AMP/STAR FY19 TTA

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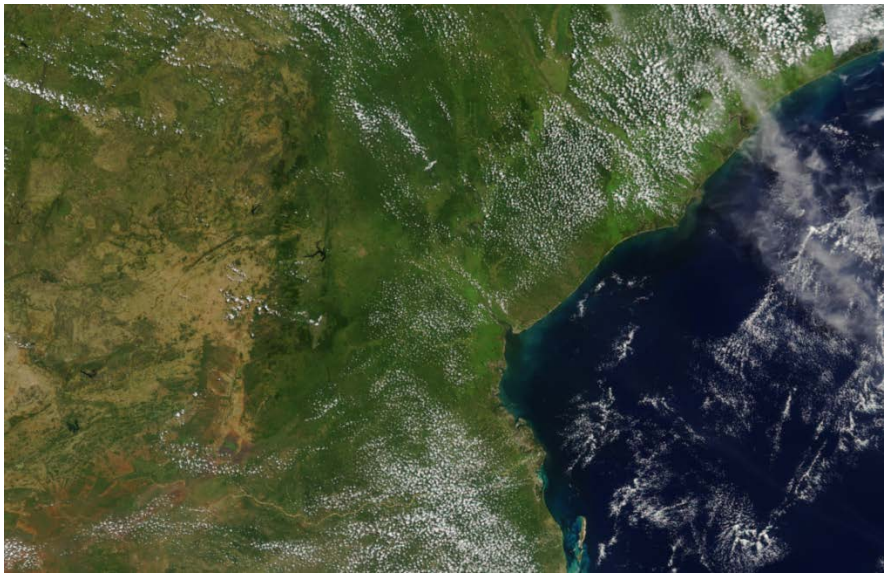
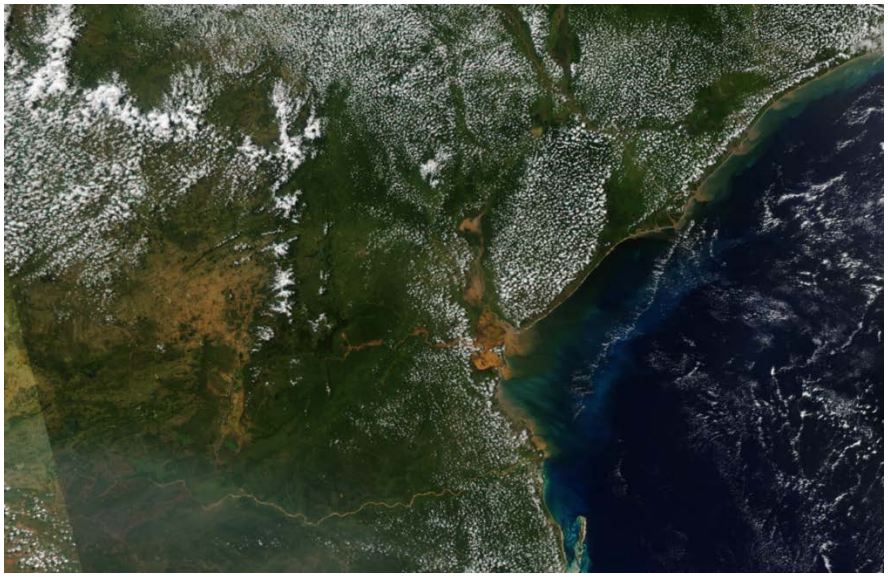
April 9, 2019

Highlights from the Science Teams





VIIRS sees aftermath of Cyclone Adai

In early March a weak tropical cyclone moved on shore in northern Mozambique with heavy rains. This system moved offshore as a weak low pressure system, then reorganized to the equivalent of a Category 4 hurricane. It then re-entered Mozambique causing devastating flooding and loss of life. The VIIRS True Color image to the left show a before and after of the region. The bottom image shows swollen rivers throughout the area.

February/March Maturity Review

JPSS STAR hosted the latest NOAA-20 Algorithm Maturity Review on March 21 2019. The review panel found that NCOMP , Vegetation Index/Green Vegetation Fraction, LST, and Land Surface Albedo, and Surface Reflectance have all reached Provisional maturity. Vegetation Health has reached Validated maturity. For more info on N20 Algorithms and Cal Val Maturity, go to JSTAR :https://www.star.nesdis.noaa.gov/jpss/AlgorithmMaturity.php

Highlights from the Science Teams

CrIS Missing Interferogram Issues found by ICVS

In late March, the CrIS ICVS team noticed missing interferogram packets causing bad data scans. On March 23 one CriS MWIR SDR scan had bad data. The next day scans were bad. By March 26 243 scans contained bad data and IDPS stopped producing CrIS SDR data. Various techniques have been tried to fix the issues, but so far to no avail. The issue is ongoing.

New Ice Model Version

The new version of improved One-dimensional Thermodynamic Ice Model (OTIM), which is the core of the Enterprise ice thickness algorithms, has been coded and tested with S-NPP VIIRS data. This update, version 3.6, has important improvements in dealing with cloud contamination and melt ponds on ice.

New Dual VIIRS winds product being generated

Starting this month a new wind product is being generated CIMSS that uses cloud tracking features from S-NPP and NOAA-20 together. With both satellites in the same orbit but separated by approximately 50 minutes, and both having VIIRS, we now have the capability of generating a "tandem" winds product. Cloud Motion Vectors (CMVs) are now being generated every 50 minutes over the polar regions using the tandem S-NPP/NOAA-20 configuration.

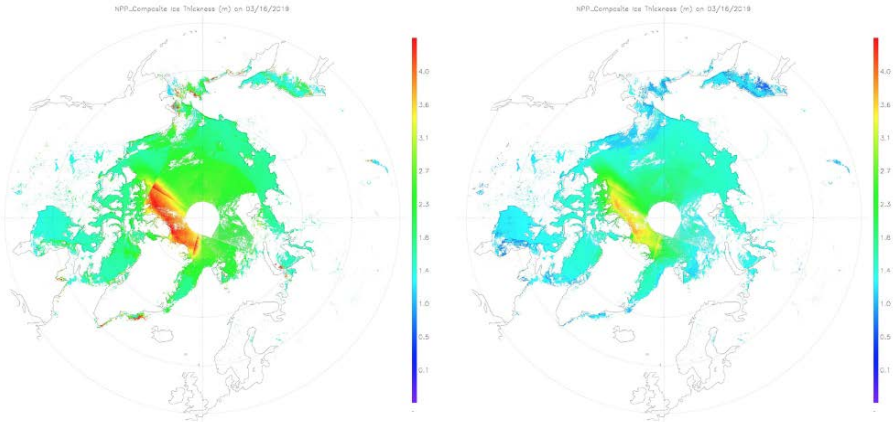


Figure. Old ice thickness on left and new on right

Highlights from the Science Teams

JSTAR Mapper/AEROSE Cruise Collaboration

To provide timely images of NUCAPS retrievals to AEROSE cruise researchers with very limited bandwidth the JSTAR Mapper team developed a version of the Mapper software which zoomed into the region of the Atlantic where the *Ron Brown* ship was sending radiosondes from. The software then was enhanced to put a proper title with product name, level, date and a colorbar legend. The shared image folder was updated each day including the weekend so they could be used in briefings and student projects.

JPSS VIIRS LST and Albedo Unit Readiness Review

The LST and Albedo science team has performed the Unit Test Readiness Review, with the ASSISST team, for the JPSS global gridded LST and albedo product development. In the software design, a common gridding tool will be run first for building up pixel-to-grid mapping files which will be used for the LST and LSA gridding processes. Am Algorithm Readiness Review (ARR) of gridded LST and LSA production, which is the last step to operational production, is scheduled in August 2019.

