



NOAA JPSS Monthly Program Office

AMP/STAR FY19 TTA

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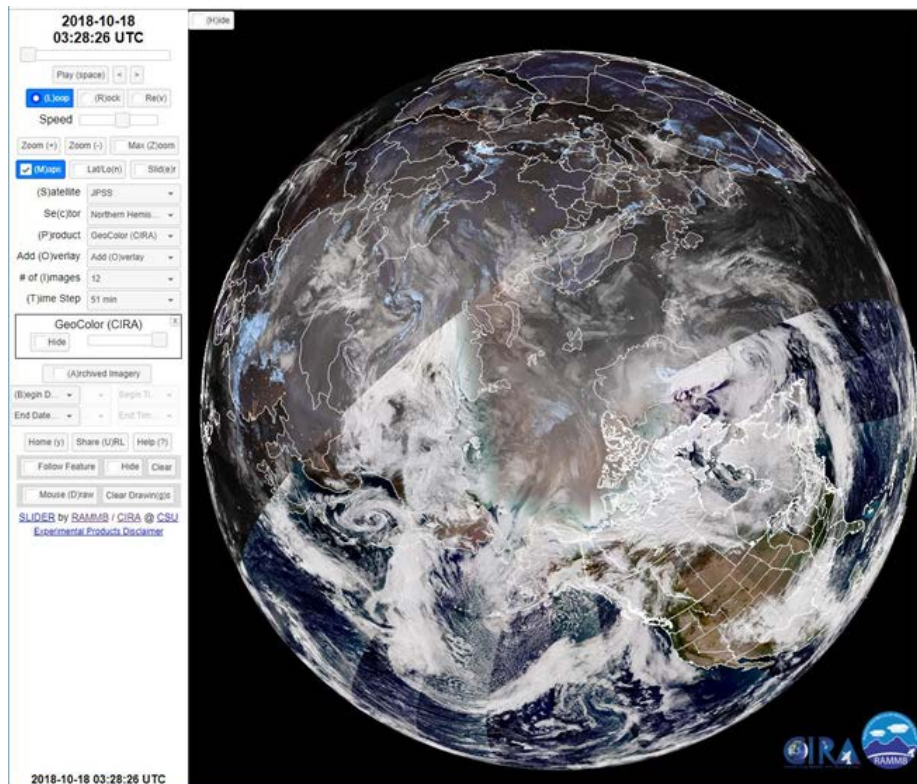
October N20 Cal Val Maturity Review

On October 2, STAR JPSS hosted a cal val maturity review for N20 products scheduled to reach maturity milestones in September and October. The results overall were encouraging with most presented products being recommended for the requested maturity.

The review panel determined that the CrIS SDR product has reached validated maturity. Continuing a trend seen with VIIRS and ATMS, NOAA-20 CrIS SDR reached validated maturity more than a year faster than the Suomi NPP version.

The panel found that the NUCAPS ozone and carbon monoxide products as well as NUCAPS outgoing longwave radiation were provisional level. Carbon dioxide and methane were recommended to remain beta.

The panel also found that VIIRS Polar Winds, and a suite of Clouds products were also recommended for Provisional Maturity. The cryosphere EDRs were recommended to remain beta.



Polar SLIDER unveiled

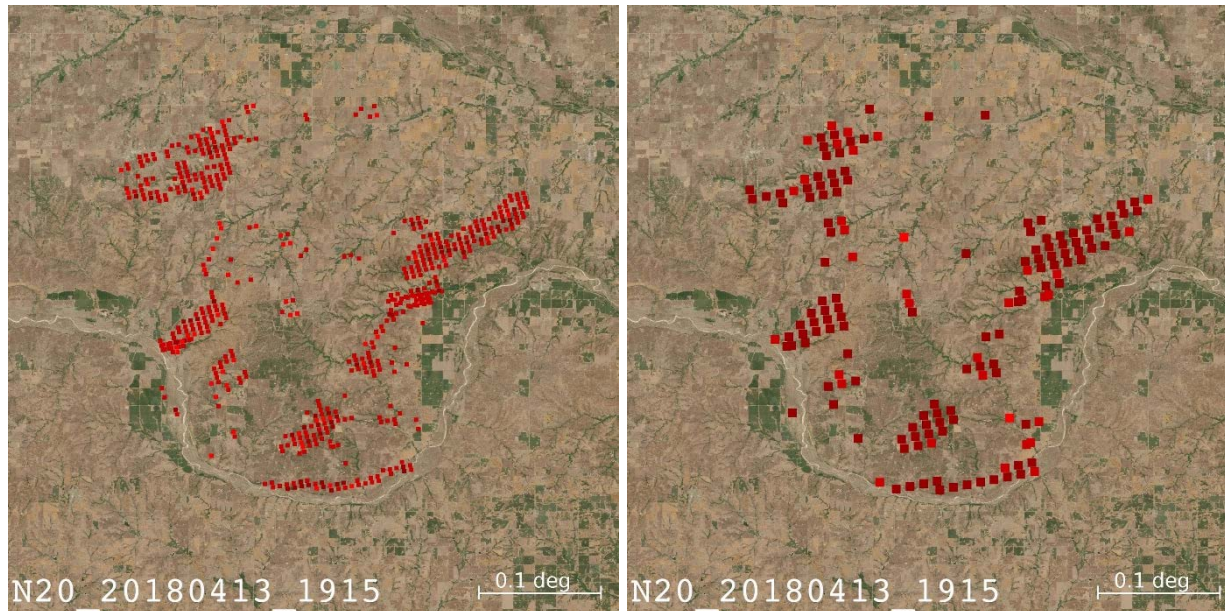
CIRA has created a new website tool – Polar SLIDER for viewing JPSS imagery over the poles. The tool, adapted from a viewer for GOES-R, allows users to see VIIRS SDR band imagery and selected EDR products as animations at both poles.

Highlights from the Science Teams

Participation in FIREX-AQ Field Campaign Planning Workshop

The NASA-NOAA field campaign to study Fire Influence on Regional to Global Environments and Air Quality (FIREX-AQ) will take place in summer 2019. STAR scientists Shobha Kondragunta and Ivan Csiszar contributed in the planning workshop that took place on October 24-26, 2018. STAR contributions included information briefing on fire and aerosol products from VIIRS and ABI in near real time for flight planning and post mission data analysis.

The fire products will not only be used in imagery format but also as input to the aerosol forecast models that predict smoke plume location and transport; aircrafts (DC-8 and ER-2) carrying instruments can fly over areas with fires/smoke plumes to make measurements.



Active Fires COMET module

The STAR Active Fire team has been participating in the development of a case study for a COMET training module on satellite fire capabilities. The case study focuses on the Rhea fire in Oklahoma in April 2018. The team is providing M-band and I-band products that are part of the suite of information available for analysts and decision makers.

The figure on the right shows I-band (left) and M-Band (right) imagery for the case study in question.

The I-band is a new product that provides higher resolution and thus picks up smaller fires.

Asia-Oceania Meteorological Satellite Users' Conference

STAR JPSS Program Manager Lihang Zhou attended the 9th Asia-Oceania Meteorological Satellite Users' Conference, which was held in Jakarta, Indonesia, on 6-11 October, 2018. The major objective of the conference is promoting satellite observations and advancing application areas, with a focus on regional issues; updating users of recent advances in remote sensing science; and fostering the dialogue between satellite operators and the user community on current and future satellites.

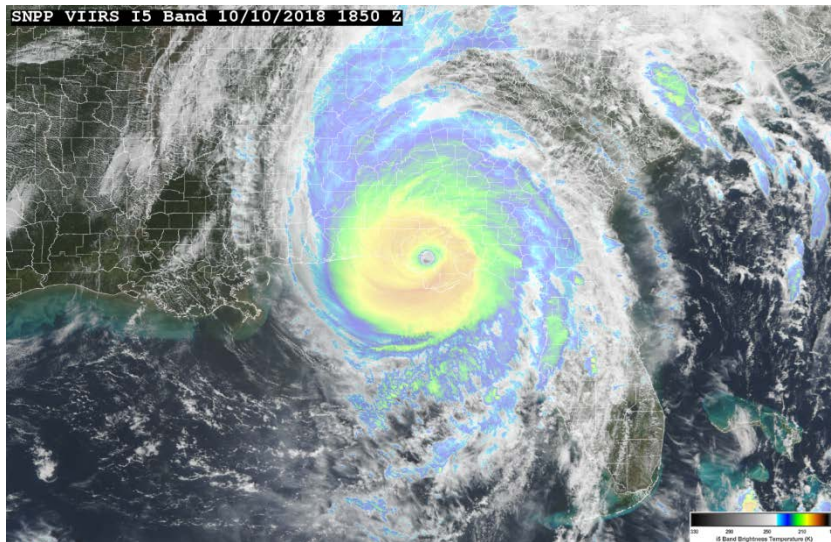


Figure. VIIRS I5 band overlaid on the true color imagery of Hurricane Michael at landfall on Oct 7.

New Papers Published

The STAR VIIRS SDR team members published an IEEE TGRS paper entitled “Improving the Calibration of Suomi NPP VIIRS Thermal Emissive Bands during Blackbody Warm-Up/Cool-Down”. The paper analyzed Suomi NPP VIIRS TEB calibration biases during blackbody warm-up/cool-down (WUCD) and presented the implementation and evaluation of two WUCD bias correction methods.

A paper entitled “New generation of U.S. satellite microwave sounder achieves high radiometric stability performance for reliable climate change detection” has been published by Science Advances on October 17, 2019.

Direct comparison of temperature anomalies between Suomi NPP ATMS and Aqua AMSU-A shows that both instruments have achieved absolute stability in the measured atmospheric temperatures within 0.04 K per decade. This uncertainty is small enough to allow reliable detection of the temperature climate trends and help to resolve debate on relevant issues.

Accomplishments

- CrIS SDR reached Validated Maturity (review date: 10/2/2018, effective date: 8/14/2018 with EngPK v115 upload)
- VIIRS SDR delivered JPSS-2 Pre-launch sensor characterization report on 10/1/2018
- OMPS SDR DAP (CCR4137/ADR8617: OMPS NM/NP Mismatch for FOVs) delivered to DPES on 11/1/2018; Re-delivered the package on 11/6/2018

- NOAA-20 SST (ACSPO v2.60) operational 11/6/2018
- VIIRS 1km Vegetation Health Products ORR: 10/3/2018

- The new VIIRS Annual Surface Type 2017 (AST2017) is ready for users at the FTP site:
 - Sinusoidal projection:
ftp://ftp.star.nesdis.noaa.gov/pub/smcd/JPSS/VIIRS-AST/S-NPP_VIIRS_GST_IGBP_2017.zip
 - Lat/long projection:
ftp://ftp.star.nesdis.noaa.gov/pub/smcd/JPSS/VIIRS-AST/S-NPP_VIIRS_GST_IGBP_2017_30arcsec.zip

- Science team delivered updated VIIRS Surface Type ATBD on 10/5/2018

- Gridded L3 Land products CDR: 10/23/2018

- Algorithm checking/testing for upcoming GFS FV3 Model Upgrade
 - ASSISTT team finished test runs for impact evaluation of the new FV3 GFS to VIIRS products (Aerosol, Clouds, Cryosphere, Volcanic Ash, LST/LSA, Polar Winds, Surface Reflectance), provided comparisons results to science teams.
 - Got the feedback from science teams
 - JSTAR submitted updated GFS testing summary report to AMP

- JSTAR submitted Block 2.1 Mx4 SOL deploy regression review/checkout report to AMP (10/18/2018)

Accomplishments – JPSS Cal Val Supports

- NOAA-20/S-NPP Operational Calibration Support:
 - S-NPP Weekly OMPS TC/NP Dark Table Updates: 10/02/18, 10/10/18, 10/16.18, 10/23/18, 10/30/18
 - NOAA-20 Weekly OMPS TC/NP Dark Table Updates: 10/02/18, 10/10/18, 10/16.18, 10/23/18, 10/30/18
 - S-NPP Bi-Weekly OMPS NP Wavelength & Solar Flux Update: 10/10/18, 10/23/18
 - NOAA-20 Monthly VIIRS StrayLight LUTs Update: 10/16/18
 - S-NPP Monthly VIIRS LUT Update of DNB Offsets and Gains: 10/16/18
 - NOAA-20 Monthly VIIRS LUT Update of DNB Offsets and Gains: 10/16/18

- September/October Monthly NOAA-20 Calibration/Validation Maturity Readiness Review (10/2/2018):
 - Validated Maturity:
 - CrIS SDR
 - Provisional Maturity:
 - OMPS Ozone V8TOz EDR
 - VIIRS Polar Winds
 - Cloud Mask, Cloud Phase/Type, Cloud Top Height/Pressure/Temperature, Cloud Base Height
 - Cryosphere Products: Ice Surface Temperature, Sea Ice, Snow Cover (Binary Map/Fraction)
 - NUCAPS Products: Ozone, CO, CO₂, CH₄, OLR

- JPSS Transition to Operations Project Milestones
 - VIIRS Veg Health Products ORR (10/3)
 - VIIRS Gridded Land Products CDR (10/23)
- S-NPP and N20 Operations:
 - The new CommonCM successfully transitioned to operations on 10/31, and AMP/STAR operations transitioned smoothly.
- J2+ and Segment 3 efforts:
 - AMP (B Guenther, C Rossiter) participated in the JPSS-2 OMPS Pre-environmental Review (PER) on
 - AMP (T Ibronke) completed an assessment of the Mission Unique Products (MUPs) list and Block 2.2 Software Requirements Specifications (SRS). The assessment was completed on the SRSs to removed non-MUPs requirements. The MUPs list was reviewed to ensure all essential product and data were specified within. Upon completion the assessment was sent to ground and IDPS personnel.
- Other
 - International Cloud Working Group Meeting:
The International Cloud Working Group (ICWG), co-chaired by Andy Heidinger, met Oct 29 - Nov 1, 2018 in Madison, Wisconsin on the campus of the University of Wisconsin. The ICWG is one of several working groups which report to the Coordination Group for Meteorological Satellites (CGMS). Over 80 scientists attended the second meeting of the ICWG and included representative from Europe, Asia, North America and Australia. AMP members, B Reed and J Weinrich, gave oral presentations at the ICWG on the topics of the JPSS Enterprise Algorithms Migration to CSPP and JPSS Aviation Initiative, respectively.

Upcoming Cal/Val Maturity Reviews

–November, 2018 (11/27/2018):

- Beta Maturity: Ocean Color
- Provisional Maturity: Surface Reflectance, Volcanic Ash, Cloud (DCOMP/NCOMP)

–December, 2018:

- Provisional Maturity: Land Surface Temperature, Surface Albedo, OMPS Ozone (V8Pro)

–February, 2019

- Provisional Maturity: Green Vegetation Fraction, Vegetation Index, Vegetation Health

–March, 2019

- Provisional Maturity: Ocean Color, Snow Fall Rate
- Validated Maturity:
 - OMPS (TC & NP) SDR
 - OMPS Ozone (V8TOz)
 - Cloud Products (ECM, Cloud Phase/Type, ACHA, CBH, DCOMP, NCOMP)
 - Aerosol Products (Aerosol Optical Depth, Aerosol Detection)
 - Volcanic Ash
 - VIIRS Polar Winds

–April, 2019

- Provisional Maturity: Cryosphere Snow & Ice Products, NUCAPS (CO₂, CH₄)
- Validated Maturity: Sea Surface Temperature, OMPS Ozone (V8Pro)

- JSTAR Code/LUT Deliveries:

- DAP to DPES:

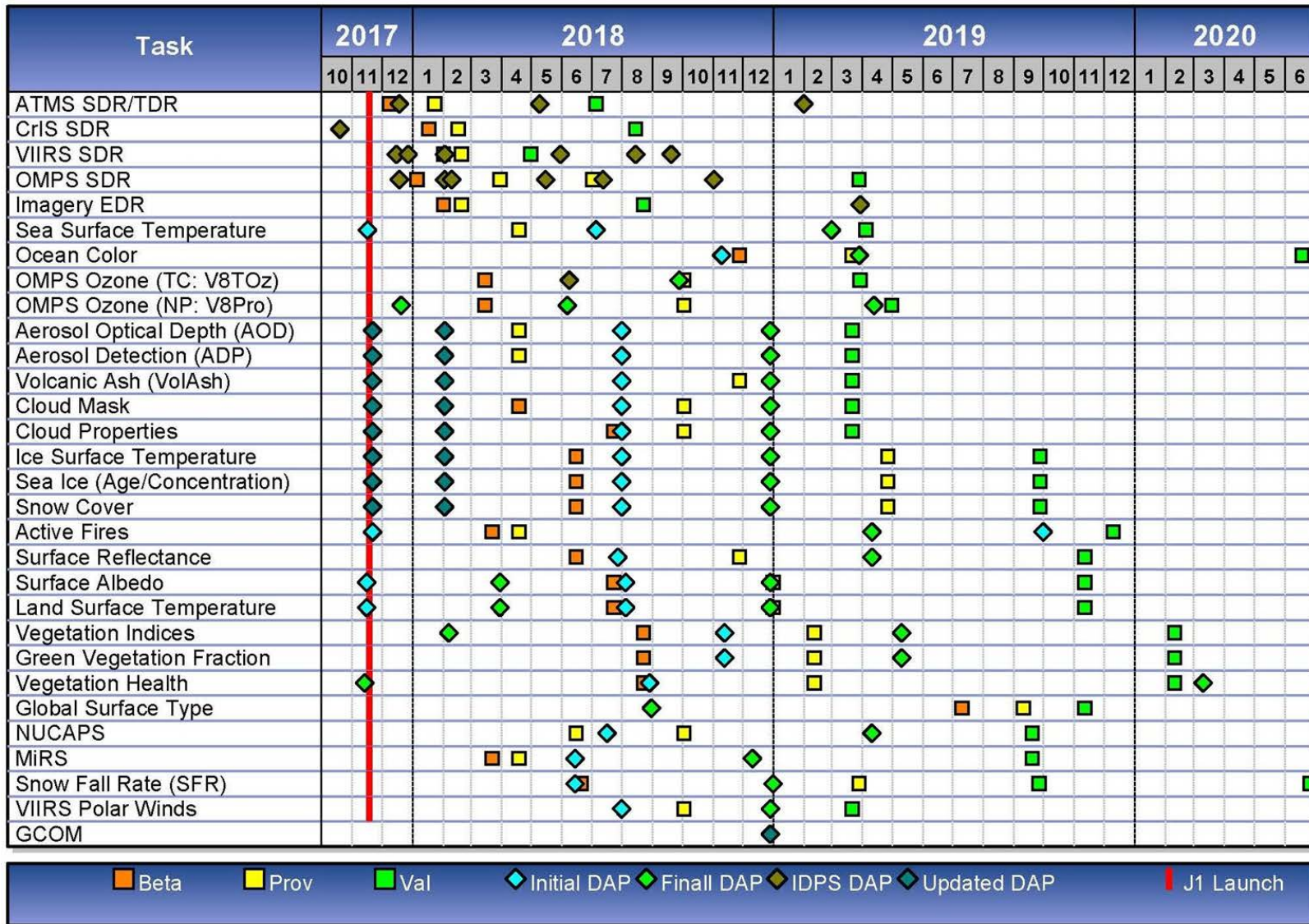
- Nov-18: OMPS NP Transient Smear Correction (ADR8709)
 - Nov-18: CrIS Turn off Spike detection and Correction Algorithm (ADR8819)
 - Nov-18: VIIRS GEO Code Change (ADR8788)
 - Dec-18: Update NOAA-20 OMPS Calibration Tables (ADR8816)
 - Dec-18: VIIRS Remove COEFF-A and COEFF-B LUTs (ADR8785)
 - Dec-18: CrIS Polarization correction (ADR8760)
 - Jan-19: ATMS reflector emissivity correction (ADR8632)

- NOAA-20 Algorithm DAP to NDE:

- Nov-18: Ocean Color, Vegetation Index, Green Vegetation Fraction – Init DAP
 - Dec-18: EPS algorithms (Clouds, Cryosphere, Aerosol, Volcanic Ash, LST/LSA) – final DAP
 - Dec-18: VIIRS Polar Winds – final DAP
 - Dec-18: MiRS/SFR – final DAP

JPSS Schedule

STAR JPSS Schedule: TTA Milestones





FY19 STAR JPSS TTA Milestones

| FY19 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|-------------------------------------------------------------------|---------------|---------------|------------------------|----------------------|
| Algorithm Updates DAPs/LTM | | | | |
| ATMS TDR/SDR: Reflector emissivity correction (code & PCT update) | Sep-19 | Sep-19 | | |
| CrIS SDR: Polarization correction algorithm implementation | Sep-19 | Sep-19 | | |
| VIIRS SDR: J2 Pre-launch sensor characterization report | Oct-18 | Oct-18 | 10/01/18 | |
| VIIRS SDR: GEO parameter side dependence | Mar-19 | Mar-19 | | |
| OMPS SDR: J2 Pre-launch sensor characterization report | Jun-19 | Jun-19 | | |
| NOAA-20 EDR Final DAPs (JRR, SST) | Jun-19 | Jun-19 | | |
| NOAA-20 EDR Final DAPs (MIRS, NUCAPS) | Sep-19 | Sep-19 | | |
| AST18 (Annual Surface Type) | Sep-19 | Sep-19 | | |
| Updated GCOM/AMSR-2 GAASP package deliver to NDE | Jul-19 | Jul-19 | | |
| ICVS-Application Website (Severe Weather Watch with JMAPPER) | Sep-19 | Sep-19 | | |



FY19 STAR JPSS TTA Milestones

| FY19 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|-----------------------------------------------------------------|---------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| NOAA-20 Cal/Val | | | | |
| Validated Maturity: NOAA-20 CrIS SDR | Oct-18 | Oct-18 | 10/02/18 (Review Date) 08/14/18 (Effective Date) | |
| Validated Maturity: NOAA-20 OMPS SDR | Dec-18 | Dec-18 | | |
| Provisional Maturity: NOAA-20 EDR Products (JRR/VPW/Trace Gas) | Oct-18 | Oct-18 | 10/02/18: Provisional Maturity: Cloud Mask, Cloud Phase/Type, Cloud Height (CTT/CTP/CTH), Cloud Base Height, Polar Winds, NUCAPS (Ozone/CO/OLR), OMPS Ozone (V8TOz) | |
| Provisional Maturity: NOAA-20 EDR Products (LST/LSA/Vegetation) | Mar-19 | Mar-19 | | |
| Provisional Maturity: NOAA-20 EDR Products (OC) | Apr-19 | Apr-19 | | |
| Validated Maturity: NOAA-20 EDR Products (JRR/VPW) | Jun-19 | Jun-19 | | |
| Validated Maturity: NOAA-20 EDR Products (SST) | Jun-19 | Jun-19 | | |
| Validated Maturity: NOAA-20 EDR Products (MIRS, NUCAPS) | Sep-19 | Sep-19 | | |



FY19 STAR JPSS TTA Milestones

| FY19 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|------------------------------------------------------------|---------------|---------------|--------------------------------------------------|----------------------|
| Operational Support | | | | |
| S-NPP: Weekly OMPS TC/NP Dark Table Updates | Weekly | Weekly | 10/02/18, 10/10/18, 10/16.18, 10/23/18, 10/30/18 | |
| S-NPP: Bi-Weekly OMPS NP Wavelength & Solar Flux | Bi-Weekly | Bi-Weekly | 10/10/18, 10/23/18 | |
| S-NPP: Monthly VIIRS LUT update of DNB Offsets and Gains | Monthly | Monthly | 10/16/18 | |
| NOAA-20: Weekly OMPS TC/NP Dark Table Updates | Weekly | Weekly | 10/02/18, 10/10/18, 10/16.18, 10/23/18, 10/30/18 | |
| NOAA-20: Monthly VIIRS LUT update of DNB Offsets and Gains | Monthly | Monthly | 10/16/18 | |
| NOAA-20: Monthly VIIRS Stray Light LUT Update | Monthly | Monthly | 10/16/18 | |



