated algorithm and evaluated the product in terms of both absolute values and time series.
- Extensively validated the newly developed temporal smoothing algorithm, testing real-time smoothing based on the prior 15 weeks of data and post-processing using a full year of data.
- Continue to monitor the current operational LAI product and evaluated it against in-situ measurements and existing products such as MODIS..
- Preparing the real time LAI product for EMC model testing, building on previous tests using LAI climatology. Currently working on developing LAI uncertainty estimation and planning future updates to Quality Flags.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

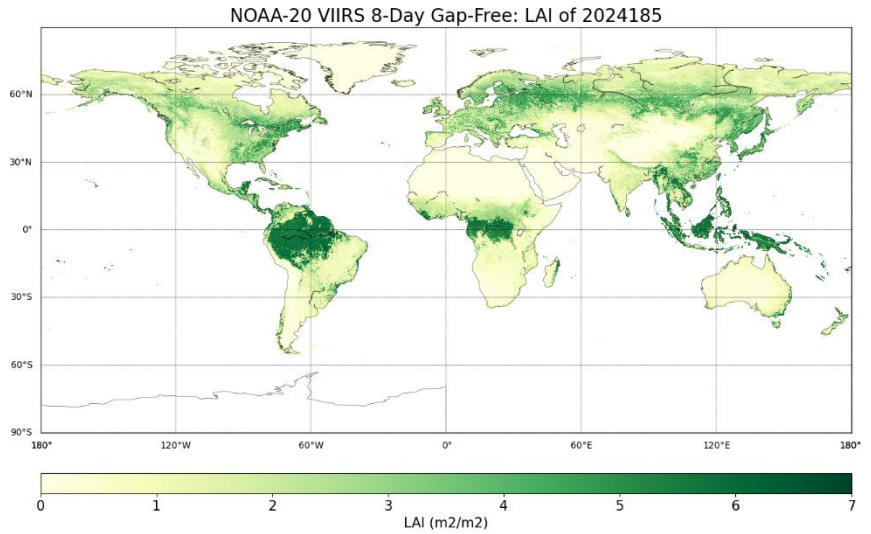
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Algorithm & product improvement according to the validation and model test.	Sep-25	Sep-25	Sep 26, 2025	
LAI near real-time datasets readiness for land surface model testing.	Dec-25	Dec-25		
LAI product in-situ validation & inter-comparison with other products	Mar-26	Mar-26		
LAI monitoring and validation tools development	May-26	May-26		
Updated LAI retrieval coefficients, Enhancement of temporal smoothing algorithm, and quality flag updates.	Jun-26	Jun-26		
LAI updated software package test and integration	Sep-26	Sep-26		

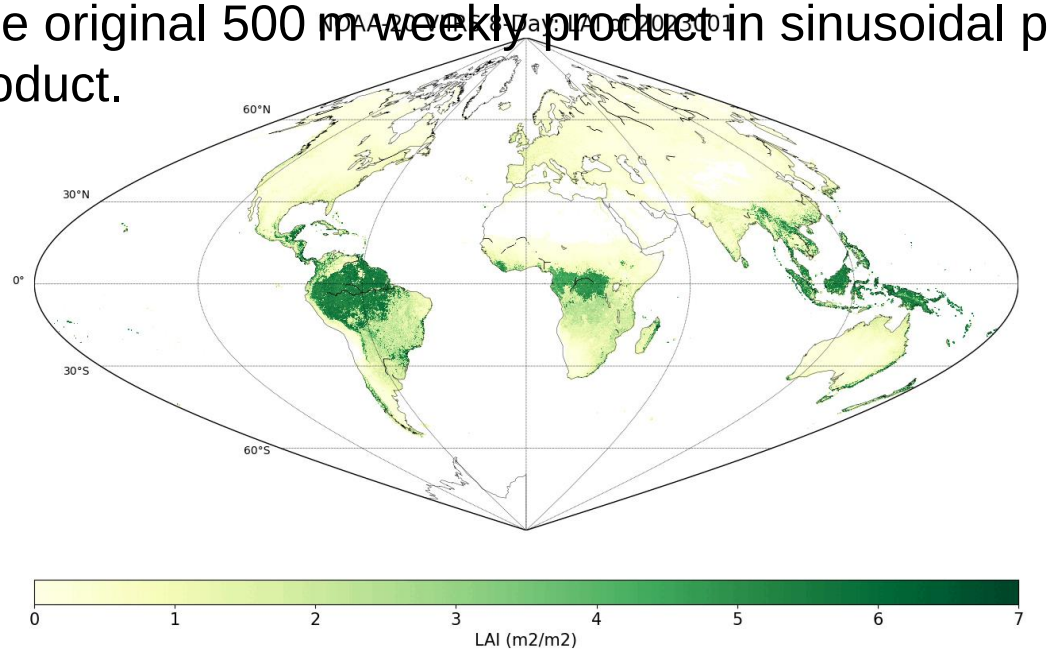
Highlights:

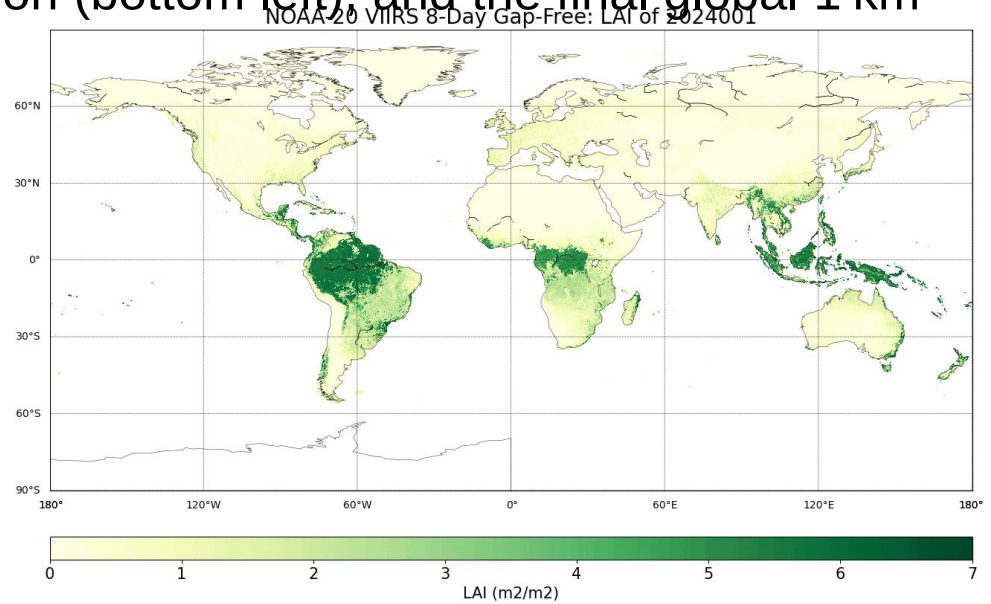


Two years (2023-24) LAI test data have been generated for the NOAA/OAR users. The data based on current operational algorithm but enhanced the temporal smoothing with updated algorithm, which improved the LAI time series data quality.

LAI Test Data (2023-2024) for NOAA/OAR

- The JPSS LAI product has been fully operational since March 2025.
- Since entering operational status, continuous verification and validation have been conducted. A new temporal smoothing and gap-filling algorithm is currently under development to further enhance time series consistency. This approach uses climatology-based adjustments to better align LAI dynamics with observed vegetation growth patterns and satellite observations.
- In response to NOAA/OAR user requests, a two-year LAI dataset has been generated using this enhanced post-processing algorithm, resulting in a more refined and temporally consistent LAI time series product.
- The original 500 m weekly product in sinusoidal projection (bottom left), and the final global 1 km product.

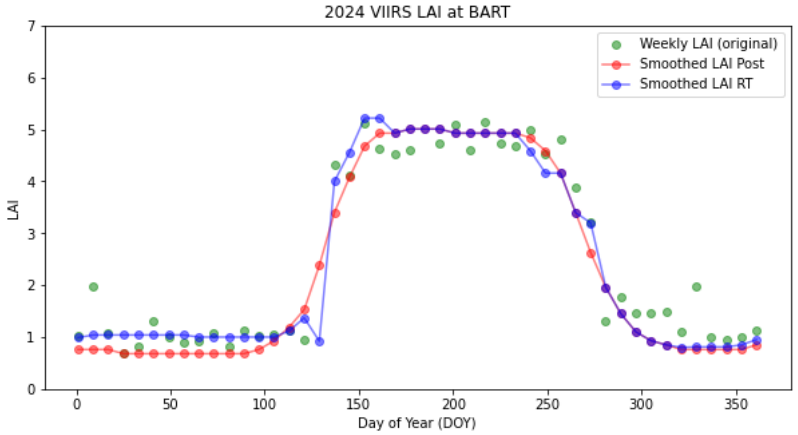


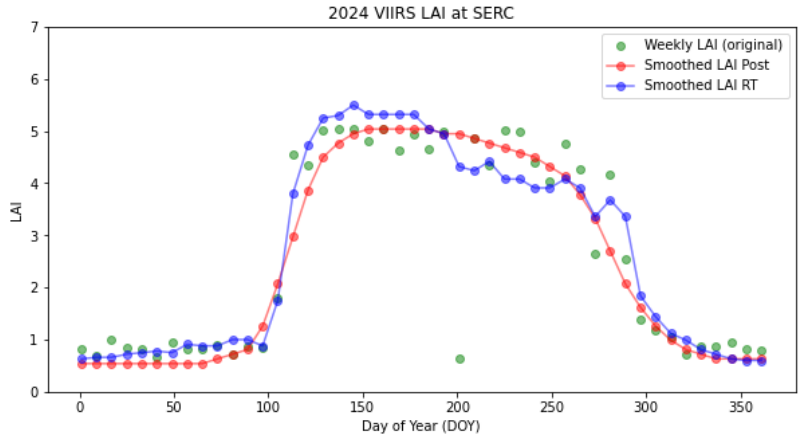


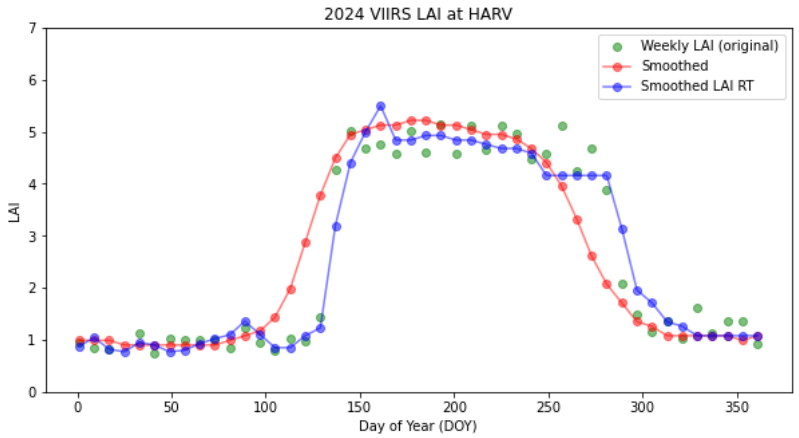
New Temporal Smoothing Algorithm Performance

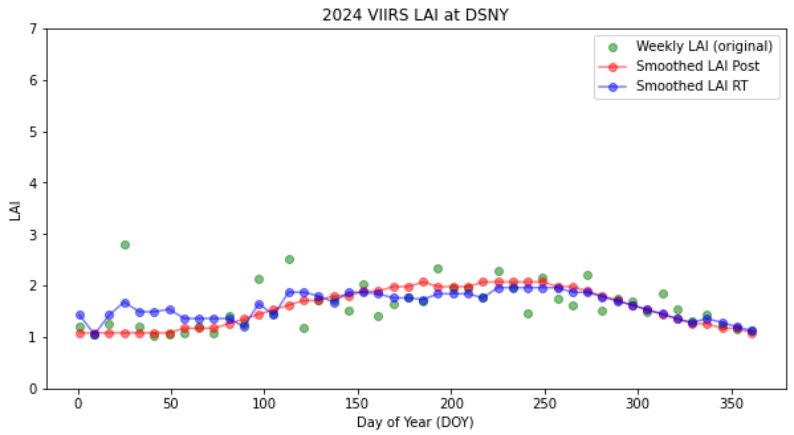
October 2025

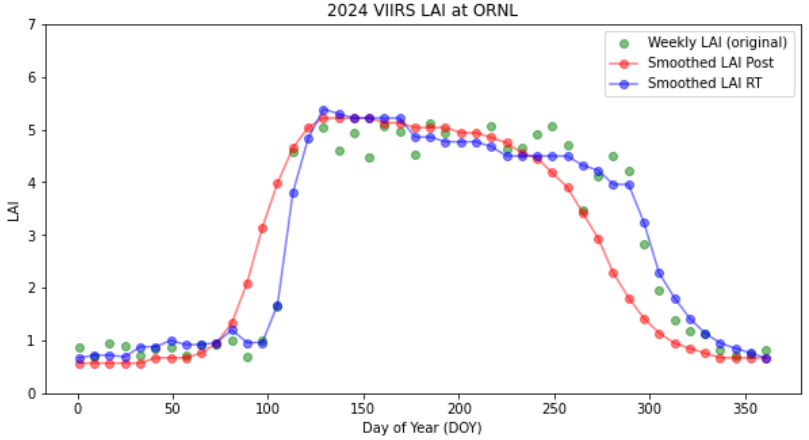
- LAI Time series test at NEON Sites (Original, real time smoothed and post processed LAI):
  - Real time smoothed using previous 15 weeks' information along with climatology, show some fluctuation but closer to satellite observation data.
  - Post processed LAI using whole year's LAI, more smoothed but differ from observation when real time data differs from climatology.

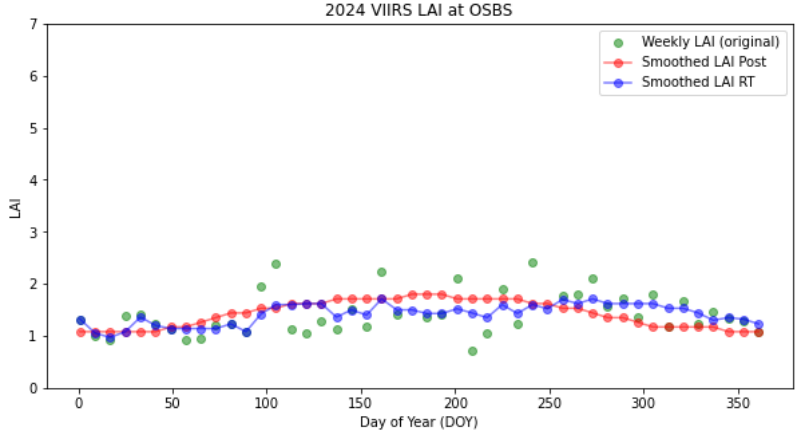












Land Surface Temperature

October 2025

Accomplishments / Events:

- Prepared and submitted a manuscript titled, "Development and Evaluation of the All-Weather VIIRS LST Product," for publication in an IEEE journal. (Highlights)
- Completed and submitted the revised LST Calibration and Validation (Cal/Val) plan, incorporating all recent feedback.
- Significantly optimized the LST Look-Up Table (LUT) generation code. This enhancement included: implementing a configuration file for improved code flow control and long-term maintainability; vectorizing and parallelizing the data reader, which dramatically reduced the total runtime from over one hour to approximately 5 to 10 minutes. Tested and verified the composite weighted regression strategy for the LST LUT generation. (Slide 2)
- Updated the L3 LST validation by adding a 3 by 3 cloud indicator. Regenerated the ground validation results for all networks. Modified the log file to handle the unsynchronized update schedules among the ground stations in BSRN network. Expanded LST ground validation capabilities by integrating data from the National Ecological Observatory Network (NEON) into the routine L3 VIIRS LST validation. (slide 3-5 for L3 SNPP, NOAA-20 and NOAA-21 VIIRS LST, respectively)
- Coordinated with the ASSISTT team to review the Gridded Preprocessor Support Document.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic					
Schedule	X				

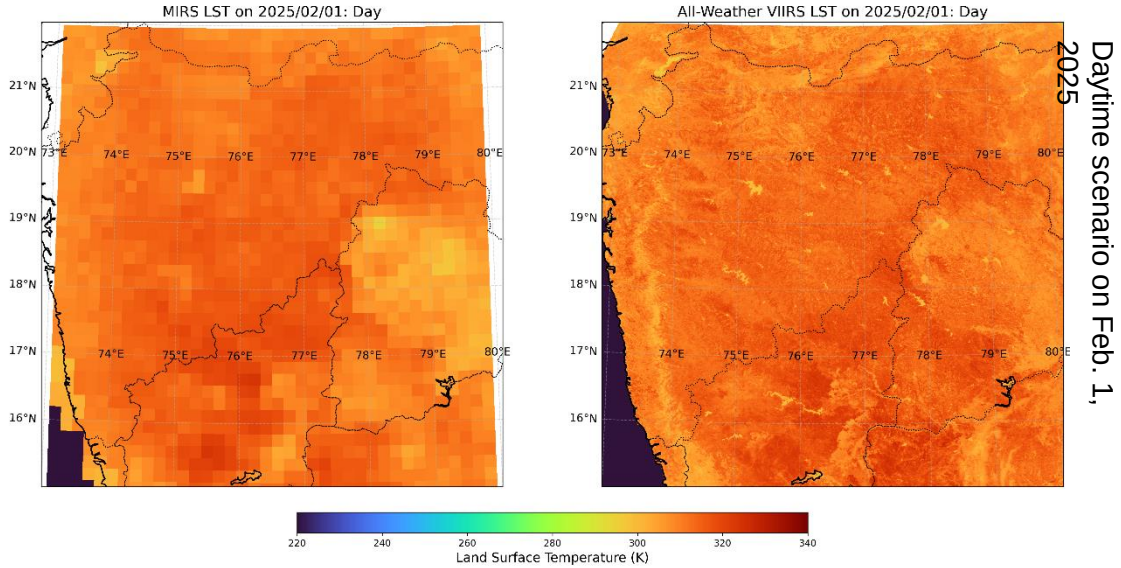
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

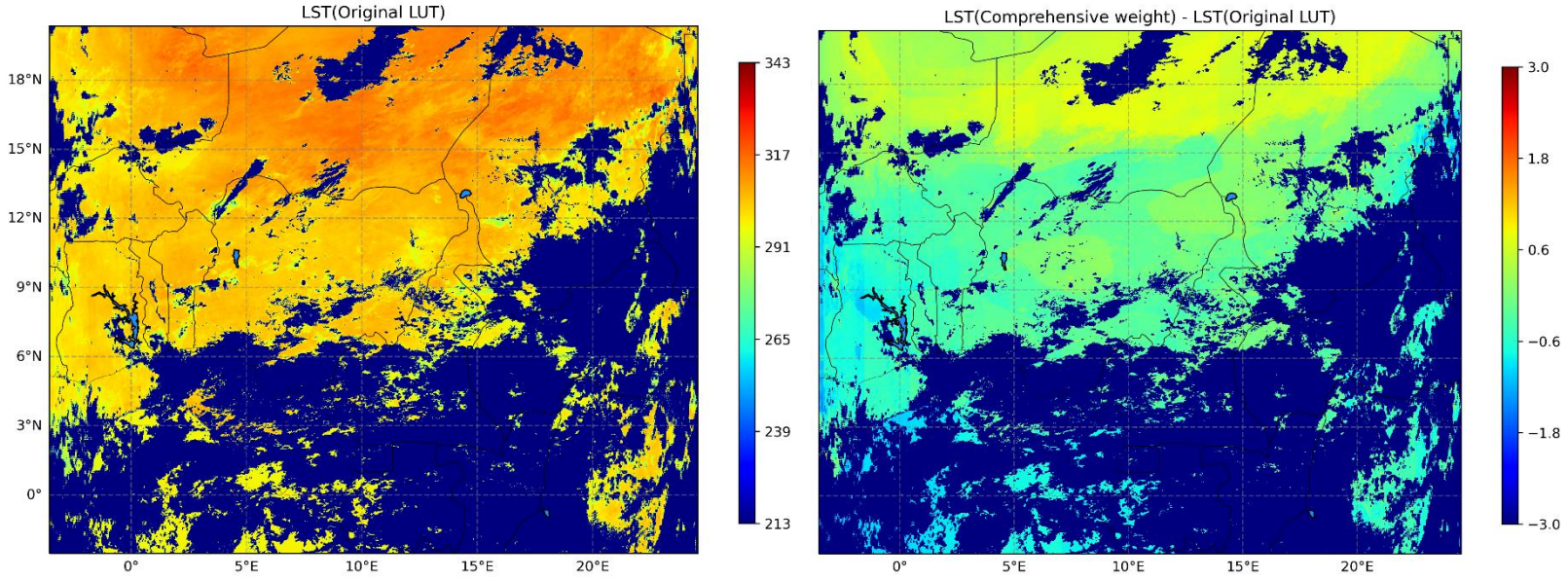
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Annual validation of L2 & L3 SNPP, NOAA-20 and NOAA-21 LST	**Dec-25**			
I-band LST improvement, validation, and T2O preparation	**Mar-26**			
High resolution LSE development	**May-26**			
I-band LST validation and applications	**Aug-26**			
LST reprocessing preparation and experiment	**Sep-25**			

Highlights: Regional spatial pattern of MIRS LST and all-weather VIIRS LST.