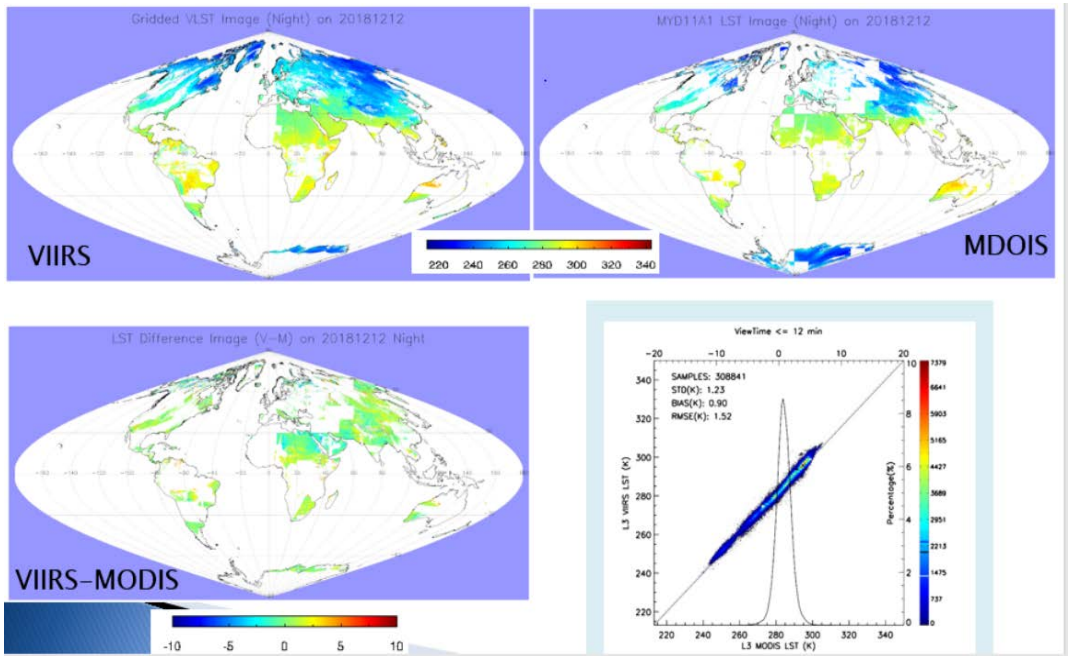


Figure. Comparison of VIIRS and MODIS LSTs

Accomplishments

- Delivery Algorithm Packages (DAPs) - Mission Unique Products:
  - CrIS SDR DAP (Refining the threshold values for CrIS lunar intrusion detection, ADR8903/CCR4451) delivered to DPES on 3/27/2019
  - TC(terrain-corrected) Imagery Critical Design Review on 3/14/2019

- DAPs - Enterprise Products:
  - STAR delivered EPS DAP (includes Clouds, Cryosphere, Aerosol, Volcanic Ash, Land Surface Temperature, Surface Albedo, and VIIRS Polar Winds) to NDE on 3/11/2019. Offline Land (LST/LSA) DAP delivered to NDE on 3/29/2019
  - GAASP_v2-5 DAP (update to the Ocean SSW algorithm and the Precipitation algorithm, with some other minor updates) delivered to NDE on 3/19/2019, and delivered to CSPP on 3/20/2019
  - STAR Ocean Color team delivered NOAA-20 MSL12 (v1.3) software package to CoastWatch on 3/21/2019
  - MiRS v11.4 DAP delivered to NDE on 3/29/2019
  - New set of NVPS test data delivered to NDE on 4/3/2019
  - VIIRS Gridded Land Unit Test Readiness Review on 3/12/2019
  - I-Band Active Fires algorithm was released in the CSPP

- IDPS Builds Checkouts:
  - STAR submitted data request for Mx6 SOL deploy regression review/checkout.

Accomplishments – JPSS Cal Val Supports

- NOAA-20/S-NPP Operational Calibration Support:
  - S-NPP Weekly OMPS TC/NP Dark Table Updates: 03/05/19, 03/12/19, 03/19/19, 03/26/19
  - NOAA-20 Weekly OMPS TC/NP Dark Table Updates: 03/05/19, 03/12/19, 03/19/19, 03/26/19
  - S-NPP Bi-Weekly OMPS NP Wavelength & Solar Flux Update: 03/12/19, 03/26/19
  - NOAA-20 Monthly VIIRS StrayLight LUTs Update: 03/13/19
  - S-NPP Monthly VIIRS LUT Update of DNB Offsets and Gains: 03/12/19
  - NOAA-20 Monthly VIIRS LUT Update of DNB Offsets and Gains: 03/12/19

- February/March NOAA-20 Cal/Val Maturity Review (3/21/2019)
  - *Provisional Maturity*: Nighttime Cloud Optical and Microphysical Properties, Surface Reflectance, Green Vegetation Fraction, Vegetation Index, Land Surface Temperature, Surface Albedo
  - *Validated Maturity*: Vegetation Health

- NOAA-20 products operational since 3/7/2019 (NDE 2.0.15 build)
  - All MiRS products, except SFR
  - Enterprise products: Cloud Mask, Cloud Phase/Type, Cloud Daytime Cloud Properties (DCOMP), Cloud Height, Cloud Base Height, Aerosol Optical Depth and Particle Size Parameter, Aerosol Detection, and Volcanic Ash
  - V8TOZ, and V8TOS
  - VIIRS Polar Winds
  - NUCAPS products: AVTP, AVMP, Ozone, OLR

Upcoming Cal/Val Maturity Reviews

- April/May Maturity Review (5/16/2019):
  - Beta Maturity:
    - I-Band Active Fires
  - Provisional Maturity:
    - Cryosphere products: Snow Cover, Sea Ice, IST
    - Snow Fall Rate
  - Validated Maturity:
    - Cloud products: ECM, Cloud Phase/Type, ACHA, CBH, DCOMP, and NCOMP
    - Aerosol product: AOD, and ADP
    - Volcanic Ash (Virtual Review)
    - VIIRS Polar Winds
    - Sea Surface Temperature

- June Maturity Review:
  - Provisional Maturity:
    - OMPS Ozone (V8Pro)
  - Validated Maturity:
    - OMPS SDR (NP & TC)
    - OMPS Ozone (V8TOz)
    - Volcanic Ash (Question & Answer)

- July Maturity Review:
  - *Beta Maturity*: GST (Global Gridded Surface Type)
  - *Validated Maturity*: OMPS Ozone (V8Pro)

Upcoming Milestones/Deliveries

- JSTAR Code/LUT Deliveries:
  - DAP to DPES:
    - May-19: OMPS LUTs delivery (for validated maturity)
    - Aug-19: CrIS Polarization correction (ADR8760)
    - Sep-19: TC Imagery
  - NOAA-20 Algorithm DAP to NDE:
    - Apr-19: V8Pro – Final DAP
    - May-19: NVPS (VI & GVF) – Final DAP
    - Aug-19: SST - ACSPO 2.70
    - Sep-19: NUCAPS – Final DAP
    - Sep-19: I-band Active Fires

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	02/11/19	
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	12/11/18	
OMPS SDR: J2 Pre-launch sensor characterization report	Jun-19	Jun-19		
NOAA-20 EDR Final DAPs (JRR, SST)	Jun-19	Jun-19	02/12/19: ACSPO 2.61 03/11/19: JRR, LST/LSA, & VPW	
NOAA-20 EDR Final DAPs (MIRS, NUCAPS)	Sep-19	Sep-19	03/29/19: MiRS v11.4	
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