FY19 STAR DAP and JPSS PSDI Milestones

| S-NPP Enterprise Algorithms | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|-------------------------------------------------------------------------------------|---------------|---------------|------------------------|------------------------------|
| S-NPP: Enterprise Processing System (Aerosol, Volcanic Ash, Clouds, and Cryosphere) | | | | |
| -- Final DAP | Nov-17 | -- | 11/21/17 | Completed |
| S-NPP: Vegetation Indices | | | | |
| -- Initial DAP | Jan-18 | -- | 6/17/18 | Completed |
| -- Final DAP | Jan-18 | -- | 2/6/18 | Completed |
| -- Delta DAP | Jan-18 | -- | 3/15/18 | Completed |
| -- Operations | Aug-17 | -- | 9/26/18 | Completed |
| S-NPP: Land Surface Temperature and Land Surface Albedo | | | | |
| -- Initial DAP | Feb-18 | -- | 11/15/17 | Passed Code Review: Feb-2018 |
| -- Final DAP | Feb-18 | -- | 4/2/18 | Completed |
| -- ORR | May-18 | Nov-18 | | |
| -- Operations | Jul-18 | Nov-18 | | |
| S-NPP: Vegetation Health (VH-1km) | | | | |
| -- Initial DAP | Nov-17 | -- | 11/13/17 | Completed |
| -- Final DAP | Nov-17 | | 11/13/17 | Completed |
| -- ORR | Nov-17 | -- | 10/05/18 | Completed |
| -- Operations | Dec-17 | Nov-18 | | |
| S-NPP: Vegetation Health (VH-4km) | | | | |
| -- Final DAP | Nov-17 | -- | 11/13/17 | Completed |
| -- ORR | Nov-17 | -- | 10/05/18 | Completed |
| -- Operations | Dec-17 | Nov-18 | | |



FY19 STAR DAP and JPSS PSDI Milestones

| S-NPP Enterprise Algorithms | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|------------------------------------|---------------|---------------|------------------------|-------------------------------------------|
| S-NPP: ATMS Snowfall Rate | | | | |
| -- Final DAP | Jun-18 | -- | 06/14/18 | Completed |
| -- CDR | Dec-18 | -- | 6/20/2018 | Completed |
| -- SCR | Jan-19 | -- | 6/20/2018 | Completed |
| -- ARR | Feb-19 | -- | 6/20/2018 | Completed |
| -- ORR | Apr-19 | Nov-19 | | Dates are dependent on NDE implementation |
| -- Operations | Jun-19 | Dec-19 | | |
| S-NPP: OMPS Limb Profiler Products | | | | |
| -- Initial DAP | TBC | TBC | | |
| -- Final DAP | TBC | TBC | | |
| -- EDR and SDR ORR | Dec-16 | Jan-19 | | |
| -- Operations | Mar-17 | Feb-19 | | |



FY19 STAR DAP and JPSS PSDI Milestones

| NOAA-20 Algorithms | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|-----------------------------------|---------------|---------------|------------------------|------------------------|
| NOAA-20: ACSPO SST | | | | |
| -- CDR | Oct-16 | -- | 10/27/16 | Completed |
| -- Initial DAP | Nov-17 | -- | 11/16/17 | Completed |
| -- Final DAP | Jul-18 | -- | 7/5/18 | Completed |
| -- SCR | Aug-18 | -- | Waived | Waived |
| -- ORR | Mar-19 | -- | Waived | Waived |
| -- Operations | Apr-19 | -- | 11/6/18 | Completed |
| NOAA-20: Active Fires | | | | |
| -- Initial DAP | Oct-18 | -- | 11/21/17 | Completed |
| -- Final DAP | Oct-18 | -- | 11/21/17 | Completed |
| NOAA-20: OMPS Ozone: V8TOS | | | | |
| -- Initial DAP | Jun-18 | -- | 06/01/18 | Completed |
| -- Final DAP | Jun-18 | -- | 06/01/18 | Completed |
| -- ORR | Jul-18 | Dec-18 | | |
| -- Operations | Aug-18 | Jan-19 | | |
| NOAA-20: OMPS Ozone: V8TOz | | | | |
| -- Initial DAP | Jun-18 | -- | 05/04/17; 06/08/18 | Completed (v3r0; v3r1) |
| -- Final DAP | Jun-18 | -- | 09/27/18 | Completed (LUT only) |
| -- ORR | Jul-18 | Dec-18 | | |
| -- Operations | Aug-18 | Jan-19 | | |
| NOAA-20: OMPS Ozone: V8Pro | | | | |
| -- Initial DAP | Jun-18 | -- | 06/02/17 | Completed (v3r0) |
| -- Final DAP | Apr-19 | -- | 06/06/18 | Completed (v3r2) |
| -- ORR | Jul-18 | Jan-19 | | |
| -- Operations | Aug-18 | Feb-19 | | |



FY19 STAR DAP and JPSS PSDI Milestones

| NOAA-20 Algorithms | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|-------------------------------------------|---------------|---------------|------------------------|----------------------|
| NOAA-20: MiRS | | | | |
| -- CDR | Oct-16 | -- | 10/27/16 | Completed |
| -- Initial DAP | Aug-18 | -- | 06/14/18 | Completed |
| -- SCR | Jun-18 | -- | 6/1/18 | Completed |
| -- ARR | Sep-18 | -- | 4/18/18 | Completed |
| -- Final DAP | Dec-18 | Dec-18 | | |
| -- ORR | Feb-19 | Feb-19 | | |
| -- Operations | Mar-19 | Mar-19 | | |
| NOAA-20: NUCAPS including CrIS OLR | | | | |
| -- CDR | Oct-16 | -- | 10/27/16 | Completed |
| -- Initial DAP | Aug-18 | -- | 07/16/18 | Completed |
| -- SCR | Aug-18 | Nov-18 | | |
| -- ARR | Sep-18 | Apr-19 | | |
| -- Final DAP | Apr-19 | Apr-19 | | |
| -- ORR | Jun-19 | Jun-19 | | |
| -- Operations | Jul-19 | Jul-19 | | |
| NOAA-20: Surface Reflectance | | | | |
| -- CDR | Oct-16 | -- | 10/27/16 | Completed |
| -- Initial DAP | Aug-18 | -- | 07/27/18 | Completed |
| -- SCR | Oct-18 | Nov-18 | | |
| -- ARR | Nov-18 | Jan-19 | | |
| -- ORR | Feb-19 | Feb-19 | | |
| -- Final DAP | Apr-19 | Apr-19 | | |
| -- Operations | Jun-18 | Mar-19 | | |



FY19 STAR DAP and JPSS PSDI Milestones

| NOAA-20 Algorithms | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|---------------------------------------------------------------------------------------------|---------------|---------------|------------------------|----------------------|
| NOAA-20: VIIRS Polar Winds | | | | |
| -- CDR | Oct-16 | -- | 10/27/16 | Completed |
| -- Initial DAP | Aug-18 | -- | 07/31/18 | Completed |
| -- SCR | Jul-18 | -- | 07/31/18 | Completed |
| -- Final DAP | Aug-18 | -- | 07/31/18 | Completed |
| -- ARR | Nov-18 | -- | 10/02/18 | Completed |
| -- ORR | Dec-18 | Dec-18 | | |
| -- Operations | Feb-19 | Feb-19 | | |
| NOAA-20: Enterprise Processing System :Aerosol, Volcanic Ash, Clouds, and Cryosphere | | | | |
| -- Initial DAP | Aug-18 | -- | 07/31/18 | Completed |
| -- CDR | Oct-16 | -- | 10/27/16 | Completed |
| -- SCR | Mar-18 | -- | 10/25/18 | Completed |
| -- ARR | Aug-18 | Nov-18 | | |
| -- Final DAP | Jan-19 | Jan-19 | | |
| -- ORR | Aug-18 | Feb-19 | | |
| -- Operations | Oct-18 | Apr-19 | | |
| NOAA-20: Enterprise Processing System: Global Gridding LST, and LSA | | | | |
| -- Initial DAP | Aug-18 | -- | 08/04/18 | Completed |
| -- CDR | Mar-18 | -- | 10/22/18 | Completed |
| -- TRR | Jul-18 | Jan-19 | | |
| -- SCR | Sep-18 | Mar-19 | | |
| -- ARR | Dec-18 | Jun-19 | | |
| -- Final DAP | Jan-19 | Jan-19 | | |
| -- ORR | Mar-19 | Jul-19 | | |
| -- Operations | Jun-19 | Sep-19 | | |



FY19 STAR DAP and JPSS PSDI Milestones

| NOAA-20 Algorithms | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|-------------------------------------------|---------------|---------------|------------------------|----------------------|
| NOAA-20: Vegetation Health | | | | |
| -- CDR | Oct-16 | -- | 10/27/16 | Completed |
| -- Initial DAP | Aug-18 | -- | 08/28/18 | Completed |
| -- SCR | Oct-18 | -- | | Completed |
| -- ARR | Feb-19 | Feb-19 | | |
| -- Final DAP | Mar-20 | Mar-20 | | |
| -- ORR | Apr-19 | May-19 | | |
| -- Operations | May-19 | Jun-19 | | |
| NOAA-20: Green Vegetation Fraction | | | | |
| -- Initial DAP | Nov-18 | Nov-18 | | |
| -- Final DAP | May-19 | May-19 | | |
| -- CDR | Oct-16 | - | 10/27/16 | Completed |
| -- SCR | Oct-18 | -- | | Completed |
| -- ARR | Feb-19 | Jan-19 | | |
| -- ORR | Apr-19 | Mar-19 | | |
| -- Operations | Jun-19 | Apr-19 | | |
| NOAA-20: Ocean Color | | | | |
| -- Initial DAP | Nov-18 | Nov-18 | | |
| -- Final DAP | Mar-19 | Mar-19 | | |
| -- Updated DAP | Nov-20 | Nov-20 | | |
| -- CDR | Oct-16 | - | 10/27/2016 | Completed |
| -- SCR | Jan-19 | Dec-19 | | |
| -- ARR | Mar-19 | Mar-20 | | |
| -- SRR | Apr-19 | Apr-20 | | |
| -- ORR | Apr-19 | Apr-20 | | |
| -- Operations | Jun-19 | Jun-20 | | |



FY19 STAR DAP and JPSS PSDI Milestones

| NOAA-20 Algorithms | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|-----------------------------------------------------|---------------|---------------|------------------------|----------------------|
| NOAA-20: Vegetation Indices | | | | |
| -- Initial DAP | Nov-18 | Nov-18 | | |
| -- Final DAP | May-19 | May-19 | | |
| -- CDR | Oct-16 | - | 10/27/2016 | Completed |
| -- SCR | Dec-18 | -- | | Completed |
| -- ARR | Feb-19 | Jan-19 | | |
| -- ORR | May-19 | Mar-19 | | |
| -- Operations | Jun-19 | Arp-19 | | |
| NOAA-20: ATMS Snowfall Rate | | | | |
| -- Initial DAP | Jun-18 | -- | 06/14/18 | Completed |
| -- Final DAP | Dec-18 | Dec-18 | | |
| -- CDR | Dec-18 | Dec-18 | | |
| -- SCR | May-19 | Dec-18 | | |
| -- ARR | Jun-19 | Jan-19 | | |
| -- ORR | Aug-19 | Apr-19 | | |
| -- Operations | Oct-19 | May-19 | | |
| NOAA-20: Microwave Tropical Cyclone Products | | | | |
| -- Initial DAP | TBC | TBC | | |
| -- Final DAP | TBC | TBC | | |
| -- CDR | Oct-16 | - | 10/27/2016 | Completed |
| -- SCR | Apr-19 | Apr-19 | | |
| -- ARR | Oct-19 | Oct-19 | | |
| -- ORR | Dec-19 | Dec-19 | | |
| -- Operations | Feb-20 | Dec-20 | | |



FY19 STAR DAP and JPSS PSDI Milestones

| NOAA-20 Blended Product Algorithms | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|---------------------------------------------------|---------------|---------------|------------------------|------------------------------------------|
| NOAA-20: Blended Products Blended Ozone | | | | |
| -- Initial DAP | TBC | TBC | | |
| -- Final DAP | TBC | TBC | | |
| -- SCR | Aug-17 | -- | | At NDE, same code as S-NPP |
| -- ORR | Jul-18 | Dec-18 | | Waiting for V8Pro to achieve Provisional |
| -- Operations | Oct-18 | Jan-19 | | |
| NOAA-20: Blended Products Blended SST | | | | |
| -- Initial DAP | TBC | TBC | | |
| -- Final DAP | TBC | TBC | | |
| -- SCR | Aug-18 | Oct-18 | | awaiting software |
| -- ORR | May-19 | Nov-18 | | |
| -- Operations | Jun-19 | Dec-18 | | |
| NOAA-20: Blended Products Blended Biomass Burning | | | | |
| -- Initial DAP | TBC | TBC | | |
| -- Final DAP | TBC | TBC | | |
| -- SCR | Oct-18 | Nov-18 | | |
| -- ORR | Jun-19 | May-19 | | |
| -- Operations | Jul-19 | Jun-19 | | |
| NOAA-20: Blended Products Blended Snow and Ice | | | | |
| -- Initial DAP | TBC | TBC | | |
| -- Final DAP | TBC | TBC | | |
| -- SCR | Aug-18 | Feb-19 | | |
| -- ORR | May-19 | Apr-19 | | |
| -- Operations | Jun-19 | May-19 | | |



FY19 STAR DAP and JPSS PSDI Milestones

| NOAA-20 Blended/Derived Algorithms | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|----------------------------------------------------------------------------------------|---------------|---------------|------------------------|----------------------|
| NOAA-20: Products Blended Hydro Products | | | | |
| -- Initial DAP | TBC | TBC | | |
| -- Final DAP | TBC | TBC | | |
| -- SCR | Jun-18 | -- | 9/20/2018 | Completed |
| -- ARR/ORR | Dec-18 | Feb-18 | | |
| -- Operations | Jan-19 | Mar-19 | | |
| Enhanced TOAST with S-NPP OMPS Limb Profiles | | | | |
| -- Initial DAP | TBC | TBC | | |
| -- Final DAP | TBC | TBC | | |
| -- CDR | Jan-17 | Feb-19 | | |
| -- SCR | Apr-17 | Feb-19 | | |
| -- ORR | May-17 | Mar-19 | | |
| -- Operations | Jun-17 | Apr-19 | | |
| Upgrade to the Multi-platform Satellite Tropical Cyclone Surface Wind Analysis Product | | | | |
| -- Initial DAP | TBC | TBC | | |
| -- Final DAP | TBC | TBC | | |
| -- PDR/CDR | Dec-17 | -- | 1/26/2018 | Completed |
| -- UTRR | Apr-18 | -- | | Waived |
| -- SCR | May-18 | Sep-19 | | |
| -- ARR | Oct-18 | Nov-19 | | |
| -- ORR | Jan-19 | Feb-20 | | |
| -- Operations | May-19 | Mar-20 | | |



FY19 STAR DAP and JPSS PSDI Milestones

| NOAA-20 Blended/Derived/Other Algorithms | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|---------------------------------------------------------------|---------------|---------------|------------------------|----------------------|
| Upgrades to the ADT Product | | | | |
| -- Initial DAP | TBC | TBC | | |
| -- Final DAP | TBC | TBC | | |
| -- PDR | Jul-17 | -- | 8/23/2017 | Completed |
| -- CDR | Jul-17 | -- | 8/23/2017 | Completed |
| -- SCR | Jun-18 | Dec-18 | | |
| -- ARR | Oct-18 | Feb-19 | | |
| -- ORR | Apr-19 | May-19 | | |
| -- Operations | Jun-19 | Jun-19 | | |
| Microwave and Diurnal Corrected Blended SST w/ AMSR-2 | | | | |
| -- ORR | Nov-16 | ON HOLD | | |
| -- Operations | Nov-16 | ON HOLD | | |
| Product Monitoring Phase IV (JPSS RR, VIIRS AF) | | | | |
| -- Initial DAP | TBC | TBC | | |
| -- Final DAP | TBC | TBC | | |
| -- SRR/ORR | Jun-18 | May-19 | | |
| -- Operations | Jul-18 | Jun-19 | | |
| Product Monitoring VI (NDE J1) | | | | |
| -- Initial DAP | TBC | TBC | | |
| -- Final DAP | TBC | TBC | | |
| -- CDR | Dec-16 | -- | 04/17/18 | Completed |
| -- TRR | Sep-17 | Jul-19 | | |
| -- SCR | Jun-19 | Jul-19 | | |
| -- ORR | Aug-19 | Nov-19 | | |
| -- Operations | Sep-19 | Dec-19 | | |
| Interactive Multisensor Snow and Ice Mapping System V3 | | | | |
| -- dORR | Jul-17 | Nov-18 | | |
| -- Operations | Jan-18 | Jan-19 | | |

JPSS PSDI Risk and Issues Summary

Risk Matrix

| | | | | | | | |
|---------------------------------------|--------|---|----------------|--------------------|-----------------------|-------------------------|---------------------|
| LI KE LI HO OD | >70% | 5 | Yellow | Yellow | Red | Red | Red |
| | 50-70% | 4 | Green | Yellow | Yellow | Red | Red |
| | 30-50% | 3 | Green | Green | Yellow 606 | Yellow | Red |
| | 10-30% | 2 | Green | Green | Yellow | Yellow 281 | Yellow |
| | <10% | 1 | Green | Green | Green | Green | Yellow |
| | | | 1 | 2 | 3 | 4 | 5 |
| | | | Insig-nificant | <1% \$ <5% time | 1-5% \$ 5-10% time | 5-10% \$ 10-20% time | >10% \$ >20 time |
| CONSEQUENCE | | | | | | | |

JPSS PSDI Risk Information

| L x C Trend | Risk # | Rank | Approach | Risk Title |
|-------------|--------|------|----------|-----------------------------------------------------|
| | 606 | 1 | M | Interactive Snow/Ice Product Operational Transition |

Criticality

High

Med

Low

L x C Trend

Increasing (Worsening)

Unchanged

Decreasing (Improving)

Approach

- M – Mitigate
- W – Watch
- A – Accept
- R – Research

JPSS PSDI Issue Summary

| Issue # | Issue Title |
|---------|--------------------------------------------------------------------|
| 602 | Availability of NDE 2.0 development/test system accessible to STAR |

As of: Nov 13, 2018

| Y | 606 | Rank 1 | MITIGATE | DATE | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--------|--------------------------------------------------------------------------------------------------------------|----------|-----------|
| | | | | PLANNED | COMPL |
| RISK STATEMENT | | | APPROACH/PLAN | | |
| If the new version of the Interactive Snow/Ice Product (IMS) does not complete user required output file reformatting development and successful transition to operations, THEN new and enhanced data products will not be realized by the Numerical Weather Prediction (NWP) community. | | | 1. Develop and deliver the GRIB2 reformatting software for the IMS product output. | Mar 2018 | 2-28-2018 |
| | | | 2. Integrate reformatting toolkit with the IMS algorithm on the integration string of the operational system | Jul 2018 | |
| | | | 3. Promote IMS enhanced algorithm to operations | Nov 2018 | |
| | | | | | |
| | | | | | |

STATUS: OPEN

- 7/12/2017: New Risk
- 8/9/2017: No formal schedule has been provided by the project lead on the additional development required to output the ice/snow products in GRIB2. The Satellite Product Managers will reach out to the developers to help define this timeline.
- 9/27/2017: No update
- 10/17/17: STAR (Wolf) has agreed to deliver GRIB2 code that the IMS project needs and Kevin Berberich has agreed to cover the integration work under the SMOMS contract. Expect ORR in 6 months. Vacancy for this position is expected to be filled by the end of the calendar year.
- 12/04/17: Learned NIC is providing funding to previous OSPO PAL (Helfrich) to complete and deliver the IMS V3.
- 12/13/2017: Project lead is expected in a couple months (OSPO offer made to candidate). Learned NIC is providing funding to previous OSPO PAL (Helfrich) to complete and deliver the IMS V3.
- 1/17/18: NIC has hired John Woods to work on snow/ice products. Bonnie and Arron met with him and will work with him to get up to speed.
- 2/14/18: Bonnie met with John Woods late Feb, evaluating current IMS system and users. STAR/ASSISTT developed/delivered the GRIB2 converter tool software in late Feb.
- 3/14/18: John Woods is coming up to speed as the Snow/Ice PAL and Sean Helfrich has agreed to deliver delta ORR by July 2018.
- 4/18/18: John Woods and Sean Helfrich are working towards completing IMS V3 and are preparing for the required delta ORR.
- 5/11/18: Monitoring IMS progress towards delta ORR and Operations.
- 6/20/18: Delta ORR planned for Aug and Operations planned for Sep 2018.
- 7/11/18: No update
- 8/10/18: No update. Schedule from 6/20/18 update is still valid.
- 9/12/18: Spoke with PAL and STAR lead, new date for dORR will be mid-October which will push Operations to November assuming successful dORR. Will keep watching.
- 11/13/18: dORR is scheduled for end of NOV; Operations in Jan 2019

As of: Nov 13, 2018

| R | # 602 | Created: 13 Mar 2017 | DATE | | |
|--------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| PROBLEM/ISSUE | | PROGRAMMATIC IMPACT | ACTION | PLANNED | COMPL |
| Availability of NDE 2.0 development/test system accessible to STAR | | If there is no NDE 2.0 development/test system accessible by STAR (similar to SADIE for NDE 1.0), THEN delivery of DAPs or DAP fixes could be delayed or inefficient resulting in delays to project schedule and delays to getting products to users. | 1. Confirm requirements for development/test system | Oct 2017 | Nov 2017 |
| | | | 2. Investigate with STAR the root causes of short or long delays with integration | Jun 2018 | Jun 2018 |
| | | | 3. Improve communication among JPSS, OSGS, STAR, OSPO. | Jun 2018 | Jul 2018 |
| | | | 4. Investigate interim solutions to mitigate impacts of not having a SADIE-like systems | Jul 2018 | In progress |
| | | | 5. Gather requirements for a SADIE-like system to address STAR and OSPO needs. | Aug 2018 | In progress |
| | | | 6. Put together cost estimate to meet requirements | Sept 2018 | |
| | | | 7. Consult with OSGS, JPSS, and GOES-R if funding is available and worth funding (cost-benefit analysis) | Nov 2018 | |
| SUMMARY ASSESSMENT | | | CURRENT STATUS - | | |
| | Aug | Sep | Oct | <ul style="list-style-type: none"> - 01/2018: Promoted to Issue - 02/14/18: ESPDS agreed to provide a status and summary of functionality of the DEV system after the 30 day test is completed. - 3/8/18: Met with OSGS, OSPO, and STAR on 2/23/2018. OSGS (Bethune) agree to draft requirements and gather ROM and work with JPSS, GOES-R, and OSGS on funding. - 4/18/18: No update - 5/11/18: No update - 6/20/18: Algorithm developers provided impact assessments of the lack of a development environment. - 7/11/18: No update - 8/7/2018: Per Brandon Bethune, the requirements are going through the ESPDS change process now to be baselined and will be part of the development environment tech refresh (build out at NSOF) later this fall. Solers is currently holding meetings with security to define the interface to STAR for and overall security controls which may alter the design. Once this is complete we will have a better schedule for the instantiation of the NSOF dev environment including STAR's access. - 9/12/18: No update - 11/13/18: No update | |
| TECHNICAL | G | G | G | | |
| COST | G | G | G | | |
| SCHEDULE | R | R | R | | |
| BUDGET | G | G | G | | |
| PRO-GRAMMATIC | Y | Y | Y | | |