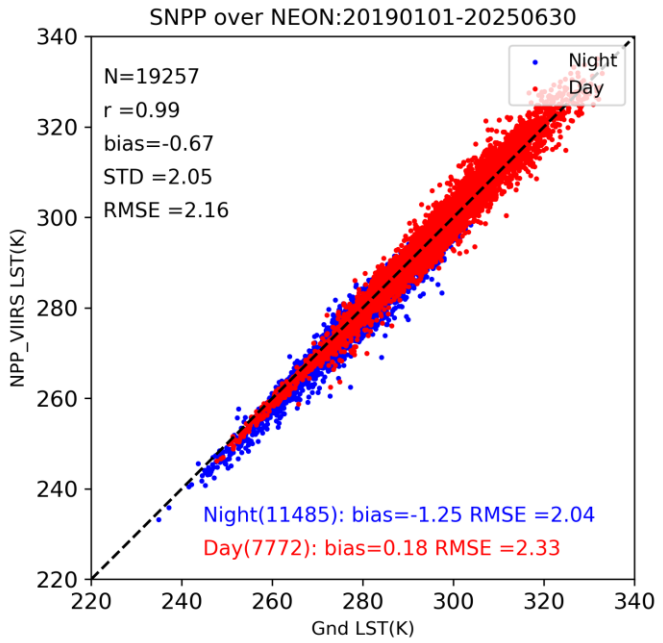
A manuscript was submitted summarizing the development and evaluation of all-weather VIIRS LST.

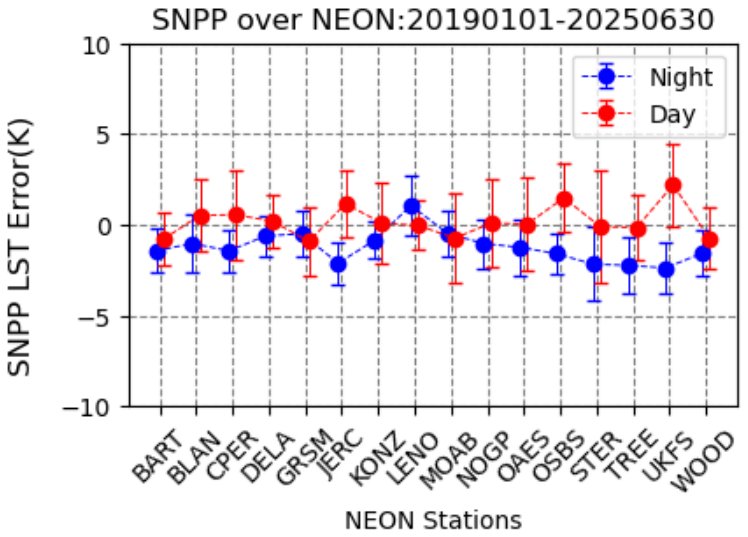
Improved LST LUT Generation: Test and Verification

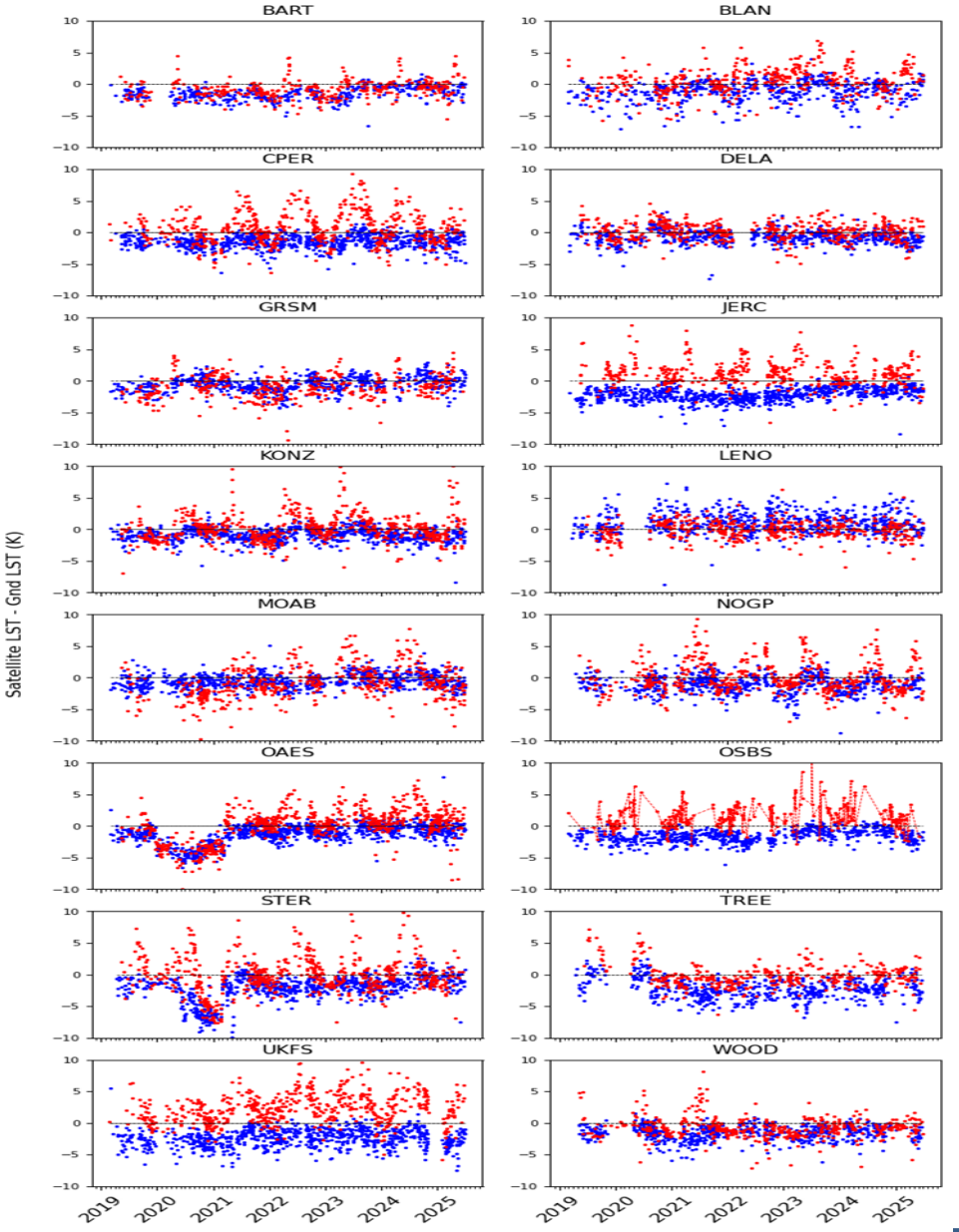


- Improved the LST LUT generation code: implementing a new configuration file for improved code flow control and long-term maintainability; and vectorizing and parallelizing the data reader, which dramatically reduced the total runtime from over one hour to approximately 5 to 10 minutes.
- A composite weighted regression is incorporated in LST LUT software package. The composite weight, derived from a combination of a Gaussian weight, a histogram density weight, and an emissivity-based weight, is designed to improve the algorithm‘s robustness and reduce sampling bias。
- This new weighted regression method was tested and verified using Metop data. A four-panel comparison is provided: The top-left panel shows the LST image from the original LUT while the bottom-left panel shows the LST generated using the composite weighting LUT. The top-right panel displays the difference map and the bottom-right panel shows the statistical distribution of the differences. The analysis of these

L3 SNPP VIIRS LST Validation against NEON Observations

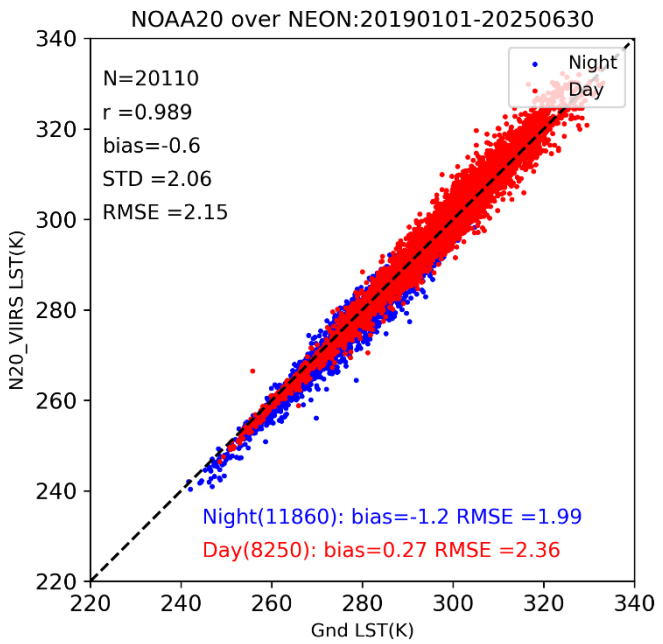


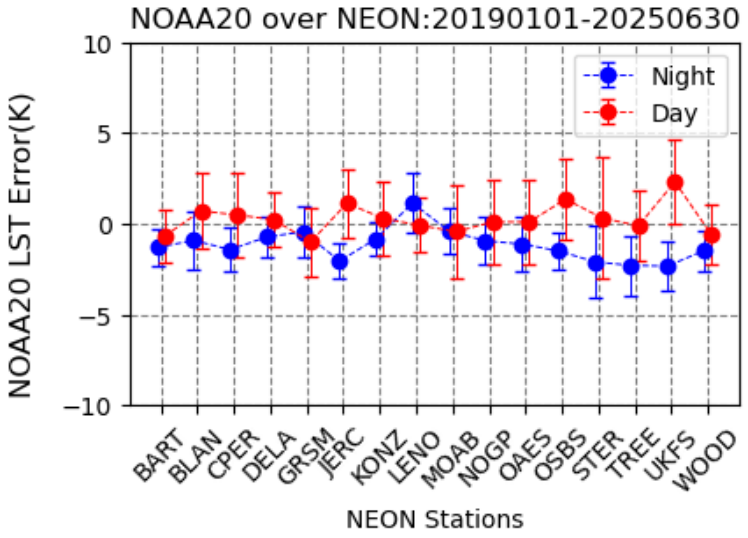


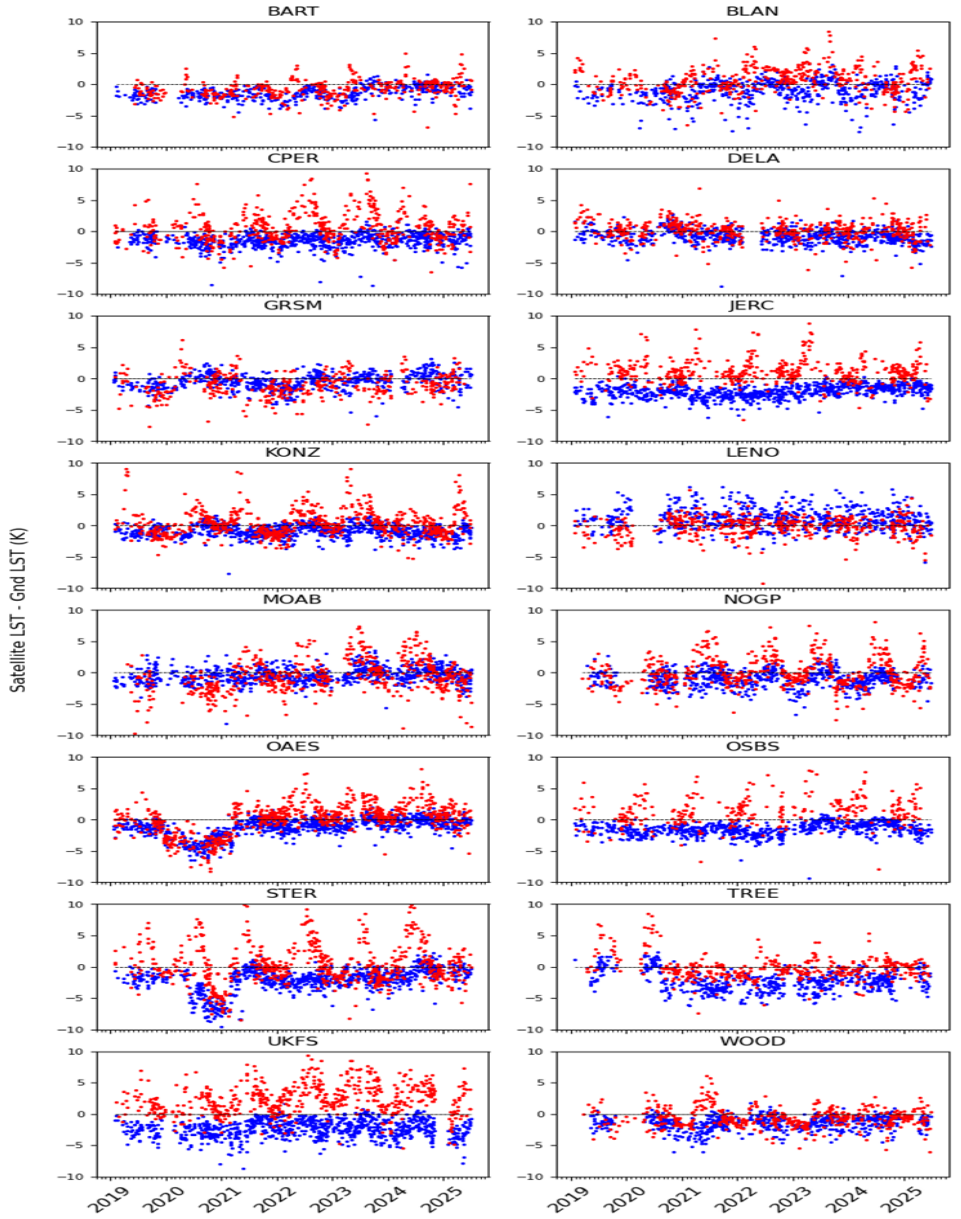


- NEON observations were incorporated into the L3 SNPP VIIRS LST validation. Both ground observations and satellite LST data underwent quality control. Data covering the period from January 1, 2019, to June 30, 2025, were used in the validation.
- Preliminary results are presented. The top-left panel shows the overall validation results, along with the results separated by day (red) and night (blue).The bottom-left panel shows the site-wide results for day and night. The middle figure shows the time series of LST discrepancies observed at each station.
- Overall, the validation shows good agreement, with a bias of -0.67 K and an STD of 2.1 K. However, nighttime data exhibit an obvious negative bias of -1.25 K, while daytime data do not.
- Seasonal and annual patterns in the discrepancies are observed at some stations (e.g., CPER, NOGP, and