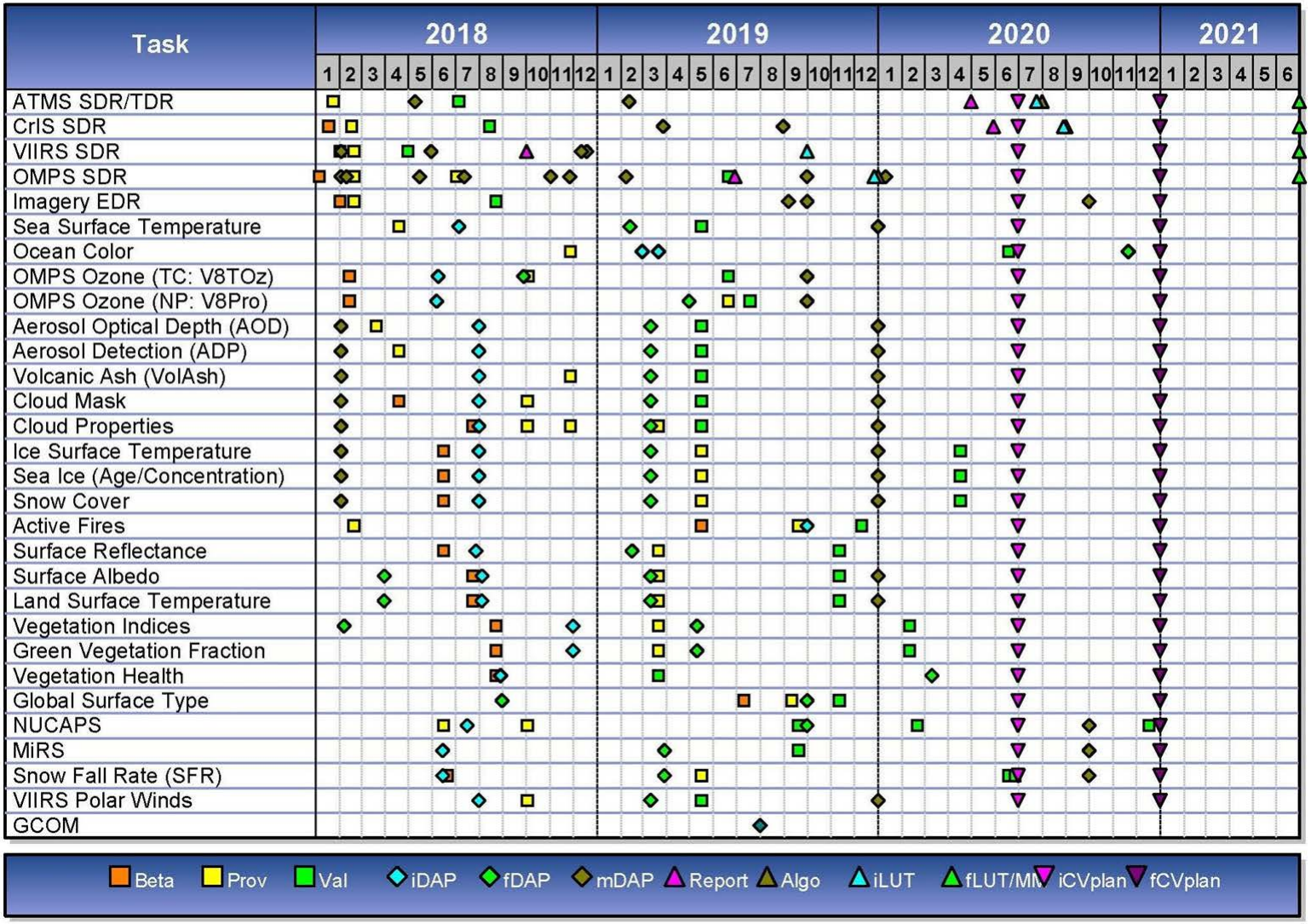
FY19 TTA Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20 Cal/Val				
Validated Maturity: NOAA-20 CrIS SDR	Oct-18	Oct-18	10/02/18 (Review Date) 08/14/18 (Effective Date)	
Validated Maturity: NOAA-20 OMPS SDR	Dec-18	Jun-19		
Provisional Maturity: NOAA-20 EDR Products (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) **11/27/18: Provisional Maturity:** Volcanic Ash, Daytime Cloud Optical and Microphysical Properties (DCOMP) **03/21/19: Provisional Maturity**: Nighttime Cloud Optical and Microphysical Properties (NCOMP)	
Provisional Maturity: NOAA-20 EDR Products (LST/LSA/Vegetation)	Mar-19	Mar-19	03/21/19 Provisional Maturity: LST/LSA/VI/GVF/SR Validated Maturity: Vegetation Health	
Provisional Maturity: NOAA-20 EDR Products (OC)	Apr-19	Apr-19	11/27/18: Ocean Color Beta/Provisional Maturity	
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, 11/06/18, 11/14/18, 11/20/18, 11/27/18, 12/04/18, 12/11/18, 12/18/18, 01/02/19, 01/08/19, 01/15/19, 01/23/19, 01/29/19, 02/05/19, 02/12/19, 02/20/19, 02/26/19, 03/05/19, 03/12/19, 03/19/19, 03/26/19**	
S-NPP: Bi-Weekly OMPS NP Wavelength & Solar Flux	Bi-Weekly	Bi-Weekly	**10/10/18, 10/23/18, 11/06/18, 11/20/18, 12/04/18, 12/18/18, 01/02/19, 01/15/19, 01/29/19, 02/12/19, 02/26/19, 03/12/19, 03/26/19**	
S-NPP: Monthly VIIRS LUT update of DNB Offsets and Gains	Monthly	Monthly	**10/16/18, 11/14/18, 12/13/18, 01/15/19, 02/12/19, 03/12/19**	
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, 11/06/18, 11/14/18, 11/20/18, 11/27/18, 12/04/18, 12/11/18, 12/18/18, 01/02/19, 01/08/19, 01/15/19, 01/23/19, 01/29/19, 02/05/19, 02/12/19, 02/20/19, 02/26/19, 03/05/19, 03/12/19, 03/19/19, 03/26/19**	
NOAA-20: Monthly VIIRS LUT update of DNB Offsets and Gains	Monthly	Monthly	**10/16/18, 11/14/18, 12/18/18, 01/15/19, 02/12/19, 03/12/19**	
NOAA-20: Monthly VIIRS Stray Light LUT Update	Monthly	Monthly	**10/16/18, 11/14/18, 12/18/18, 01/15/19, 02/12/19, 03/13/19**	

STAR JPSS Schedule

STAR JPSS Schedule: TTA Milestones



Color code:

Green: **Completed Milestones**

Gray: **Non-FY19 Milestones**

ATMS SDR

March, 2019

Accomplishments / Events:

- Studied and discussed the impact of earth scene contamination on cold calibration target using calibration roll maneuver data
- Evaluated the impact of S-NPP ATMS scan drive main motor and compensate motor current variation on TDR/SDR data quality
- Updated JPSS Algorithm Specification Volume II: Data Dictionary for the ATMS /TDR/SDR document to include PCT format update contents associated with reflector emission correction algorithm
- Kept improving ATMS bias monitoring package using RO data to improve the inter-sensor comparison capability
- Reviewed and discussed ATMS Algorithm Theoretic Basis Document (ATBD) update draft to reflector the lasted update in ATMS calibration algorithm

Overall Status:

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

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

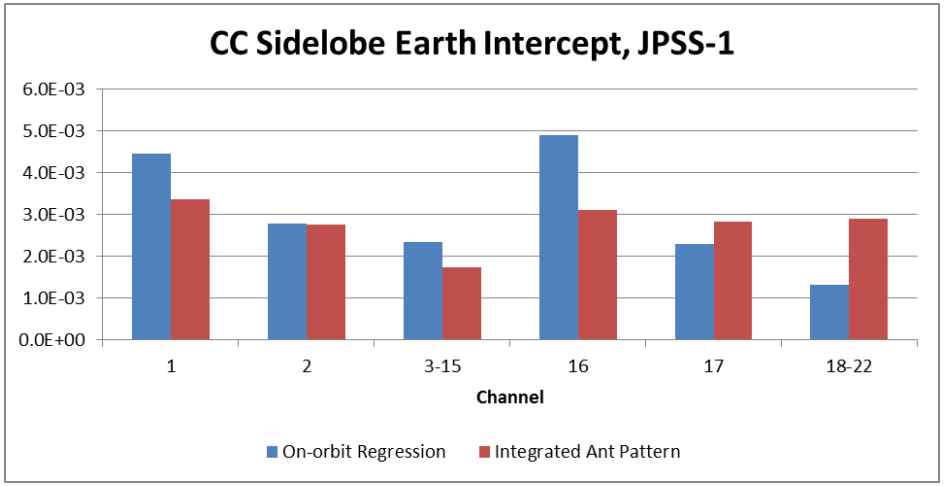
Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20 and SNPP cross verification	Sep-19	Sep-19		
Annual ATMS TDR/SDR performance report	Aug-19	Aug-19		
J2 pre-launch test data (TVAC) review/analyze	Sep-19	Sep-19		
Reflector emissivity correction DAP (PCT and code update, ADR8632/CCR3971)				
Technical Interchange Meeting (TIM)	Feb-19	Feb-19		
DAP to ASSISTT	Feb-19	Feb-19	01/31/19	
DAP to DPES	Mar-19	Mar-19	02/11/19	
IDPS Mx build I&T deploy regression support:				
Mx 5 data review/checkout	Feb-19	Feb-19	02/11/19	
Mx 6 data review/checkout	May-19	May-19		
Mx 7 data review/checkout	Sep-19	Sep-19		

Highlights:

Earth Scene Intercepts Derived from Measured NOAA-20 Antenna Patterns



CrIS SDR

March, 2019

Accomplishments / Events:

- Verified and delivered to ASSISTT the package for Refining Lunar Intrusion (LI) Threshold Values on 03/27/2019 (ADR8903). The evaluation of the optimized LI algorithm was discussed during the CrIS SDR Science Team meeting held on 03/20/2019. The updated LI threshold values were placed in PCT files, in order to be treated as out-of-cycle LUT table update. This update does not involve code changes.
- NOAA-20 CrIS Responsivity Degradation results were discussed (**Figure 1**). Analysis of NOAA-20/CrIS TVAC and On-orbit data provides evidence that the contamination source is internal to the instrument and not associated to external sources. Comparison of NOAA-20 and J2 TVAC data indicates that possible NOAA-20/CrIS root cause may not impact the responsivity of J2/CrIS instrument.
- On-orbit diagnostic mode interferograms demonstrate the presence of higher A/D Quantization Noise when instruments perform Earth Scene (ES) observations. The ICT observations are more stable and less impacted by A/D Quantization Noise (**Figure 2**).
- On 03/26/2019, IDPS stopped producing SNPP/CrIS SDR data at 18:27UTC due to Missing SNPP/CrIS MWIR Interferograms (RDR data) (**Figure 3**). Potential root cause is associated to failure in the MWIR signal processor FPGA and associated support circuitry. Switch to Side-2 Electronics is an option being discussed to rectify the instrument anomaly. Cal/Val activities are expected to be completed in about 3-months, if switch to Side-2 electronics is decided by JPSS managers.