BACKUP

As of: Nov 13, 2018

| G | 449 | Rank 6 | MITIGATE | DATE | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|--------|----------------------------------------------------------------------------------------|----------|----------|
| | | | | PLANNED | COMPL |
| RISK STATEMENT | | | APPROACH/PLAN | | |
| If solution to the AWIPS DD-PDA issue drives major changes on the NESDIS production/distribution, then operational use of products by NWS will be delayed and NESDIS may be required to fund major upgrades for PDA or NDE. | | | 1. Confirm existing PDA capabilities for Polar Data | Jun 2017 | Jun 2017 |
| | | | 2. Fully understand & document NWS AWIPS requirements for Polar Data | Dec 2018 | |
| | | | 3. Determine if an upgrade to PDA or NDE is necessary to meet NWS needs. | Jun 2019 | |
| | | | 4. Develop new solution. | Aug 2019 | |
| | | | 5. If changes are required on the NESDIS side, seek funding for the approved solution. | Sep 2019 | |

STATUS: OPEN

- 3/1/2017: New Risk
- 4/17/2017: John Evans is continuing to work with NWS, however; progress is slow due to NWS focusing on the distribution of KPPs to AK. Continuing to stay involved in NWS AWIPS DD meetings and John has offered to lead the integrated work team to come to a resolution to the requirement issue. Bi-weekly meetings among JPSS, OSGS, and NWS are to start 6/9.
- 6/14/2017: Started bi-weekly meetings with OSGS and the NWS, goal being to update the ConOps, develop requirements, consider technical solutions, and bring results to management for decision. A timeline for this activity is additionally being developed.
- 7/12: Biweekly meetings continue with a focus on reviewing existing requirements and CONOPs documents(both approved and unapproved) and reviewing the product priority lists from NWS.
- 8/9/2017: Biweekly meetings continue. Clear plans from NWS on dissemination of Alaska KPPs has been developed. Technical subgroups are kicking-off to review product-by-product considerations. It has been noted that because some JPSS products are so small already, no specialized, dynamic tailoring may be necessary (TBC through the subgroups).
- 9/27/2017: Last IWT meeting on 9/22 demonstrated progress in analyzing individual polar products for tailoring needs. Services sub-team also stood-up to investigate possible technical solutions to meeting NWS needs.
- 10/17/17: With both AWIPS-DD development and ESPDS development tightly constrained under current contract / task commitments, progress on new operational capabilities for polar data access has been slow. However, recent technical discussions of a prototype (/ pilot / pathfinder) data service standing in for PDA for polar data have helped to expose possible new opportunities for near-term progress. These include hosting a server in a commercial cloud or the ESPC VTLab (thus not tightly coupled to the operational PDA service), and connecting AWIPS-DD to it as a new data source (to avoid encumbering the current AWIPS-DD task connecting to PDA). An assessment of benefits vs. costs, and a clear tie back to mission requirements, will be necessary for NWS and NESDIS to authorize development effort.
- 11/08/17: No update.
- 12/13/2017: At 12/1 IWT, ESPDS presented current capabilities in PG and the possibility of a web service to meet NWS needs. Work continues to understand NWS needs for polar data and documenting requirements that would then be delivered to OSGS.
- 1/17/2018: JPSS/AMP is nearly ready to submit a CCR to the JPSS Program CCB for a requirements change to meet this need for NWS. This should kick-off an engineering and cost study.
- 2/14/2018: JPSS is not fielding any Level 1 requirements changes at this point. However, JPSS will be requesting a cost estimate from OSGS on some possible short-term and long-term solutions. Once we have the cost estimate and engineering assessment, the SPM will engage with JPSS management on a path forward.
- 3/14/18: No Update
- 4/18/18: No Update
- 5/11/18: J Evans draft NESDIS service requirements at end of April. Expect to share with NWS and OSGS for input by end of June.
- 6/13/18: Interim proposal by John Evans has been discussed at IWT meeting. Will be setting-up meeting with Benjie Spencer to discuss further the long-term planning, requirements, design, and solution.
- 7/11/18: IWT meetings are continuing. Possible implementation approaches were briefed at the JPSS Director's Forum on 7/11/2018. Overall guidance was for the IWT to continue working toward a recommendation, which then needs to be provided to OSAAP for approval/allocation/funding/prioritization.
- 8/9/2018: Near-term solution agreed-to with NWS to request NDE create thinned data products for dissemination to AWIPS. Briefed PGR IPT on 8/7, and follow-up meeting scheduled for later in Aug.
- 9/12/18: No update
- 11/13/18: No update

Color code:

Green:

Completed Milestones

Gray:

Non-FY18 Milestones

Accomplishments / Events:

- Monitor and analyze S-NPP ATMS scan drive main motor current spike and impact on ATMS SDR data
- Discuss the reflector emission correction algorithm, optimal antenna pattern data, and associated PCT format change
- Prepare to reprocess S-NPP SDR simulation using same version of CRTM as NOAA-20 so as to study the double difference results
- Update ADL ATMS SDR code and associated PCT to implement reflector emission correction in TDR
- Test update S-NPP TDR to SDR conversion coefficients

Overall Status:

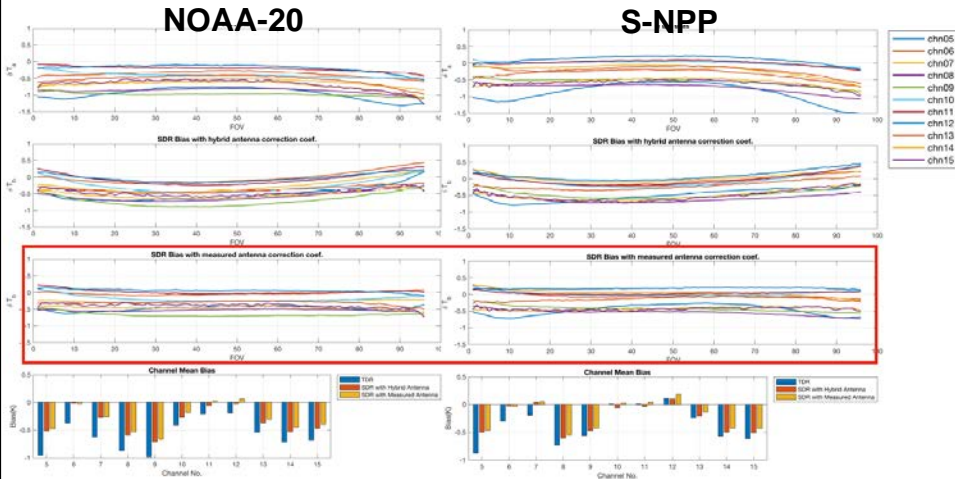
| | Green ¹ (Completed) | Blue ² (On-Schedule) | Yellow ³ (Caution) | Red ⁴ (Critical) | Reason for Deviation |
|--------------------------|-----------------------------------|------------------------------------|----------------------------------|--------------------------------|----------------------|
| 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:

Some recommendations on reflector emission correction update are given by NWP users and NASA flight project. A three-month extension is asked for more testing

Highlights:



Hybrid vs Measured Antenna Pattern Evaluation at Sounding Channels

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | Dec-17 | Dec-17 | 12/08/17 | L+20D |
| Provisional Maturity | Dec-17 | Dec-17 | 01/23/18 | V6 PCT Implemented |
| Validated Maturity | May-18 | May-18 | 07/05/18 | Review 6/15 |
| J1/N20 PCT updates | 10/30/17 (V5, ADR8506/CCR3669) 12/18/17 (V6, ADR8521/CCR3702) 05/09/18 (V7, ADR8458/CCR3916) | | | |
| J1/N20 PCT update (based on the Pitch Maneuver) | Apr-18 | Apr-18 | 05/01/28 | To ASSISTT: 04/26/18 |
| Planned Algorithm Update | | | | |
| SNPP/J1 earth scene reflector emissivity correction in IDPS (PCT & code update) (ASSISTT to DPES AIT) | Jun-18 | Jan-19 | During STAR JPSS Annual Science Conference, ATMS SDR team holds a face-to-face discussion with NWP users. Some recommendations on upcoming reflector emission correction update need longer testing | |

Accomplishments / Events:

- NOAA-20 CrIS SDR Validated Maturity level review was held on 10/2/2018. The NOAA-20 CrIS SDR products were declared "Validated" on 10/24/2018.
- The interferogram spike detection and correction algorithm (SDCA) was implemented operationally on October 3, 2018 as part of the Block 2.1 Mx3. Evaluation of the operational algorithm has indicated that further optimization of the algorithm is needed, since it is not able to properly detect the presence of spike noise within the interferograms. No major impact is expected to be observed in NWP or in the retrieval of soundings using CrIS observations, since only 0.01% of the global data is affected.
- The CRIS SDR team decided to open two new DRs on 10/24/18 in response to the performance of the SDCA: 1) Turning off the spike detection (DR 8819), 2) Perform the optimization of the spike detection algorithm (DR 8820).
- Verified the correct implementation of the CrIS Lunar Intrusion Detection and Correction Algorithm as part of the Block 2.1 Mx4 SOL Review/Checkout. A dataset with a lunar event on 2018-02-25 was used.

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:

- JSTAR CrIS Team is in need of computer resources to perform its activities.
- JSTAR CrIS personnel has decreased from 3.25 to 2 FTE. New personnel is required to support the CrIS activities.
- The geolocation expert, Likun Wang, presented his resignation with effective date on November 19, 2018. Geolocation experience needs to be regained.

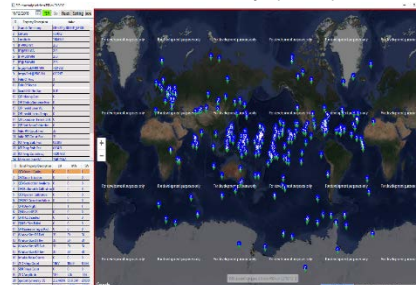
| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------|----------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | Jan-18 | Jan-18 | 01/17/18 | V113 uploaded |
| Provisional Maturity | Feb-18 | Feb-18 | 02/16/18 | V114 uploaded |
| Validated Maturity | Aug-18 | Sep-18 | 10/02/18 | v115 uploaded |
| uploaded Engineering packet update for JPSS-1 operations | 01/05/18 01/18/18 02/16/18 | 01/05/18 01/18/18 02/16/18 | V112: 01/03/18 v113: 01/17/18 V114: 02/16/18 V115: 08/14/18 | |
| RDR generator software package development: (1) STAR NL correction coefficient generator; (2) STAR ILS parameter generator; (3) STAR CITS unpacker to generate level 1a product; (4) STAR CITS geolocation to generate geolocation data; (5) STAR RDR generator | Mar-18 | Jun-18 | 06/29/18 | |
| DAP Deliveries | 10/19/17 (ADR8489,8490,ADR8491/CCR3656) 02/14/18 (ADR8519/CCR3726) 03/06/18 (ADR8629/CCR3851); 03/20/18 (update) 04/05/18 (ADR8653/CCR3908) 04/20/18 (ADR8631/CCR3922) | | | |

Highlights:

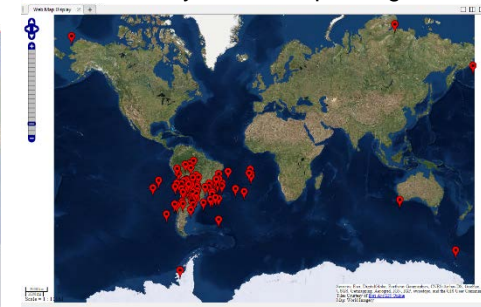
(a) Summary the on-orbit NOAA-20 CrIS FSR SDR performance (blue) against specifications (black).

| Band | Spectral Range (cm ⁻¹) | Resolution (cm ⁻¹) | Number of Channels | NEdN* (mW/m ² /sr/cm ⁻¹) | Frequency Uncertainty (ppm) | Geolocation Uncertainty* (km) | Radiometric Uncertainty @287K BB* (%) | Radiometric Stability @287K BB (%) |
|------|------------------------------------|--------------------------------|--------------------|-------------------------------------------------|-----------------------------|-------------------------------|---------------------------------------|------------------------------------|
| LWIR | 650-1095 | 0.625 | 713 | 0.086 (0.14) | 2 (10) | 0.22 (1.6) | 0.19 (0.45) | 0.27 (0.40) |
| MWIR | 1210-1750 | 0.625 | 865 | 0.0315 (0.084) | 2 (10) | 0.22 (1.6) | 0.21 (0.58) | 0.30 (0.50) |
| SWIR | 2155-2550 | 0.625 | 633 | 0.00766 (0.014) | 2 (10) | 0.22 (1.6) | 0.37 (0.77) | 0.52 (0.64) |

(b) Spatial distribution of CrIS SWIR pixels with "detected" spike noise on 10/12/2018. These pixels are clearly not aligned with the spatial pattern of South Atlantic Anomaly (SAA).



(c) Location of manually inspected pixels containing spike noise. Those cases are clearly aligned with the SAA and were not detected by the CrIS spike algorithm.



Accomplishments / Events:

- Generated and updated offset and gain ratio LUTs for NOAA-20 and S-NPP DNB using new moon calibration data from Oct. 8, 2018
- Generated NOAA-20 DNB stray light correction LUT from Oct. 2018 data
- Published an IEEE TGRS paper entitled “Improving the Calibration of Suomi NPP VIIRS Thermal Emissive Bands during Blackbody Warm-Up/Cool-Down”
- Generated predictions of the NOAA-20 VIIRS lunar calibration opportunities in November 2018 to support roll maneuver planning
- Outlined VIIRS SDR team plans and schedule for developing JPSS-2 LUTs
- Presented a brief overview of operational VIIRS SDR LUT and code changes for NOAA-20 and S-NPP in 2018
- Reanalyzed the latest solar calibration measurements from VIIRS instruments on NOAA-20 and S-NPP

Overall Status:

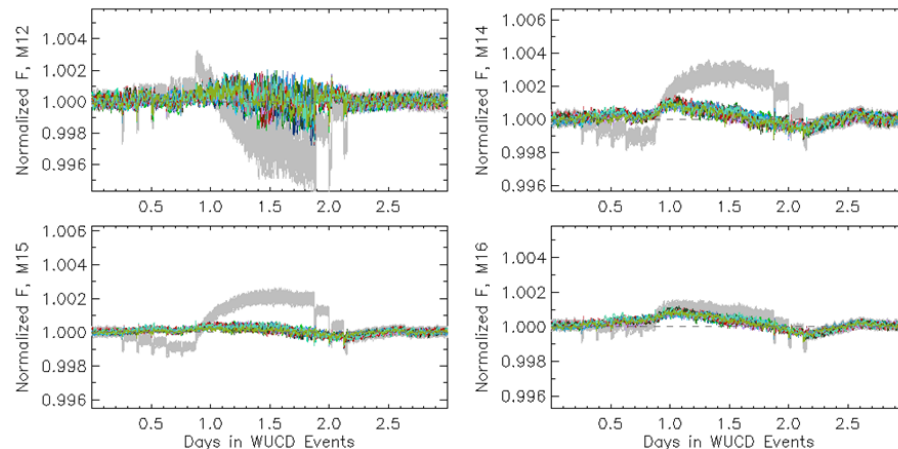
| | Green ¹ (Completed) | Blue ² (On-Schedule) | Yellow ³ (Caution) | Red ⁴ (Critical) | Reason for Deviation |
|--------------------------|-----------------------------------|------------------------------------|----------------------------------|--------------------------------|----------------------|
| 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:



Normalized band averaged F-factor time series before (gray lines) and after L_{trace} correction (colored lines) for WUCD events from September 2012 to December 2016 (each WUCD event shown with a different color)

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Date | Variance Explanation |
|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|----------------------|
| N20 Post-Launch Cal/Val | | | | |
| 1st set of LUT updates for operations | Dec '17 | Dec '17 | 12/27/17 | CCR 3555 |
| Beta Maturity | Jan '18 | Jan '18 | 02/01/18 | CCR 3742 |
| 2nd set of LUT updates for operations | Feb '18 | Feb '18 | 01/30/18 | CCR 3738 |
| Provisional Maturity | Feb '18 | Feb '18 | 02/19/18 | CCR 3912 |
| Validated Maturity | May '18 | May '18 | 04/30/18 | Review 6/15 |
| Planned Algorithm Updates | | | | |
| M6 rollover flagging correction | Sep '18 | Jun '18 | 06/12/18 | CCR 3966 |
| LWIR FPA temperature flagging | Sep '18 | Jun '18 | 05/30/18 | CCR 3965 |
| LUT update to reduce SDSM uncertainty | Jul '18 | Aug '18 | 08/14/18 | CCR 4069 |
| WUCD calibration correction | Aug '18 | Aug '18 | 08/29/18 | CCR 4068 |
| Identify algorithm updates based on JPSS-2 pre-launch test data: Pre-launch sensor characterization report | Sep '18 | Sep '18 | 09/30/18 | |
| DAP delivery | 12/15/17 (ADR8528/CCR3700) 01/16/18 (ADR8559,8560,8561/CCR3742) 03/26/18 (ADR8578/CCR3857) 05/21/18 (ADR8686/CCR3963) | | | |

Accomplishments / Events:

- Regular weekly dark deliveries for OMPS sensors were made.
- Regular bi-weekly OMPS-NP wavelength table deliveries were made for S-NPP.
- S-NPP OMPS Limb SDR processor was successfully run at NDE. This is a prototype for the JPSS-2 OMPS Limb SDR which will be an operational product.
- Delivery of OMPS-NP-CALCONST table to IDPS that corresponds to an October flight table update

Overall Status:

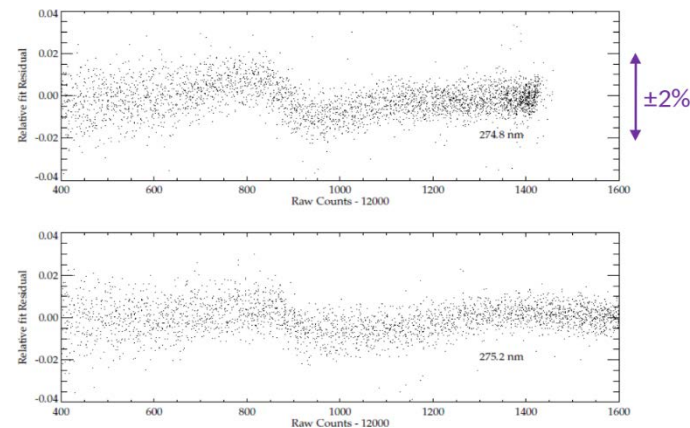
| | Green ¹ (Completed) | Blue ² (On-Schedule) | Yellow ³ (Caution) | Red ⁴ (Critical) | Reason for Deviation |
|--------------------------|-----------------------------------|------------------------------------|----------------------------------|--------------------------------|----------------------|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

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

Issues/Risks:

Recently discovered problem with OMPS-NP non-linearity. Continuing problem with OMPS-TC and OMPS-NP Sample tables.

Highlights:



The image shows the discretization error in OMPS-NP non-linearity correction that will be fixed with the delivery of a NOAA-20 flight table and IDPS Calconst update.

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------|-----------------------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | Jan-18 | Jan-18 | 01/26/18 | |
| Provisional Maturity | Feb-18 | Jul-18 | 07/03/18 | Required Mx2 TTO |
| Validated Maturity | Aug-18 | Dec-18 | | Need IDPS Table Updates |
| LUT update for JPSS-1 operations (1 st delivery) | Dec-17 | Dec-17 | 12/18/17 | L+42D |
| Weekly Dark Cal for JPSS-1 operations OMPS-NP-DARKS-GND-PI OMPS-TC-DARKS-GND-PI | Feb-18 | Feb-18 | 01/08/18 | Started weekly update on 1/8/2018 |
| NOAA-20 OMPS NP OSOL & Wavelength LUT update (ADR8508/CCR3770) | Feb-18 | Feb-18 | 02/01/18 | |
| NOAA-20 OMPS SDR LUT updates | 01/23/18 (ADR8576/CCR3760, ADR8577/CCR3761, NM & NP FAM LUTs update) 02/15/18 (ADR8594/CCR3821, TC SDR LUT and GND-PI updates) | | | |
| OMPS code update DAP | 02/16/18 (ADR8615/CCR3829) 07/12/18 (ADR8684/CCR4014 & ADR8685/CCR4015) | | | |
| Update S-NPP OMPS TC Straylight Table | 05/15/18 (ADR8527/CCR3906) | | | |

Accomplishments / Events:

- S-NPP reprocessed SDRs (V1, cut-off by March 8, 2017) are available from OPeNDAP/THREDDS for research evaluation purpose at <http://jlrdata.umd.edu/opensdap/thredds>
- STAR teams generated aggregated SDR data in the same format (CLASS family/datatype, aggregation, metadata conventions) as what CLASS uses for operational SDRs
- Reprocessed SDR data has been sent to users, such as NWS, for further evaluation
- Had a telecon discussion with CLASS and NCEI staff to discuss plans for STAR-CLASS Interface on Oct. 16
- Respond to users' request on data accessing and reading
- Received user's feedback on the analysis of CrIS reprocessing data from KMA (shown in Highlights)

Overall Status:

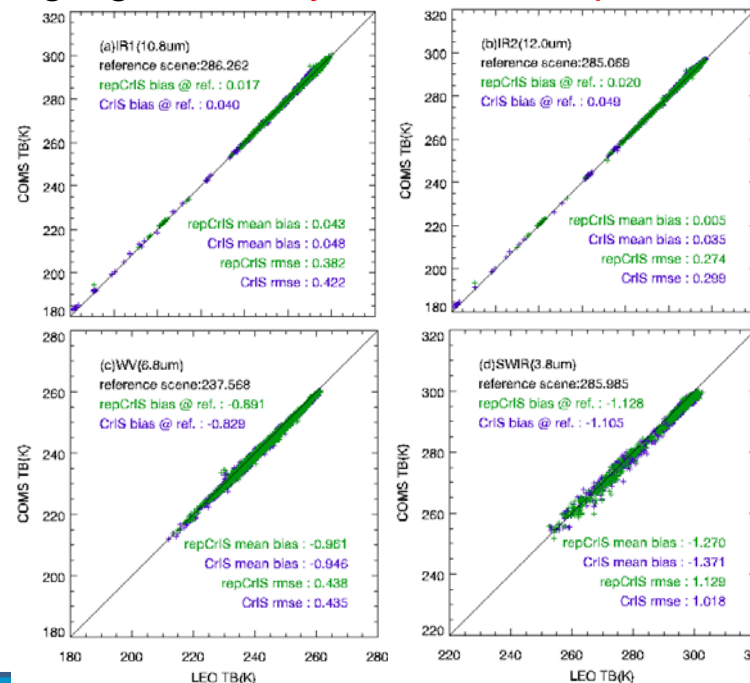
| | Green ¹ (Completed) | Blue ² (On-Schedule) | Yellow ³ (Caution) | Red ⁴ (Critical) | Reason for Deviation |
|--------------------------|-----------------------------------|------------------------------------|----------------------------------|--------------------------------|----------------------|
| 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: Analysis of CrIS Reprocessing Data



Mean bias and RMSE are generally smaller for reprocessed data than original data.