L3 NOAA-20 VIIRS LST Validation against NEON Observations

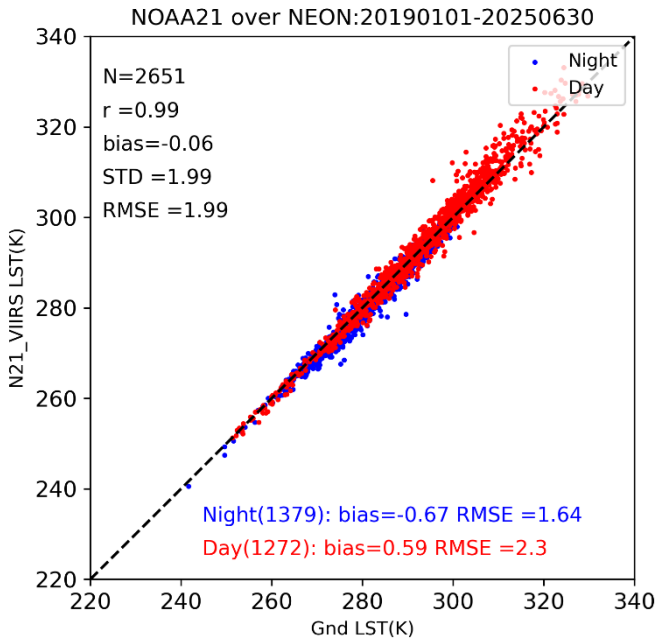


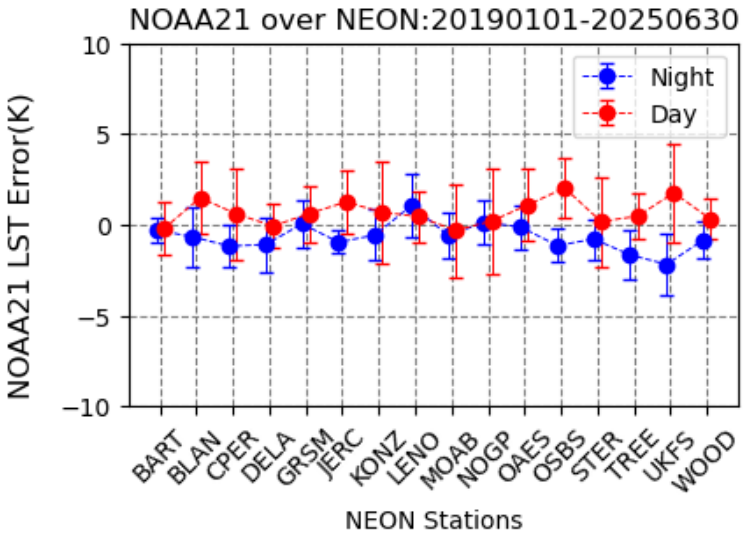


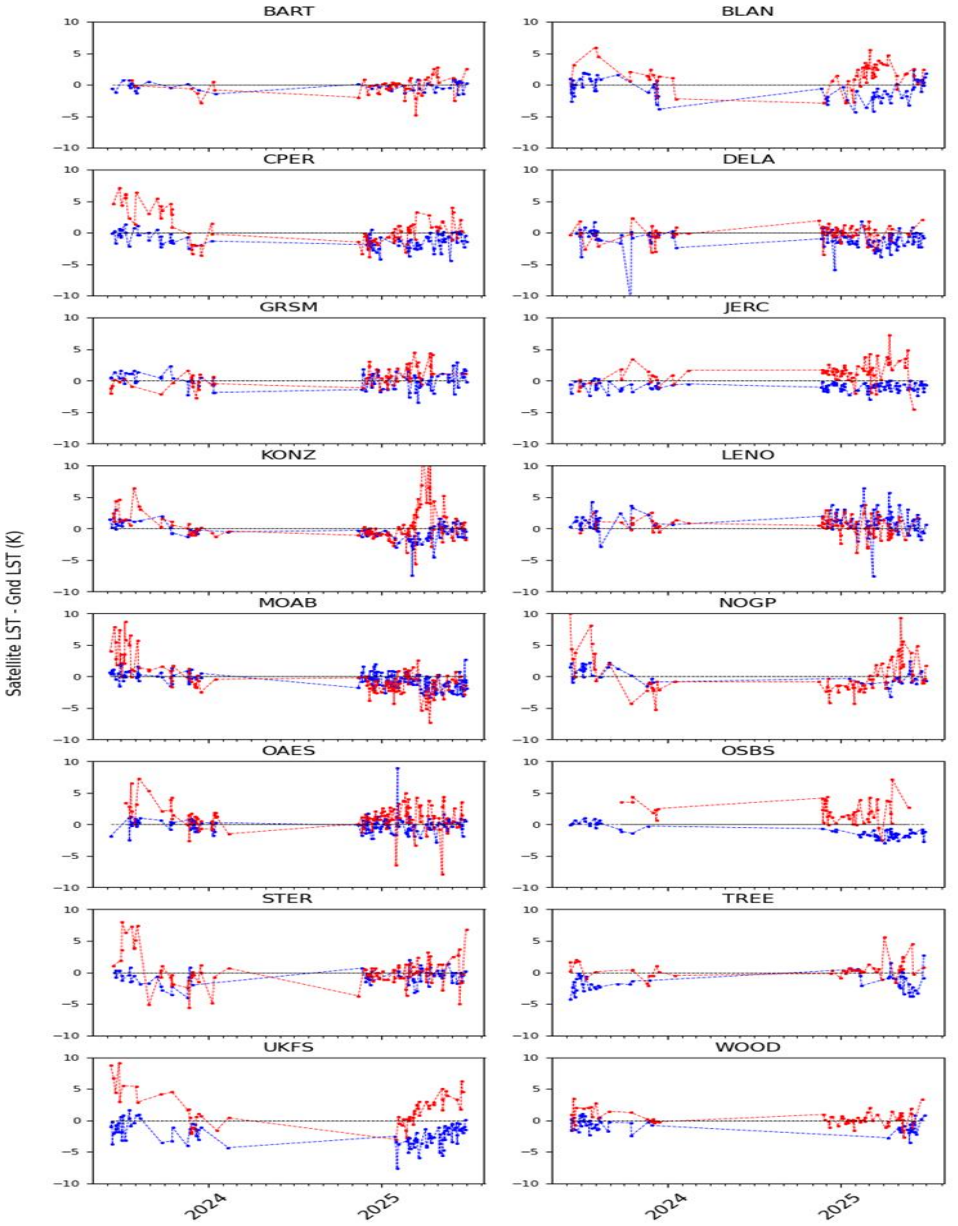


- NEON observations were incorporated into the L3 NOAA-20 VIIRS LST validation. Both ground observations and satellite LST data underwent quality control. Data covering the period from January 1, 2019, to June 30, 2025, were used in the validation.
- NOAA-20 presents validation results similar to SNPP. The top-left panel shows the overall validation results, along with the results separated by day (red) and night (blue).The bottom-left panel shows the site-wide results for day and night. The middle figure shows the time series of LST discrepancies observed at each station.
- Overall, the validation shows good agreement, with a bias of -0.6 K and an STD of 2.06 K. However, nighttime data exhibit an obvious negative bias of -1.2 K, while daytime data do not.
- Seasonal and annual patterns in the discrepancies are observed at some stations (e.g., CPER, NOGP, UKFS, OSBS and STER). A detailed site-

L3 NOAA-21 VIIRS LST Validation against NEON Observations







- NEON observations were incorporated into the L3 NOAA-21 VIIRS LST validation. Both ground observations and satellite LST data underwent quality control. Data covering the period from June 8, 2023, to June 30, 2025, were used in the validation.
- Preliminary results are presented. The top-left panel shows the overall validation results, along with the results separated by day (red) and night (blue).The bottom-left panel shows the site-wide results for day and night. The middle figure shows the time series of LST discrepancies observed at each station.
- Overall, the validation shows good agreement, with a nearly zero bias and an STD of 1.99 K. However, significant data gaps are evident for the NOAA-21 VIIRS LST, especially in 2024. Only three months—January, November, and December—have very limited data
  - Consequently, seasonal and annual patterns in the discrepancies are not very clear due to these missing data.

MiRS Products

October 2025

Accomplishments / Events:

- Collaborated with the ASSIST team to prepare MiRS V6 (V11R10) for NCCF operations.
- Resolved a rare issue with cross-day ATMS granules that caused misplaced NEDT files and retrieval failures.
- Verified ASSIST outputs for eight supported satellites; corrected the Metop-B configuration and fixed the QuickSounder ascending/descending flag issue.
- Presented “Enhancing MiRS ATMS Precipitation over CONUS and SST Using Machine Learning” at the NOAA AI Workshop (September 15) at the poster session.
- MiRS successfully captured the full life cycle of Super Typhoon Ragasa, from formation to landfall.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget	x				
Technical / Programmatic	X				
Schedule	x				

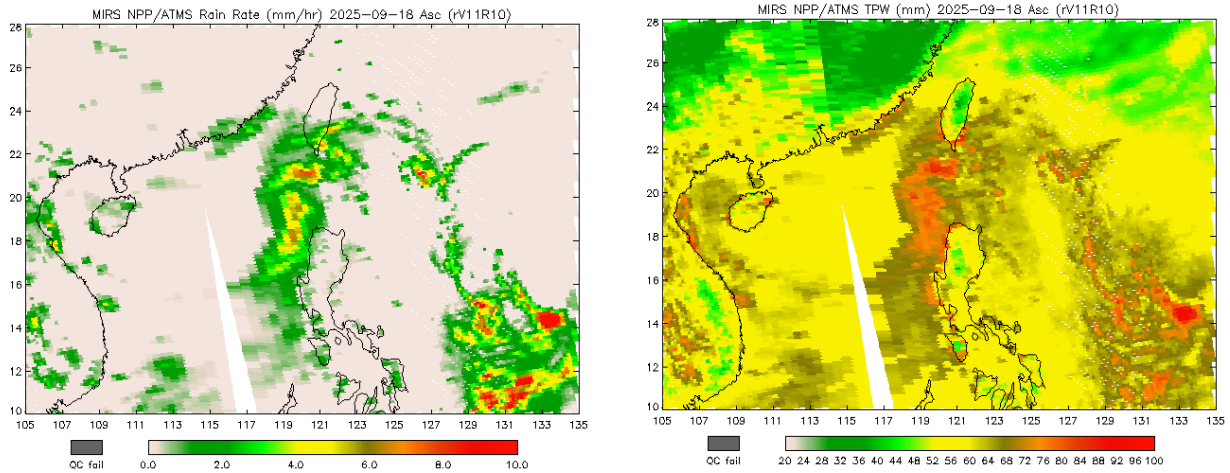
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion	Variance Explanation
Help the ASSIST team transition MiRS V6 (V11.10) to operational status	*Dec-2026*			
AI/ML precipitation post-processing over CONUS	*Mar - 2026*			
Update to CRTM V3 in MiRS	*Apr - 2026*			
MiRS DAP version 12.0 delivery	*Apr-2026*			
Develop and evaluate AI/ML MiRS post-processing for global precipitation	*Jun-2026*			
Explore approaches for improving MiRS retrieval under extreme conditions	*Sep-2026*			
Prepare for JPSS-4 ATMS pre-launch capability	*Sep-2026*			
Explore AI/ML temperature and water vapor sounding retrieval from L1B TBs	*Sep-2026*			
EDR maintenance	*Sep-2026*			

Highlights:



Super Typhoon Ragasa

Animation of MiRS RR [mm/hr] (left) and TPW [mm] (right) from September 18 to 24, 2025

Satellites: N21, N20, SNPP, MetopC, MetopB

MiRS QuickSounder

October 2025

Accomplishments / Events:

- MiRS team has established QuickSounder noise simulation capability by developing a dedicated microwave sounder emulator. This noise simulation addresses the need to assess the noticeable noise identified in QuickSounder during ground testing.:
  - QuickSounder ground tests show noticeable noise, which needs to be assessed.
  - Implementing QuickSounder noise simulation using the new microwave sounder emulator developed by the MiRS team.
  - Validating the simulation results against ground TVAC tests, which confirms a consistent noise level.
  - Integrating the simulated noise by adding it to the Earth scene brightness temperature from the CRTM.
  - The simulation of both QuickSounder noise and its Earth scene brightness temperature paves the way for assessing the impact of noise on retrievals

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget	X				
Technical / Programmatic	X				
Schedule	X				

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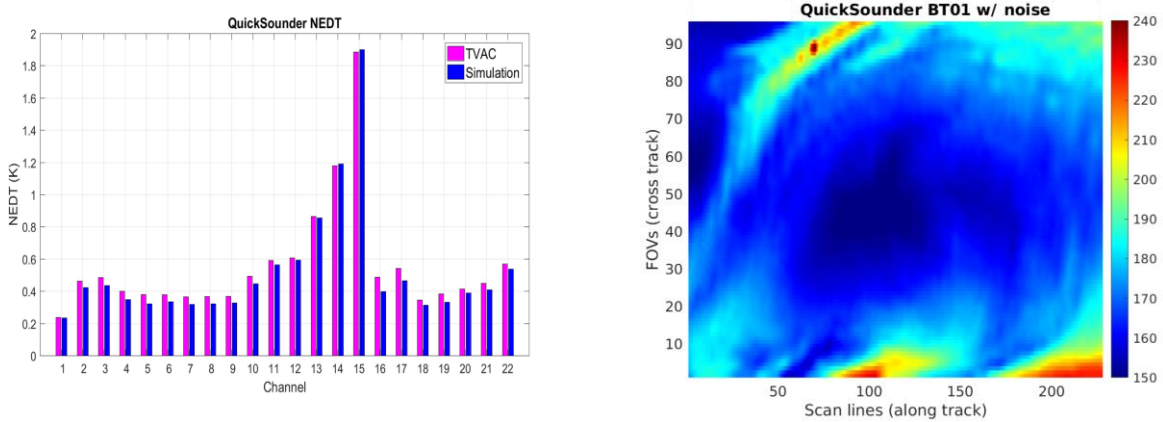
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Extension of validation and assessment software for MiRS ATMS EDU retrievals	Dec-25	Dec-25		
Specification of primary ATMS EDU instrument characteristics (pre-launch): develop a noise module	Mar-26	Mar-26		
Develop a denoising module for the real QuickSounder measurements after the examination of the real QuickSounder L1B data	Jun-26	Jun-26		
QuickSounder post-launch checkout: detailed validation within MiRS (bias correction & surface covariance matrix)	Sep-26	Sep-26		

Highlights:



(Left) Sounder noise simulation, implemented using a microwave sounder emulator developed by the MiRS team, is compared against TVAC ground tests, confirming a consistent noise level. (Right) The simulated noise is added to the CRTM-modeled Earth scene brightness temperature for Channel 1 (23 GHz). This dataset will be used to assess the impact of noise on MiRS retrievals.

NOAA Products Validation System (NPROVS) and JSTAR Mapper/STEMS

October 2025

Accomplishments / Events:

NPROVS:

- Began upgrading the NPROVS binary to netCDF conversion program to add interpolated temperature and moisture profiles for every collocated platform.
- Evaluated reprocessed NUCAPS EDR and compared the data to the originally processed NUCAPS.
- Reprocessed NPROVS data captures and collocation in response to network disruptions.
- Collected files from multiple platforms that surround Hurricane Melissa for possible future studies.
- Continued to monitor and maintain all NPROVS special and conventional radiosonde processes.
- Added Beltsville ozonesonde data to NPROVS special process

JSTAR Mapper:

Continued work on refactoring IDL/bash scripts for generating gridded and granule products to Python.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Conduct Site Wide Review of image tiles for JSTAR Mapper	**Q3**	**Q3**	Q3	
JSTAR mapper review and evolution to STEMS	**Q4**	**Q1**		Unable to schedule meeting with stakeholders during shutdown
Dedicated Radiosonde Programs: 1) DOE/ARM to include new BNF site in Alabama, 2) AEROSE 2025 campaign support	**Q3**	**Q2**		Cruise was postponed until Jan 2026

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		x			
Technical / Programmatic		x			
Schedule		x			

1. *Project has completed.*
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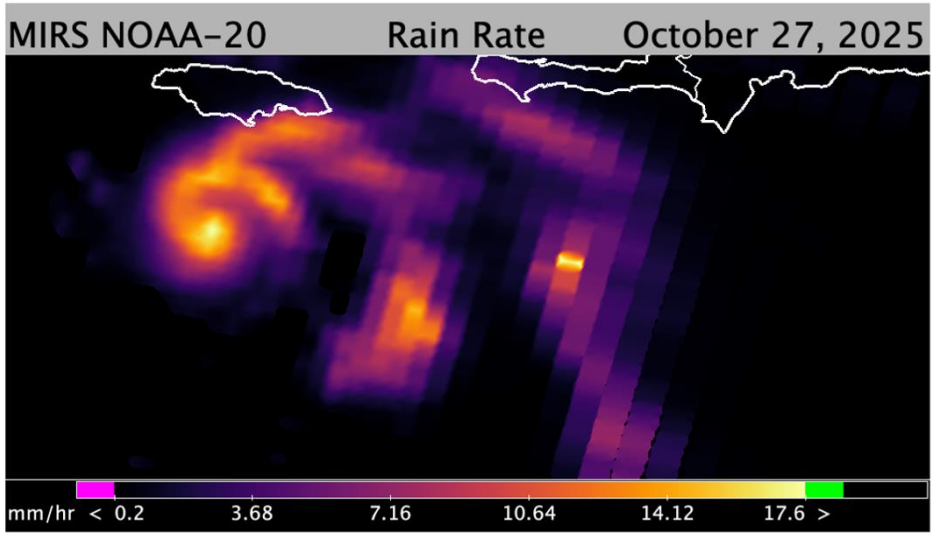
Issues/Risks: None

Highlights

NOAA Products Validation System (NPROVS)



MIRS NOAA-20 rain rate over Hurricane Melissa south of Jamaica. October 27, 2025. 6:57 Z

Ocean Color

Accomplishments / Events:

- The contractors and CI folks have been working for maintaining the routine ocean color data processing and production during the government shutdown. Some worked items are listed below.
- The new global water transparency product (i.e., Secchi depth) is being routinely produced from three VIIRS sensors, providing important and useful water quality measurements globally.
- Routinely producing global daily VIIRS (SNPP, NOAA-20, and NOAA-21) true color/false color images in OCView.
- Routinely Producing global daily VIIRS (SNPP, NOAA-20, and NOAA-21) ocean color products and showing in OCView routinely : https://www.star.nesdis.noaa.gov/socd/mecb/color/index.php
- VIIRS OC data are being distributed through NOAA CoastWatch, including global daily gap-free ocean color products, i.e., Chl-a, K_d(490), and SPM.

Issues/Risks:

- The shutdown has significant impacts on our works. There is also a high risk for the shutdown in next January.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		x			
Technical / Programmatic		x			
Schedule		x			

1. *Project has completed.*
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Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Ocean Color J2 Provisional Code delivery to ASSIST	Apr-2024	Apr-2024		
Ocean Color Beta Maturity	Nov-2023	Mar-2023		
Ocean Color Provisional Maturity	Mar-2024	Mar-2024		
Ocean Color Validated Maturity	Jul-2025	Jul-2025	March 2024	

OMPS SDR

October 2025
(as of Nov. 20, 2025)

Accomplishments / Events:

- Derived and delivered OMPS weekly dark LUTs for 3 NPs and NMs.
- Derived and delivered OMPS solar bi-weekly LUTs for 3 NPs.
- Initialized a preliminary code about solar radiometry calibration from counts to flux in preparation of J3/J4.
- Supported the STAR CRTM user engagement with EMC DA by providing OMPS O – B AI/ML development status.
- Initialized a new method to validate long-term stability of OMPS SDR data using a validation site.
- Worked on generation of NOAA-21 OMPS NM O – B training dataset using CRTM towards AI/ML OMPS simulation AI emulator (An example about O – B over desert is given in shown figure).
- Continued to assess an AI/ML algorithm performance about OMPS radiance data assimilation impact analysis in support of EMC DA (see next slide for preliminary results)
- Updated the OMPS RDR reader codes to improve performance.
- Continued to refined the OMPS NP throughput degradation analysis to solve discontinuity issue in the dataset.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule			x		

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
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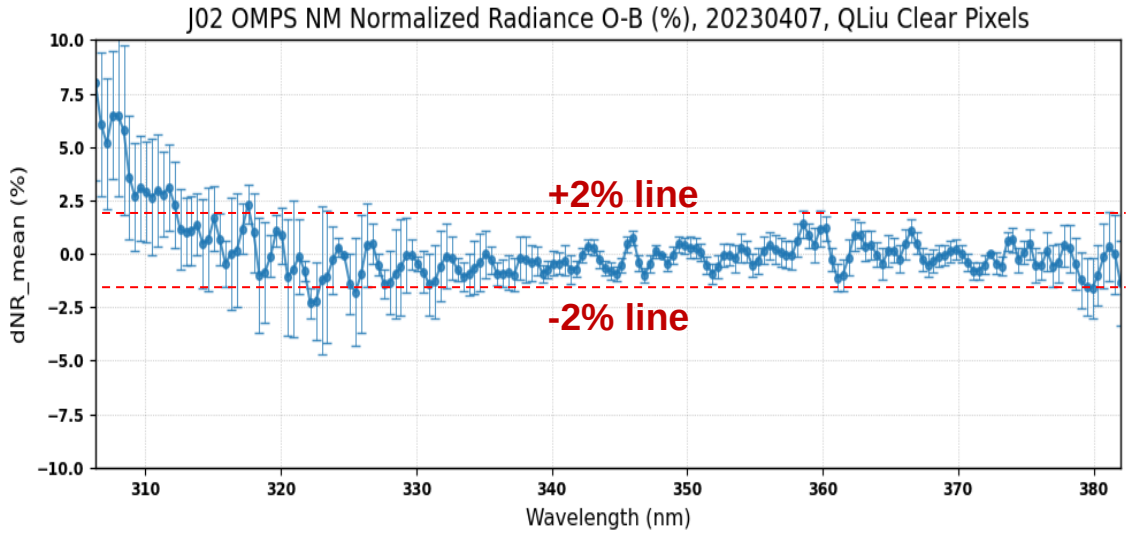
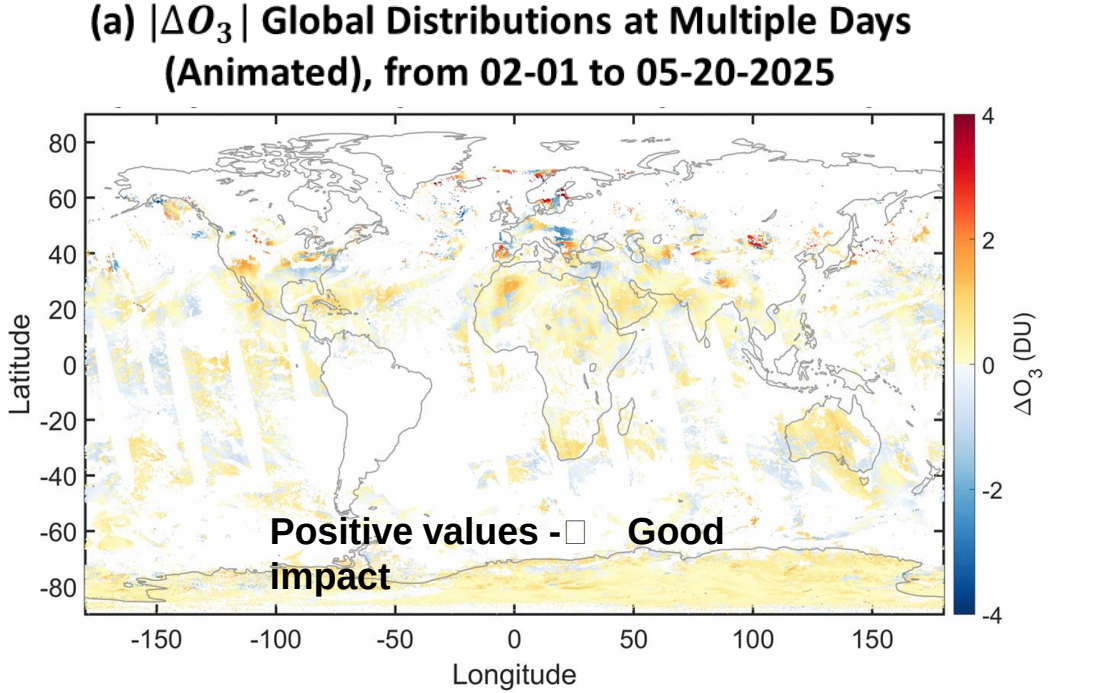
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Finalize degradation correction factors about SNPP and NOAA-20 OMPS NP	Dec.-25			
Implement the degradation correction to operational SNPP and NOAA-20 OMPS NP SDR pro.	Feb.-26			
Develop/update J4 OMPS NM and NP pre-launch SDR Earth radiance straylight algorithms	Mar.-26			
Implement the degradation correction to operational SNPP and NOAA-20 OMPS NM SDR	Apr.-26			
Establish an off-line OMPS ADL SDR processing package to support J4 OMPS SDR pre-launch activities	Apr.-26			
Develop Initial J4 OMPS NM and NP pre-launch SDR Earth radiance calibration tables	May-26			
Develop a beta version of solar calibration algorithm and processing code	Jul.-26			
Complete the J4 JCT 3b Test Analysis Report for OMPS NM and NP	Aug.-26			
Support the CRTM team for (J3 and J4) OMPS simulation function developments, including deriving macro-pixel level SRF datasets	Sep.-26			
Support NCCF cloud migration activity about OMPS SDR (preliminary code test in cloud environment)	Sep.-26			
Reprocessing NOAA-20 OMPS NM and NP SDR data, after both solar degradation, solar activity adjustment are applied (Effort on the recalibration of N20 SDR prior to Dec. 2019 is limited)	Sep-26			
Develop and deliver dark and OSOL LUTs for SNPP/NOAA-20/NOAA-21	Sep-26			
Maintain SNPP/NOAA-20/NOAA-21 OMPS SDR data quality	Sep-26			