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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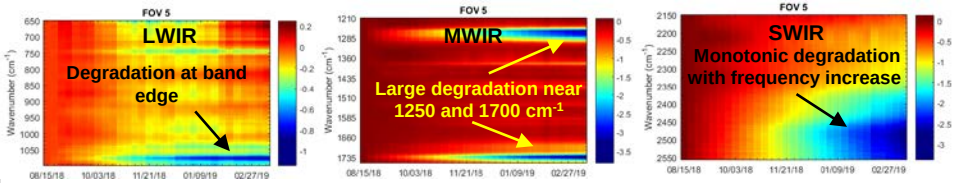
Issues/Risks:

- Applications of candidates for the Physical Scientist position at ESSIC to Support the CrIS SDR Cal/Val Activities have been received and are under revision.

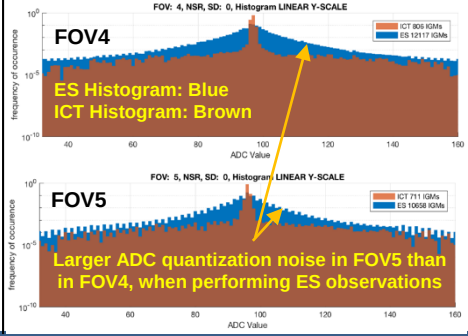
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20 and SNPP cross verification	Sep-19	Sep-19		
Annual CrIS SDR performance report	Aug-19	Aug-19		
J2 pre-launch test data (TVAC) review/analyze	Sep-19	Sep-19		
Polarization correction algorithm implementation DAP (ADR8760)				
Technical Interchange Meeting (TIM)	Feb-19	Feb-19	12/19/18	TIM 1
DAP to ASSISTT	Jul-19	Jul-19		
DAP to DPES	Aug-19	Aug-19		
Turn off Spike detection and Correction Algorithm due to false alarms (ADR8819/CCR4201)			12/18/18	
Refining the threshold values for CrIS lunar intrusion detection (ADR8903/CCR4451)			03/27/19	
Turn off Truncated Spectrum CrIS Data	Sep-19	Apr-20		OSPO/User
IDPS Mx build I&T deploy regression support:				
Mx 5 data review/checkout	Feb-19	Feb-19	02/13/19	
Mx 6 data review/checkout	May-19	May-19		
Mx 7 data review/checkout	Jul-19	Jul-19		

Highlights:

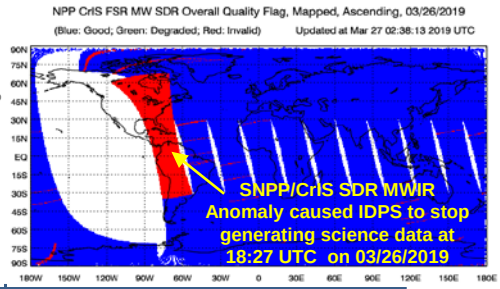
(1) NOAA-20/CrIS Responsivity from 08/2018 to 03/2019 over the CrIS spectral bands.



(2) Histograms of the ADC codes exercised by on-orbit diagnostic mode interferograms for NOAA-20/CrIS LWIR FOV4 (top) and FOV5 (bottom).



(3) SNPP/CrIS MWIR SDR Overall Quality Flag on 03/26/2019. Invalid radiometric calibration yield reached ~35% at 18:27UTC due to an instrument anomaly on the MWIR band.



VIIRS SDR

March, 2019

Accomplishments / Events:

- Delivered for deployment in IDPS operations updated, NOAA-20 and S-NPP DNB offset and gain ratio LUTs generated using new moon calibration data from Mar. 6, 2019
- Delivered for deployment in IDPS operations an updated NOAA-20 DNB stray light correction LUT generated from Feb. 2019 data
- Monitored the S-NPP VIIRS RSB calibration history files generated by IDPS since the 2/24/19 solar diffuser measurements anomaly: radiometric calibration accuracy of VNIR bands continues to recover after the anomaly; the SWIR bands remain biased (~0.5%)
- Processed the scheduled lunar collections for both NOAA-20 and S-NPP VIIRS: derived lunar F-factors were compared with the solar F-factors to evaluate calibration quality
- Reanalyzed and confirmed that the frequency of the SDSM measurements on NOAA-20 has been reduced to once per week as planned
- Presented S-NPP VIIRS Version 2 reprocessing status, calibration improvements and data distribution at GSICS Annual meeting in Frascati, Italy on Mar. 4-8, 2019
- Coordinated collecting and processing WUCD measurements for both NOAA-20 and S-NPP on Mar. 19-21, 2019
- Extracted and analyzed the VIIRS radiometric consistency among NOAA-20 and S-NPP using polar SNOs, extended low latitude SNOs and desert sites

Overall Status:

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

1. *Project has completed.*
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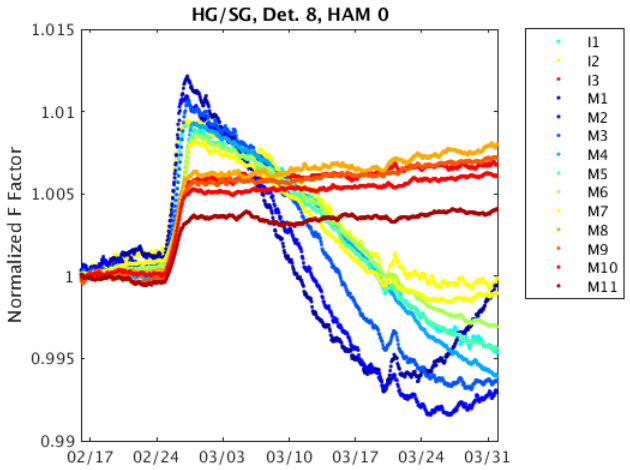
Issues/Risks:

none

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20 and SNPP cross verification	Sep-19	Sep-19		
Annual VIIRS SDR performance report	Aug-19	Aug-19		
J2 pre-launch test data (TVAC) review/analyze	Sep-19	Sep-19		
J2 Pre-launch sensor characterization report			10/01/18	
J2 Launch-ready LUTs (initial delivery)	Sep-19	Sep-19		
Comprehensive solution for VIIRS Geo SCE SideB HAM mirror LUT Missing (code and LUTs, ADR8788/CCR4185)	Dec-18	Dec-18	12/11/18	
Remove COEFF-A and COEFF-B LUTs (ADR8785/CCR4148)	Mar-19	Mar-19	12/18/18	
IDPS Mx build I&T deploy regression support:				
Mx 5 data review/checkout	Feb-19	Feb-19	02/07/19	
Mx 6 data review/checkout	May-19	May-19		
Mx 7 data review/checkout	Sep-19	Sep-19		

Highlights:



S-NPP VIIRS solar calibration anomaly (February 24, 2019): the VNIR bands continue to recover; the SWIR bands remain biased (~0.5%)

OMPS SDR

March, 2019

Accomplishments / Events:

- Regular weekly dark deliveries for OMPS sensors were made.
- Regular bi-weekly OMPS-NP wavelength table deliveries were made for S-NPP.
- Work on J02 OMPS has begun.
- Prepared for Bi-Weekly NOAA-20 OMPS-NP wavelength and solar table updates.