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Comp Date | Variance Explanation |
|----------------------------------------------------------------------------------------------------|---------------|---------------|------------------|----------------------|
| Complete the preparation of aggregated reprocessed ATMS data to be transitioned to CLASS | Jun-18 | Jun-18 | Jun-18 | |
| Complete the base line version reprocessing of ATMS, CrIS, VIIRS and OMPS SDR data till March 2017 | Aug-18 | Aug-18 | Aug-18 | |
| Updated OMPS NP/TC reprocessing algorithm | Sep-18 | Sep-18 | Sep-18 | |
| Tested latest ADL (V5.3.21_12.1.03) for future reprocessing | Sep-18 | Sep-18 | Sep-18 | |
| Work with CLASS/NCEI on preparation for transition of reprocessing data | Dec-18 | Dec-18 | | |

Accomplishments / Events:

- Initialized the analysis about top five monitoring parameters corresponding to each instrument onboard SNPP and NOAA-20
- Updated and reprocessed NOAA-20 RSB F-factor monitoring to provide more accurate information of NOAA-20 operational VIIRS SDR data quality
- Detected the false alarm of noise on SW pixels and aiding CrIS SDR team in improving the noise spike removal algorithm
- Closely monitoring SNPP ATMS scan drive problem
- Developed NOAA-20 CrIS FOV2FOR radiance difference, relative and absolute spectral bias for both NSR and FSR
- Further improved iSEW Hurricane Watch by adding 2D vertical central structure images and tracking the evolution of hurricane with location
- Contributed on resolving of VIIRS GEO location product anomalies
- Detected CrIS Scene Select Module (SSM) position counter error
- Started to take over CrIS geolocation code package from CrIS SDR team
- Supported JPSS/SMCD weekly/monthly reports

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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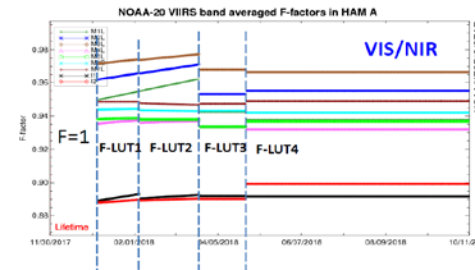
Issues/Risks:

None

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|-----------------------------------------------------------------------------------------|---------------|---------------|------------------------|----------------------------------------------------|
| J1 Post-launch Monitoring/Trending Package | Dec-17 | Dec-17 | Dec-18 | |
| CrIS SDR Data Quality Trending | Dec-17 | Dec-17 | Dec-17 | |
| First version of ICVS-GRAVITE package | Mar-18 | Mar-18 | Mar-18 | |
| OMPS SDR Quality Trending Phase I | Jun-18 | Jun-18 | May-18 | |
| SNPP/J1 cross-comparison package initialized | Dec-17 | Jun-18 | Jun-18 | Change Personnel |
| Geolocation Accuracy Trending Initialized | Mar-18 | Jun-18 | Jun-18 | Change Personnel |
| ICVS-Application: ICVS Severe Weather Watch (iSEW) System | Mar-18 | Dec-18 | | Initialized iSEW web site |
| JPSS-ICVS Monitoring/Trending Enhancement (On-going work) | Sep-18 | Dec-18 | | Catch new needs from SDR team |
| ICVS System Maintenance Manuals and Technical Reports (On-going work for final version) | Sep-18 | Dec-18 | | Beta version is done. Need to finalize the reports |

Highlights: Significantly contribute to STAR SDR Teams

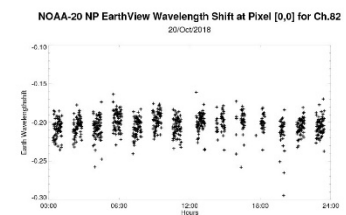
F Factor Time Series (due to VIIRS LUT update)



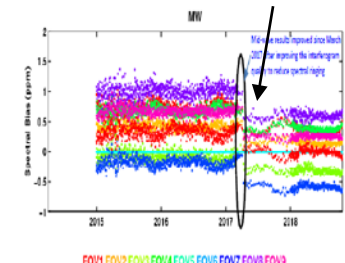
About 93% false 'spike' events are detected!



NOAA-20 OMPS EarthView Wavelength Shift



MW FOV radiance data bias is reduced since March 2017



Accomplishments / Events:

- The **Imagery and Geo Teams** continue to meet regularly (the third Tuesday of each month) primarily about the Terrain Correction (TC) issue for EDR Imagery:
 - Both the **I-bands** and the **M-bands** are now capable of being produced with Terrain Correction. (**NCC** yet to be attempted.)
 - A subset of ADL experts are reporting weekly on TC progress to R. Marley (Imagery JAM) who is organizing the Imagery-Geo Team meetings.
- **Polar SLIDER** is now publicly available (<http://rammb-slider.cira.colostate.edu>). To access, choose "JPSS" as the satellite, either the Northern or Southern Hemisphere sector, and then select the VIIRS band or image product of interest.

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 | | | |

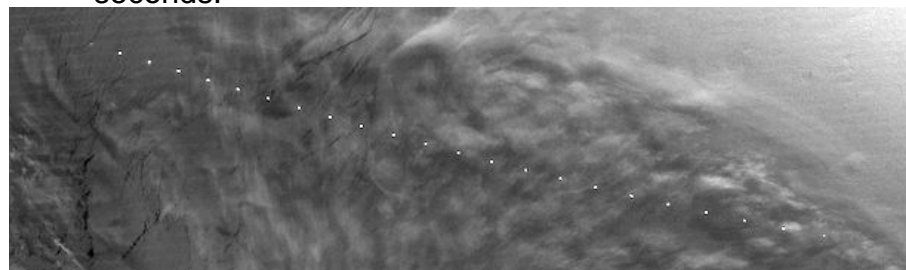
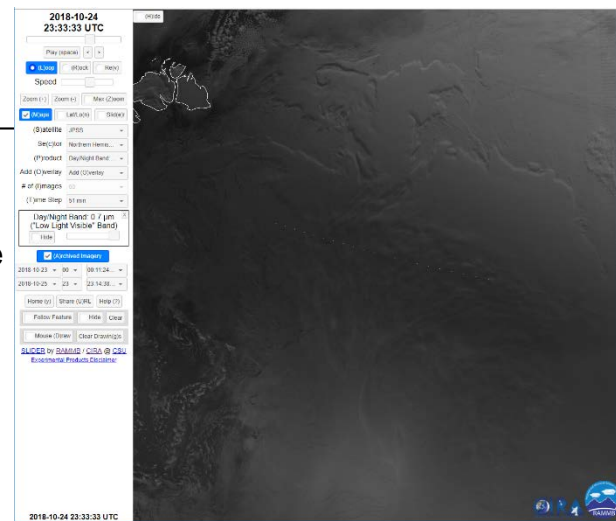
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Issues/Risks:

None

Highlights:

(Right) VIIRS DNB Imagery of a satellite under-pass of JPSS;
 (Below) blowup of the 23 reflections caught in separate DNB scans spanning about 30 seconds.



| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|-------------------------------------------------------------------------------------|---------------|---------------|------------------------|----------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | Jan-18 | Jan-18 | 02/01/18 | |
| Provisional Maturity | Feb-18 | Feb-18 | 02/19/18 | Review: 02/20/18 |
| Validated Maturity | Aug-18 | Aug-18 | 08/22/18 | |
| Algorithm Update/Testing | | | | |
| NCC LUT update (DAP from science team to ASSISTT) | Sep-18 | Mar-19 | | Provisional + 1 year |
| Long Term Monitoring | | | | |
| Deliver additional product(s) to LTM website; Add J1 products to EDR monitoring web | Sep-18 | Sep-18 | Sep-18 | |

Accomplishments / Events:

- October 2 Provisional Maturity Review for Cloud Mask, Cloud Phase/Type, Cloud Height (CTT/CTP/CTH), and Cloud Base Height products.
- Developed a 24 day library of SNPP and NOAA-20 data for analysis.
- Delivered NOAA-20 version of CLAVR-x into CSPP
- Delivered NOAA-20 Enterprise cloud algorithms and CLAVR-x to UAF GINA for the cloud demo this Fall.
- Conducted MODIS analysis for day / night consistency

Overall Status:

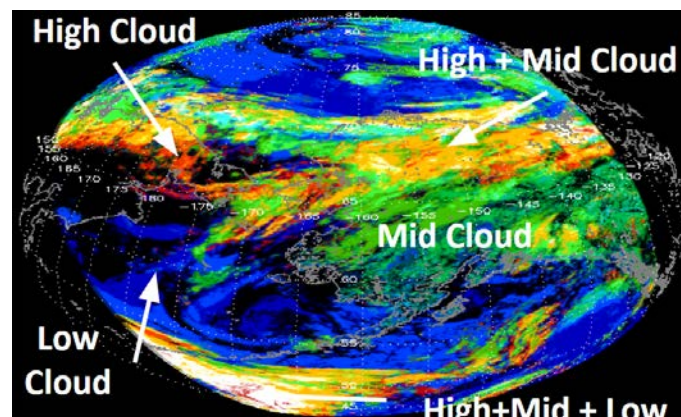
| | Green ¹ (Completed) | Blue ² (On-Schedule) | Yellow ³ (Caution) | Red ⁴ (Critical) | Reason for Deviation |
|--------------------------|-----------------------------------|------------------------------------|----------------------------------|--------------------------------|----------------------|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

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Issues/Risks:

None

Highlights: RGB Based on Cloud Cover Layers



Example of a false color RGB derived from the 5-layer Cloud Cover Layer (CCL) product. RGB provides a quick view of the product that complements the quantitative layer values. This will be generated for the Alaska Cloud Demo.

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|-----------------------------------------------------------------------------------------------------------------------------|--------------------|------------------------------------|-------------------------------------------|----------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | Jul-18 | Jul-18 | CM: 04/18/18 CBH/ACHA/DCOMP: 07/23/18 | |
| Provisional Maturity | Sep-18 | Oct/Nov-18 | DCOMP/NCOMP: 11/27/18 Others: 10/02/18 | |
| Apply CALIPSO tools to NDE Mask with Lunar Reflectance | Sep-18 | Sep-18 | Aug-18 | |
| Continue the visualization and demonstration of CCL for the Aviation Weather Center, with focus on Alaska Region and Hawaii | Sep-18 | Sep-18 | Sep-18 | |
| Inter-sensor calibration studies by using visible reflectance and cloud optical thickness from GOES, JPSS and MODIS | Sep-18 | Sep-18 | Sep-18 | |
| J1 algorithm adjustments: | | | | |
| Preliminary DAP to ASSISTT (science team to ASSISTT) | Apr-18 | Apr-18 | 2/23/18 | |
| Preliminary DAP to NDE (ASSISTT to NDE) | Aug-18 | Aug-18 | 7/31/18 | |
| JPSS EPS algorithm updated DAPs | 11/21/17; 02/02/18 | 02/02/18 (J1 capability); 04/30/18 | | |

Accomplishments / Events:

- A single-band ice surface temperature (IST) algorithm was developed for use with the high-resolution VIIRS I5 band at 11.5 μm at 375 m. The new single-band algorithm and comparisons to the operational split-window VIIRS algorithm and to IST from Landsat are described in a paper recently submitted to the journal *Remote Sensing*.

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 | | | |

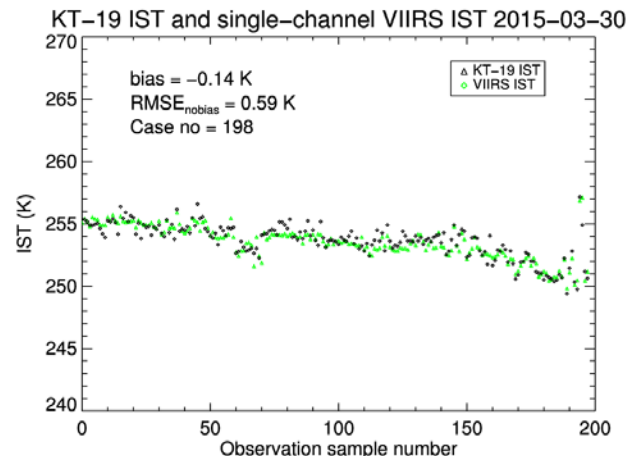
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Issues/Risks:

None

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|------------------------------------------------------|----------------------------------------------|---------------|------------------------|-----------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity: IST | May-18 | May-18 | 06/15/18 | |
| Beta Maturity: Snow | Jun-18 | Jun-18 | 06/15/18 | |
| Beta Maturity: Sealce | Jul-18 | Jul-18 | 06/15/18 | |
| Provisional Maturity (IST, Snow, and Sealce) | Sep-18 | Apr-19 | | Review date: 10/02/18 |
| J1 algorithm adjustments: | | | | |
| Preliminary DAP to ASSISTT (science team to ASSISTT) | Apr-18 | Apr-18 | Apr-18 | |
| Preliminary DAP to NDE (ASSISTT to NDE) | Aug-18 | Aug-18 | 07/31/18 | |
| JPSS EPS algorithm updated DAPs | 11/21/17; 02/02/18 (J1 capability); 04/30/18 | | | |

Highlights:



KT-19 ice surface temperature (IST) (black) and single-band IST from S-NPP VIIRS (green) along the P-3 Ice Bridge flight track around 22:17 UTC on 30 March 2015.

Accomplishments / Events:

- STAR team is working with ASSIST to resolve issues related to needed changes to metadata in output files to conform to version controls versus what the requirements are from NDE
- STAR aerosol team hosted a one week Aerocom/Aerosat workshop. Several members of the team gave oral presentations and posters. A key note presentation on “consistent science for aerosol algorithms across multiple satellite sensors” was given by team member Hongqing Liu
- STAR aerosol team is making progress with enhancements to its internal long term monitoring page to add NOAA-20 data. This website specific to aerosols and different from STAR LTM site.
- STAR aerosol team participated in FIREX-AQ field campaign planning workshop remotely. Aerosol products from SNPP, NOAA-20, GOES_16 will play a key role in flight planning and post mission data analysis.

Overall Status:

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|--------------------------|-----------------------------------|------------------------------------|----------------------------------|--------------------------------|----------------------|
| Cost / Budget | | X | | | |
| Technical / Programmatic | | X | | | |
| Schedule | | X | | | |

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

Issues/Risks:

None

NOAA-20 aerosol detection product has anomalies over the ocean with a lot of false smoke detections. These are likely due to upstream problems with Enterprise Cloud Mask product. STAR aerosol team is communicating with the cloud team to understand this problem.

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|------------------------------------------------------|----------------------------------------------|---------------|------------------------|---------------------------------------------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | Apr-18 | Apr-18 | 04/18/18 | |
| Provisional Maturity | Sep-18 | Sep-18 | 04/18/18 | |
| J1 algorithm adjustments: | | | | |
| Preliminary DAP to ASSISTT (science team to ASSISTT) | Apr-18 | Apr-18 | Apr-18 | |
| Preliminary DAP to NDE (ASSISTT to NDE) | Aug-18 | Aug-18 | 07/31/18 | |
| Add J1 products to EDR monitoring web | Sep-18 | Sep-18 | TBD | Significant granule dropouts. Issue under investigation |
| JPSS EPS algorithm updated DAPs | 11/21/17; 02/02/18 (J1 capability); 04/30/18 | | | |

Accomplishments / Events:

- Added to a list of NOAA-20 VIIRS granules that were known to contain ash, but the missing granule issue continued to hamper validation efforts.
- Validated NOAA-20 products against height and loading derived from advection pattern (see figure).
- Continued to develop and test algorithm improvements through incorporation with CrIS measurements.

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 | | Missing granule issue |

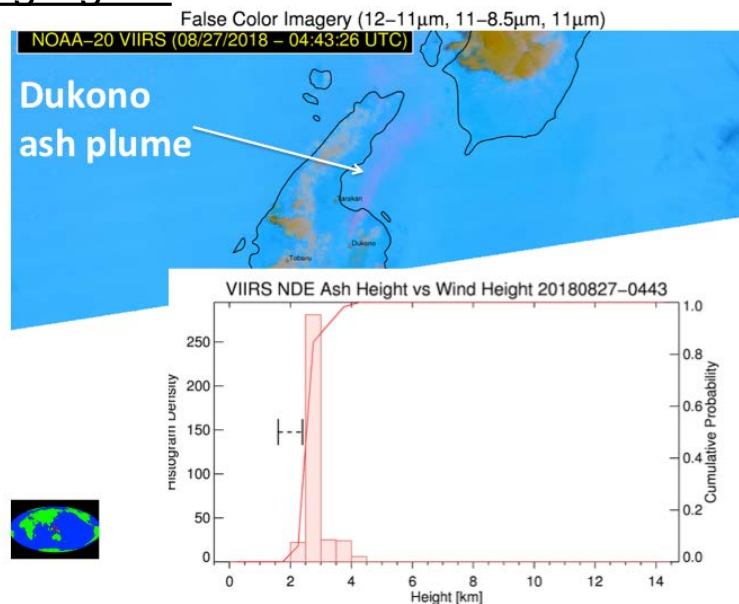
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Issues/Risks:

The missing granule issue has greatly limited the number of NOAA-20 validation opportunities. The provisional review has been postponed.

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|----------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------|------------------------|----------------------|
| J1 post-launch calibration/validation | | | | |
| JPSS-1 Cal/Val Plan | Dec-17 | Dec-17 | 12/18/17 | |
| Beta Maturity | Jul-18 | Nov-18 | 11/27/18 | Combine B & P |
| Provisional Maturity | Sep-18 | Nov-18 | 11/27/18 | Missing granules |
| J1 algorithm adjustments: | | | | |
| Complete development of Version 2 (V2) of the volcanic ash algorithm. Version 2 may utilize VIIRS + CrIS | Feb-18 | Feb-18 | Feb-18 | |
| Update LUT and thresholds for JPSS-1 | Feb-18 | Feb-18 | Feb-18 | |
| Preliminary DAP to ASSISTT (science team to ASSISTT) | Apr-18 | Apr-18 | Apr-18 | |
| Preliminary DAP to NDE (ASSISTT to NDE) | Aug-18 | Aug-18 | 07/31/18 | |
| JPSS EPS algorithm updated DAPs | 11/21/17; 02/02/18 (J1 capability); 04/30/18 | | | |

Highlights: N20 Ash Cloud Height vs. Wind Derived Height



Accomplishments / Events:

- Processed and evaluated VIIRS fire data over the Rhea fire (OK) to support COMET training
- Worked with the HRRR-smoke group to evaluate impact analysis of the I-band product
- Edited the VIIRS Active Fire Quick Guide for iMETs
- Participated in the FIREX-AQ planning meeting and provided material on VIIRS fire products
- Updated the NOAA Science Vignette on fire monitoring from satellites
- Worked on technical specifications for possible operational I-band production
- Presented on product status at GOFC-GOLD, ForestSat and NASA MODIS/VIIRS ST meetings

Overall Status:

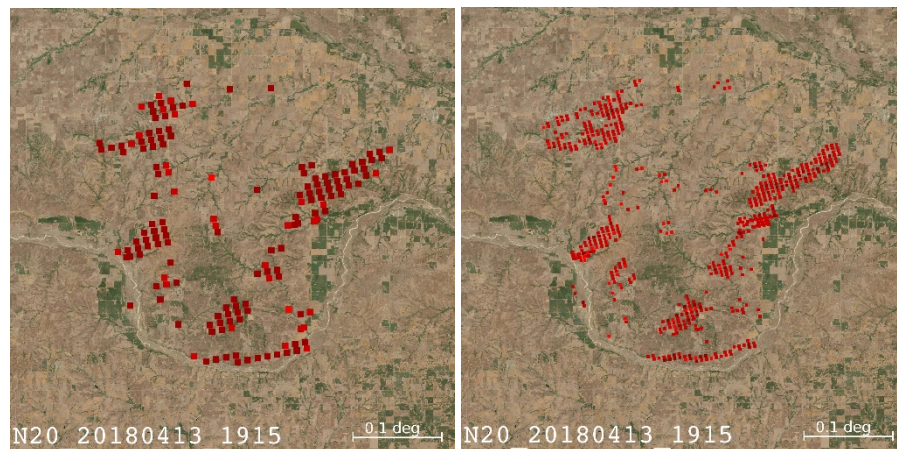
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| Schedule | | X | | | |

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Issues/Risks:

None

Highlights:



NOAA-20 VIIRS active fire detections of the Rhea fire in Oklahoma on April 13, 2018. Left: 750m operational M-band product; right: 375m experimental I-band product Credit: Marina Tsidulko, IMSG@STAR

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|-------------------------------------------------------|---------------|---------------|------------------------|----------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | Jun-18 | Jun-18 | 03/22/18 | Virtual Review |
| Provisional Maturity | Dec-18 | Dec-18 | 04/18/18 | |
| J1 algorithm adjustments: | | | | |
| Preliminary DAP to ASSISTT (science team to ASSISTT) | Aug-18 | Aug-18 | Oct-17 | |
| Preliminary DAP to NDE (ASSISTT to NDE) | Oct-18 | FY19 | 11/21/17 | |
| SNPP/J1 algorithm refinement (Maintenance DAP) | | | | |
| J1 data analysis and feedback | Sep-18 | Sep-18 | Sep-18 | |
| Enterprise algorithm evaluation | Sep-18 | Sep-18 | Sep-18 | |
| Suomi NPP reprocessing analysis | Sep-18 | Sep-18 | Sep-18 | |
| Add J1 products to EDR monitoring web | Sep-18 | Sep-18 | Sep-18 | |

Accomplishments / Events:

- Evaluated a potential issue in aerosol model LUT and its impact on product performance
- Worked on interfacing NDE product output and AERONET validation data
- Completed GFS impact analysis for a full day (512 daytime granules):
 - 1. effects of surface pressure, total column ozone, and total precipitable water
 - 2. effects of cloud mask, cloud height, or aerosol optical depth
- Working on documentation towards Provisional review

Overall Status:

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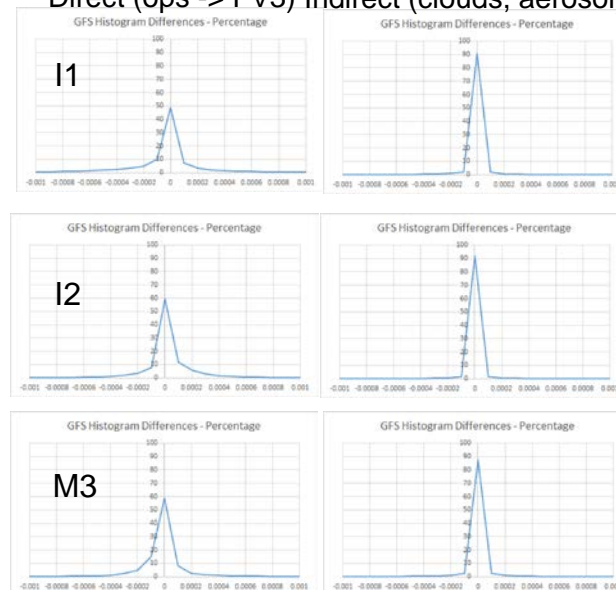
Issues/Risks:

None

Highlights:

Frequency distributions of Surface reflectances derived using the operational and new GFS input. Shown are I1, I2 and M3, which are the input bands used by the Vegetation Index product suite. The left column shows direct effects of changing from the operational to the GFS core. The right column shows indirect effects of changes in cloud mask, cloud height and aerosol optical depth.