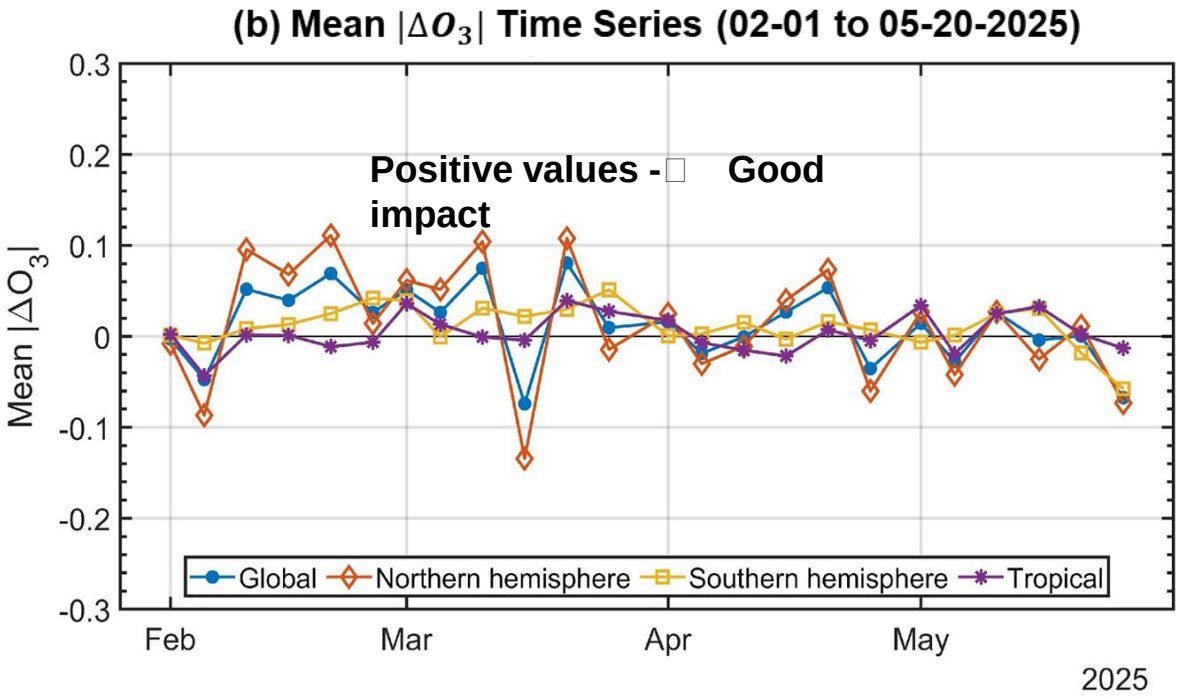
OMPS NM O – B Training data set demonstration: NOAA-21 OMPS NM (O – B) (%) at all Wavelengths over Desert, from 01-03 to 12-06-2024



Motivation: Accelerate validation of J4 OMPS SDR
Goal: Generate a global N21 OMPS NM O –B training dataset and develop an AI/ML-based OMPS NM simulation emulator

ML-Based NOAA-21 OMPS NM Radiance Assimilation Experiment Impact Assessment (Assimilation with 6-hr GFS Forecast)





- Assessment Method:

$$Double\ Difference, \Delta O_3 = |O_3\ (NWP\_analysis) - O_3\ (NWP\_forecast)| - |O_3\ (NWP\_analysis) - O_3\ (ML\_forecast)|$$

if ΔO_3 > 0.0, positive impact on NWP O_3 forecast accuracy;

ΔO_3 < 0.0, negative impact on NWP O_3 forecast accuracy;

ΔO_3 = 0.0, neutral impact on O_3 forecast accuracy.

Finding: NOAA-21 OMPS NM radiance data shows an overall positive impact for most of the selected days on the GFS total ozone **6-hr** forecast performance.

OMPS Ozone (V8Pro, V2Limb & V8TOz)

Sep/Oct 2025

Major Accomplishments / last two Months:

Moved STAR copies of OMPS and GOME-2 SDRs and EDRs to a new 300 TB Ozone-Only LINUX storage system better organizing the Ozone Team datasets and freeing up space for the rest of STAR.

The ASTA 2.0 support contract has brought two new staff members on board. They have accounts and badging. They will support trace gas and ozone products from OMPS and UVNS.

The V2 Limb is fully operational at NDE as of mid-September. Continued collecting and testing upgrades (now up to seven) to the V2Limb. These will be delivered to ASSISTT soon in a delta-DAP but may wait for implementation in coordination with future Day 1 JPSS-04 table deliveries.

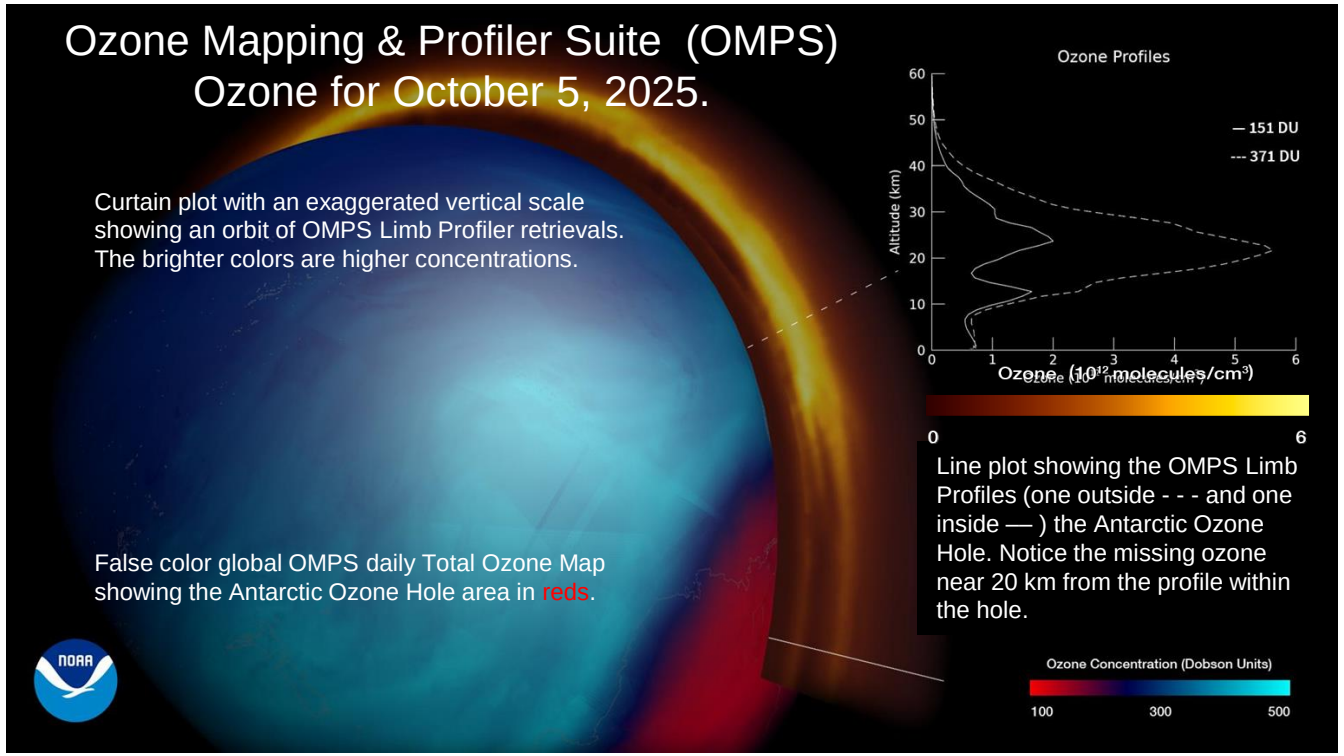
The new EN_TOz version of the V8TOz with the capability to process Metop-SG Sentinel 5 UVNS measurements is at ASSISTT but will wait for implementation with the V3 iteration. The development and testing of a EN-V8Pro with nadir ozone retrieval capabilities for UVNS is proceed slowly as the sample test science data is not very good. The satellite was launched on August 12, 2025 and is progressing towards it first light science measurements next month. After that we should have some better data sets. We need to move the location of the shortest channel from 253 nm to 265 nm.

New monitoring plots for the LIMB EDR and SDR data are ready for viewing but only within STAR. There is expanded content for many Nadir EDRs.

Related Work:

Monitoring plots show a need for another round of soft calibration for Metop-B GOME-2 E-NV8TOz.

The DOAS NO2 retrieval algorithm has been tested on NOAA-20 OMPS NM SDRs for the new higher resolution measurements. It will be progressing to a delivery to ASSISTT over the next two months.



Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule			X		ASTSA 2.0, SDR improvements

1. Project has completed. 2. Project is within budget, scope and on schedule.
3. Project has deviated slightly from the plan but should recover.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks: ASTA 2.0 Option Year One support is a work in progress. We do not yet have sample data for two SDR ADR.

FY25 Milestones: JPSS Ozone EDRs and Level 3 from OMPS Nadir Instruments

Tasks/Deliverables/Milestones	Estimated Completion
Task 1: *Maintain, Sustain, Validate, Improve and Reprocess OMPS V8Pro Ozone Profile EDRs, V8TOz Total Column Ozone EDRs, V8TOS Total Column Ozone and SO2 EDRs.*	May 2026
Subtask 1.1: *Monitor and validate operational OMPS products by using ground-based assets and time series analysis and comparisons. Create and deliver (Monthly) regular overpass datasets for NOAA ground-based networks. Maintain STAR internal monitoring pages (Monthly) and work with the STAR IT group to help coordinate resources for the ozone team. Keep STAR Linux Cluster OMPS databases up to date.*	Monthly Updates
Subtask 1.2: *Construct, improve and deliver tables and codes, and perform validation studies. Make changes to V8Pro soft calibration adjustment tables as the OMPS SDR Team implements solar calibration changes. Provide presentation of results to maintain and demonstrate Ozone EDR Maturity and Improvements.*	As Needed June 2025 (NDE OPS July 23, 2025)
Subtask 1.3: *Reprocess the full V8Pro records for NPP and N20 after developing soft calibration adjustments to create a homogenized Climate Data Record. Reprocess the full V8TOz record with time dependent soft calibration adjustments to account for degradation. Provide presentations validating and document each set of results.*	NPP V8Pro completed April 2025 N20 V8Pro completed May 2025 (except for 2018) NPP V8TOz August 2025
Subtask 1.4: *Maintain, monitor, trouble-shoot all NOAA OMPS Nadir Ozone and SO_2 products.*	Ongoing
Subtask 1.5: *Test and implement approaches to improve SNR for small-FOV N21 OMPS V8TOS EDRs. Coordinate OMPS Processing capabilities with Enterprise DOAS Trace Gas EDR advances.*	September 2025 → January 2026
Subtask 1.6: *Support preparation, testing, table development and code changes for J04 OMPS Nadir Products. Deliver initial instrument and soft calibration tables.* Subtask 1.7: *Modify and deliver V8TOs and V8Pro for application to higher resolution NOAA-20 OMPS NM SDRs.*	September 2025 July 2025 (Code at NDE is ready) November 2025 (Better soft calibration)
Task 2: *Maintain, Sustain, Validate and Improve the Nadir Total Ozone Analysis using Stratospheric and Tropospheric sources (NTOAST) products.*	Sept 2025
Subtask 2.1: *Validate operational NTOAST processing and help to prepare the Algorithm / Operational Readiness Reviews and associated documents (ATBD, UMM, SMM)*	June 2025 - Both NTOAST and LTOAST are on NDE. STAR ARR/ORR August 26, 2025
Subtask 2.2: *Monitor operational implementation and performance and provide expertise to resolve any issues.*	Ongoing
Task 3: *Transition research DOAS trace gas retrieval algorithms (NO2 and HCHO) applied to OMPS measurements to STAR. Convert output generating code to provide NOAA-standard NetCDF EDR files. Provide a report confirming duplication of research processing results and as a preliminary Algorithm Readiness Review.*	December 2025. Week of 139 CT SDR data for NOAA-20 has been tested. Awaiting SDR Team.

Tasks/Deliverables/Milestones	Estimated Completion
Task 1: *Maintain, Sustain, Validate, Update, and Improve OMPS V2Limb codes, calibration tables, monitoring systems and overpass data.*	May 2026
Subtask 1.1: *Provide delta-DAPs to ASSISTT as NOAA implements improved temperature logic and NASA provides improved Level 1 corrections and aerosol retrievals, or makes other tables, corrections or code modifications.*	May 2025 December 2025 – Paused to concentrate on getting the Limb to Ops.
Subtask 1.2: *Provide weekly table deliveries for Darks, Wavelengths and Orbital Definition files.*	Weekly
Subtask 1.3: *Complete NOAA-21 V2Limb validation and move to operations. Validate operational LTOAST processing and help to prepare the Algorithm / Operational Readiness Reviews and associated documents (ATBD, UMM, SMM). Provide guidance on OSPO Limb Monitoring.*	V2Limb is on NDE OPS as of September 2025
Subtask 1.4: *Monitor and validate operational products by using ground-based assets and time series analysis and comparisons. Create and deliver (Monthly) regular overpass datasets for NOAA ground-based networks. Maintain STAR internal monitoring pages (Monthly) and work with the STAR IT group to help coordinate resources for the ozone team. Keep STAR Linux Cluster OMPS databases up to date.*	Monthly Updates
Subtask 1.5: *Provide sample days of N21 and NPP V2Limb NetCDF files to teams working on LTOAST, BUFR, and Monitoring.*	Provided May 2025
Subtask 1.6: *Support Cal/Val Plan preparation, testing, table development and code changes for J04 OMPS Limb*	Plan May 2025 Tables Mar

Snowfall Rate

October 2025

Accomplishments / Events:

- Y. Fan from the SFR team gave a presentation about day-1 SFR product from Arctic Weather Satellite (AWS) at EUMETSAT Meteorological Satellite Conference 2025.
- The team updated SFR algorithm for Metop-B to resolve the issue of missing data from degraded 50.3GHz (CH3) and 54.4GHz (CH6) channels.
- The SFR team has set up an Asia SFR page here.
- The multi-ice-habit microphysics model for NOAA-21, NOAA-20, S-NPP, Metop-B, Metop-C, and GPM has been finalized. The model combines three ice habits: sphere, Hollow-bullet-rosette and Snow1/Snow4/Graupel based on their performance on each satellite, e.g. Snow1 was selected for S-NPP and GPM; Snow4 was selected for Metop-B and Metop-C; and Graupel was selected for NOAA-21 and NOAA-20. An XGB model was trained to derive the probability of each habit using satellite observations and GFS model data.
- Y. Hong from the SFR team published a manuscript about the multi-ice-habit model on GRL.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Advanced microphysics for NOAA-21, NOAA-20, S-NPP, Metop-B, Metop-C, and GPM	**6/2025**	**9/2025**	**10/2025**	**Testing new ML approaches to further enhance retrievals**
Integrate the multi-ice-habit microphysics in the enterprise SFR processing system	**12/2025**			
Transition SFR v4.0 with multi-ice-habit microphysics to ASSISTT	**03/2026**			
Validate AMSR3 prototype algorithms	**04/2026**			
Update and validate ML Snowfall Detection and other ML elements with enhanced data for all operational satellites	**07/2026**			
Train and tune AMSR3 SD and SFR algorithms using real AMRS3 data	**09/2026**			
Explore 2D ML enhancement based on algorithm evaluation	**09/2026**			

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
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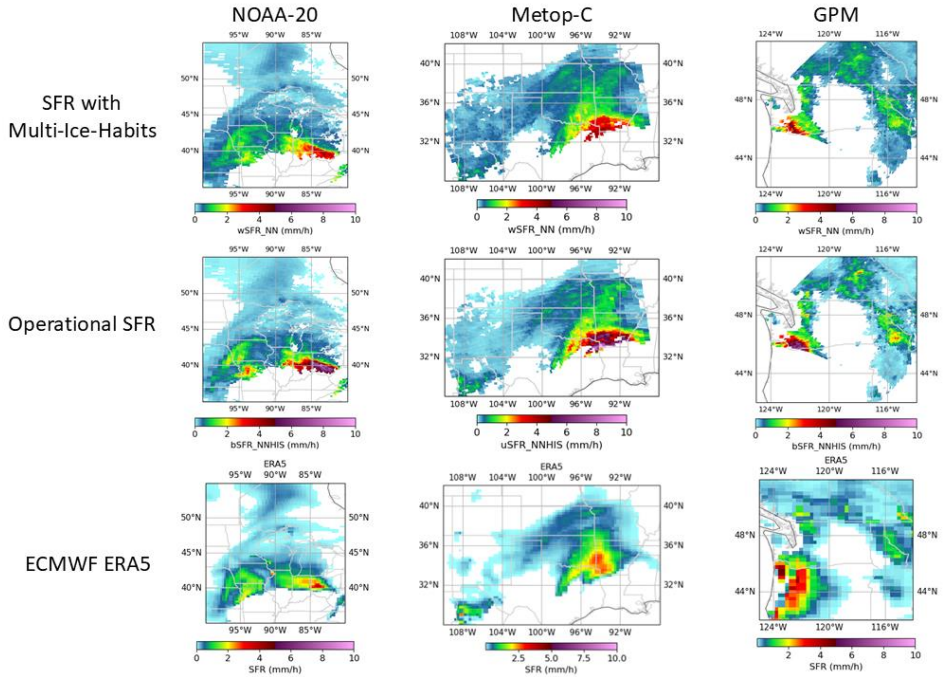
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks: None