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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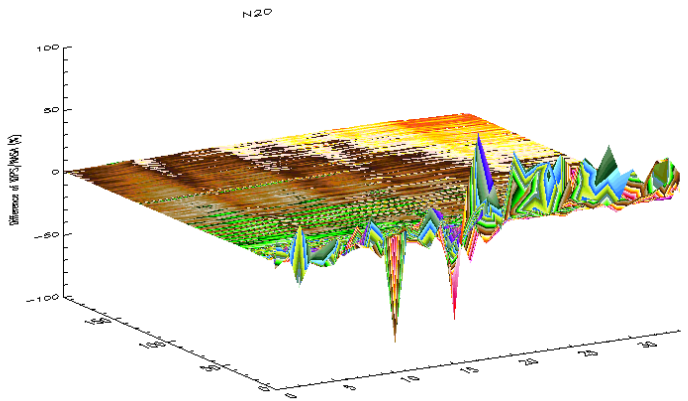
Issues/Risks:

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

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity	Jun-19	Jun-19		
NOAA-20 and SNPP cross verification	Sep-19	Sep-19		
Annual OMPS SDR performance report	Aug-19	Aug-19		
J2 pre-launch test data review/analyze	Sep-19	Sep-19		
J2 Pre-launch sensor characterization report	Jun-19	Aug-19		PSR changed
OMPS NM/NP Mismatch for FOVs (ADR8617/CCR4137)			11/01/18	
Update NOAA-20 OMPS Calibration Tables (ADR8816)	Dec-18	Dec-18	02/07/19	Govt. shutdown
OMPS NP Transient Smear Correction (ADR8709/CCR4138)	Dec-18	Dec-18	11/26/18	
IDPS Mx build I&T deploy regression support:				
Mx 5 data review/checkout	Feb-19	Feb-19	02/15/19	
Mx 6 data review/checkout	May-19	May-19		
Mx 7 data review/checkout	Sep-19	Sep-19		

Highlights:



Comparison of radiance using the current OMPS-TC straylight and wavelength versus proposed tables. The plot shows percent difference.

SDR Reprocessing

March, 2019

Accomplishments / Events:

- Completed 2016 VIIRS V2 SDR reprocessing VIIRS V2 SDR using updated look up tables and ADL version of 5.3.19 with IDPS I2.1.01.00
- The Kalman Filter model based RadiometricBiasCorrection term has been inserted into the newly produced SDR data for retrieving the new calibrated RSB Radiance/Reflectance by the NOAA STAR SDR team
- The 2016 VIIRS V2 SDR dataset has been delivered to the NOAA STAR Aerosol team and Land Surface Temperature team for evaluation
- Reprocessing for the remaining 2012-2017 is ongoing, and will be completed by July 2019 (on schedule)
- A user-friendly reprocessing data distribution interface is under development to enable users to access millions of VIIRS reprocessed data files (shown in highlights)
- Preparation of reprocessing data maturity review is ongoing

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Finish 2016 VIIRS V2 reprocessing	Feb-19	Feb-19	Feb-19	N/A
Upgrade the reprocessing data dissemination interface	May-19	May-19		
Finish the remaining VIIRS V2 reprocessing	July-19	July-19		
Reprocessed data maturity review	Aug-19	Aug-19		
Reprocessing paper/report	Sep-19	Sep-19		
Engineering assessment of transitioning reprocessed ATMS data from STAR to NCEI	Dec-19	Dec-19		

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			

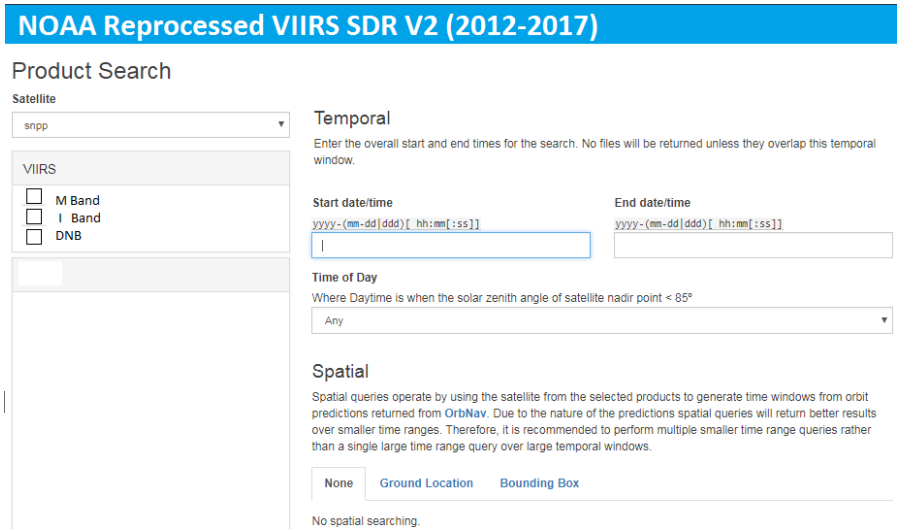
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Highlights:

User-friendly Graphics User Interface Protocol for VIIRS reprocessed Data Order



ICVS

March, 2019

Accomplishments / Events:

- Observed S-NPP CrIS MW anomaly and reported CrIS SDR team for further investigation
- Reprocessed S-NPP lifetime data to generate SDR relative spectral shift and FOR-to-FOR difference long term trending plots
- Added NOAA-20 and S-NPP CrIS spectral responsivity degradation plots
- Monitored S-NPP ATMS scan drive main motor and compensate motor current variation and impact on ATMS TDR/SDR/GEO data quality, as well as impact on CrIS dynamic alignment tilt error
- Developed hurricane warm core maximum temperature anomaly time series for sever weather event monitoring
- Finalized CrIS geolocation accuracy near real time monitoring package development
- 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			

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

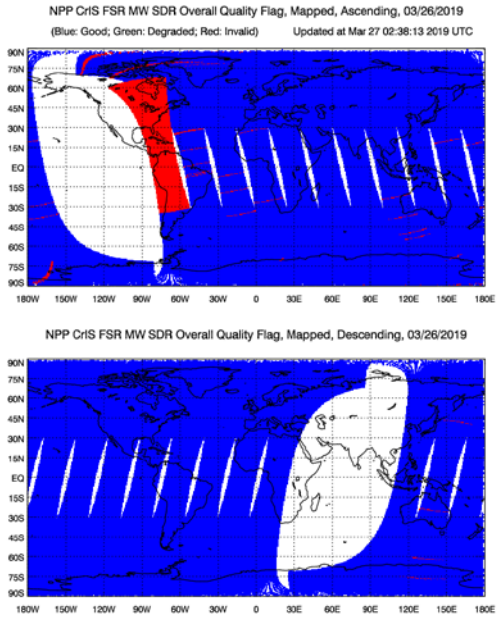
Issues/Risks:

None

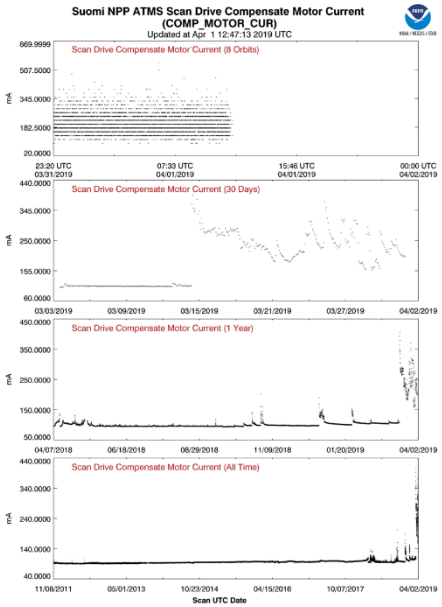
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
ICVS-Application: ICVS Severe Weather Watch (iSEW) System (Severe Weather Watch with JMAPPER) (Beta Version)	Dec-18	Dec-18	Dec-18	
ICVS User's Manual and Technical Report Version 1	Mar-19	Mar-19	Mar-19	
ICVS Module initialize and Development (each instrument on both SNPP and NOAA-20): • Global (POES) Inter-Sensor Comparison Modules • VIIRS/CrIS &GOES ABI Comparison Module • Global O-B and Double Difference Bias Modules • RDR/SDR Operational Data Missing Granule Modules • CrIS/VIIRS geolocation monitoring module implementation and improvement • CrIS FOV(R)-To-FOV(R) Difference modules • CrIS Relative (Absolute) Spectral Difference Modules	Jun-19	Jun-19		
ICVS Module development and update: • Inter-Sensor Comparison Module update • O-B and DD Bias Module Update • ICVS Geolocation Accuracy Trending Modules • Enterprise ICVS Cloud/Clear Flag Modules • ICVS SDR Spectral Analysis Modules • ICVS Severe Weather Watch (iSEW) Update	Sep-19	Sep-19		
JPSS-ICVS System Standardization and ICVS Annual Performance Review	Sep-19	Sep-19		