Direct (ops -> FV3) Indirect (clouds, aerosol)



Credit: Mike Wilson (IMSG@STAR)

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------|----------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | May-18 | May-18 | 06/15/18 | Scheduled 6/15 |
| Provisional Maturity | Nov-18 | Nov-18 | 11/27/18 | |
| J1 algorithm adjustments: | | | | |
| Preliminary DAP to ASSISTT (science team to ASSISTT) | Jun-18 | Jun-18 | Jun-18 | |
| Preliminary DAP to NDE (ASSISTT to NDE) | Aug-18 | Aug-18 | 07/27/18 | |
| Add SR to EDR monitoring web | Sep-18 | Sep-18 | Sep-18 | |
| Patch DAPs to NDE | 10/06/17 (global attribute, endianness) 12/11/17 (QF2 attribute text fix) 01/29/18 (file name change) 02/21/18 (QCALL flag value change) | | | |

Accomplishments / Events:

- Further improved the I/O design of the L3 LST product by using the L2 LST EDR only for the data composition (**Highlight**). The composition method, quality flag, as well as metadata have been modified accordingly by remove the viewing geometry dependency. The code has been changed accordingly and tested. Cross comparison with L3 MODIS LST product has been updated (**Slide 2 and 3**).
- The final version of VIIRS gridded LST CDR has been delivered. The CDR presentation was held on Oct. 23, 2018, and got passed.
- The EDR LST DAP was delivered to ASSIST for January 2019 collection. The DAP includes the code update related to the AOD data availability and updated ATBD. The output from the framework has been verified. No issues were found for its implementation in the framework.
- Enterprise LST ORR preparation. The test data has been collected and analyzed and the system test has been performed. The first draft slide is ready. (**Slide 4-6**)
- Continue to monitor the NOAA 20 LST data at granule and global scale.
- Had a meeting with model group to discuss the data need and preliminary analysis results. Feedback from users were collected.

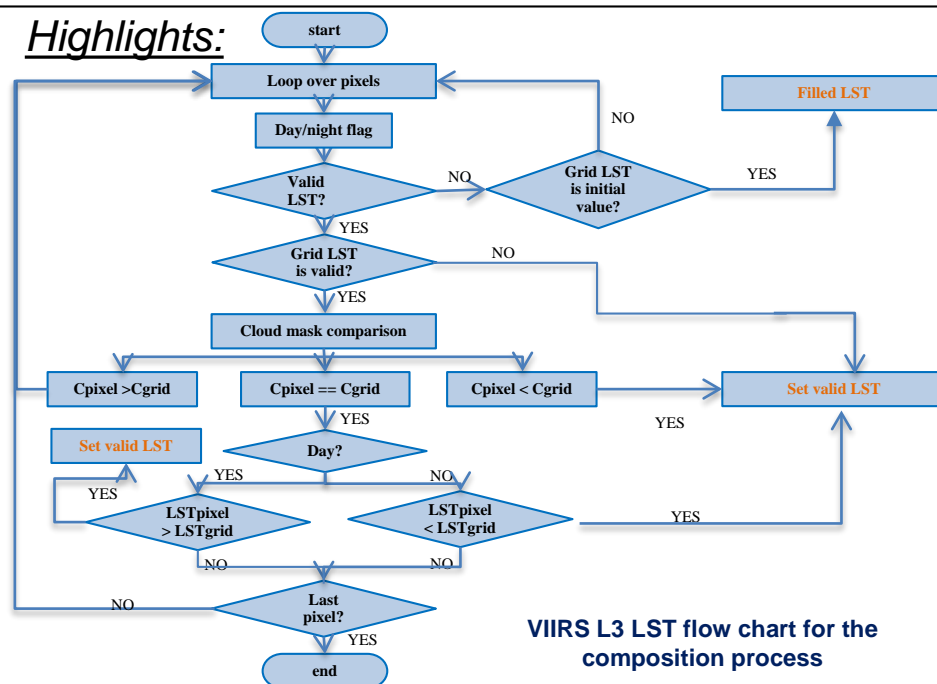
Overall Status:

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|--------------------------|-----------------------------------|------------------------------------|----------------------------------|--------------------------------|----------------------|
| Cost / Budget | | X | | | |
| Technical / Programmatic | | X | | | |
| Schedule | | X | | | |

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Issues/Risks:

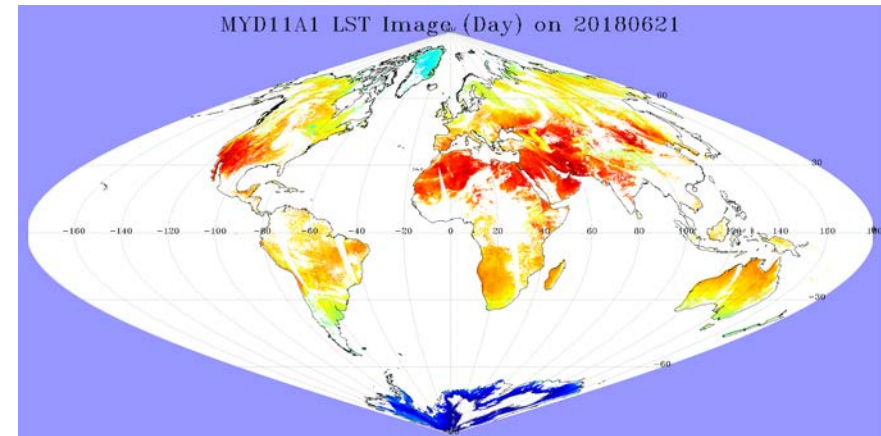
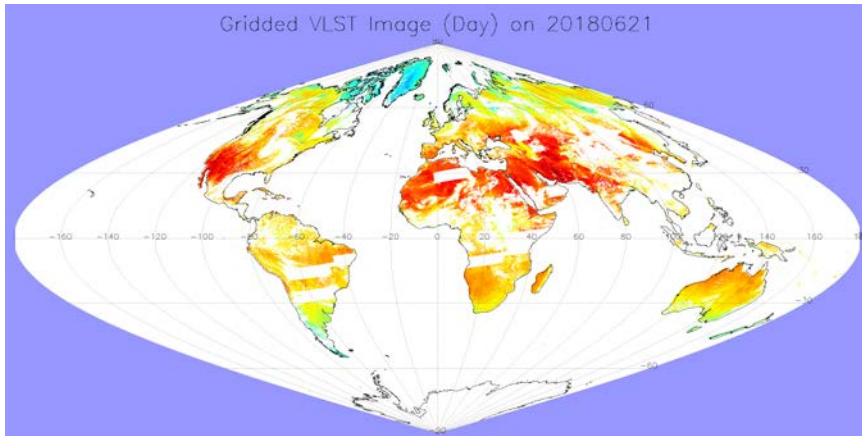
Highlights:



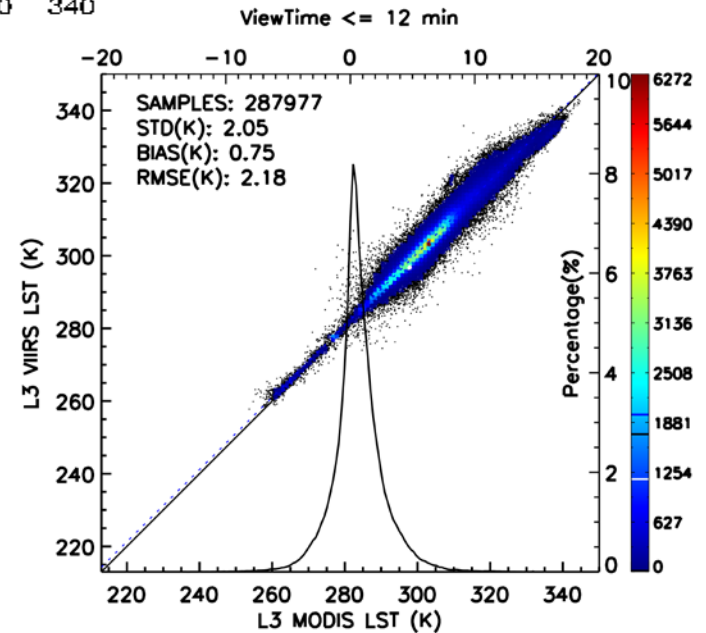
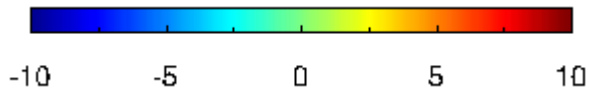
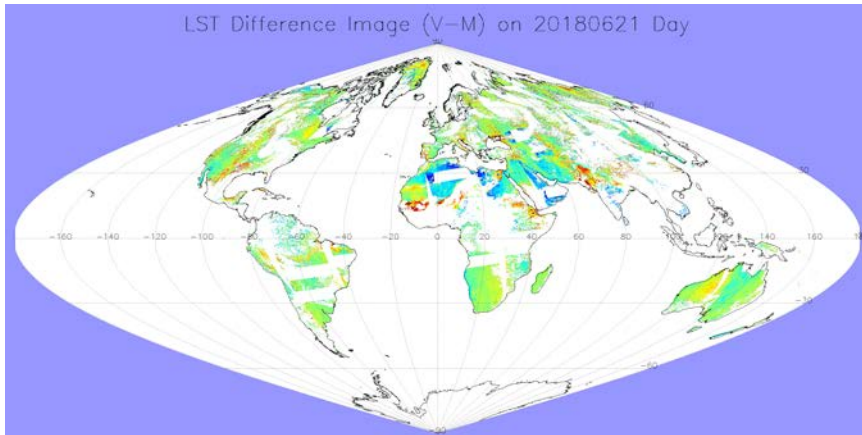
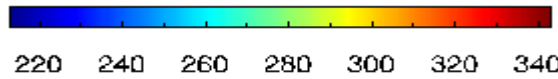
VIIRS L3 LST flow chart for the composition process

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|------------------------------------------------------|---------------|---------------|-----------------------------------------|----------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | Jul-18 | Jul-18 | July 19 | |
| J1 algorithm adjustments: | | | | |
| Preliminary DAP to ASSISTT (science team to ASSISTT) | Apr-18 | Apr-18 | 03/09/18 | |
| Preliminary DAP to NDE (ASSISTT to NDE) | Aug-18 | Aug-18 | 08/04/18 | |
| SNPP/J1 algorithm Refinements | | | | |
| Enterprise Algorithm Final DAP | Feb-18 | Mar-29 | Init DAP: 11/15/17 Final DAP: 4/2/18 | Passed SR: Feb-18 |
| CDR review ready for global gridded LST production | Jun-18 | Oct-18 | 10/23/2018 | Passed on 10/29/2018 |
| Additional cloud filtering | Sep-18 | Sep-18 | Sep-18 | |
| Add J1 products to EDR monitoring web | Sep-18 | Sep-18 | Jun-18 | |
| Deep-dive analysis for the anomaly watch | Sep-18 | Sep-18 | Sep-18 | |

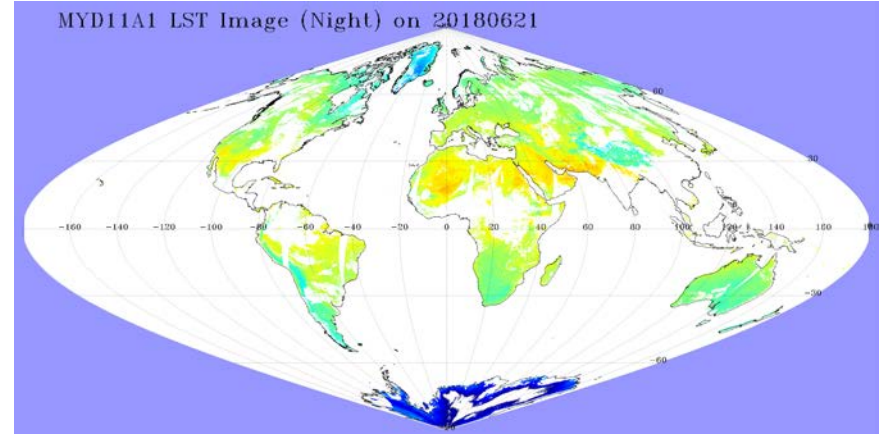
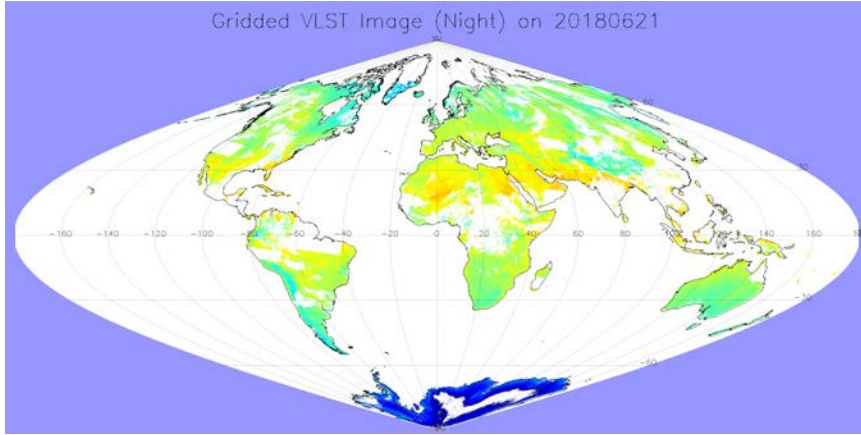
VIIRS L3 LST vs MODIS L3 LST Product(MYD11A1)



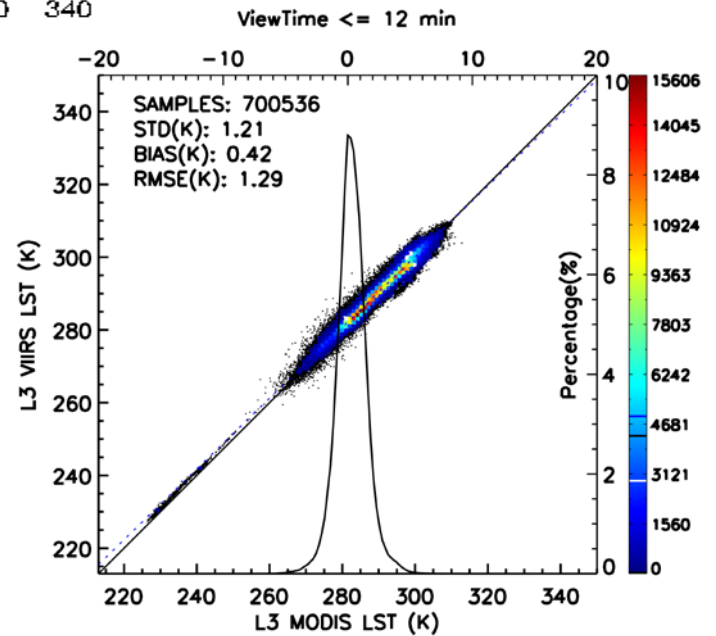
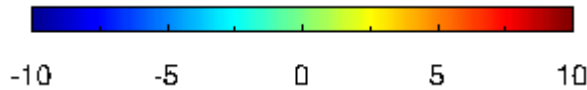
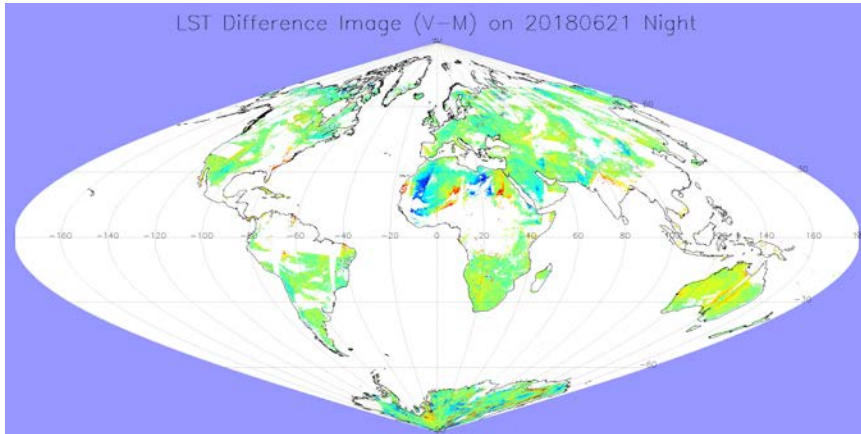
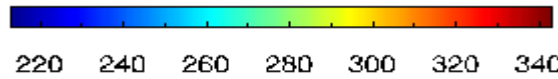
Daytime: June 21,2018



VIIRS L3 LST vs MODIS L3 LST Product(MYD11A1)

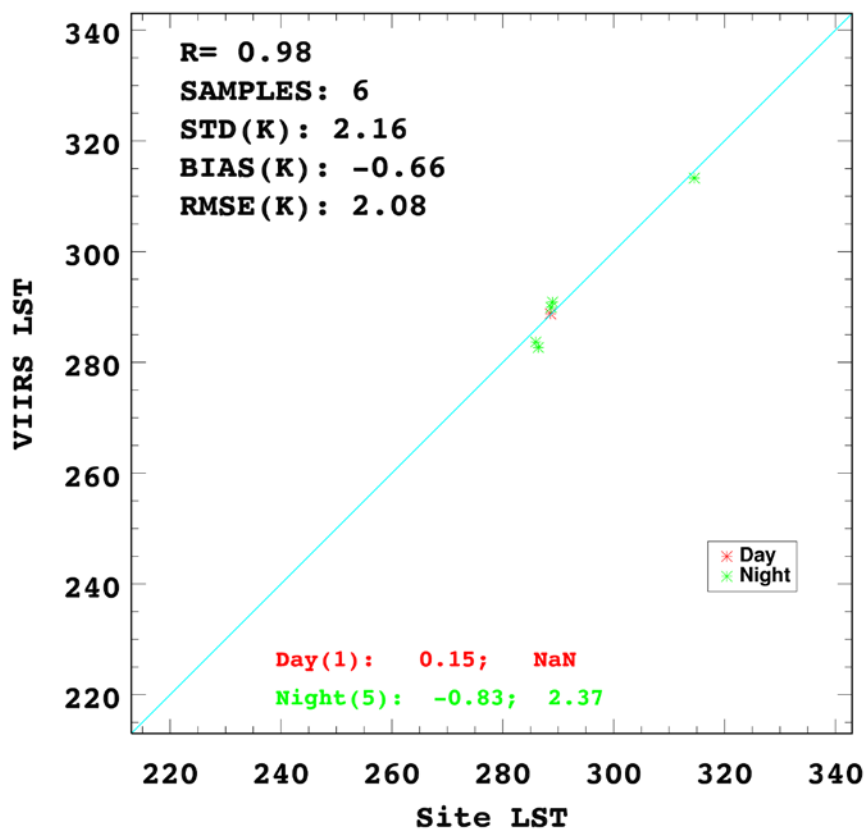


Nighttime: June 21, 2018



Validation of product quality: NDE LST vs Ground Observations

VIIRS LST vs Ground LST



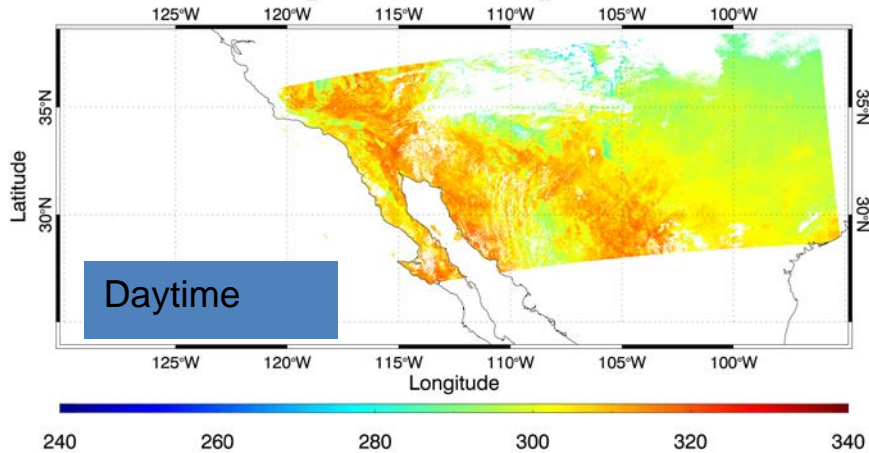
Data source from NDE

| Date | File numbers | Day/night availability |
|----------|--------------|------------------------|
| 20181010 | 290 | Both day and night |
| 20181011 | 501 | Nighttime only |
| 20181017 | 19 | Daytime only |

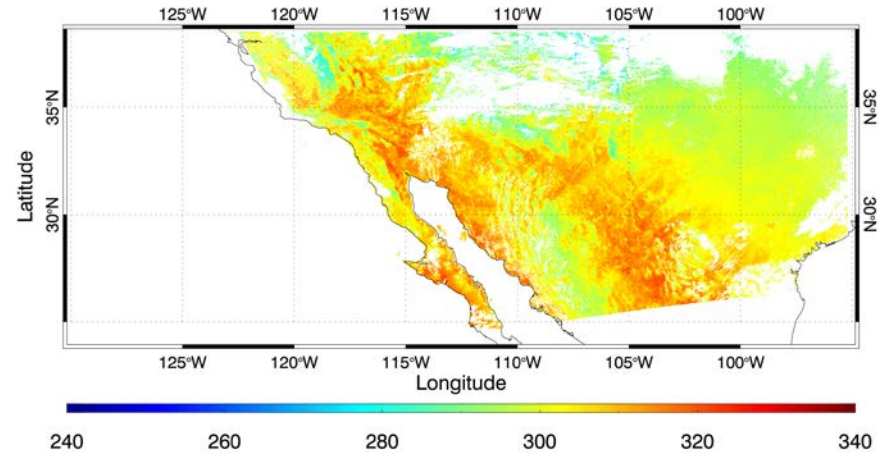
| No | Site | Date | Time | SatelliteLS T (K) | Ground LST (K) |
|----|------|---------|------|-------------------|----------------|
| 1 | DRA | 2018283 | 2031 | 313.28 | 314.55 |
| 2 | DRA | 2018284 | 0852 | 283.68 | 285.97 |
| 3 | DRA | 2018284 | 1033 | 282.70 | 286.42 |
| 4 | GWN | 2018284 | 0711 | 289.95 | 288.71 |
| 5 | SXF | 2018290 | 1822 | 288.77 | 288.615 |
| 6 | BON | 2018290 | 1820 | 290.90 | 288.98 |