Highlights:



Top: SFR retrieved with the multi-ice-habit microphysics; Middle: the operational SFR shows much higher intensity than the multi-ice-habit model compared to the reference; Bottom: ERA5 reanalysis hourly snowfall as the reference

Sea Surface Temperature

August 2025

Accomplishments / Events:

- We tested new ACSPO capability to process 3D dust aerosol data from the NOAA Global Ensemble Forecast System (GEFS). We compared GEFS and CAMS aerosol data for a whole year (2024). Since the aerosol concentration and temperature now enter the SST retrievals, we were concerned about systematic differences between GEFS and CAMS aerosol products which can result in systematic bias in retrieved SST. Fortunately, we did not observe systematic differences GEFS vs CAMS that are big enough to be a concern for SST.
- We processed two years of ACSPO VIIRS SST data for NPP, N20 and N21 to train a new candidate SST retrieval algorithm based on a feedforward neural network. In addition to the traditional input features (brightness temperatures and view angle), we include atmospheric variables such as total precipitable water, average water vapor temper… dust concentration, dust temperature, ozone concentration, wind speed and … insolation. Based on our analysis we found significant improvement in S… statistics and reduced regional SST biases due to dust contamin…

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic			X		SST Task descoping
Schedule				X	SST Task descoping

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

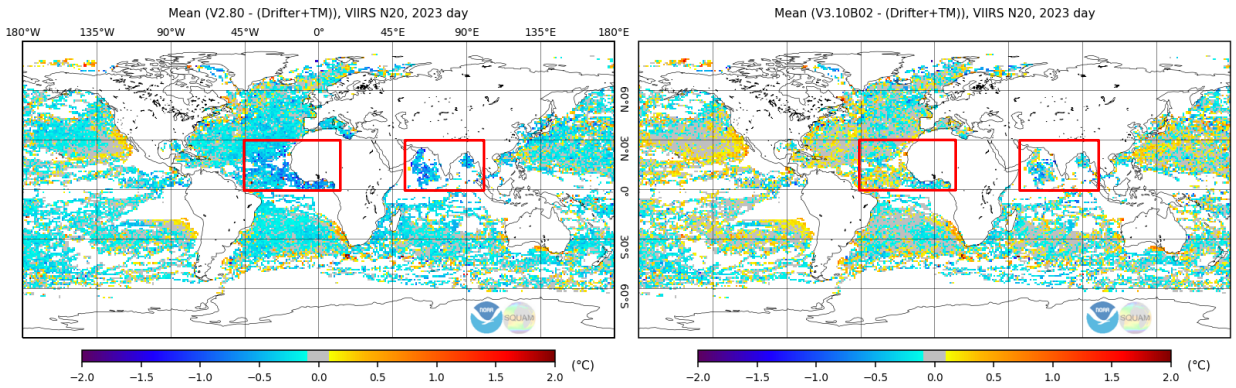
… contracting staff was reduced from 8.5 to 4 FTEs. As a …celled.

Status Delayed Due to Government Shutdown

Milestones	Origin…			
Promote experimental iQuam updates to live access				
Deliver ACSPO VIIRS V3.00 package to AS…				
Migrate legacy IDL iQuam codebase to pyth…				Task descoping
Reprocess historical iQuam SST data using v2.3		Sep-25		Task descoping
Update CRTM library from v2.3 to 3.0 (need… inclusion of aerosols in radiance simulations	Mar-25	Mar-25	Mar-25	
Investigate how inclusion of aerosol information in simulated radiances can be used to improve ACSPO SST and clear-sky mask algorithms.	Aug-25	Aug-25	Aug-25	
Reprocess VIIRS SST using ACSPO V3.00	Dec-25	Dec-25		Task descoping

…etwork-based SST retrievals that take advantage of …ust information

…ggregated (2023) bias between ACSPO N20 VIIRS daytime SST and in-situ … from drifters and tropical moorings. Left: Current operational version of ACSPO (V2.80). Right: Current development version (V3.10B2) with new SST algorithm. Reduced cold SST biases in dust-affected regions with V3.10B02 are emphasized with red rectangles. Note that the V2.80 results have a global mean cold bias due to VIIRS calibration drift since V2.80 was released and are not related to the SST



Surface Albedo

Accomplishments / Events:

- Evaluating ASSISTT-generated VIIRS BRDF dataset
  - Confirmed that the final ASSISTT implementation is correct.
  - Communicated concerns regarding integration into the cloud system.
- Developing the VIIRS albedo reprocessing prototype, focusing on workflow design and computing resource requirements.
  - Generated initial test results.
  - Working on verification and batch processing.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		x			
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
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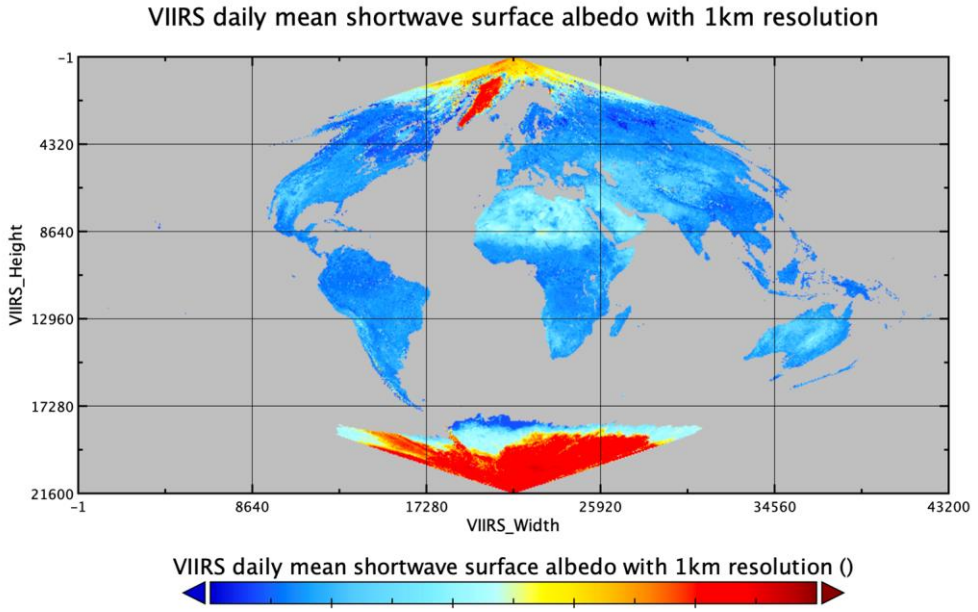
Issues/Risks:

Milestones	Original Date	Forecast Date	Actual Completion	Variance Explanation
Science support during VIIRS BRDF transition to Cloud	Nov-2025			
Enterprise VIIRS LSA Reprocessing Prototype	Dec-2025			
VIIRS BRDF Monitoring & Validation System	Jan-2026			
Advanced LSA Long-Term Monitoring System	Feb-2026			
Reprocessed VIIRS LSA (2014–2019(depends on computational capability))	Jun-2026			
Reprocessed Data Release with User Documentation	Sep-2025			

Highlights:

Reprocessed SNPP VIIRS LSA of 20140701

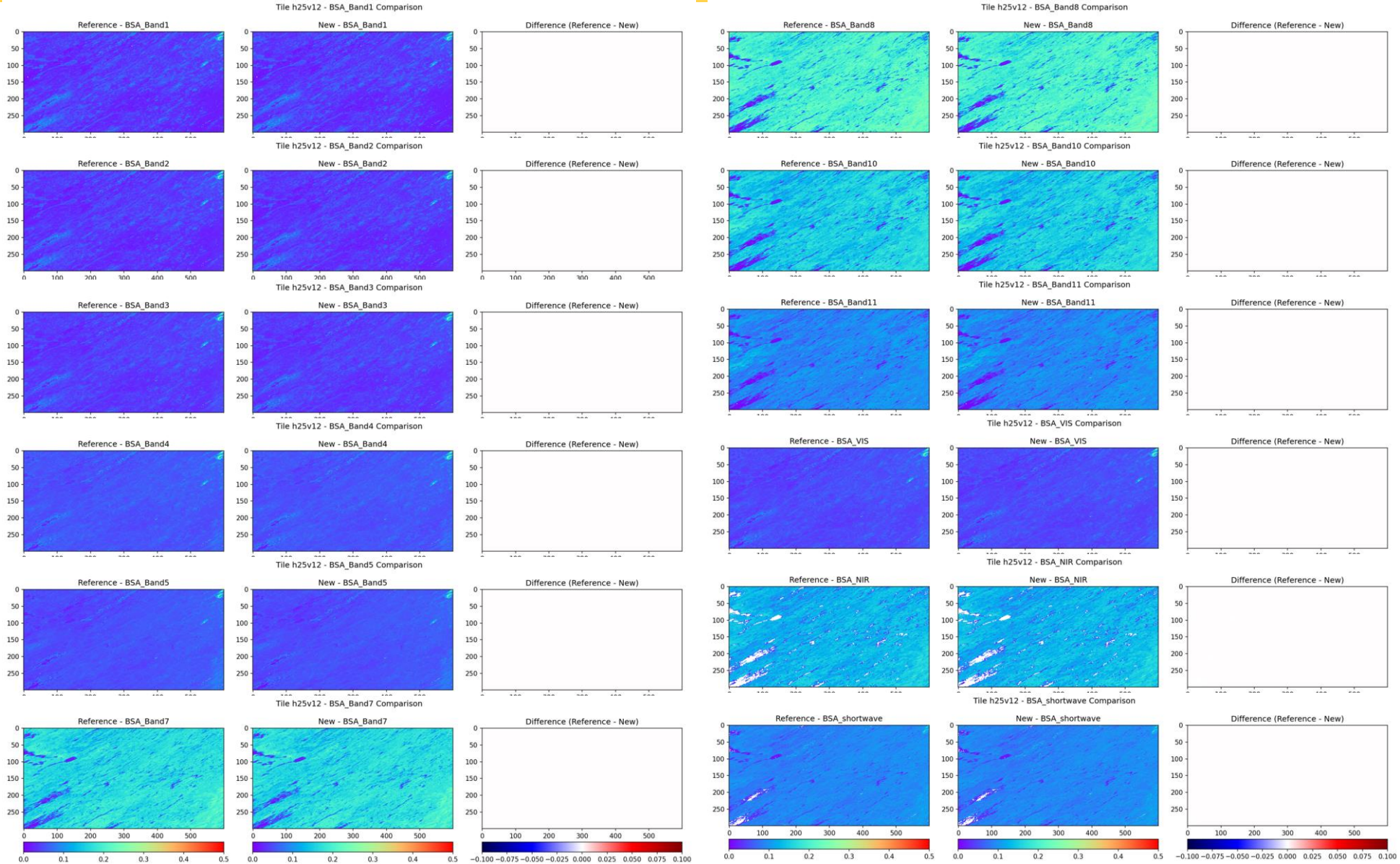


VIIRS BRDF integration verification completed

During ASSISTT verification, the science team sought to confirm correct program integration and separate data-related differences from processing issues.

Because ASSISTT could not easily run a complete case, discrepancies initially mixed both causes. The team created a dedicated environment to reproduce BRDF retrievals using ASSISTT's input data, enabling more precise error detection and correction.

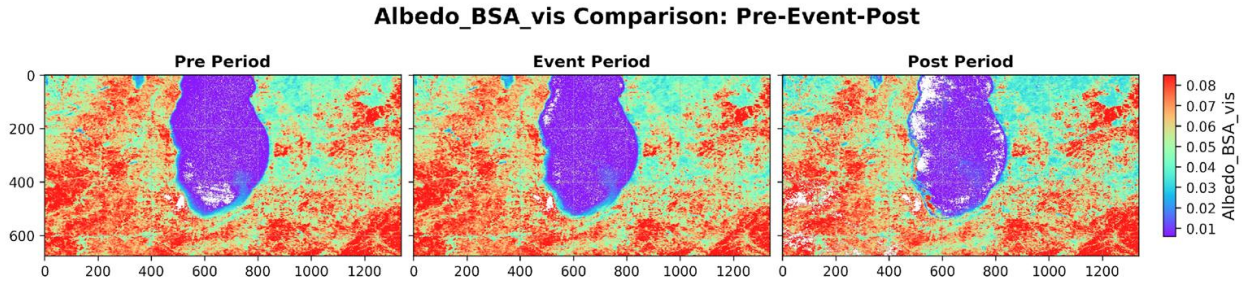
By late October, the integration was confirmed to be correct, and as long as the operational system receives the required inputs, output quality is

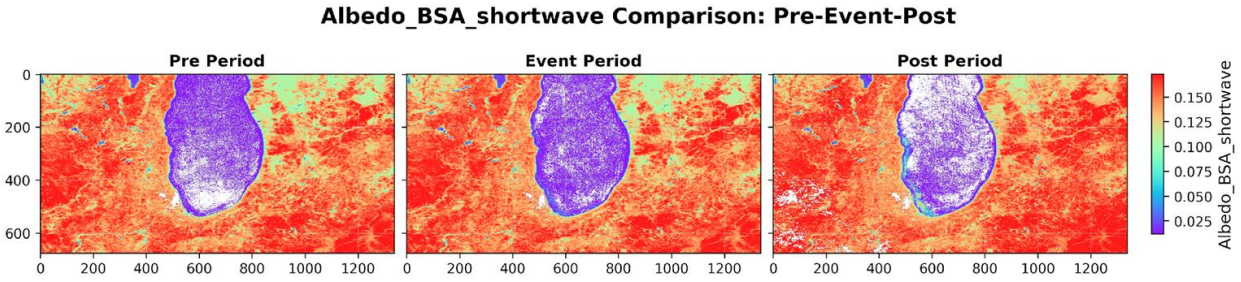


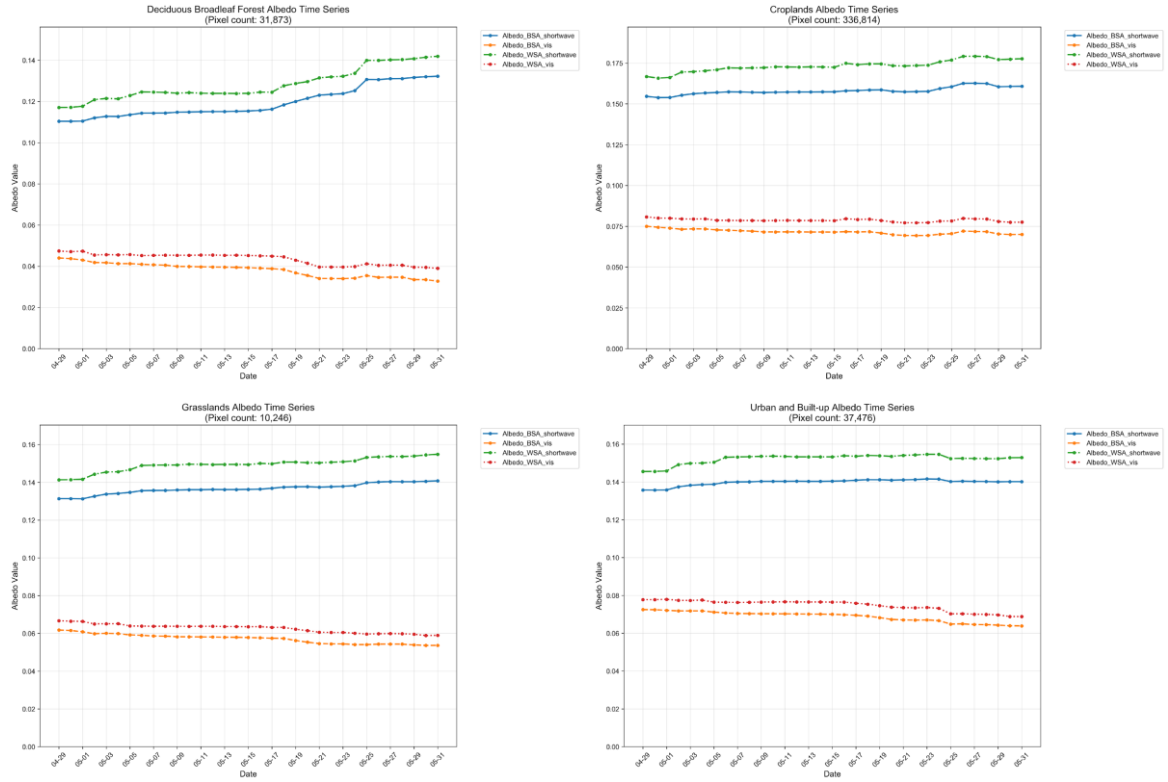
Each group compares one BSA variable: the left panel shows the science team's result, the middle shows ASSISTT's output, and the right shows their difference

VIIRS BRDF Validation Summary

Albedo Response to the May 2025 Midwest Dust Storm







Highlights:

- The May 16 2025 dust storm over the U.S. Midwest (Illinois–Indiana) produced a notable short-term increase in surface albedo (ΔSA ≈ 0.02–0.04) over croplands and grasslands.
- According to *Chen et al.* (2024), such albedo enhancement could shift the local aerosol radiative effect toward reduced cooling or even warming (ΔADRE > 0).
- Visible-band albedo decreased slightly, suggesting wavelength-dependent effects (infrared scattering vs. visible absorption).
- The pattern supports the hypothesis that dust deposition and soil drying jointly modify land-surface optical properties.
- Recovery by late May indicates gradual removal of surface dust and vegetation regrowth.