Highlights: Significantly contribute to STAR SDR Teams

S-NPP CrIS MW SDR QF on March 26, 2019



S-NPP ATMS Scan Drive Compensate Motor Current



VIIRS Imagery

March, 2019

Accomplishments / Events:

- The EDR Imagery Terrain Correction CDR was held on 14 March 2019. Major contributors were:
  - V. Mikles – Requirements
  - W. Chen – Code changes
  - D. Hillger – TC justification/science
  - Other Imagery-Geo contributor comments
- The CDR slide set/report was subsequently updated with additional slides explaining the validation plan:
  - Three (3) terrain cases
  - Two (2) flat cases
  - Maximum go-location shits expected
- TC Imagery to be validated at CIRA and Aerospace, as well as by NWS and other users (likely via AWIPS)

Overall Status:

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

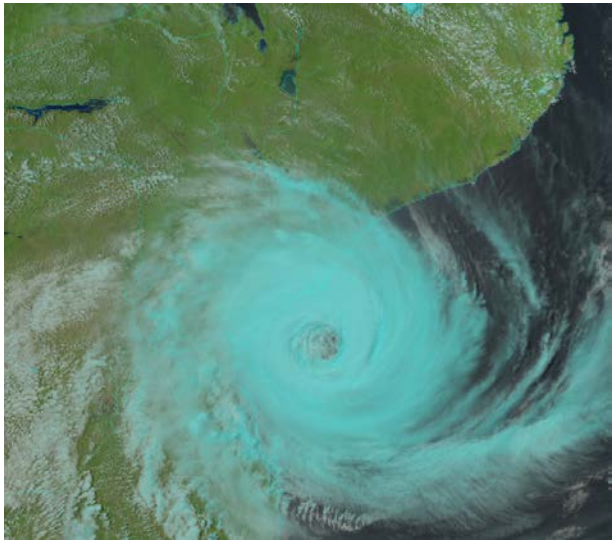
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20 and SNPP cross verification	Sep-19	Sep-19		
Annual VIIRS Imagery performance report	Aug-19	Aug-19		
N20 NCC LUT update	Sep-19	Sep-19		
Terrain-Correction geo-locations for VIIRS Imagery EDRs (ADR8239)				
Design Review	Mar-19	Mar-19	03/14/19	
Algorithm Readiness Review (ARR)	Sep-19	Sep-19		
DAP to DPES	Sep-19	Sep-19		
Run ADL locally (@ CIRA, to allow code testing/changes)	May-19	May-19		
IDPS Mx build I&T deploy regression support:				
Mx 5 data review/checkout	Mar-19	Mar-19	02/15/19	
Mx 6 data review/checkout	May-19	May-19		
Mx 7 data review/checkout	Sep-19	Sep-19		

Highlights:



NOAA-20 VIIRS Natural-color RGB image of Tropical Cyclone Idai second landfall on 14 March 2019 near Beira, one of the major ports in Mozambique. Low clouds are white and higher/ice clouds are cyan.

Clouds

March, 2019

Accomplishments / Events:

- NOAA-20 Enterprise Cloud Mask (ECM) Look-up Table (LUT) created from over 1 year of NOAA-20 data co-located with NASA CALIPSO CALIOP.
- Paper resubmitted on use of NUCAPS and VIIRS Enterprise Cloud products.
- Cloud Temperature added to VIIRS Long-term Monitoring Site (see image)
- Team prepares for May 16, 2019 Operational Review.
- VIIRS CCL Cross-Sections demonstrated at JPSS Aviation Initiative.

Overall Status:

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

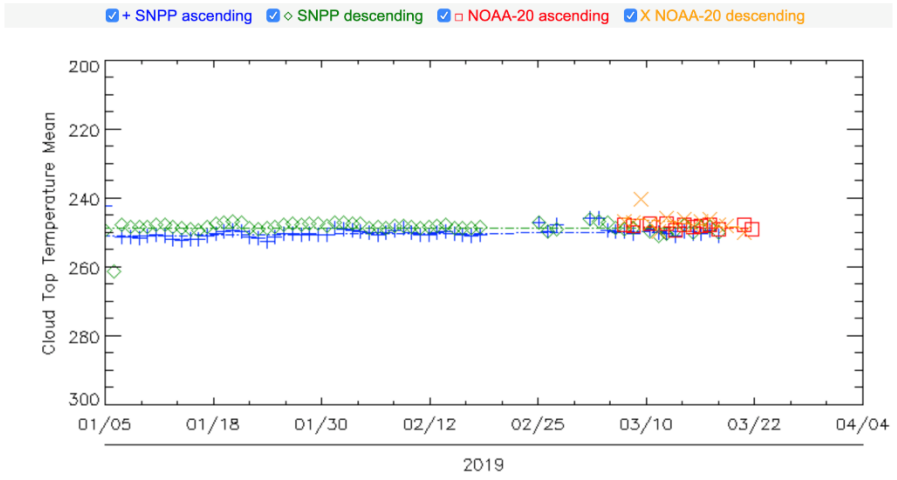
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Beta/Provisional Maturity: NCOMP (N20 Cal/Val)	Feb-19	Feb-19	03/21/19	ppt ready
Provisional Maturity: DCOMP (N20 Cal/Val)	Nov-18	Nov-18	11/27/18	
Provisional Maturity: Cloud Mask, Cloud Phase (Beta & Provisional), ACHA (CTT/CTP/CTH), CBH			10/02/18	
Validated Maturity (N20 Cal/val)	May-19	May-19		
Final DAP (N20 Algorithm Adjustment)	Mar-19	Mar-19	03/11/19	
Algorithm update DAP to ASSISTT: ▪ Cloud Mask: Develop new LUTs that support multi-dimension classifiers and provide full meta-data ▪ Cloud Phase/Type: Optimize cloud phase thresholds for NOAA-20 ▪ ACHA: improving multilayer ACHA by analysis of calipso observed cloud behavior to support Polar Winds ▪ CCL: Separate CCL from ACHA processing	Mar-19	Mar-19	Mar-19	
Algorithm update DAP to ASSISTT: ▪ Cloud Mask: Implement DNB ▪ ACHA: Work on surface emissivity issues that are impacting 8.5 micron clear-sky BT ▪ CBH: Leverage GOES-RR to target characterization of overlapping cloud assess CBH performance for multi-layer cloud systems ▪ DCOMP9: Incorporate improved surface reflectance for DCOMP channels ▪ DCOMP: Implement gross phase correction for DCOMP pixels that fail (thin cirrus over stratus is a common issue) ▪ NCOMP: extend NCOMP cloud optical depth range to include larger values by including a neural net approach	Sep-19	Sep-19		

Highlights: VIIRS Cloud-top Temperature Monitored



Cloud-top Temperature (CTT) from SNPP and NOAA-20 is now part of the VIIRS cloud product monitoring being done at CIMSS in support of the JPSS Cloud Team. This data is from the operational data pulled into CIMSS. At times, this feed fails.

Aerosol

March, 2019

Accomplishments / Events:

- Level 3 gridded AOD and other related parameters (e.g., absorption aerosol optical depth) data have been generated on a 1o x 1o grid for 2018 to be delivered to AEROCOM/AEROSAT working group for intercomparisons with global models
- Aerosol team is evaluating NOAA-20 by comparing with other correlative measurements. The NOAA-20 VIIRS AOD has slight positive bias compared to SNPP VIIRS over Ocean. This bias is being investigated for source
- Aerosol team has revised some matchup software to improve the processing speed. The tool can now provide matchup results for one month in 8 hours
- The aerosol team is also working with STAR IT team to revise, improve, enhance its VIIRS cal/val website. All parts of the website are being upgraded for efficiency and ease with which information can be found. The ADP product details on the website are new.
- The AOD to PM2.5 conversion algorithm has been substantially improved and the team is working with NCEP in assessing its performance.