Validation of product quality: NDE VIIRS LST vs MODIS LST

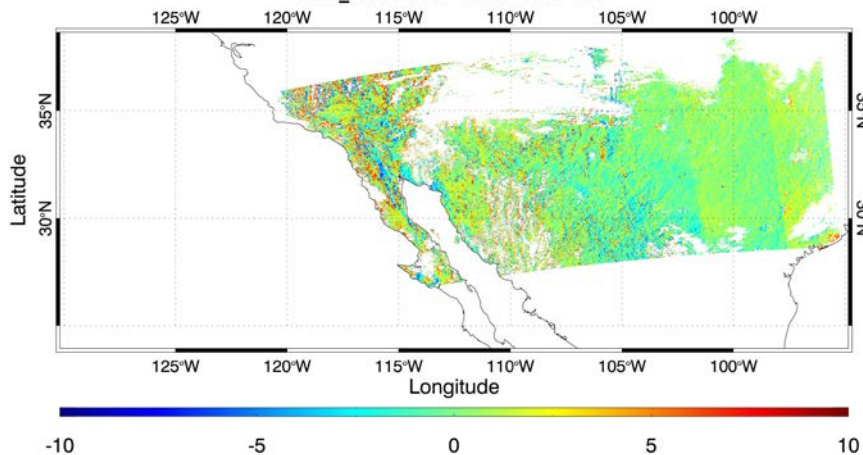
NPP_VIIRS LST on 20181010_2030 UTC



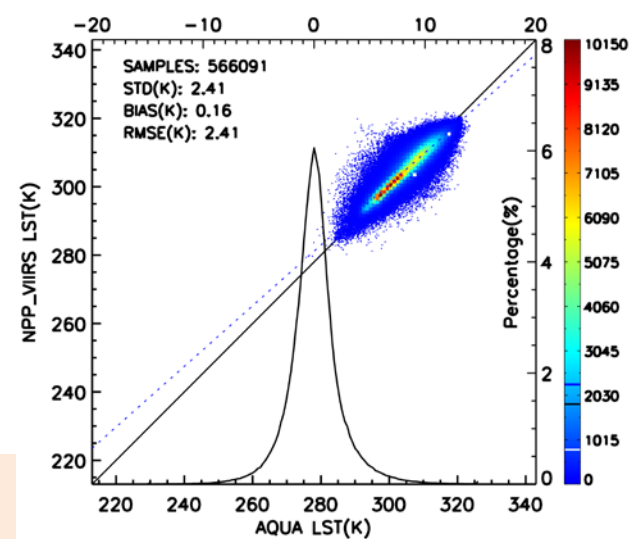
AQUA LST on 2018283.2020 UTC



NPP_VIIRS LST - AQUA LST UTC

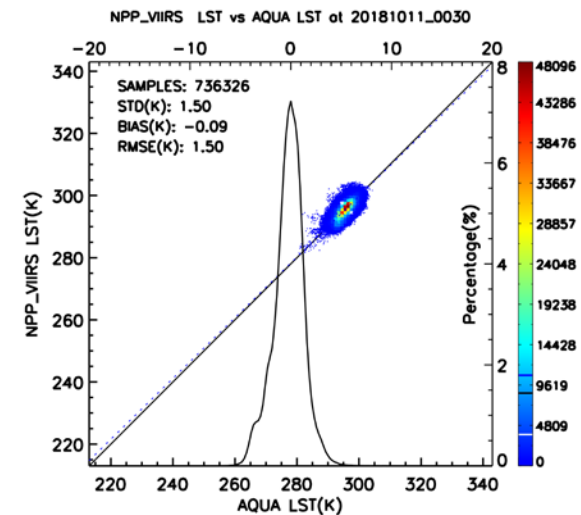
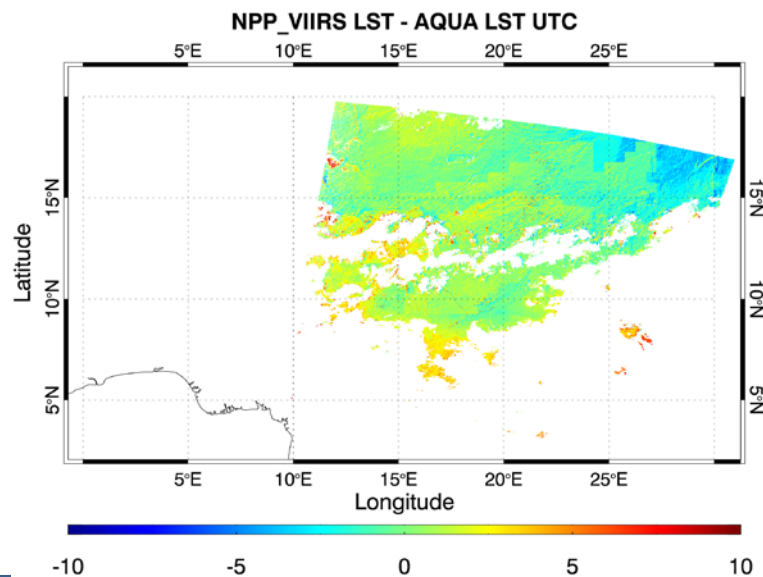
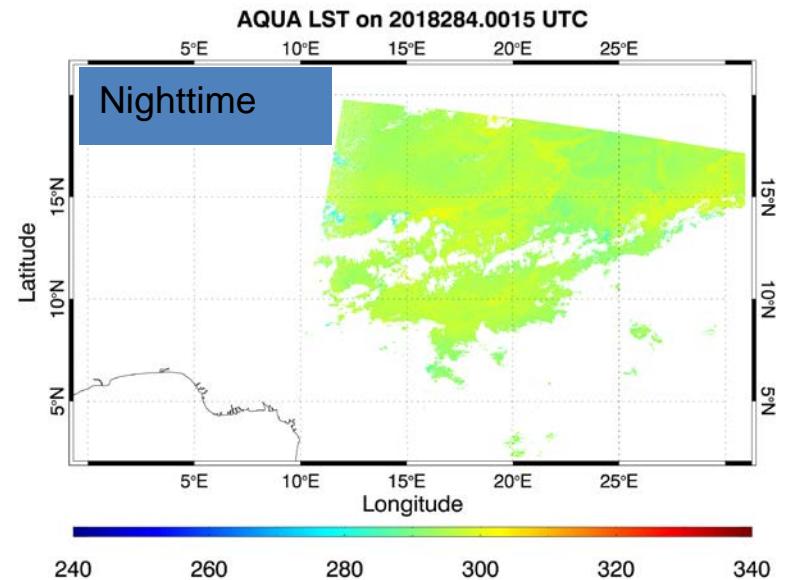
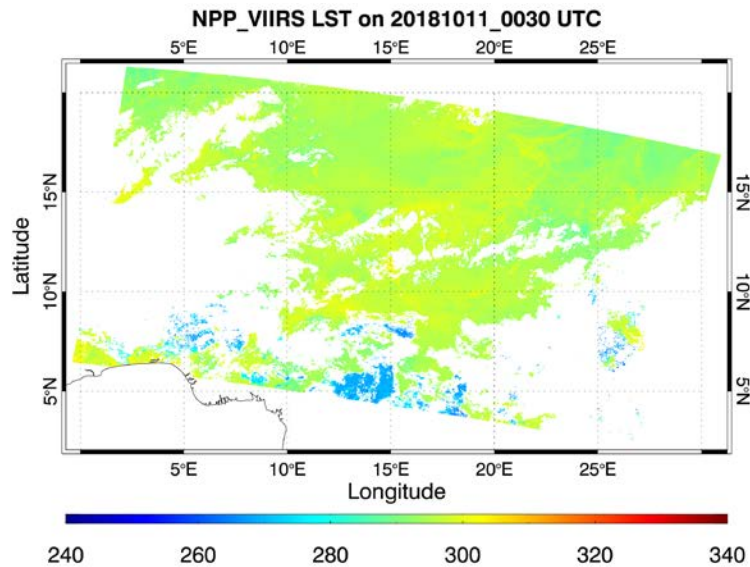


NPP_VIIRS LST vs AQUA LST at 20181010_2030



- Temporal difference is between 10-15 minutes
- Both cloud clear

Validation of product quality: NDE VIIRS LST vs MODIS LST



Accomplishments / Events:

- Tested and Refined the composition strategy of L3 gridded albedo product (**Slide #2**)
- Passed the Critical Design Review (CDR) of L3 albedo product
- Compared L3 gridded albedo product with MODIS daily mean albedo (**Slide #3**)
- Checked the validity of the NDE operational L2 granule albedo, which shows correct result
- Validated the NDE operational L2 granule albedo using in-situ measurements
- Compared the NDE L2 albedo with IDPS albedo visually (highlights)
- Conducted Cross-comparison of NDE operational L2 granule albedo with MODIS daily mean albedo

Overall Status:

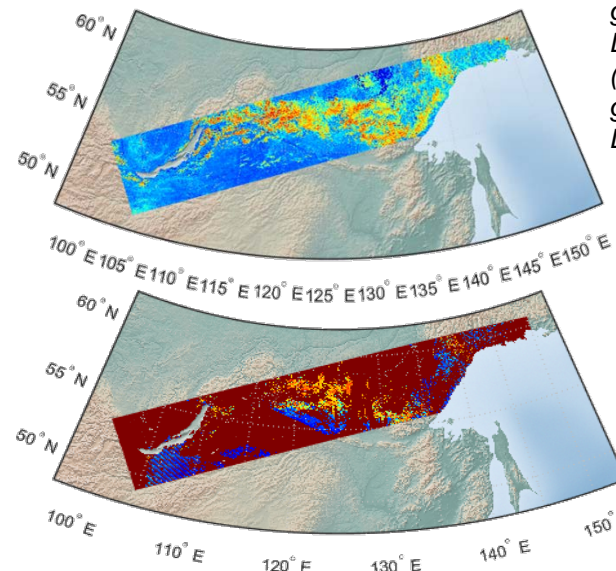
| | Green ¹ (Completed) | Blue ² (On-Schedule) | Yellow ³ (Caution) | Red ⁴ (Critical) | Reason for Deviation |
|--------------------------|-----------------------------------|------------------------------------|----------------------------------|--------------------------------|----------------------|
| 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.

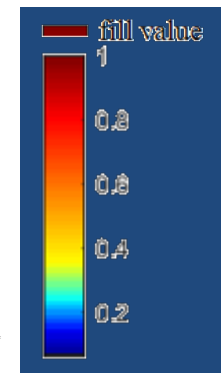
Issues/Risks:

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|------------------------------------------------------|---------------|---------------|----------------------------------|--------------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | Jul-18 | Jul-18 | Jul-18 | |
| J1 algorithm adjustments: | | | | |
| Preliminary DAP to ASSISTT (science team to ASSISTT) | Apr-18 | Apr-18 | 03/09/18 | Completed |
| Preliminary DAP to NDE (ASSISTT to NDE) | Aug-18 | Aug-18 | 08/04/18 | |
| SNPP/J1 algorithm Refinements | | | | |
| Enterprise Algorithm Final DAP | Feb-18 | Feb-18 | Init: 11/15/17; Final: 4/2/18 | Passed SR: Feb-18 |
| LUT for Sea Ice Albedo computation | Dec-17 | Dec-17 | 03/05/18 | Completed |
| Developing improved albedo climatology | Jul-18 | Jul-18 | 02/23/18 | Completed |
| Refining codes of gridded VIIRS albedo | Sep-18 | Sep-18 | 10/23/18 | CDR passed on 10/29/2018 |
| Deep-dive analysis for the anomaly watch | Sep-18 | Sep-18 | Sep-18 | Completed |
| Add J1 products to EDR monitoring web | Sep-18 | Sep-18 | Sep-18 | |
| Enterprise Algorithm LSA ARR | | | 03/14/18 | |

Highlights:

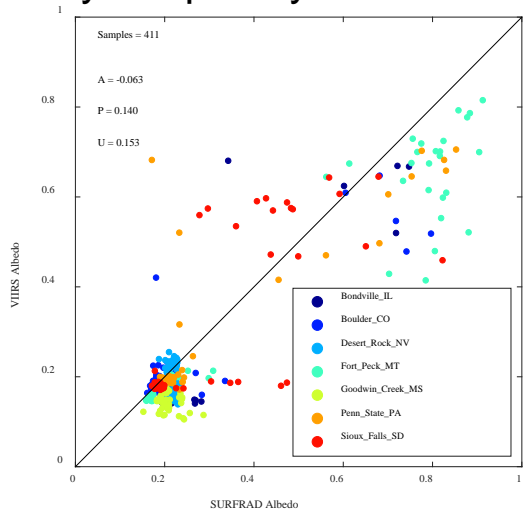


(above) NDE operationally generated SNPP VIIRS LSA
(below) IDPS operationally generated SNPP VIIRS LSA

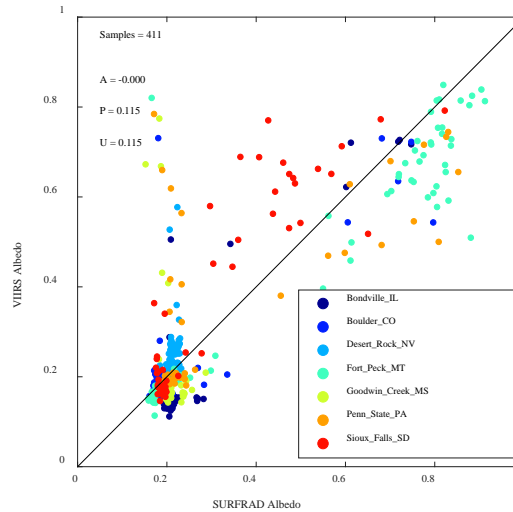


L3 LSA Composition Strategy Selection

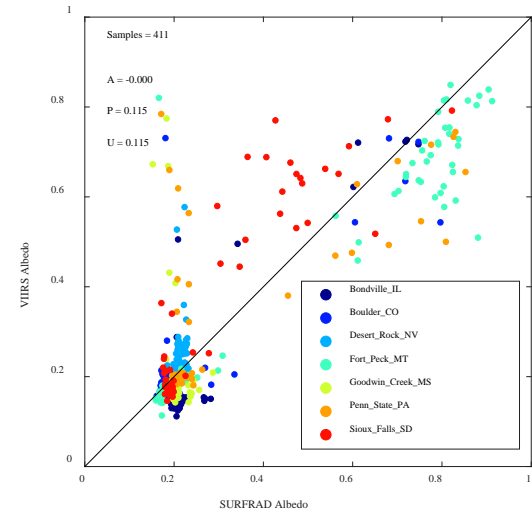
9-day temporally filtered albedo



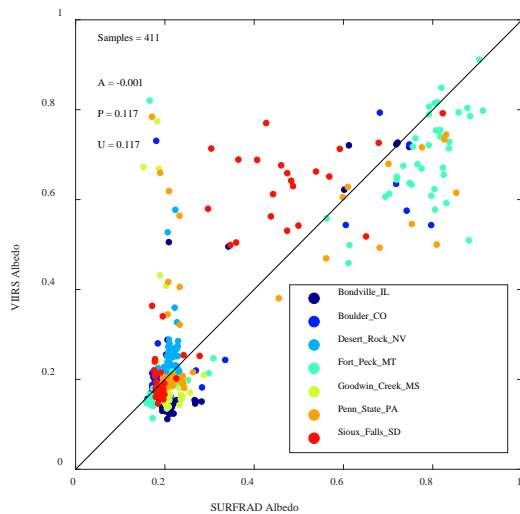
Use the mean value



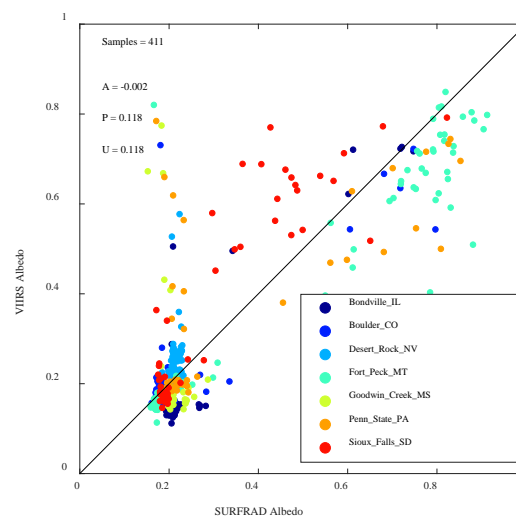
Use the median value



Select the smallest SZA



Select the smallest VZA

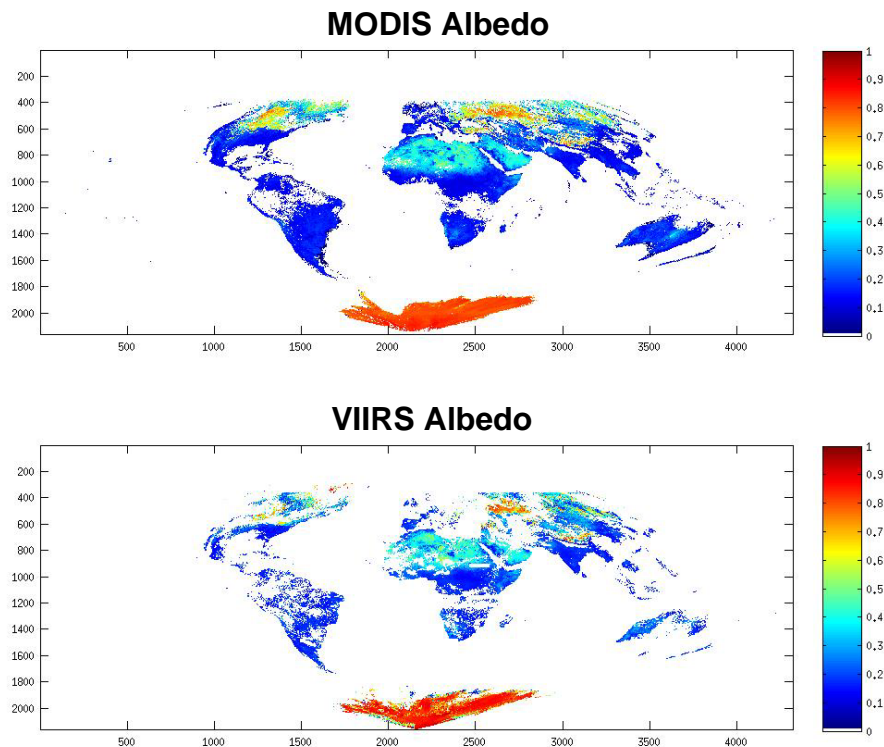
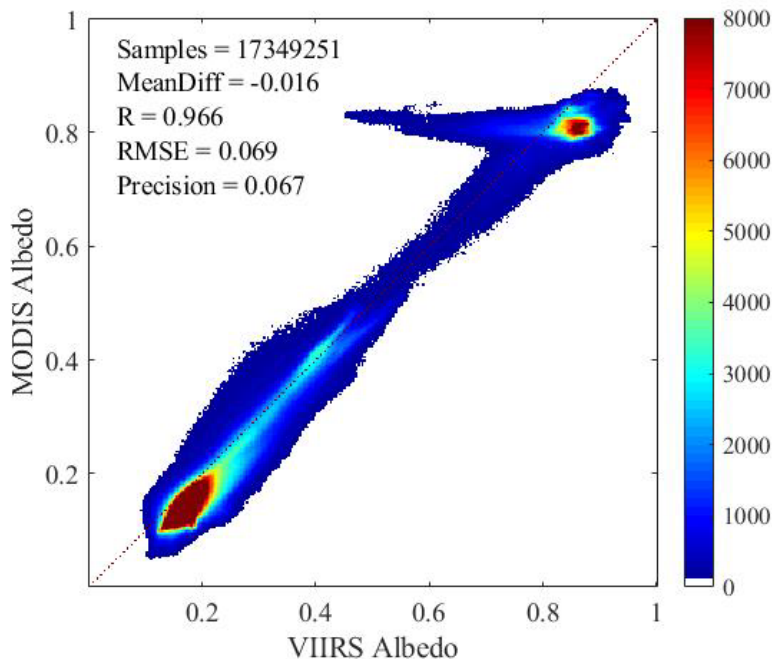


| Strategy | A | P | U |
|---------------------|--------------|--------------|--------------|
| Temporally filtered | -0.063 | 0.14 | 0.153 |
| 1 (mean) | 0.000 | 0.115 | 0.115 |
| 2 (median) | 0.000 | 0.115 | 0.115 |
| 3 (smallest SZA) | -0.001 | 0.117 | 0.117 |
| 4 (smallest VZA) | -0.002 | 0.118 | 0.118 |

The median strategy has been selected in current algorithm design.

Cross comparison between L3 LSA and MODIS daily mean albedo

01/10/2015



- L3 LSA values are directly composited from L2 LSA. The validation result reflects the L2 LSA quality.
- Over the non-snow surface, VIIRS gridded Albedo agree very well with MODIS.
- Snow-covered surfaces contribute most to the overall differences between two albedo products. MODIS albedo product is based on 16-day mean data, and VIIRS has 2-day latency. The snow mask difference mainly caused the different retrieval path and the albedo difference.

Accomplishments / Events:

- Created a new ATBD describing the current algorithms for generating the Annual Surface Type (AST) product.
- Updated the STAR-JPSS Surface Type website.
- Presented the AST product suite at the VIIRS/MODIS meeting
- Processed and downloaded VIIRS observations acquired in October
- Started to evaluate the 2017 AST product against the MODIS C6 product and ESA's Climate Change Initiative (CCI) global land cover product
- Completed validation of AST17 product (results presented at the August STAR Science Team meeting)

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.