Surface Reflectance

October 2025

Accomplishments / Events:

- Addressed code review comments to make the SR software more robust and flexible by removing hard-coded values and improving exception handling.
- Checked AERONET site data status and evaluated sites using statistics of aerosol and cloud properties.
- Summarized SR validation at AERONET based on a full year of subset data (2024); results meet requirements and demonstrate improvements from the mitigation algorithm.
- Continued algorithm development, focusing on the internal AOD module to enhance performance and consistency, and to address upstream inconsistencies for future reprocessing.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

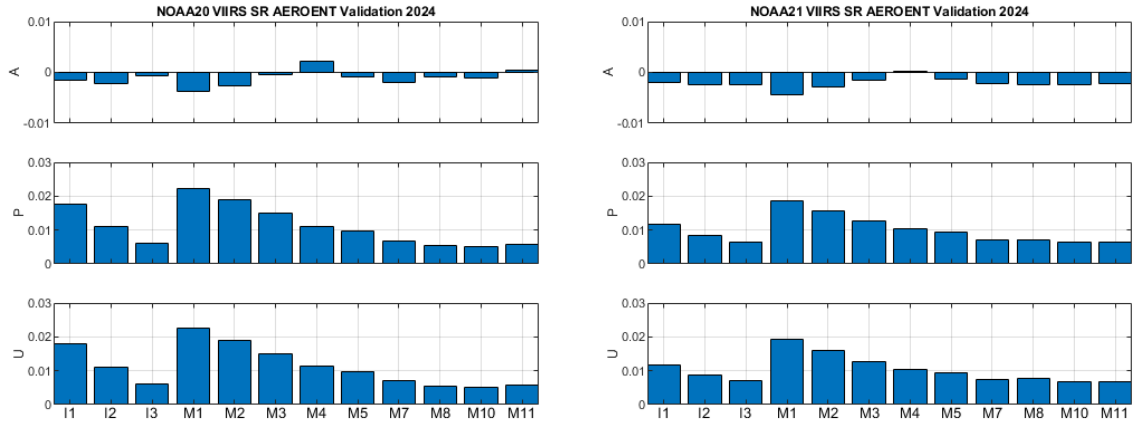
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
SNPP, N20 & N21 monitoring and validation and user feedback & response	Sep-25	Sep-25	Sep 26, 2025	
BRDF adjustment for validations	Dec-25	Dec-25		
Determination and evaluation of VIIRS surface reflectance recalibration coefficients	Feb-26	Feb-26		
Software package with updated algorithm and quality flags.	Apr-26	Apr-26		
Monitoring and validation datasets preparation	Jun-26	Jun-26		
Software package with updated algorithm and quality flags.	Jul-26	Jul-26		
Long-term monitoring tool update and report	Sep-26	Sep-26		

Highlights:

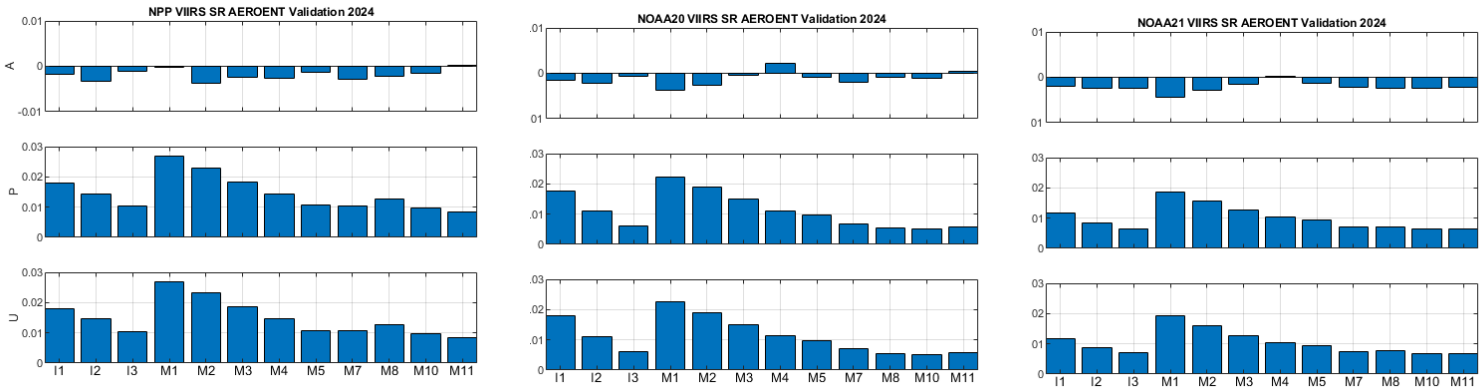


The year 2024 SR validation summary at AERONET sites, the product performs as expected and meets the requirements, the slight negative bias will be fixed in the upcoming patch.

AERONET Sites Evaluation (Year 2024)

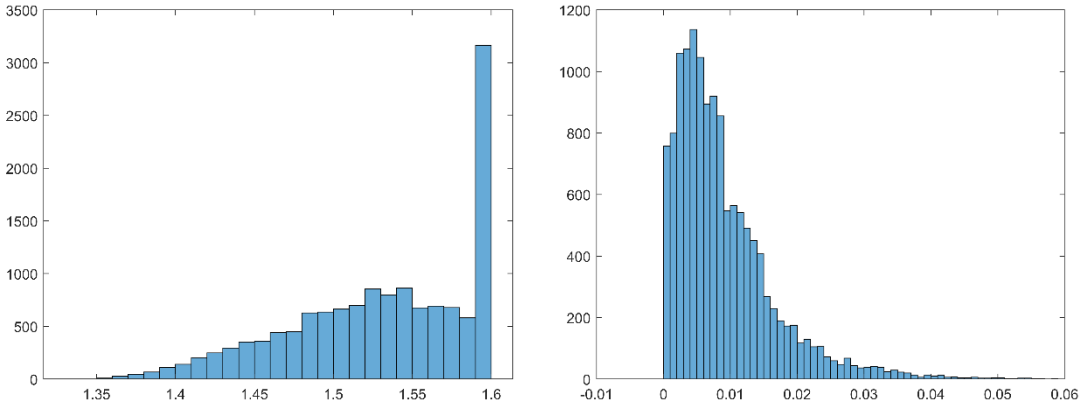
October 2025

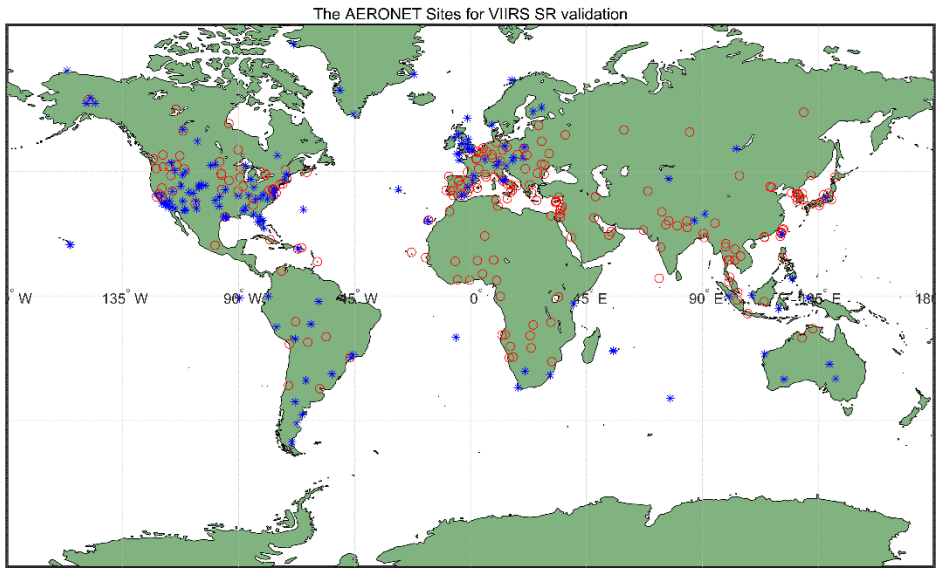
- Summarize the Year 2024 AERONET status and Validations



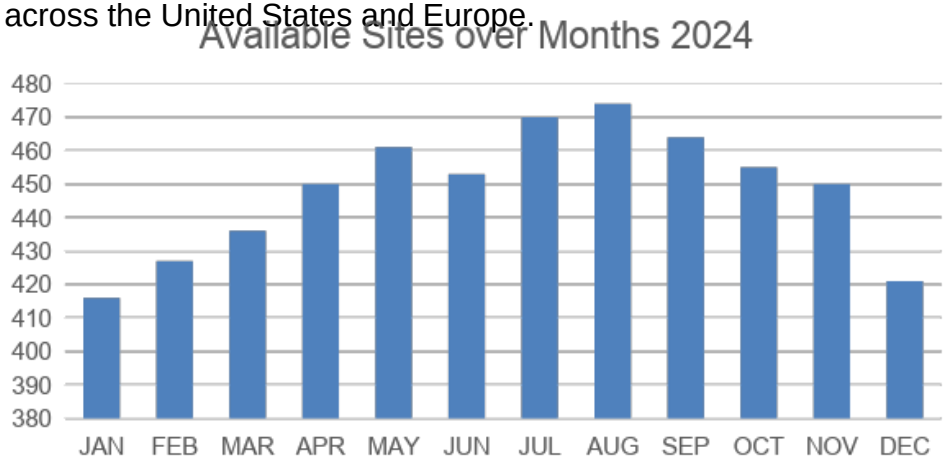
Overall, SNPP, N20 and N21 show expected performance meeting the product requirement. Due to the dust aerosol model, the SR shows a slight negative bias, but not significant. A mitigation algorithm in the upcoming version is expected to fix this issue. The uncertainty follows similar pattern and comparable numbers.

- Refractive index histogram: Real part (Left) and Image part (Right), indicate the aerosol model.





Red marks indicate sites with complete parameter sets, while blue marks represent sites without retrieved aerosol models but still usable. The coverage is generally global, with denser distributions across the United States and Europe.



SR Software Package Status and Path Forward

- **Updated SR software package**
  - Added a new global attribute for improved monitoring.
  - Compressed output NetCDF files to reduce storage requirements.
  - Implemented a mitigation algorithm to handle potentially misclassified dust aerosol models.

- **Code Review**
  - Hard-coded values → Correction: Predefine constant values.
  - Potentially unsafe buffer → Correction: Use safer functions to prevent buffer issues.
  - Package library → Keep as is from the perspective of the science team.

- **Under development for the next delivery**
  - Develop an internal aerosol module following the NASA SR algorithm, use the same aerosol model configuration and perform AOD retrieval internally to reduce the dependency on upstream AOD product.
  - Serve as an alternative method to get the AOD information.
  - Develop the algorithm to support long-term reprocessing. Primarily address inconsistencies in upstream products, such as cloud masks.
  - Continue to work on the calibration between JPSS satellites.

Surface Type

October 2025

Accomplishments / Events:

- STAR-UMD VIIRS Surface Type team has downloaded and processed NOAA-21, NOAA-20, and S-NPP VIIRS daily granule surface reflectance data acquired in October of 2025 for the production of AST25.
- The team is exploring the use of GEDI data to improve global surface type mapping:
  - Tools have been developed to create gridded forest height and canopy cover estimates based on all available GEDI granule data.
  - The team is assessing the quality of those estimates across the globe (see highlights for an example).
  - Tools are being developed to use the gridded GEDI data to improve the surface type training and validation polygons as well as AST map products.
- ~~The team continues to produce monthly water surface fraction (WSF) products for the~~

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Complete gridding of all VIIRS surface reflectance granule data acquired in 2025	Dec-25	Dec-25		
Complete production of global daily surface reflectance mosaics for 2025	Jan-26	Jan-26		
Complete global monthly composites for all 12 months of 2025	Mar-26	Mar-26		
Generate global annual classification metrics for 2025	May-26	May-26		
Complete AST25 IGBP 17 type map	Aug-26	Aug-26		
Complete AST25 EMC 20 type map	Aug-26	Aug-26		
AST25 Validation Statistics and delivery to JSTAR and users	Sept-26	Sept-26		

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

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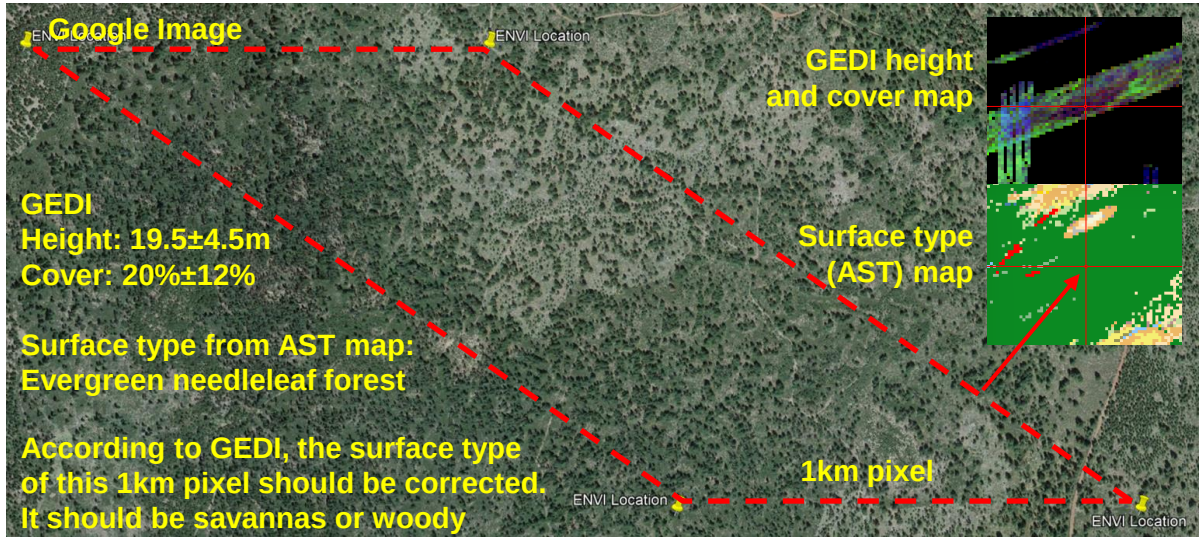
Issues/Risks:

None

Highlights:

GEDI Highly Valuable for Improving Surface Type Mapping

NASA's GEDI mission provides LiDAR-based forest canopy cover and height estimates, which are considered more accurate than estimates derived using optical or radar remote sensing technology. Therefore, they can greatly improve the separability between forest and nonforest types. The VIIRS surface type team is developing tools to use GEDI data to improve the AST product.



Vegetation Health

October 2025

Accomplishments / Events:

- Continued monitoring of vegetation health as indicated by publications of weekly vegetation health products (VHP) from currently operational NOAA-20 VIIRS observations via STAR webpage at https://www.star.nesdis.noaa.gov/smcd/emb/vci/VH/vh_browse.php. Reprocessed abnormal daily maps and impacted weekly jobs due to extended data delays of VIIRS SDR on SCDR.
- Continued development of the 500m VH DAP v3.1 software package and enabled its execution at OSPO for generating VHP NDE-style products. This involved modifying and tuning source codes, daily and weekly scripts through unit testing. A new cron job was established to routinely run DAP WF-VHP using PCF, which will gradually replace the existing STAR WF-VHP.
- Streamlined cron jobs by merging three streams into two and updated the monitoring webpage's layout accordingly (see the webpage image on the left). As an additional unforeseen effort required by VHP-CCAP, the satellite IDs in all WF-based VHP products, programs, and scripts were renamed from "j01" to "N20" and "j02" to "N21."
- Reprocessed GC-based AdminVH ASCII files for the satellite-period mapping. Based on this reprocessing, generated new WF-based ASCII files, which will be used not only for VHP-CCAP delivery, but also for comparison against the current STAR GC-based ASCII production (v2021Nov). An internal website was launched to visualize the three ASCII file sets.
- Advanced the comparative analysis of AdminVH ASCII files between the current and new VH products. Given the new availability of WF-based ASCII files and no meaningful change observed in the 1982–2012 AVHRR VHP, the analysis mainly focused on the later 2013–2025 VIIRS period. Differences were evaluated across countries, crop types, and VH types. Several internal websites are under development to display timeseries comparison plots.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Deliver CCAP for VIIRS 500m global Vegetation Health Products and make operational at NCCF	Sept'26	Sept'26		
Develop CCAP for value-added and science-enhanced ASCII and Geotiff data files of regional Vegetation Health Products for USDA users and make them operational at NCCF	Sept'26	Sept'26		
Enhance VHP ASCII data files for USDA users by adding Evaporative Stress Index	Sept'26	Sept'26		

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

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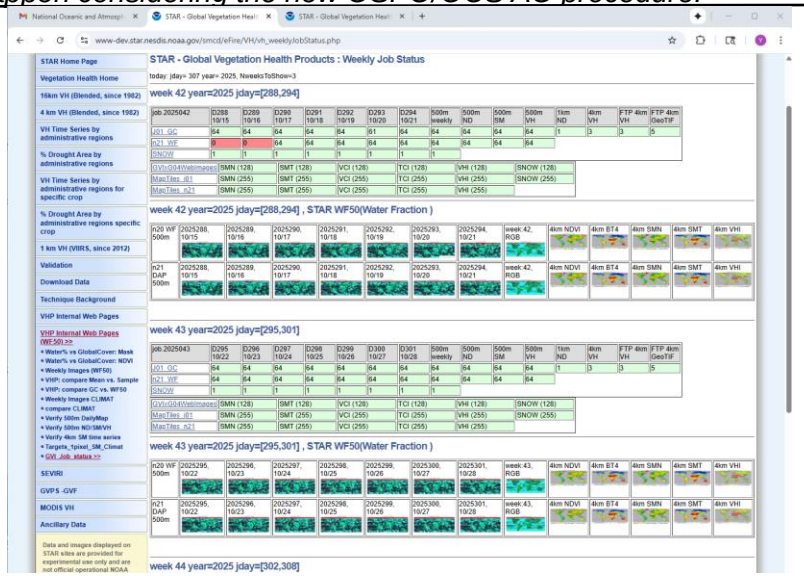
Issues/Risks:

Team updated the land water mask and the VHP climatology database correspondingly, which pushed the original delivery date of the 500m VHP production software package to December 2025. Per FY26 JPSS PMR, FY26 tasks and subtasks were updated following the delay. Further delays may happen considering the new OSPO/OCS AO procedure.

Highlight: *To better support VHP-CCAP and effectively manage all VHP job runs and databases, the consolidation of three cron job streams (STAR-GC, STAR-WF and DAP-WF) into two (STAR-GC and DAP-WF) has been undertaken and is currently in progress. This effort will reduce processing time and save computer resources. Furthermore, the layout of the webpage for monitoring cron job status is being reconfigured to reflect these changes (see the webpage image for an example, with the link on the left).*



(https://www-dev.star.nesdis.noaa.gov/smcd/eFire/VH/vh_weeklyJobStatus.php)

Vegetation Index and Green Vegetation Fraction

October 2025

Accomplishments / Events:

- Conducted FY25 NVPS annual validation.
- Continued efforts on ML/AI-based GVF algorithm development by building the neural network models using Keras/TensorFlow.
- Continued efforts on reprocessing of N20 NVPS product, which is on-track to the Dec-25 milestone.
- Initialized building the data pipeline of the 20m resolution downscaled NVPS production.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NVPS product annual validation report	Sep-25	Oct-25	Oct-25	Data processing delay due to frequent server down
Fully validate the blended NVPS product algorithm; Initiate the R2O process	Nov-25	Nov-25		
Partially finish reprocessing of NVPS product; Analyze the product consistency among versions	Dec-25	Dec-25		
Routine production of 20m resolution downscaled VIIRS NVPS datasets for user-demanded ROI	Feb-26	Feb-26		
Fully validation and implementation of the gap-filling approaches for enhanced NVPS data quality	Mar-26	Mar-26		
Expand development of AI/ML-based GVF enhancement with comprehensive training and large-scale validation	June-26	June-26		
Advance to the R2O process for the integrated NVPS-VHP framework	Aug-26	Aug-26		

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

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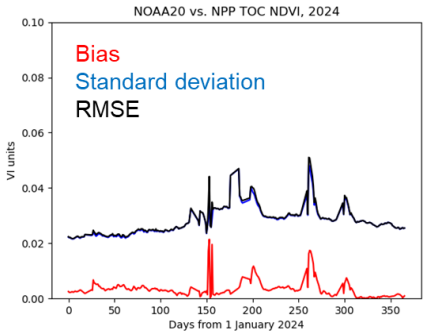
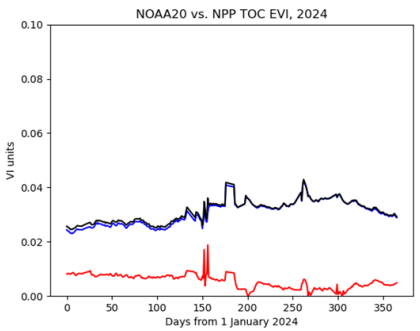
Issues/Risks:

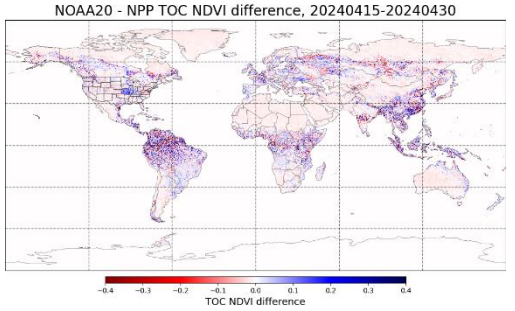
None

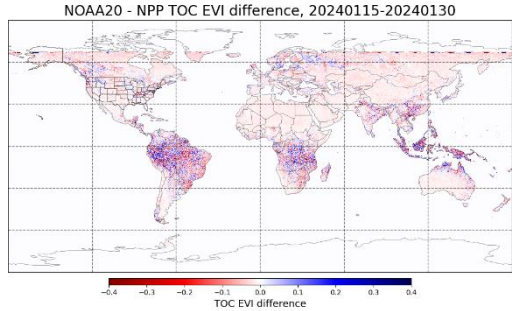
Highlights:

Part of results of FY25 NVPS annual validation



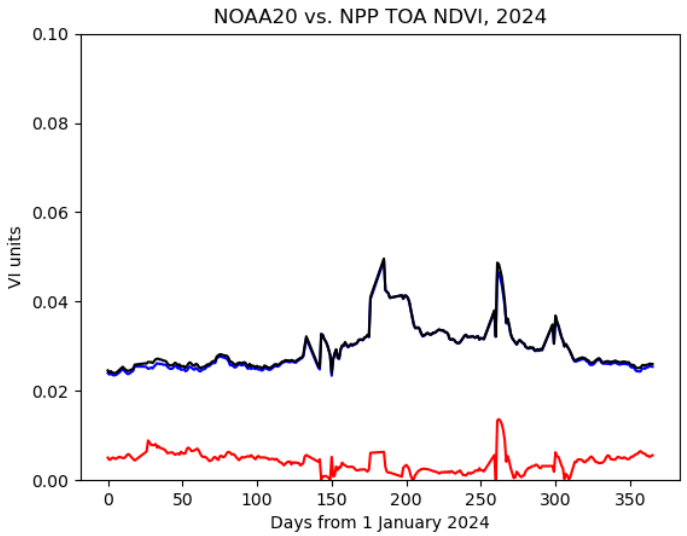


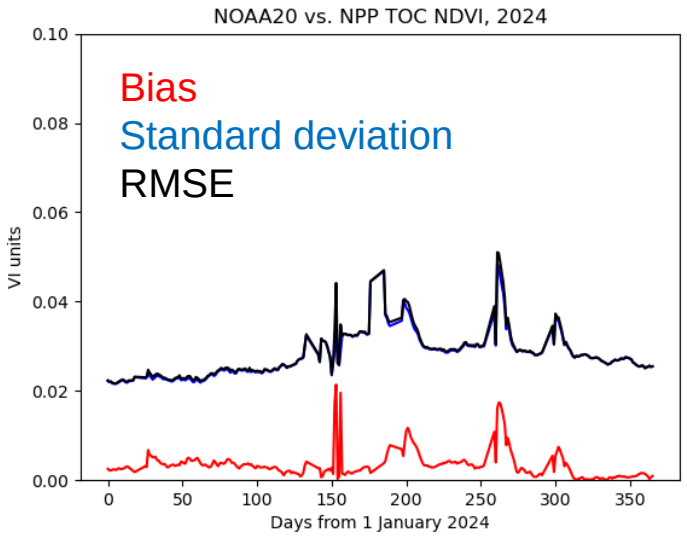


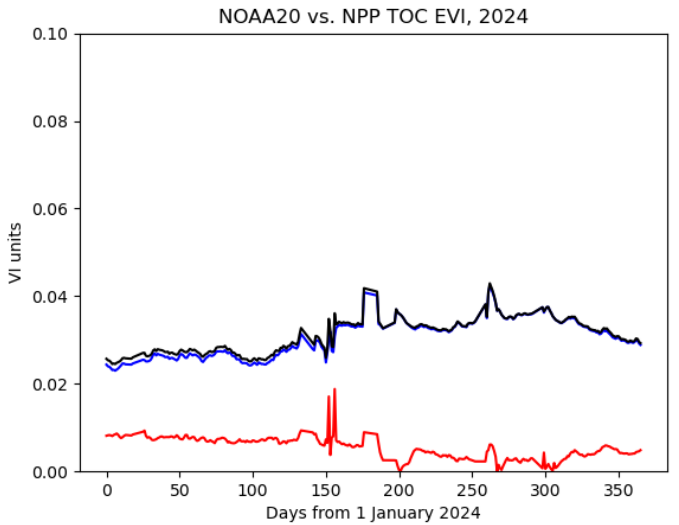


NVPS product annual validation

- Obtained NPP and NOAA-20 biweekly global VI data for the year 2024.
- Repeated analysis from previous cal/ val work, including time series and difference images.
- Results were similar to previous years, with mean difference, standard deviation, and RMSE well below specifications and difference images showing no pronounced spatial pattern in most cases. Exceptions are as follows:
  - Time series statistics show jumps near data gaps. This is a known issue, and we have a task to address it.
  - July difference image shows generally lower VIs in NOAA20 than in NPP, except for higher values of TOA NDVI in NOAA20 than NPP. This will be investigated further.



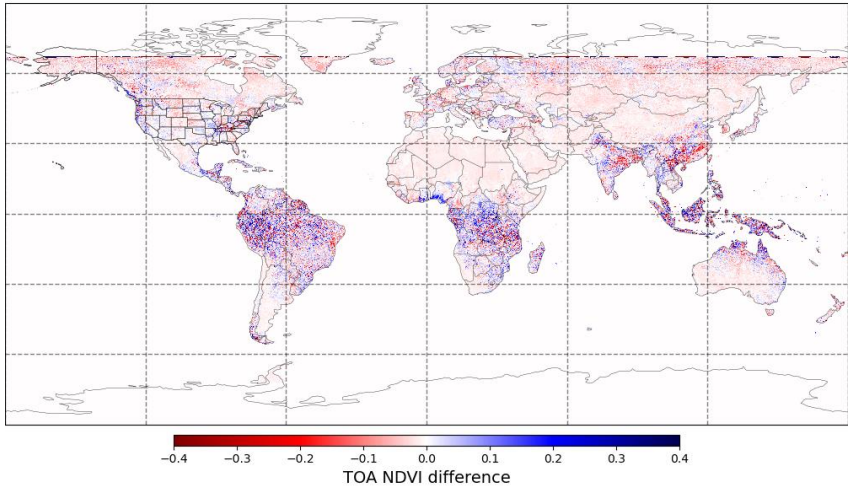




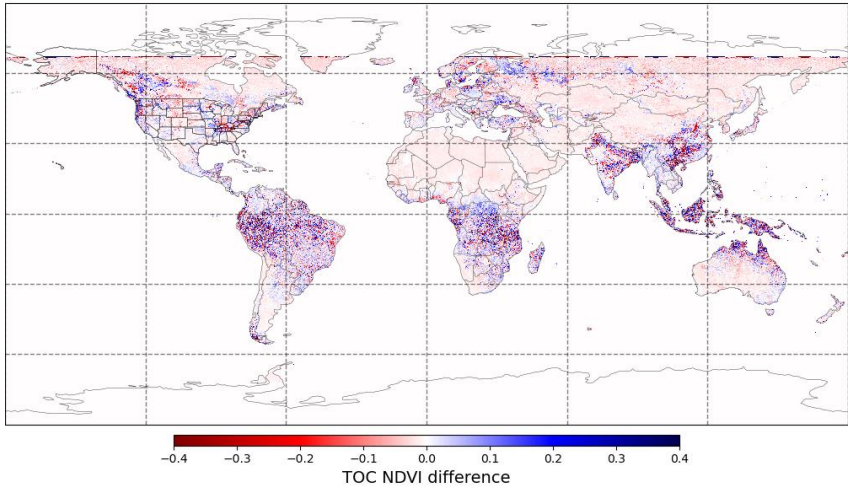
NVPS product annual validation

- Difference images: January 2024

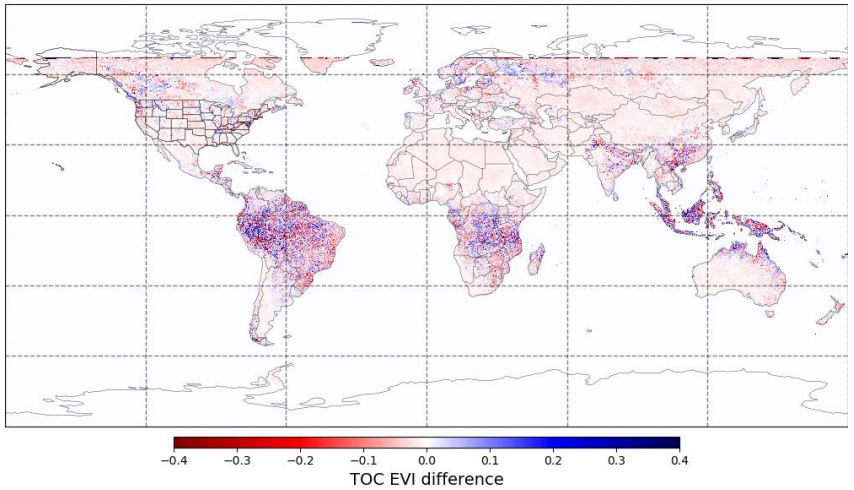
NOAA20 - NPP TOA NDVI difference, 20240115-20240130



NOAA20 - NPP TOC NDVI difference, 20240115-20240130



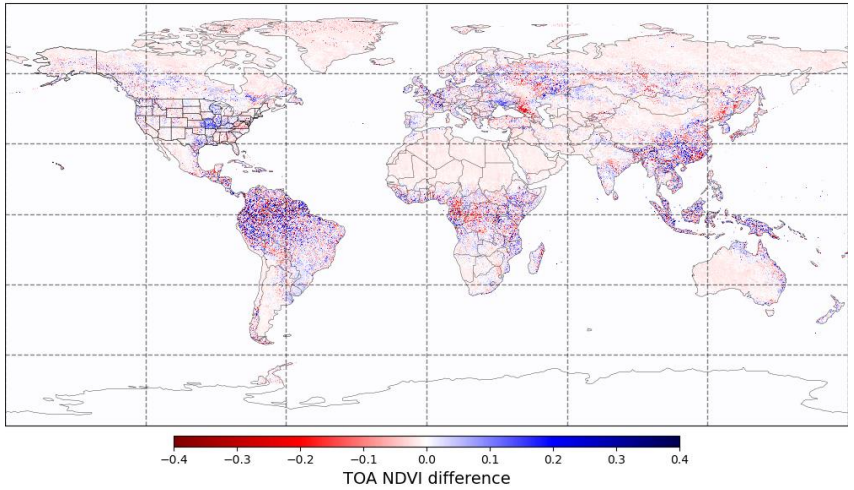
NOAA20 - NPP TOC EVI difference, 20240115-20240130



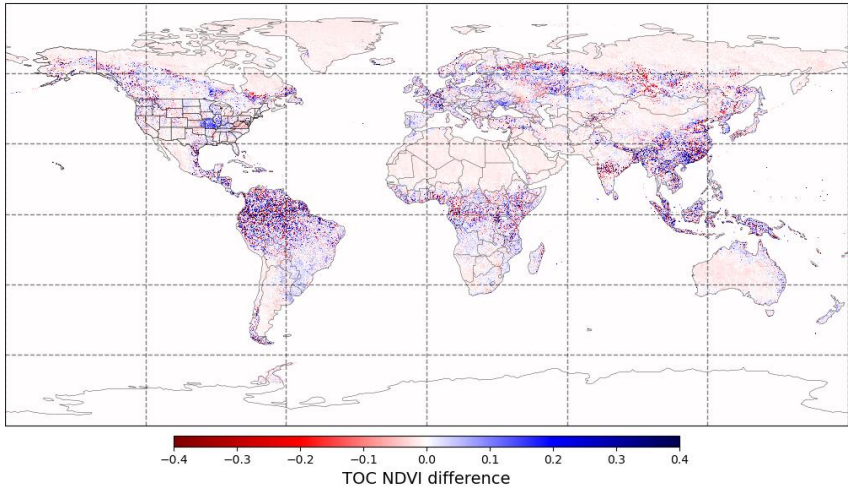
NVPS product annual validation

- Difference images: April 2024

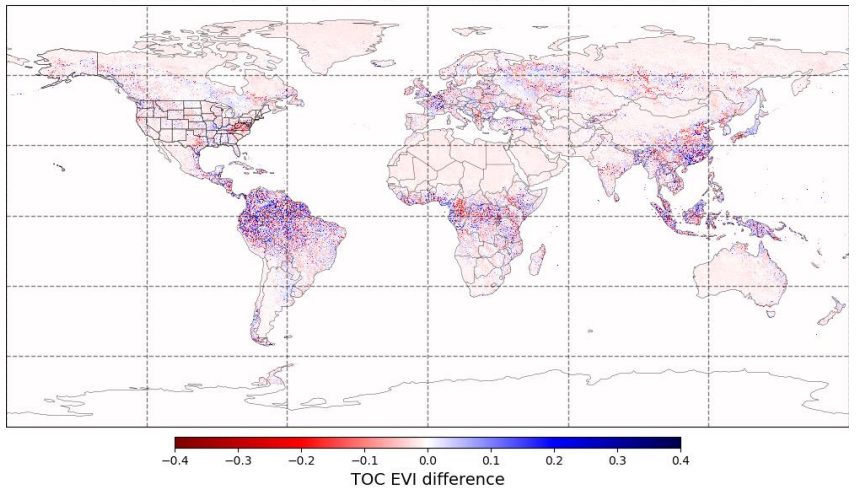
NOAA20 - NPP TOA NDVI difference, 20240415-20240430



NOAA20 - NPP TOC NDVI difference, 20240415-20240430

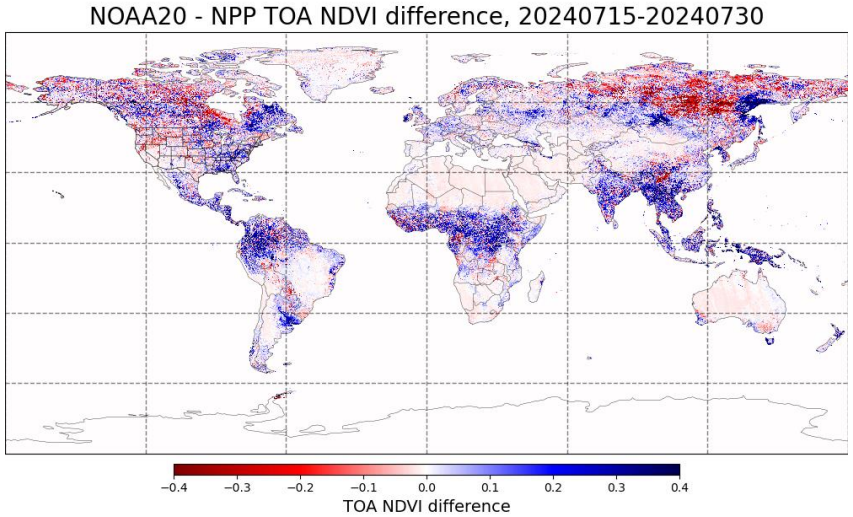


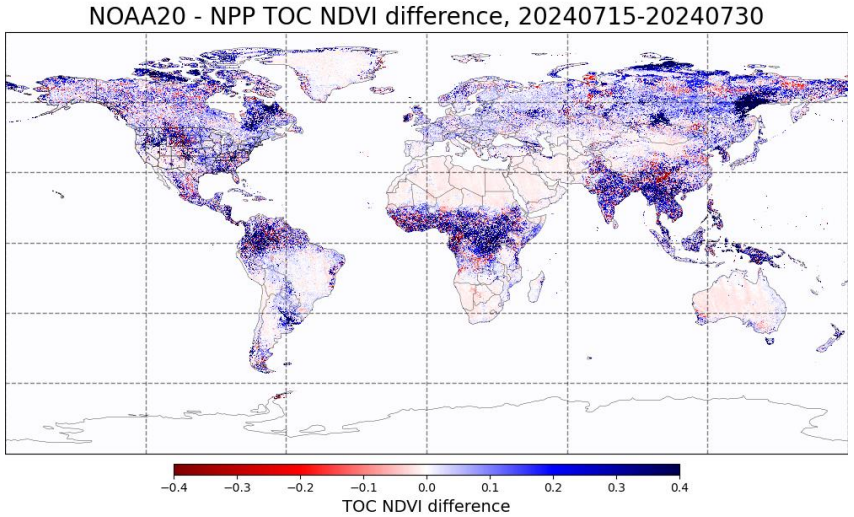
NOAA20 - NPP TOC EVI difference, 20240415-20240430

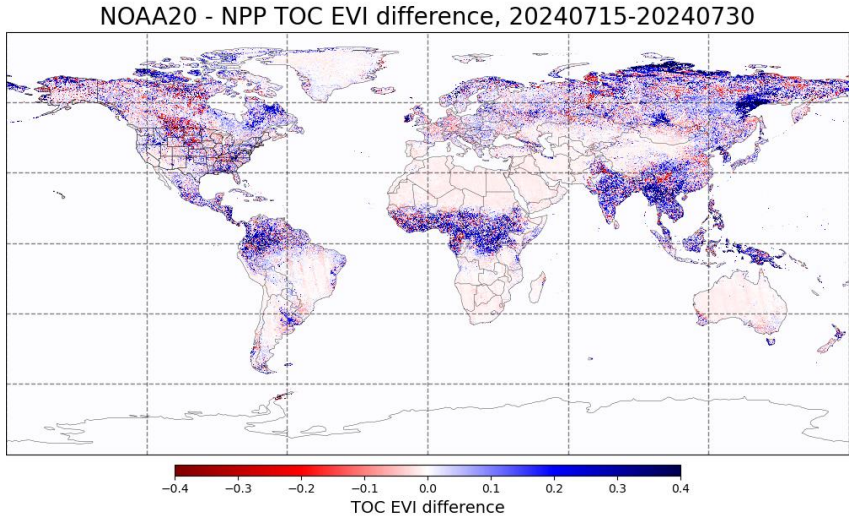


NVPS product annual validation

- Difference images: July 2024



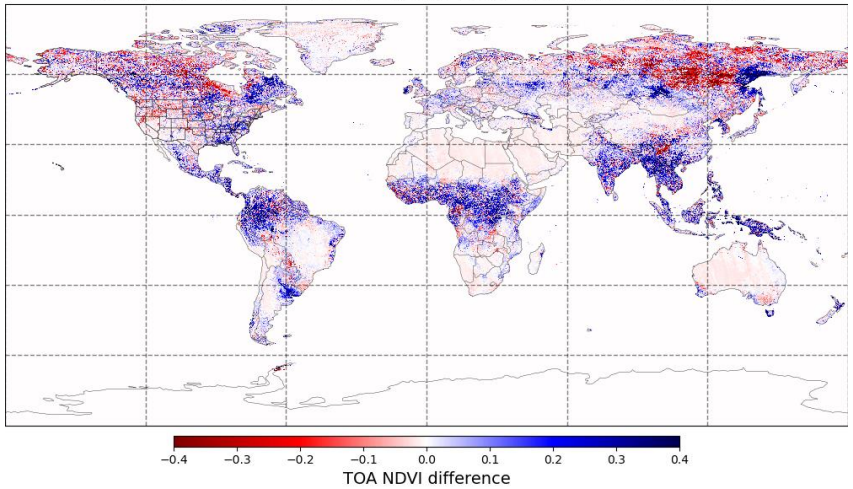




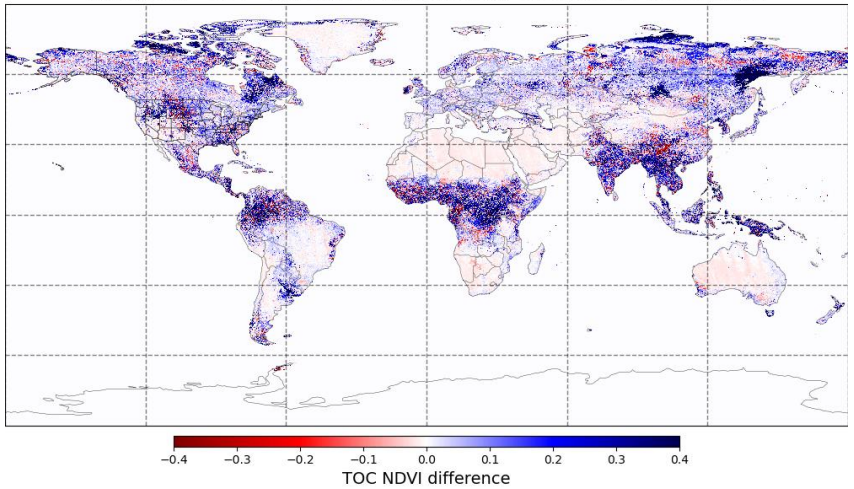
NVPS product annual validation

- Difference images: July 2024

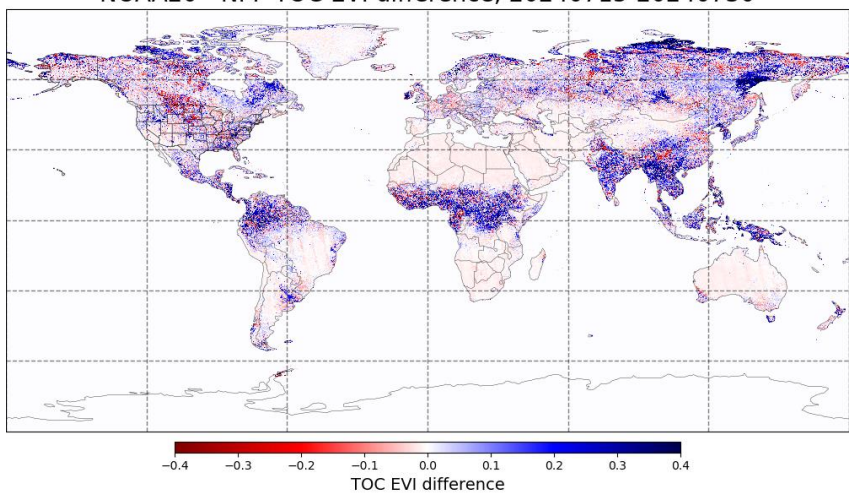
NOAA20 - NPP TOA NDVI difference, 20240715-20240730