Overall Status:

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

1. *Project has completed.*
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Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity (N20 Cal/Val))	May-19	May-19		
Final DAP (N20 Algorithm Adjustment)	Mar-19	Mar-19	03/11/19	
Algorithm update DAP to ASSISTT: ▪ Revise the output quality flags (grouped based on the retrieval quality) ▪ AOD: Update internal tests (e.g., sea ice, heavy aerosol etc.) for SNPP and NOAA-20 ▪ ADP: algorithm updates to the IR-visible path (thresholds and quality flag determination)	Mar-19	Mar-19	Mar-19	
Algorithm update DAP to ASSISTT: ▪ Algorithm update for heavy aerosol retrievals over dark land surface (high reflectance might trigger the retrieval over bright land) ▪ AOD: Update the bright surface reflectance database ▪ ADP: algorithm updates to improve (improve correct detection and minimize false detection) over bright surfaces using spectral surface reflectance data base	Sep-19	Sep-19		
Enhancements to AerosolWatch website to add NOAA-20 data	Jun-19	Jun-19		

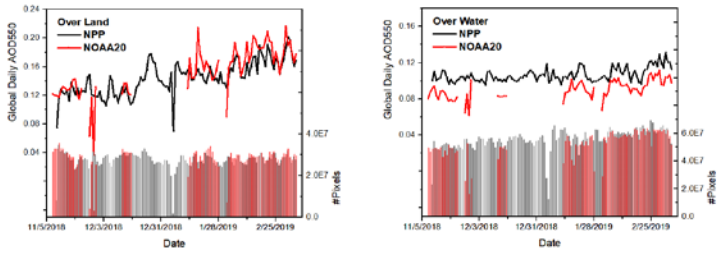

Figure 1. Global averaged high-quality AOD from S-NPP and NOAA20 VIIRS, as well as the number of daily pixels with high-quality retrievals. Left panel: over land; right panel: over water.

Volcanic Ash

March, 2019

Accomplishments / Events:

- Added to list of known NOAA-20 observations of non-trivial ash clouds
- Continue to perform validation of NOAA-20 ash observations (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			

1. *Project has completed.*
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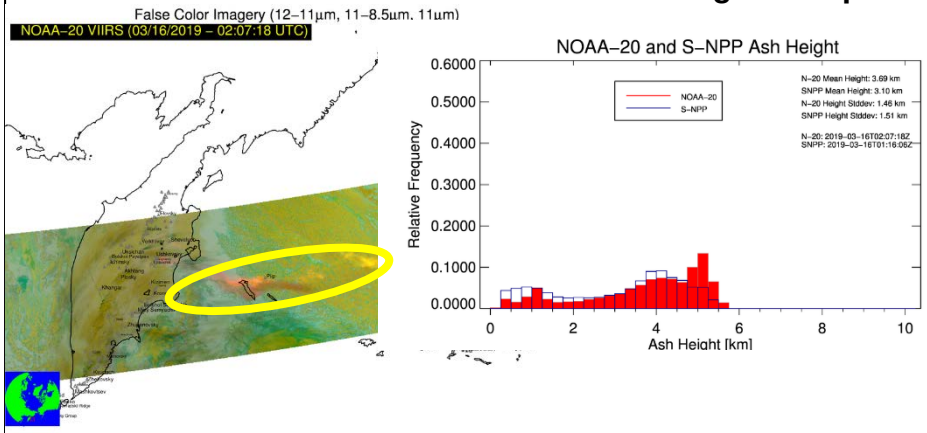
Issues/Risks:

Validated maturity risk is related to number volcanic ash cases observed by NOAA-20 that can be validated using wind advection approach and/or CALIPSO co-locations.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Beta Maturity (N20 Cal/Val)	Nov-18	Nov-18	11/27/18	
Provisional Maturity (N20 Cal/Val)	Nov-18	Nov-18	11/27/18	
Validated Maturity (N20 Cal/Val)	May-19	May-19		
Final DAP (N20 Algorithm Adjustment)	Mar-19	Mar-19	03/11/19	
Incorporation of CrIS	Sep-19	Sep-19		
Comparison of volcanic ash products with validation data	Sep-19	Sep-19		
Submit user request for the VOLCAT capability (implementation)	Mar-19	May-19		1-2 month delay due to shutdown

Highlights:

NOAA-20/SNPP Ash Height Comparison



A large ash cloud (approximately 40,000 M-band pixels) from Bezymianny volcano on March 16, 2019 was observed from both NOAA-20 and SNPP. The analysis above shows excellent agreement between NOAA-20 and SNPP.

Cryosphere

March, 2019

Accomplishments / Events:

- We continue testing a new algorithm and software generating spatially continuous global maps of snow cover by combining observations from VIIRS and from satellite microwave sensors (currently DMSP SSMIS). The implemented technique shares a number of common features with the algorithm incorporated in the GMASI system. Blended VIIRS+SSMIS maps appear to adequately and accurate reproduce seasonal changes of the continental-scale and hemispherical snow cover extent.
- VIIRS ice concentration shows good agreement to Landsat over Canadian Lakes.
- Anomalous Winter Transition to Open Water for Western Alaska…Again. NOAA's AMSR2 sea ice concentration product demonstrates how different sea ice conditions off the coast of western Alaska were in late February/early March of 2018 and 2019.

Overall Status:

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

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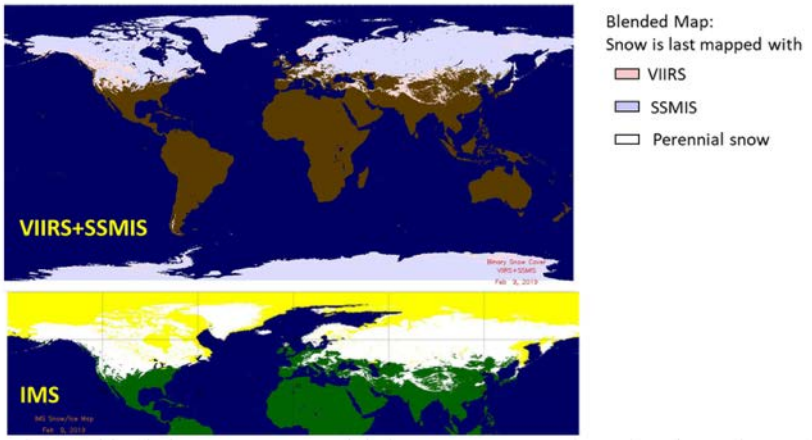
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity (N20 Cal/Val)	Apr-19	Apr-19		
Final DAP (N20 Algorithm Adjustment)	Mar-19	Mar-19	03/11/19	
Offline Products: ▪ Snow: Establish routine generation of global gridded binary and fractional snow cover products on a daily basis ▪ IST: Begin routine production of I-band IST algorithm using only the 11 um I-band channel ▪ Ice Concentration: Start generating an I-band resolution product with available I-band IST	Sep-19			
Algorithm Cal/Val: ▪ Snow: Compare N20 Snow with SNPP, MODIS, and IMS snow data. Provide an in-depth evaluation of the Binary Snow product over different surface cover types, topography and geographical regions ▪ IST: Compare N20 IST with SNPP, MODIS, IceBridge, and IABP IST ▪ Ice Concentration: Compare N20 ice concentration with NPP, MODIS, SAR, Landsat, SENTINEL-1&2, and IceBridge data ▪ Ice Thickness: ValidateN20 ice thickness with NPP, IceBridge, CryoSat-2, SMOS, and ICESat-2 products	Sep-19			
Algorithm Updates: ▪ Modify/add quality flags if needed ▪ Ice Concentration: Improve tie-point processing for marginal ice zone ▪ **Ice Thickness**: • Ice growing/melting and dynamic adjustment factors • Snow depth climatology and interface temperature between ice and snow • Use weekly or bi-weekly running mean temperature	Sep-19			

Highlights:



Example up a blended VIIRS+SSMIS global snow cover map (upper) and IMS interactive snow and ice cover map produced at NIC for the same day.