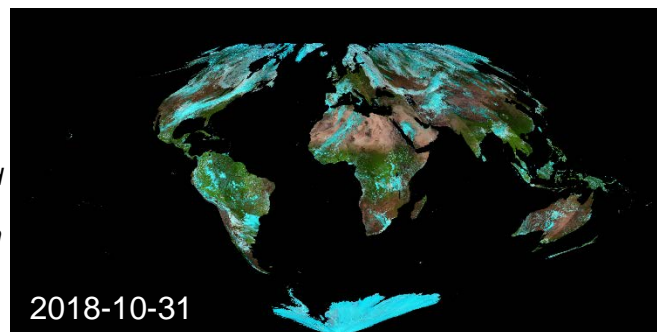
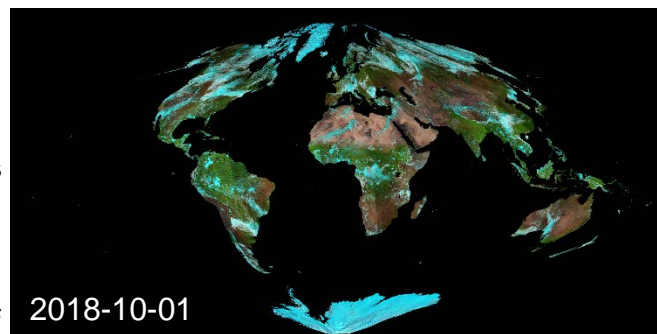
Issues/Risks:

None

Highlights:

Rapid Sun Angle Change Resulted in Increasing Data Gaps in the Northern Hemisphere

The VIIRS atmospheric correction algorithm does not work when the solar zenith angle exceeds 75°, resulting in data gaps in the northern Hemisphere during fall/winter. Such gaps, though normal, increased substantially in October due to rapid decreases in sun elevation angle during this period.



| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|----------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|------------------------|----------------------|
| J1 post-launch calibration/validation | N/A | | | |
| Comparison of AST17 with surface type validation data | Sep-18 | | Aug-28 | |
| Planned Algorithm Delivery | N/A | | | |
| Complete monthly composites of global gridded VIIRS data (9 land bands + thermal bands) for VIIRS GST17 based on VIIRS 2017 data | Sep-18 | Sep-18 | Aug-18 | |
| Generate VIIRS GST17 based on VIIRS 2017 data using SVM algorithms | Sep-18 | Sep-18 | Aug-18 | |
| ATBD update | Sep-18 | Oct-18 | 10/05/18 | Rewriting |

Accomplishments / Events:

- Presented the SNPP/NOAA-20 VIIRS VI product to the colleagues and potential users in the ForestSAT 2018 conference hold in College Park, MD on Oct. 1-5, 2018
 - Evaluated the impact of new cloud mask on SNPP VIIRS VI product
 - Improved the efficiency of biweekly compositing component of VIIRS VI operational algorithm
 - Discussed the plan to updated VIIRS VI product QA
 - Refined the visualization website for providing better VIIRS VI product access to users
- https://www.star.nesdis.noaa.gov/smcd/viirs_vi_web/landwatch.php

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 | | | |

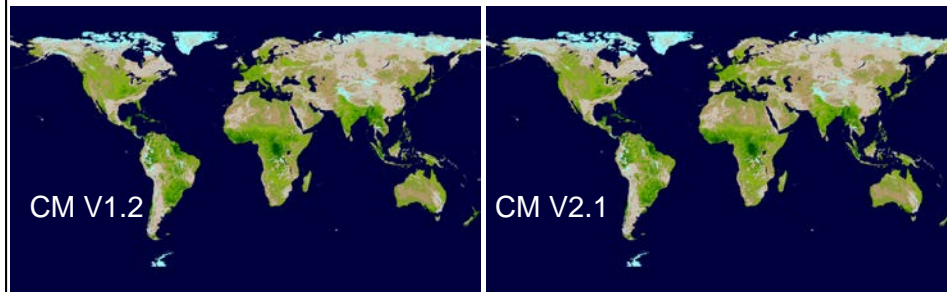
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4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

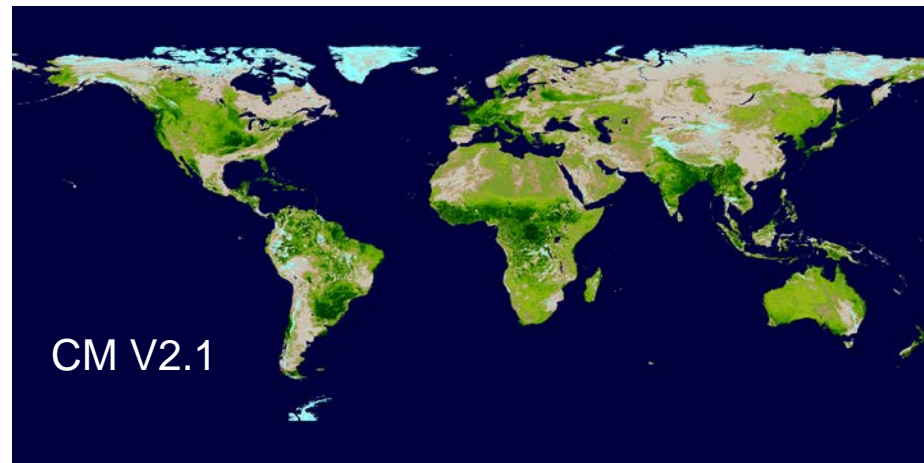
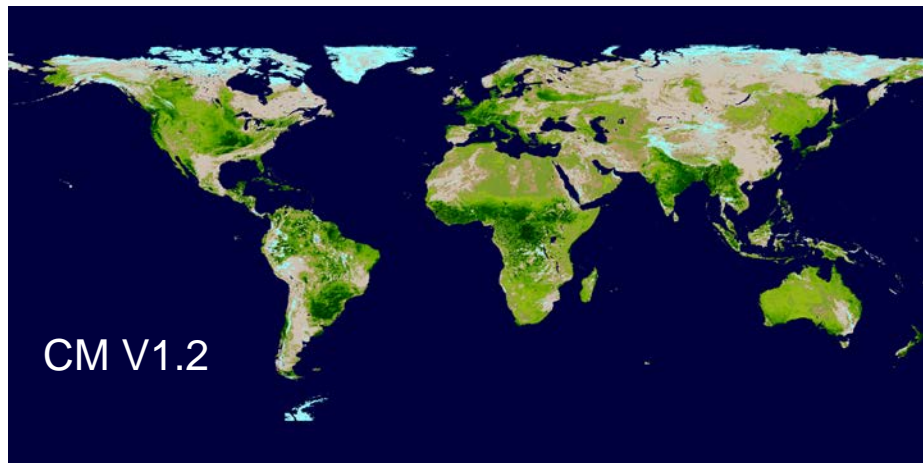
Investigation on the issue of consistency between IDPS surface reflectance and NDE surface reflectance is on going. .

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|-------------------------------------------------------|---------------|---------------|---------------------------------------------------------------------|----------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | Aug-18 | Aug-18 | 08/22/18 | |
| J1 algorithm adjustments: | | | | |
| Preliminary DAP to ASSISTT (science team to ASSISTT) | Sep-18 | Nov-18 | | |
| Preliminary DAP to NDE (ASSISTT to NDE) | Nov-18 | Dec-18 | | |
| SNPP/J1 algorithm Refinement (Maintenance DAP) | | | | |
| Add J1 products to EDR monitoring web | Sep-18 | Sep-18 | | |
| Enterprise Algorithm Final DAP | Jan-18 | Jan-18 | Initial DAP: 06/26/17 Final DAP: 02/06/18 Delta DAP: 03/15/18 | |
| NVPS ARR | | | 12/21/17 | |

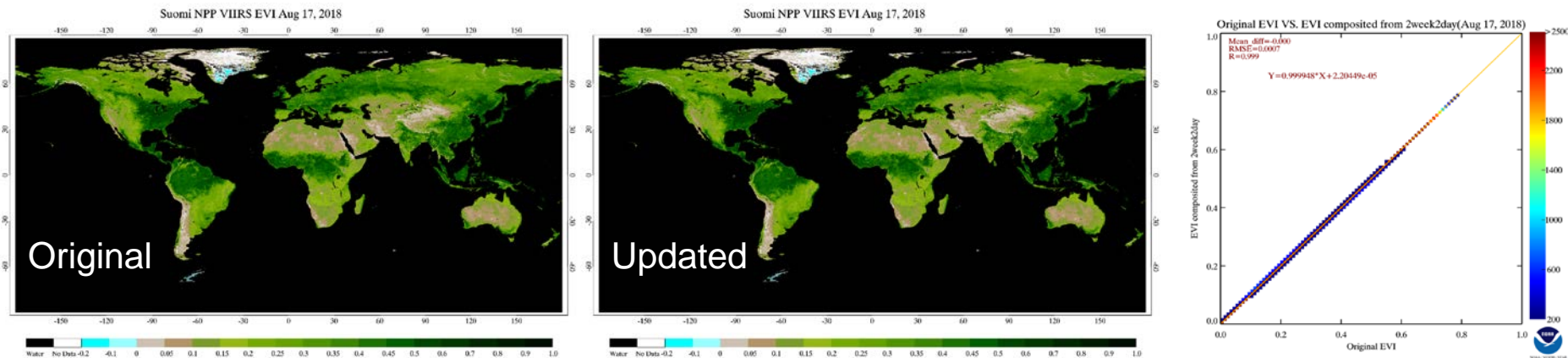
Highlights:



OSPO is developing a new cloud mask (CM Version 2.1) designed to replace the cloud mask (CM Version 1.2) being used in the current SNPP-NOAA-20 VIIRS VI operational algorithm. The figures are two sample daily VIIRS EVI products with different cloud mask applied. The preliminary assessment of the impact of updated cloud mask on the VIIRS VI product suggests that the VIIRS VI product is minimally impacted by the updated cloud mask



OSPO is developing a new cloud mask (CM Version 2.1) designed to replace the cloud mask (CM Version 1.2) being used in the current SNPP-NOAA-20 VIIRS VI operational algorithm. The figures are two sample daily VIIRS TOC NDVI products with different cloud mask applied. The preliminary assessment of the impact of updated cloud mask on the VIIRS VI product suggests that the VIIRS VI product is minimally impacted by the updated cloud mask



Current bi-weekly compositing component in SNPP/NOAA-20 Operational Algorithm is inefficient as it reads 16 days of daily surface reflectance (SR) data. To improve the efficiency, we choose to adopt a new strategy - compositing from 2 weekly SR and 2 daily SR data - and the new strategy significantly reduces the running time from 8-9 hours to 2-3 hours while producing almost exactly the same VIIRS VI product. The figures are two sample daily VIIRS TOC EVI products with original and updated bi-weekly compositing component applied respectively, and also their comparison in the scatterplot. This test strongly suggests that the efficiency of current VIIRS VI algorithm can be improved with new strategy in bi-weekly VI product compositing.

Accomplishments / Events:

- Presented the SNPP/NOAA-20 VIIRS GVF product to the colleagues and potential users in the ForestSAT 2018 conference hold in College Park, MD on Oct. 1-5 2018
- Evaluated the impact of new cloud mask on SNPP VIIRS GVF product
- Discussed the plan to updated GVF QA
- Updated the visualization website for providing better VIIRS GVF access to users in the following website.
https://www.star.nesdis.noaa.gov/smcd/viirs_vi_web/land_watch.php

Overall Status:

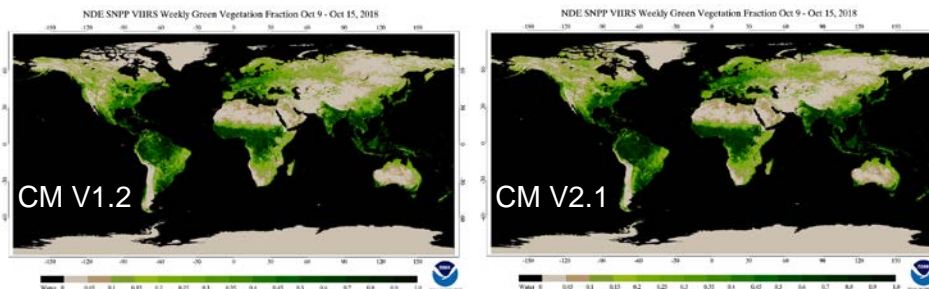
| | Green ¹ (Completed) | Blue ² (On-Schedule) | Yellow ³ (Caution) | Red ⁴ (Critical) | Reason for Deviation |
|--------------------------|-----------------------------------|------------------------------------|----------------------------------|--------------------------------|----------------------|
| 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:

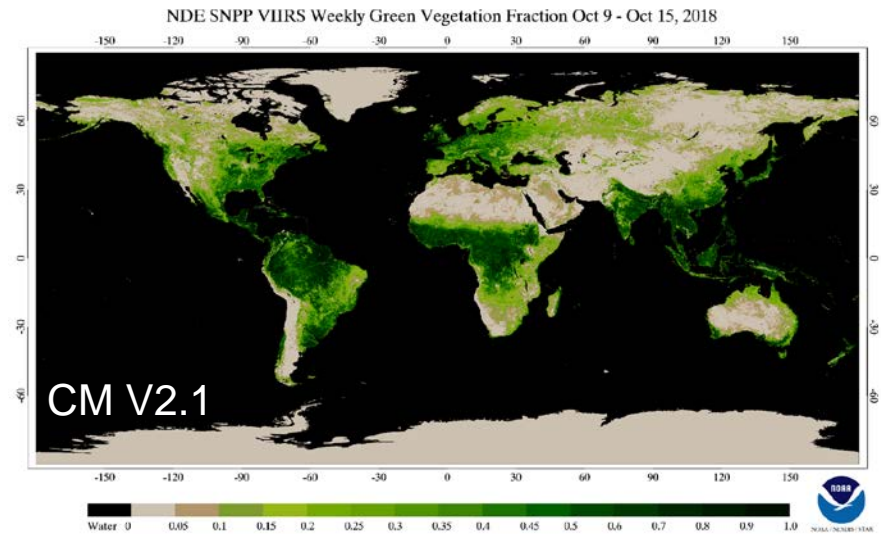
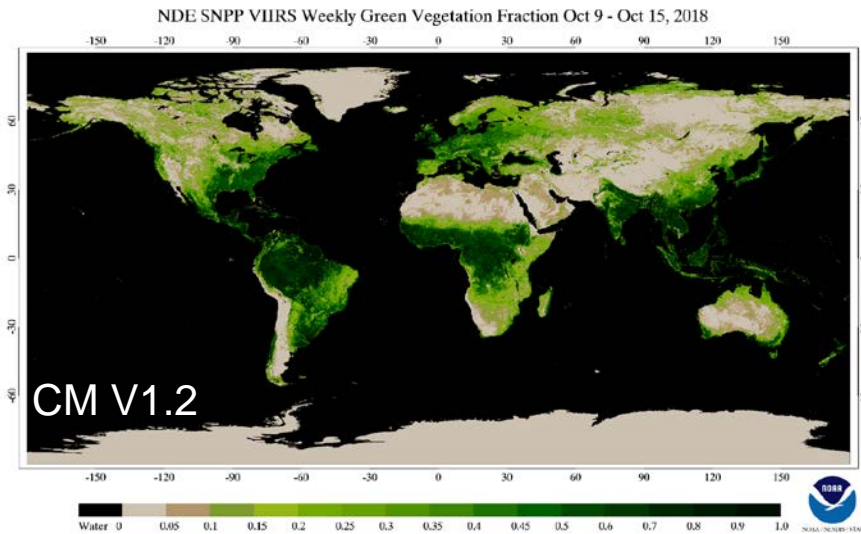
Investigation on the issue of consistency between IDPS surface reflectance and NDE surface reflectance is on going. .

Highlights:



OSPO is developing a new cloud mask (CM Version 2.1) designed to replace the cloud mask (CM Version 1.2) being used in the current SNPP-NOAA-20 VIIRS GVF operational algorithm. The figures are two sample weekly VIIRS GVF products with different cloud mask applied. The preliminary assessment of the impact of updated cloud mask on the VIIRS GVF product suggests that the updated cloud mask may bring minimal impact on the VIIRS GVF product. Yet further evaluation is required due to limited data for this test.

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|------------------------------------------------------|---------------|---------------|------------------------|----------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | Aug-18 | Aug-18 | 08/22/18 | |
| J1 algorithm adjustments: | | | | |
| Preliminary DAP to ASSISTT (science team to ASSISTT) | Sep-18 | Nov-18 | | |
| Preliminary DAP to NDE (ASSISTT to NDE) | Nov-18 | Dec-18 | | |
| SNPP/J1 algorithm Refinement (Maintenance DAP) | | | | |
| Add J1 products to EDR monitoring web | Sep-18 | Sep-18 | Sep-18 | |



OSPO is developing a new cloud mask (CM Version 2.1) designed to replace the cloud mask (CM Version 1.2) being used in the current SNPP/NOAA-20 VIIRS GVF operational algorithm. The figures are two sample weekly VIIRS GVF products with different cloud mask applied. The preliminary assessment of the impact of updated cloud mask on the VIIRS GVF product suggests that the VIIRS GVF product is minimally impacted by the updated cloud mask. Yet further evaluation is required due to limited testing data.

Accomplishments / Events:

- Prepared 16 weeks of the most recent 1km and 4km NOAA-20 data files, and 7-day outputs for NDE;
- Performed several regression tests to compare STAR versus NDE generated VHP 1km products;
- Updated Operational Readiness Review (ORR) of NPP VIIRS VH product ;
- Generation of NOAA-20 and SNPP VIIRS 500m, 1km, 4km, 16km weekly composite VH data & products;
- Presented NOAA-20 VH data and products (drought, climate) at the EUMETSAT meeting

Overall Status:

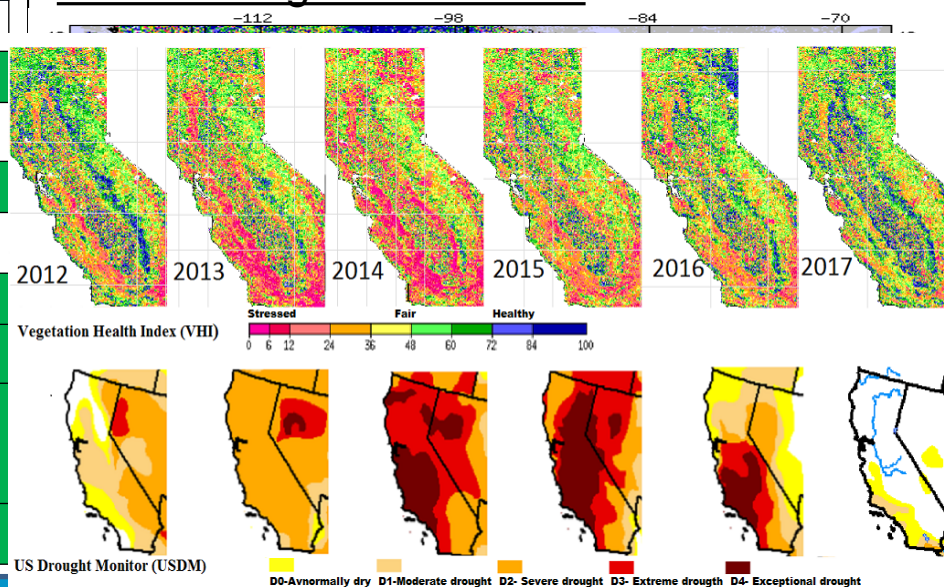
| | Green ¹ (Completed) | Blue ² (On-Schedule) | Yellow ³ (Caution) | Red ⁴ (Critical) | Reason for Deviation |
|--------------------------|-----------------------------------|------------------------------------|----------------------------------|--------------------------------|----------------------|
| 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: 1 km Vegetation health versus USDM Drought assessment



| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|------------------------|----------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | Aug-18 | Aug-18 | 08/22/18 | |
| J1 algorithm adjustments (1-km & 4-km VH): | | | | |
| Preliminary DAP to NDE | Aug-18 | Aug-18 | 08/28/18 | |
| SNPP/J1 algorithm Refinement (Maintenance DAP) | | | | |
| Add J1 products to EDR monitoring web | Sep-18 | Sep-18 | Sep-18 | |
| Vegetation Health (1-km) Algorithm Final DAP | Nov-17 | Nov-17 | 11/13/17 | |
| Updated DAP to NDE (metadata statistic update; code change to process SDR files from specific satellite only → can process J01/N20 VIIRS SDR) | | | 12/14/17 | |
| Vegetation Health (1-km) Algorithm Readiness Review | | | 12/13/17 | |

Accomplishments / Events:

- Marine Optical Buoy is back online after a series of issues and unfortunate incidents and now providing data as of 2 October 2018. Data are accessible through CoastWatch.NOAA.gov [MOBY pages](#).
- ZhongPing Lee of University of Massachusetts – Boston presented on his team’s work on “Cal/Val of SNPP VIIRS and NOAA-20 Rrs products in the Massachusetts Bay”
- Chuanmin Hu of University of South Florida presented on his team’s work on “Evaluation of VIIRS data products using bio-optical data collected from the 2018 Dedicated JPSS VIIRS Ocean Color Calibration/Validation Cruise – Part II”
- Ongoing work with NOAA-20, preparing for JPSS beta review in November

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.

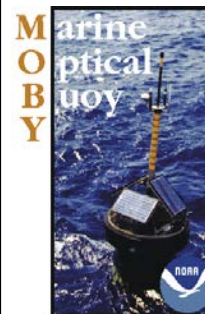
Issues/Risks:

- SDR calibration error for SNPP—identify how to avoid same error in future
- Big jumps in NOAA-20 SDR have impacted the schedule for validation of NOAA-20 MSL12 ocean color EDR

Highlights:

Marine Optical Buoy (MOBY) back online and MOBY266 deployment data are now available

Steph Flora reports that, “After a long absence, due to errant fisherman and associated propellers, MOBY is back in the water.” MOBY266 deployment data are now available on [NOAA CoastWatch/OceanWatch/PolarWatch](http://NOAA.CoastWatch/OceanWatch/PolarWatch) [MOBY pages](#) or go directly to these sub-pages:



Deployment Pages

<https://www.star.nesdis.noaa.gov/sod/moby/>

Gold Directory

<https://www.star.nesdis.noaa.gov/sod/moby/gold/>

Spectral ASCII files

https://www.star.nesdis.noaa.gov/sod/moby/filtered_spec/

The Gold directory has MOBY satellite weighted data for the following missions: VIIRS SNPP (including I-bands) and NOAA-20; OLCI S3A; SGLI GCOM-C; OCM2; MODIS Aqua, Terra and Land; SeaWiFS.

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|--------------------------------------|----------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | Nov-18 | Nov-18 | 11/27/18 | |
| Work on J1 instrument pre-launch characterization and calibration, including addressing the out spec polarization sensitivity issue, first report | Mar-18 | Mar-18 | Mar-18 | |
| Work on J1 specific lookup tables etc. and other needed modifications for VIIRS-J1 ocean color data processing system using MSL12 | Aug-18 | Aug-18 | Aug-18 | |
| Cal/Val team will finish the 2016 VIIRS dedicated cruise report (Fall 2017) and in situ data analyses (e.g., improve in situ data quality) | Mar-18 | Mar-18 | Cruise report published October 2017 | |
| In situ data collections including NOAA dedicated cruise in May 2018 and continue Cal/Val for VIIRS ocean color EDR | May-18 | May-18 | May-18 | |
| SNPP/J1 algorithm Refinement (Maintenance DAP) | | | | |
| With significantly improved MSL12, VIIRS mission-long ocean color data products will be reprocessed (the second data reprocessing). Both NRT and science quality data streams will be going forward using the new MSL12 | Dec-17 | Dec-17 | Dec-17 | |
| Work with CoastWatch/NCEI for the second (v 1.2) reprocessed ocean color data distributions | Sep-18 | Sep-18 | Nov-17 | |

Accomplishments / Events:

- Following ACSPO v2.60 delivery to NDE in Jun 2018, operational implementation is now planned on 6 Nov 2018
- Once ACSPO 2.60 is operational, archival of N20 SST will commence with PO.DAAC. Operational record will be back-filled to Jan 2018-pr with N20 RAN1 data currently produced in STAR
- We worked with VIIRS SST users to evaluate 2.60 SNPP SST with Met Office OSTIA Team. Also, we worked with the NOS West Coast Ocean Forecast System (WCOFS) Project to evaluate the new N20 SST product. Both users report that they are ready. Notices were also sent to all other users of ACSPO VIIRS SST.
- The future ACSPO v2.70 will explore a super-collated gridded (L3S) 0.02° VIIRS SST product from SNPP and N20 L3Us, which will reduce residual cloud, suppress noise, and improve coverage

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

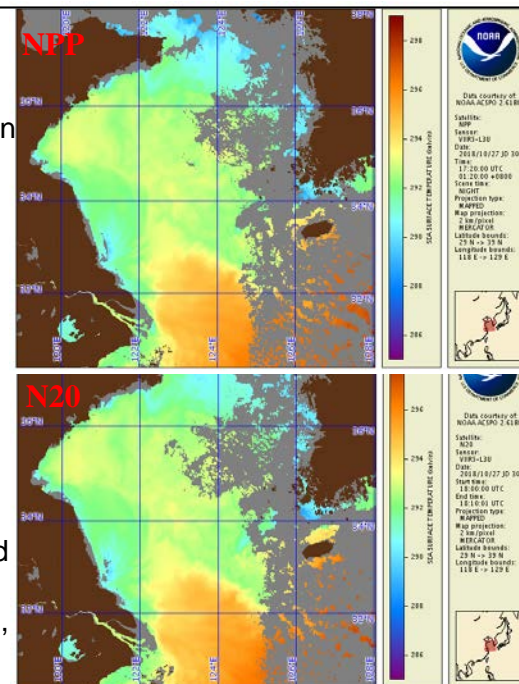
Highlights:

ACSPO 2.60, delivered in Jun 2018, will become operational in NDE on 6 Nov 2018.

It will produce 2 SST products: SNPP & N20. They are highly consistent yet complementary.

We will explore aggregating those and creating a global 0.02° gridded super-collated L3S VIIRS product.