NOAA20 - NPP TOC NDVI difference, 20240715-20240730



NOAA20 - NPP TOC EVI difference, 20240715-20240730



VIIRS Flood Mapping

October 2025

Accomplishments / Events:

- VIIRS downscaled flood products for selected 2024-2025 flood events were generated, and mosaicked flood maps at 30 m spatial resolution were delivered to FEMA for their evaluation and comparison with commercial flood products.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic			X		Delay in executing OSTA Opt Yr 3
Schedule		X			

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

Highlights:

VIIRS Imagery

October 2025

Accomplishments / Events:

- VIIRS Imagery Team Presentations
  - Jorel Torres, Oct 7 NOAA Satellite Hackathon: “How to Access JPSS Imagery, Products, and Training Resources Online”
- Team Blog Posts with VIIRS Imagery
  - Nighttime Visible Imagery over the Atlantic
  - Dense Fog across the High Plains
  - Western Alaska Floods
  - Hurricane Melissa
- 28 VIIRS Imagery Posts on CIRA Social Media (X) this Month. A few posts:
  - VIIRS NCC Imagery of ice movement in arctic (3.7K views)
  - VIIRS DLC RGB Imagery of reservoir in Ethiopia (1.4K views)
  - VIIRS VIS/IR Imagery of Hurricane Melissa (7.2K views)
  - VIIRS NCC Imagery of power loss across Jamaica following Melissa (74.8K views)

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		x			
Schedule		X			

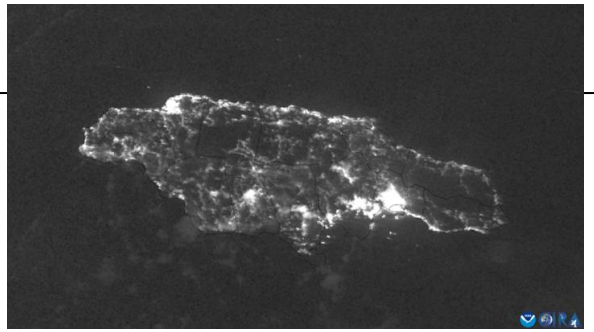
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

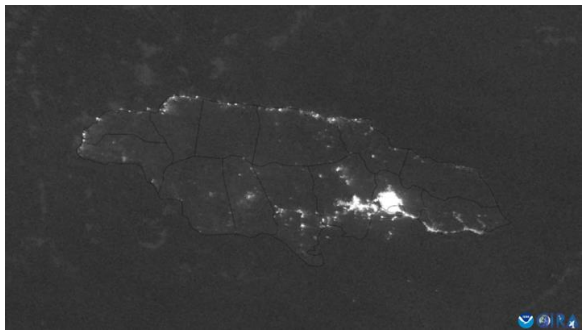
Issues/Risks:

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Coming Next Month				

Highlights: Image of the Month

Figure: Before (top, 29 Sep 2025) and after (bottom, 30 Oct 2025) overnight VIIRS NCC Imagery capturing Hurricane Melissa influence on power (city lights) across Jamaica.





VIIRS Polar Winds

August 2025

Accomplishments / Events:

- Completed development of a polar winds pre-processing script that handles the selection of S-NPP, NOAA-20, and NOAA-21 granules used for generating a triplet of VIIRS orbital imagery needed to generate the tandem VIIRS polar wind (VPW) product. This script will be delivered to OCS as part of the transition effort to implement the tandem VIIRS for operational implementation Figure 1 shows an example of the tandem VIIRS polar winds generated from overlapping N21, SNPP, and N20 VIIRS M15 band imagery over Antarctica at 00:32 UTC on September 3, 2025.
- Use of the enterprise winds algorithm has been expanded to derive polar winds from NOAA-20 or NOAA-21 over the Arctic by tracking cloud features derived from the VIIRS Near Constant Contrast (NCC) pseudo-albedo product and utilizing the VIIRS Day/Nigh… Band (DNB) for quality control information. Figure 2 shows an example of these … NOAA-21 at 1531 UTC on August 20, 2025

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. …
3. …*ay over budget.*

Status Delayed Due to Government Shutdown

Milestones	Original Date	…	…	…
Demonstration and validation of Polar "Tandem-Satellite" VIIRS SWIR & LWIR wind datasets over a 4-6 week time period an… them available to NWP Centers				
Incorporate VIIRS DNB (Near-Constant Contrast) updates f… heritage to enterprise winds algorithm in FW2.x				
Develop and validate approaches to generate VIIRS winds f… tandem-satellite pairs of images (enables global coverage)				
Feature tracking QC for VIIRS winds: Investigate scan angle… between successive orbits & impact on VIIRS winds quality; … for parallax				
Development of updated VPW Validation and monitoring sy…	…25	Jun 25		
Support transition of "Single-Satellite" VIIRS SWIR winds int… operations	Sep 25	Sep 25	In progress	
Begin transition of Tandem-Satellite" VIIRS LWIR and SWIR winds to operations (if funded)	Sep 25	Sep 25	In progress	
Addition of ERA5 analysis to winds team's validation tool set	Sep 25			
Deliver enterprise winds algorithm updates, as needed			In progress	
Dev and testing of minor algorithm updates as needed. Continued monitoring and validation of VPW winds;	Sep 25		In progress	

…P-N20) VIIRS Polar

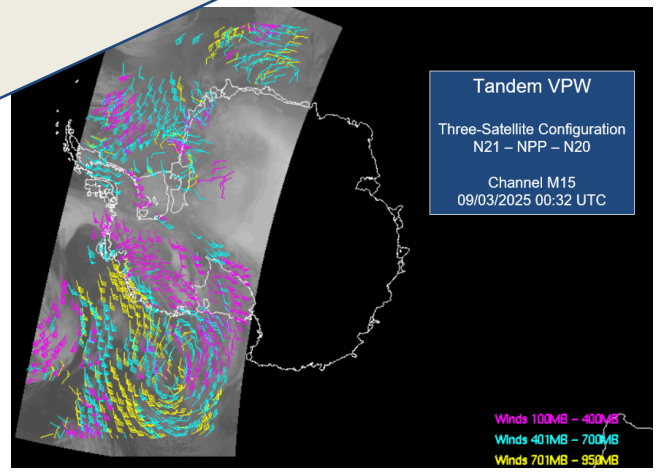


Figure 1. Tandem VIIRS polar winds generated from overlapping N21, SNPP, and N20 VIIRS M15 band imagery over Antarctica at 00:32 UTC on September 3, 2025

VIIRS NOAA-21 DNB-NCC Polar Winds

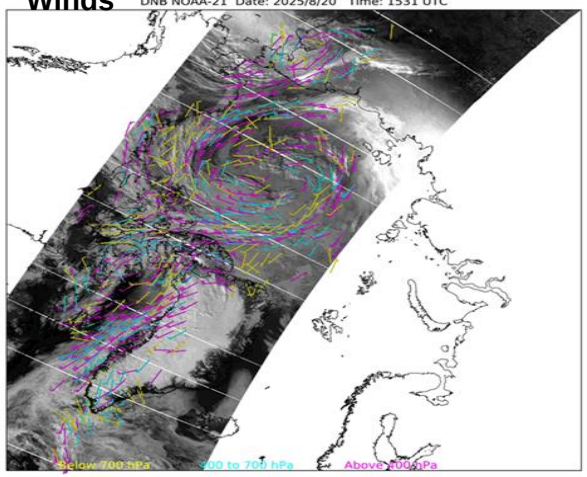


Figure 2. VIIRS polar winds generated from NOAA-21 DNB-NCC imagery over the Arctic at 15031 UTC on August 20, 2025

VIIRS Polar Winds

August 2025

Accomplishments / Events:

- Completed development of a polar winds pre-processing script that handles the selection of S-NPP, NOAA-20, and NOAA-21 granules used for generating a triplet of VIIRS orbital imagery needed to generate the tandem VIIRS polar wind (VPW) product. This script will be delivered to OCS as part of the transition effort to implement the tandem VIIRS for operational implementation Figure 1 shows an example of the tandem VIIRS polar winds generated from overlapping N21, SNPP, and N20 VIIRS M15 band imagery over Antarctica at 00:32 UTC on September 3, 2025.
- Use of the enterprise winds algorithm has been expanded to derive polar winds from NOAA-20 or NOAA-21 over the Arctic by tracking cloud features derived from the VIIRS Near Constant Contrast (NCC) pseudo-albedo product and utilizing the VIIRS Day/Nigh… Band (DNB) for quality control information. Figure 2 shows an example of these … NOAA-21 at 1531 UTC on August 20, 2025

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

1. *Project has completed.*
2. …
3. …*ay over budget.*

Status Delayed Due to Government Shutdown

Milestones	Original Date	…	…	…
Demonstration and validation of Polar "Tandem-Satellite" VIIRS SWIR & LWIR wind datasets over a 4-6 week time period an… them available to NWP Centers				
Incorporate VIIRS DNB (Near-Constant Contrast) updates f… heritage to enterprise winds algorithm in FW2.x				
Develop and validate approaches to generate VIIRS winds f… tandem-satellite pairs of images (enables global coverage)				
Feature tracking QC for VIIRS winds: Investigate scan angle… between successive orbits & impact on VIIRS winds quality; … for parallax				
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Support transition of "Single-Satellite" VIIRS SWIR winds int… operations	Sep 25	Sep 25	In progress	
Begin transition of Tandem-Satellite" VIIRS LWIR and SWIR winds to operations (if funded)	Sep 25	Sep 25	In progress	
Addition of ERA5 analysis to winds team's validation tool set	Sep 25			
Deliver enterprise winds algorithm updates, as needed			In progress	
Dev and testing of minor algorithm updates as needed. Continued monitoring and validation of VPW winds;	Sep 25		In progress	

…P-N20) VIIRS Polar

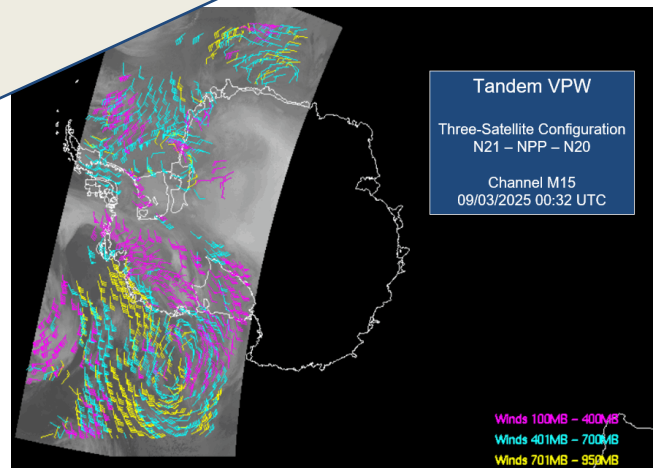

Figure 1. Tandem VIIRS polar winds generated from overlapping N21, SNPP, and N20 VIIRS M15 band imagery over Antarctica at 00:32 UTC on September 3, 2025

VIIRS NOAA-21 DNB-NCC Polar Winds

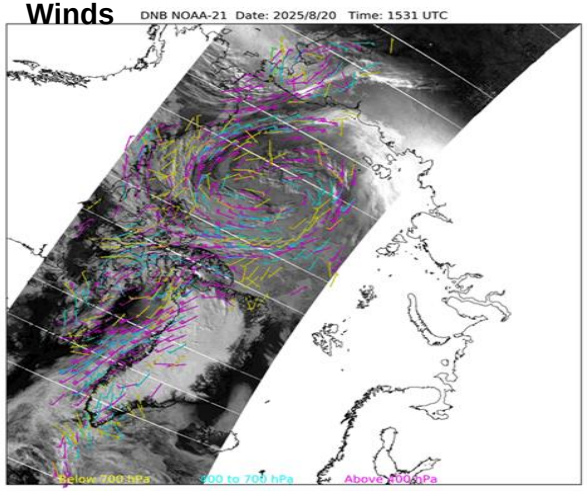

Figure 2. VIIRS polar winds generated from NOAA-21 DNB-NCC imagery over the Arctic at 15031 UTC on August 20, 2025

VIIRS SDR

October 2025

Accomplishments / Events:

- Examined NOAA-21 VIIRS data acquired around the instrument safe mode anomaly on 10/1/2025: Post-anomaly analysis confirmed return to the nominal product quality for VIIRS SDR radiometry and geolocation; After concerns voiced by NASA VCST, further investigated NOAA-21 VIIRS DC Restore (DCR) behavior after the recent anomalies on 9/18/2025 and 10/1/2025; Additional discussions with OSPO and RTX revealed that the multiple versions of the onboard table ID 14 (82 K vs. 80 K) caused the unexpected DCR behavior (resolved after the correct table ID 14 was uploaded by OSPO on 10/10/2025)
- After downloading the required VIIRS SDR product files from DP-AE and NODD, compared values generated on DP-AE with the ADR-11192 code change and on DP-OE (IDPS ops) without the change: verified correct implementation of the code change
- Generated, tested and delivered for deployment in the IDPS operations the updated NOAA-21, NOAA-20, and S-NPP VIIRS SDR DNB DN0 and GAIN-RATIOS LUTs that were created based on data acquired during the new moon on 10/21/2025

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
J4 VIIRS SDR initial prelaunch LUTs delivery	Dec-25			
Implement TSIS-2 full solar spectrum for JPSS-3/-4 VIIRS	Mar-26			
NCCF-based CPM V2 geolocation validation tool deployed	Mar-26			
VIIRS SDR AI/ML training ready datasets over cal. sites	Jun-26			
“Monthly” VIIRS lunar calibration predictions and analyses	Jul-26			
Cross-calibration between VIIRS and METimage	Sep-26			
VIIRS Sensor Library	Sep-26			
Analysis of J4 Satellite Ambient & TVAC JCT data	Sep-26			
J4 VIIRS SDR simulation to support EDR algorithm testing	Sep-26			

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

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2. *Project is within budget, scope and on schedule.*
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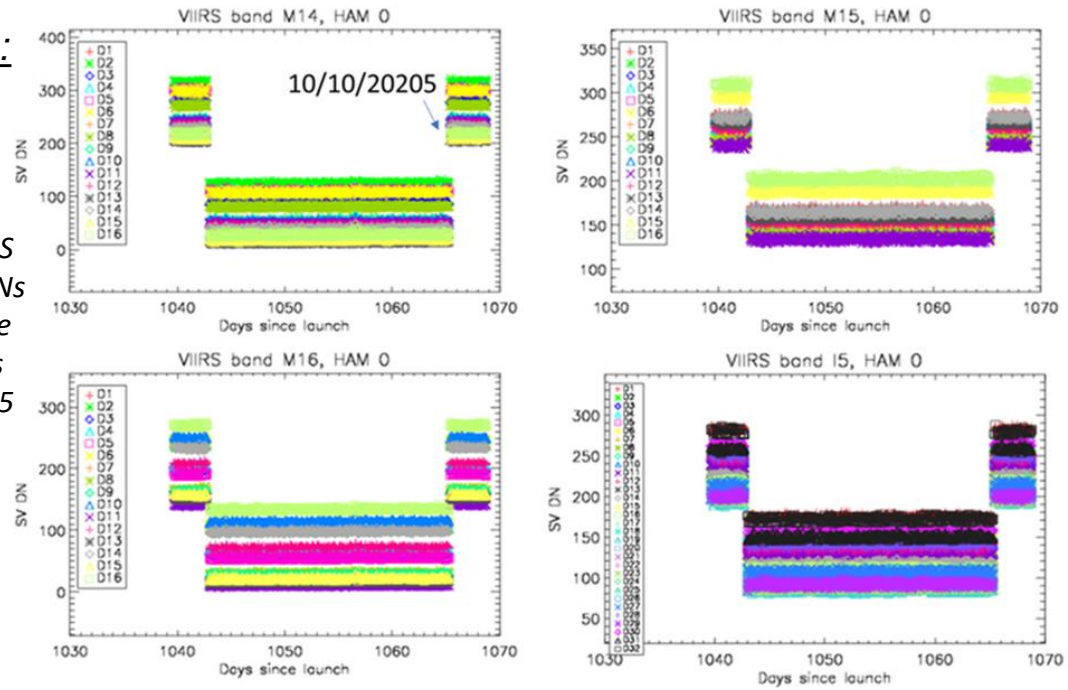
Issues/Risks:

Highlights:

NOAA-21 VIIRS Space View DNs restored to the nominal levels on 10/10/2025



VOLCAT/Volcanic Ash

October 2025

Accomplishments / Events:

- VOLCAT will replace the JPSS Volcanic Ash EDR upon successful transition to NOAA operations within NCCF. The VOLCAT team will continue to support JPSS Volcanic Ash EDR until it is retired.
- The VOLCAT team has previously reported on an improved methodology for VIIRS-based ash plume detection utilizing a random forest approach. This research continues; the RF method demonstrates higher skill scores than the current VOLCAT methodology. The VOLCAT team is investigating how additional predictors (e.g., usage of combination of 3.9 and 11µm channels) might improve version 2 of RF relative to version 1. The figure to the right shows an example of a RF ash plume detection that the current VOLCAT methodology missed. At this point, further research is needed as inclusion of new metrics has lead to too great a reduction in detection rates, one possibility might be need to increase training sample sizes.
- The VOLCAT team is also working on quantifying impact of usage of VIIRS I-bands in the VOLCAT ash height retrieval algorithm. An update will be provided when this work is complete.

Overall Status:

	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		x			
Schedule		X			

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Issues/Risks:

Milestones	Original Date	Forecast Date	Actual Completion	Variance Explanation
Version 2 of improved ML approach for ash plume detection	June 2026	June 2026		
Assessment of VOLCAT performance relative to EDR	August 2026	August 2026		

Highlights:

An example of a small ash plume (pink plume in the red oval) from the Fuego volcano (June 2025; S-NPP VIIRS). This ash plume was detected by the RF approaches but not detected by the current VOLCAT methodology.