L3S will report data of improved quality (reduced residual cloud and suppressed random noise), and in larger retrieval domain.



| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|----------------------------------------------------------------------------------------------------------------|---------------|---------------|-------------------------------------|----------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | Apr-18 | Apr-18 | 04/18/18 | |
| Provisional Maturity | Sep-18 | Sep-18 | 04/18/18 | |
| Set up RAN2 in STAR, test end-to-end | May-18 | May-18 | 05/31/18 | |
| J1 algorithm adjustments: | | | | |
| ACSPO 2.5 (improved SST Imagery, fixed bow-tie gaps/distortions) | Nov-17 | Nov-17 | 11/16/17 | |
| Preliminary ACSPO 2.6 DAP to NDE (improved clear-mask in coastal/dynamic areas; ocean fronts; N20 adjustments) | Jul-18 | Jul-18 | 06/14/18 to ASSISTT 07/05/18 to NDE | |
| SNPP/N20 Algorithms Refinement (Maintenance DAP), LTM | | | | |
| Release updated SQUAM v2.1, iQuam v2, and ARMS v2.1 | Sep-18 | Sep-18 | Completed 08/31/2018 | |

Accomplishments / Events

- NUCAPS NOAA20 trace gas and OLR provisional validated review was held on October 2nd 2018. We presented validation results of the recent algorithm upgrades by mean of a more comprehensive validation data set.
- Double difference studies on the SNPP and NOAA20 CrIS SDR demonstrated the sources on interconsistency in the CO2 products (0.1K translates to 3ppmv in CO2 abundances).
- Antonia Gambacorta and Nick Nalli presented in the 2018 NASA Science Fall meeting.
- Work continues towards the development of an improved N2O climatology.
- A thorough validation of NOAA20 NUCAPS ozone was concluded and showed remarkable consistency against SNPP NUCAPS ozone.
- A first validation of NUCAPS NOAA20 OLR against collocated CERES OLR shows a remarkable agreement.

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 | | | |

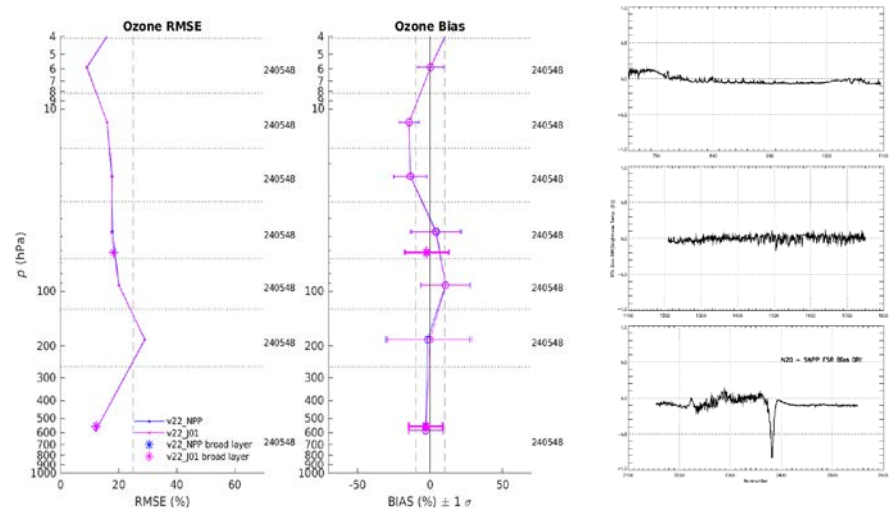
1. Project has completed.
2. Project is within budget, scope and on schedule.
3. Project has deviated slightly from the plan but should recover.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

None

Highlights:

- NUCAPS NOAA20 ozone and OLR passed the provisional validated review. Left figure shows SNPP and NOAA20 NUCAPS ozone comparisons. Right figure shows CrIS NOAA20 – SNPP double differences (OBS-CALC).



| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|------------------------------------------------------------------------------------|---------------|---------------|-----------------------------------------------------------------------------------------|--------------------------------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | Jun-18 | Jun-18 | 06/15/18 | |
| Provisional Maturity | Sep-18 | | 06/15/18 10/02/18 | 06/15/18: AVMP/AVTP 10/02/18: O3/CO/OLR |
| Matchup J1 CrIS SDR with CERES data; generate regression coefficients for CrIS OLR | Jun-18 | August 18 | Aug-18 | |
| Validation against ECMWF data and radiosondes; SNPP and J1 EDRs cross comparisons | Sep-18 | Sep-18 | Sept-18 | |
| Validation with NPP CERES radiation products | Sep-18 | Sep-18 | Sept-18 | |
| Validation NUCAPS trace gas EDRs against MOPITT, AIRS, TCCON, OCO-2 | Sep-18 | Sep-18 | Sept-18 | |
| J1 algorithm adjustments: | | | | |
| Preliminary DAP to ASSISTT (team to ASSISTT) | Apr-18 | Apr-18 | 04/27/18 | |
| Preliminary DAP to NDE (ASSISTT to NDE) | Aug-18 | Aug-18 | 07/16/18 | Updated deliveries: 8/10 & 8/15 |
| NUCAPS Emergency DAP | | | 07/12/18 (update to the NUCAPS codes to handle the changes to the JPSS-RR Clouds files) | |

Accomplishments / Events:

- Continuing to work with NDE to integrate MiRS v11.3 into operations. The issue (floating point exception) that led to 10% of granules to fail (only at NDE, not STAR) has been resolved.
- Additional discrepancies were found between N20 results at NDE and in STAR when testing in the DEV string. This has now been resolved with single granule verification tests using benchmark data showing 100% agreement (see highlight plots).
- Codes for NPP and NDE are now being moved to I&T string for testing prior to transition to OPS.

Overall Status:

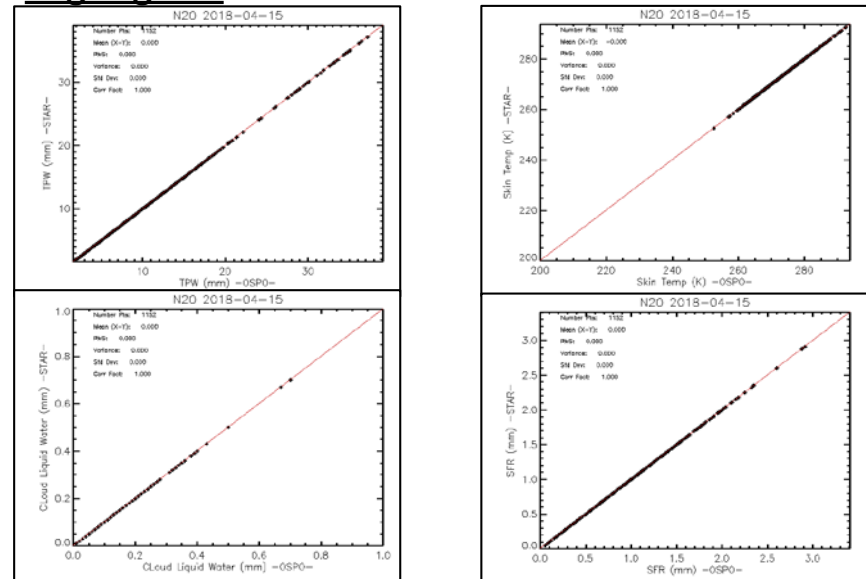
| | Green ¹ (Completed) | Blue ² (On-Schedule) | Yellow ³ (Caution) | Red ⁴ (Critical) | Reason for Deviation |
|--------------------------|-----------------------------------|------------------------------------|----------------------------------|--------------------------------|----------------------|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

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

Issues/Risks:

None

Highlights:



Single granule verification test of NDE and STAR MiRS outputs for N20 showing 100% agreement.

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|---------------------------------------------------------------------------------|---------------|---------------|------------------------|-------------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | Jun-18 | Jun-18 | 03/22/18 | Virtual Review |
| Provisional Maturity | Sep-18 | Sep-18 | 04/18/18 | |
| Validation against ECMWF data and radiosondes | Sep-18 | Sep-18 | 08/28/18 | |
| Validation against other reference data for MiRS EDRs (e.g. RR, SWE, SIC, etc.) | Sep-18 | Sep-18 | Sep-18 | |
| J1 algorithm adjustments: | | | | |
| Preliminary DAP to NDE (Extend/Optimize MiRS for J1) | Aug-18 | Aug-18 | 06/14/18 | Passed OSPO code review |
| SNPP/J1 algorithm Refinement (Maintenance DAP) | | | | |
| Add J1 products to EDR monitoring web | Sep-18 | Sep-18 | Sep-18 | |

Accomplishments / Events:

- Calibration of the NOAA-20 SFR is ongoing. New approach is based on the connection between SFR bias and satellite measurements as well as GFS model parameters. The figure below shows the correlation coefficients between the SFR bias and some other parameters.
- Two sets of SFR processing systems have been updated and are generating SFR from direct broadcast data from CIMSS where data are available. The two sets of systems are for CONUS and Alaska, respectively, and currently include 8 satellites from JPSS, POES, Metop, GPM, and DMSP. NASA SPoRT converts the data to AWIPS and send them to WFOs. Some forecasters have contacted the SFR team about product evaluation in the coming winter.
- The S-NPP SFR successfully passed the Operation Readiness Review on November 2, 2018.

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 | | | |

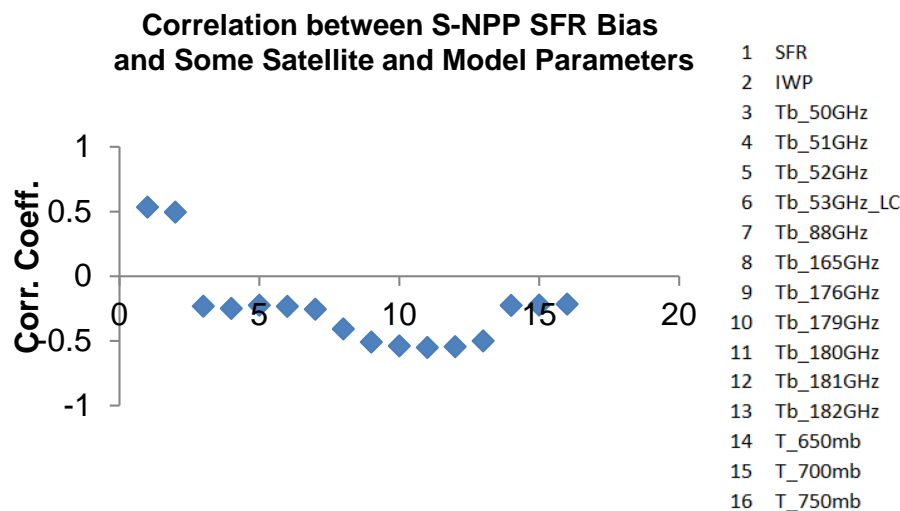
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Issues/Risks:

None

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|----------------------------------------------------|---------------|---------------|------------------------|-------------------------|
| SNPP/J1 calibration/validation | | | | |
| Snow Fall Rate (SFR) Cal/Val plan (draft delivery) | Dec-17 | Dec-17 | 12/30/17 | |
| Snow Fall Rate (SFR) Cal/Val plan (final delivery) | Mar-18 | Mar-18 | 03/28/18 | |
| S-NPP SFR Provisional Maturity | Jun-18 | Jun-18 | 06/20/18 | |
| NOAA-20 SFR Beta Maturity | Jun-18 | Jun-18 | 06/20/18 | |
| SNPP/J1 algorithm development/adjustments: | | | | |
| S-NPP/NOAA-20 SFR DAP to NDE | Aug-18 | Aug-18 | 06/14/18 | Passed OSPO code review |

Highlights:



Accomplishments / Events:

- The International Cloud Working Group (ICWG) met for this week in Madison, Wisconsin. The ICWG is one of several working groups which report to the Coordination Group for Meteorological Satellites (CGMS). The ICWG has a strong connection to the International Winds Working Group (IWWG), and a special winds breakout session was held one afternoon to discuss cloud height retrieval error impacts on polar and geostationary winds.

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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- Project has deviated slightly from the plan but should recover.
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Issues/Risks:

None

Highlights:



| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|-------------------------------------------------------|---------------|---------------|------------------------|----------------------------|
| J1 post-launch calibration/validation | | | | |
| Beta Maturity | Jun-18 | Sep-18 | 10/02/18 | Combine Beta & Provisional |
| Provisional Maturity | Sep-18 | Sep-18 | 10/02/18 | |
| J1 algorithm adjustments: | | | | |
| Preliminary DAP to ASSISTT (science team to ASSISTT) | Apr-18 | Apr-18 | Apr-18 | |
| Preliminary DAP to NDE (ASSISTT to NDE) | Aug-18 | Aug-18 | 07/31/18 | |
| SNPP/J1 algorithm Refinement (Maintenance DAP) | | | | |
| Add J1 products to EDR monitoring web | Sep-18 | Sep-18 | Sep-18 | |

Accomplishments / Events:

- Preparing for JAXA NCWCP visit on December 10, 2018 to discuss AMSR3 and GCOM-C
- Testing continues on updated GAASP package that includes several algorithm upgrades
- Working with satellite liaisons and NWS on GCOM product quick guides
- Continued product cal/val; all products meeting requirements
- Comparing EDR's with counterpart JAXA EDR's
- Continue to work with IA, NJO and OSGS to respond to JAXA requests for NOAA needs for AMSR-2 follow-on and orbit preference
- Participated in relevant project meetings/discussions with NJO, OSGS and OSPO

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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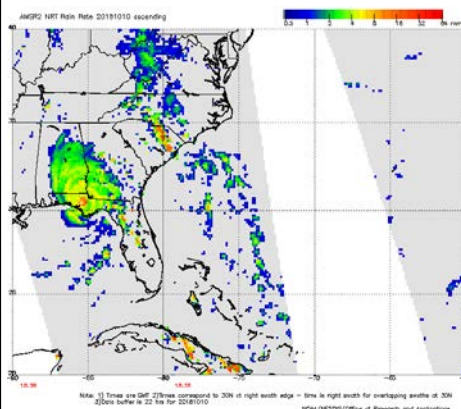
Issues/Risks:

None

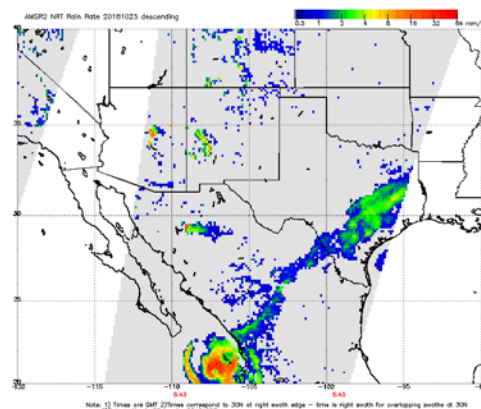
| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|--------------------------------------------------------------------------------------------|---------------|---------------|------------------------|----------------------------------------------|
| Updated Wind Speed Product (Coastal and accuracy improvements) | Nov-17 | Nov-17 | Nov-17 | |
| Conduct technical information meeting with JAXA GCOMW-1 scientists and engineers | Nov-17 | Nov-17 | Nov-17 | |
| GAASP V2.1 DAP to NDE (switch SST ancillary file to CMC SST) | Jan-18 | Jan-18 | Jan-18 | |
| Updated AMSR2 brightness temperature calibration analysis and corrections (V2.1) | Feb-18 | Apr-18 | Apr-18 | Latest L1 S/W not implemented on NDE on Time |
| Soil Moisture, snow and precipitation product updates finalized for integration into GAASP | Jun-18 | Jun-18 | Jun-18 | |
| DAP to ASSISTT (science team to ASSISTT) | Jul-18 | Jul-18 | Jul-18 | |
| Delivery of updated GAASP Package to OSPO (ASSISTT to NDE) | Aug-18 | Dec-18 | | Final testing almost completed |

Highlights: GCOM Observations of Hurricane Florence

Rain Rates 23 Oct 2018



Rain Rates 10 Oct 2018



GCOM AMSR-2 rain rate products depicting Hurricane Michael just after landfall (left) and Hurricane Willa just before landfall (right).

Accomplishments / Events:

- V8TOz reached Provisional Maturity (10/2/2018)
- OMPS Total Ozone EDR Adjustment Table deliveries for V8TOz and V8TOS were checked by ASSIST and delivered to NDE.
- SO2 alert pages at OSPO are up.
- Performance of TOAST blended products using V8Pro and CrIS NUCAPS EDRs at OSPO verified vs STAR.
- Monitoring site content expansion to include more NOAA-20 OMPS products continued.

https://www.star.nesdis.noaa.gov/smcd/spb/OMPSSDemo/pro/OMPSbeta.TOZ_N20_V8.php

Overall Status:

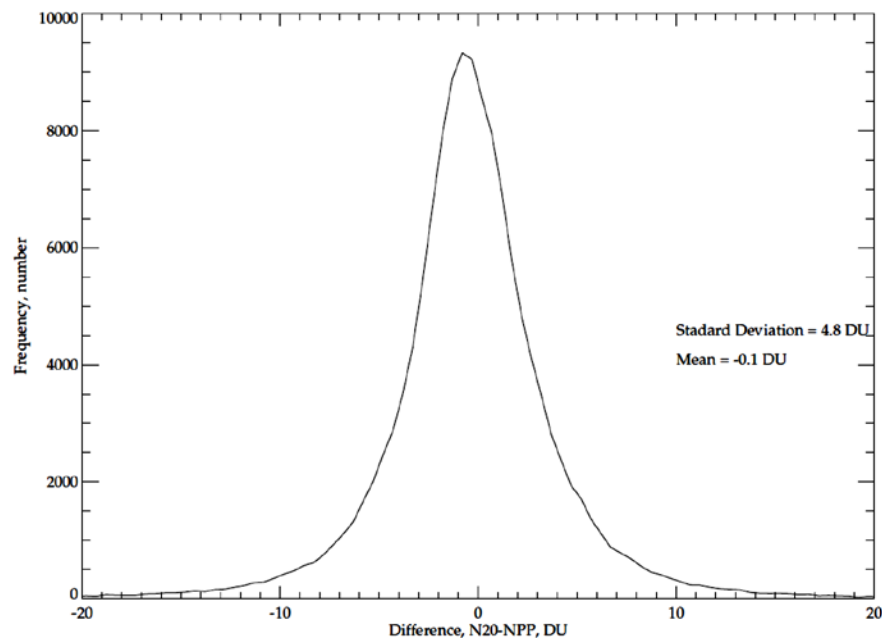
| | Green ¹ (Completed) | Blue ² (On-Schedule) | Yellow ³ (Caution) | Red ⁴ (Critical) | Reason for Deviation |
|--------------------------|-----------------------------------|------------------------------------|----------------------------------|--------------------------------|----------------------|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

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:

Code Changes for OMPS SDR on path to maturity will not be implemented at IDPS until July and September 2018.

| FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|--------------------------------------------------|---------------|-------------------|---------------------------------------------------|------------------------------|
| NOAA-20 calibration/validation | | | | |
| Beta Maturity | Feb-18 | Mar-18 | 03/22/18 | Virtual Review |
| Provisional Maturity (V8TOz) | Apr-18 | Oct-18 | 10/02/18 | SDR Provisional , Mx2 TTO |
| Provisional Maturity (V8Pro) | Apr-18 | Nov-18 | | SDR Provisional , Mx2 TTO |
| Validated Maturity | Aug-18 | Feb-19 | | 16-Granule Fix, Mx3 TTO |
| Prepare, demonstrate and exercise tools for J-01 | Dec-17 | Dec-17 | Dec-17 | |
| Trending of ground-based comparisons | Jun-18 | Jan-19 | | Varying SDR calibration |
| NOAA-20 algorithm adjustments | | | | |
| DAP to ASSISTT (science team to ASSISTT) | Apr-18 | May-18 | 5/28/2018 | Combined with table delivery |
| Soft Calibration for J-01 (DAP) (ASSISTT to NDE) | May-18 | June-18 Sep-18 | 06/01/18 LFSO2 06/06/18 V8Pro 9/28/18 V8TOz | Final will await SDR fixes. |



Histogram of Total Ozone Matchups for Latest Adjustment Table

Accomplishments / Events:

- Ongoing review of NUCAPS sounding for NPP and NOAA-20
- Installed new “Supersaturation” flag in NPROVS for NUCAPS soundings and provided review **(Highlight)**
- Ongoing review of “reprocessed” NPROVS Special radiosonde dataset from the GRUAN Lead Center and associated satellite product collocations from STAR.
- Observations from the ongoing Radiosonde Inter-comparison and VALidation (RIVAL) campaign processed into NPROVS
- Article published in GSICS Quarterly Newsletter, Summer, 2018: “GSICS and GRUAN Coordination: RIVAL to the Rescue?”
- VIIRS I-5 Band descending images were added to the JSTAR Mapper website which is now public and linked to the JPSS website. **(Highlight)**.

Overall Status:

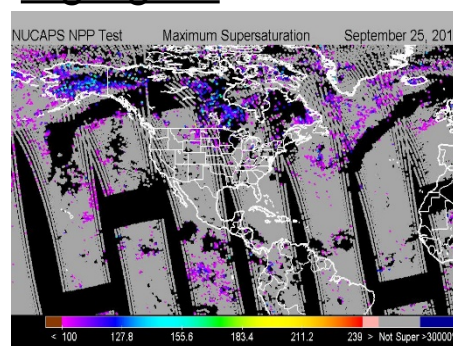
| | Green ¹ (Completed) | Blue ² (On-Schedule) | Yellow ³ (Caution) | Red ⁴ (Critical) | Reason for Deviation |
|--------------------------|-----------------------------------|------------------------------------|----------------------------------|--------------------------------|----------------------|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

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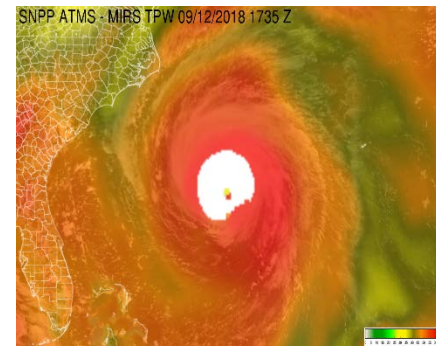
Issues/Risks:

None

Highlights:



NPROVS: New NUCAPS flag installed in NPROVS displays numerous occurrences (colors) of supersaturated (Humidity >100%) IR-based soundings which otherwise passed QC; problematic! Investigation continues.



EDR-LTM: Figure 1: Hurricane Florence as it approaches Mid-Atlantic coast on September 12, 2018. The two products shown are the SNPP MIRS Total Precipitable Water overlaid on VIIRS True Color image.

| Team | FY18 TTA Milestones | Original Date | Forecast Date | Actual Completion Date | Variance Explanation |
|---------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|------------------------|----------------------|
| EDR LTM | Maintain / expand existing EDR LTM web pages and integrate available NOAA-20 EDR | Sep-18 | Sep-18 | Sep-18 | |
| NPROVS | Maintain and support operational transition and algorithm upgrades for NUCAPS (and MiRS) sounding EDR from S-NPP, MetOp, and pending NOAA-20. | Aug-18 | Aug-18 | Aug-18 | |
| | Maintain support of GRUAN, ongoing NOAA/GRUAN/ARM RIVAL Coordination and GRUAN / GSICS activities | Aug-18 | Aug-18 | Aug-18 | |
| | Support NWS Radiosonde Transition and AWIPS-2 (NUCAPS user) programs/initiatives | Aug-18 | Aug-18 | Aug-18 | |