Active Fires

March, 2019

Accomplishments / Events:

- The I-band algorithm was released in the Community Satellite Processing Package
- CSPP now enables users to process both Suomi NPP and NOAA-20 data by both the M-band and the I-band algorithms
- Worked on stand-alone granulation scheme with improved land-water mask information
- Analyzed and processed available persistent hot spot anomaly databases for integration into the active fire products
- Worked on technical details and an initial DAP for proposed operational implementation of the I-band product

Overall Status:

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

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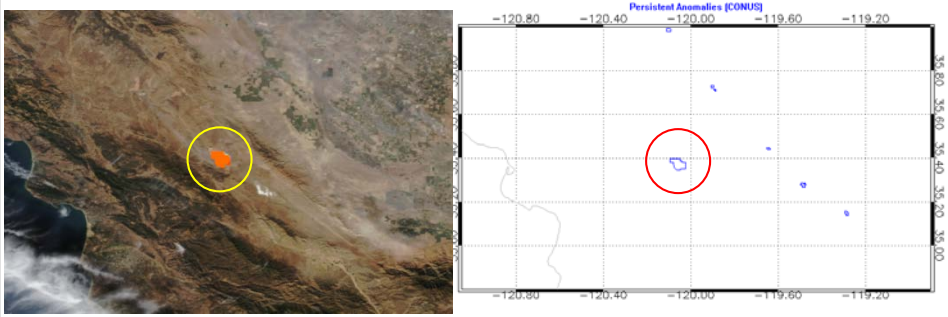
Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
S-NPP / NOAA-20 data analysis	Sep-19	Sep-19		
I-Band Active Fires algorithm development and Cal/Val				
User request for I-Band Active Fires	Mar-19	Mar-19	Feb-19	
Delta design review for I-band AF (Beta Maturity)	Apr-19	Apr-19		05/16/19
Algorithm readiness review for I-band AF (Provisional Maturity)	Sep-19	Sep-19		
I-Band AF DAP deliver to NDE	Sep-19	Sep-19		

Highlights:



An example of false alarm caused by reflection from a solar farm and the CONUS persistent anomaly database that can be used to flag such spurious detections. The example shown is NOAA-20 M-band FRP, 20:50 UTC November 18, 2018. Fire product image is from JSTAR Mapper (https://www.star.nesdis.noaa.gov/jpss/mapper/)

Credit: Wei Guo, IMSG@STAR and Wilfrid Schroeder, OSPO

Surface Reflectance

March, 2019

Accomplishments / Events:

- Presented validation results at the March 2019 Provisional Maturity Review
- Accuracy / Precision / Uncertainty statistics were calculated against a global sample of AERONET sites over ~ one month of data
- Per the Review Panel's guidance comparisons between Suomi NPP and NOAA-20 retrievals were also provided
- NOAA-20 I3 retrievals are impacted by the VIIRS bad detector
- The NOAA-20 product was recommended for Provisional Maturity and transition to operations

Overall Status:

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

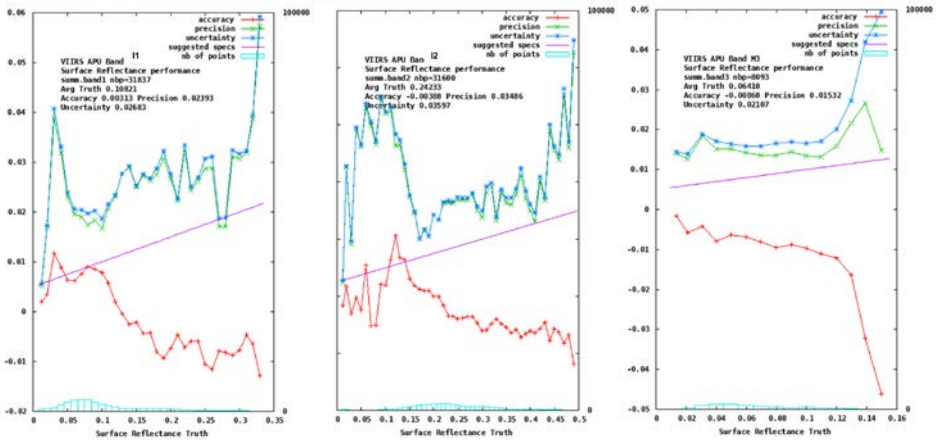
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity (N20 Cal/Val)	Feb-19	Mar-19	03/21/19	Feb/Mar combined
Final DAP (N20 Algorithm Adjustment)	Apr-19	Apr-19	02/15/19	Feb patch DAP
S-NPP / NOAA-20 data analysis	Sep-19	Sep-19		
Patch delivery (fixed the Aerosol look-up tables wrong index issue)			11/21/18	
Patch delivery (fixed wrong values issue for the production_site and production_environment global attributes)			12/19/18	
Patch delivery (fixed latitude/longitude logic so that the system doesn't record -999.3 values for the last scanline global attributes)			02/15/19	

Highlights:



Validation results of NOAA-20 VIIRS I1 (left), I2 (middle) and M3 (right) surface reflectance retrievals, derived from comparisons of ~30 month of data over a global sample of AERONET sites.

Credit: Eric Vermote et al., NASA GSFC

Surface Type

March, 2019

Accomplishments / Events:

- Downloaded and processed VIIRS observations acquired in March 2019 to create daily mosaics (up to the writing of this report)
- Completed generation of VIIRS monthly composites for 2018.
- Ongoing communications:
  - Provide assistance to the VIIRS Surface Albedo EDR team on their use of VIIRS AST
  - Work with Tom Atkins on restarting the generation of products for surface type LTM

Overall Status:

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

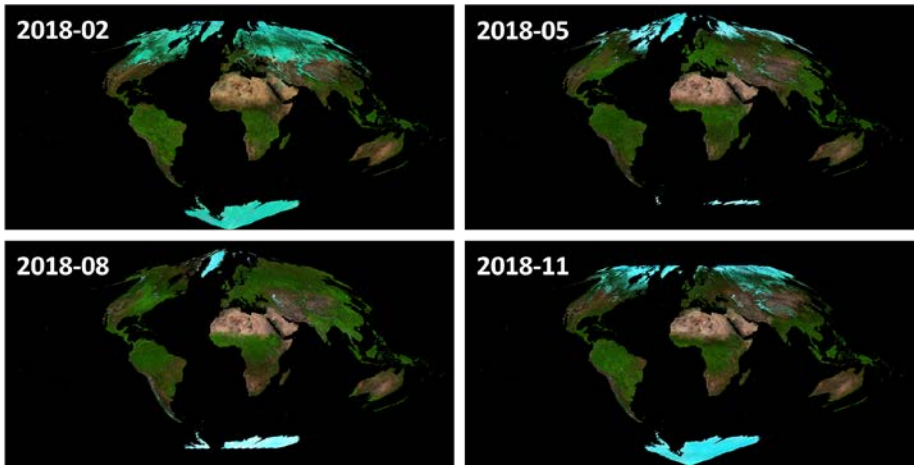
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Beta Maturity (N20 Cal/Val)	Jul-19	Jul-19		
Provisional Maturity (N20 Cal/Val)	Sep-19	Sep-19		
Annual performance report	Aug-19	Aug-19		
AST18 (Annual Surface Type):				
Complete monthly composites of global gridded VIIRS data (9 land bands + thermal bands) for VIIRS AST18 based on 2018 VIIRS data	May-19	May-19		
Generate VIIRS AST18 based on 2018 VIIRS data using SVM algorithm	Aug-19	Aug-19		
Comparison of AST18 with surface type validation data (Accuracy statistics of the new AST18 and LWM)	Sep-19	Sep-19		
Delivery of AST18 (available for users through STAR FTP)	Sep-19	Sep-19		
Communicate with EDRs and ASSISTT teams on switching to use VIIRS AST	Mar-19	Mar-19	Mar-19	

Highlights:



VIIRS monthly composites for selected months of 2018. Green and cyan indicate vegetation and snow/ice cover in these composites. The team has completed the generation of monthly composites for all months of 2018.

Land Surface Temperature

March, 2019

Accomplishments / Events:

- The unit test readiness review of the gridded VIIRS LST went through successfully on March 12th. (slide 2-3)
- The provisional readiness review of the NOAA 20 VIIRS LST went through successfully on March 21.
- Investigated NDE I&T LST data. Only SNPP data is checked. J1 data is not found.
- Found a problem with NRT LST data: inconsistency between the LST snow flag and the snow input. Has reported to ASSIST group. The issue has not been solved yet.
- The cross comparison between SNPP and NOAA20 LST has been extended from daily results to 16-day and 32-day mean LST. It demonstrated that both LSTs are consistent to each other (highlight)
- The LST science code update: modified the quality flag bit order to be consistent with the JPSS convention; updated the snow flag by using permanent snow information from emissivity output. The LST readme file has been updated accordingly. (slide 4)
- To get ready for the local generation of the Sentinel 3 LST: BT database has been built up and the LUT for LST calculation is ready.
- Further modified the manuscript titled "Enterprise LST algorithm development and its evaluation with NOAA 20 data" following all comments and suggestions.

Overall Status:

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

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

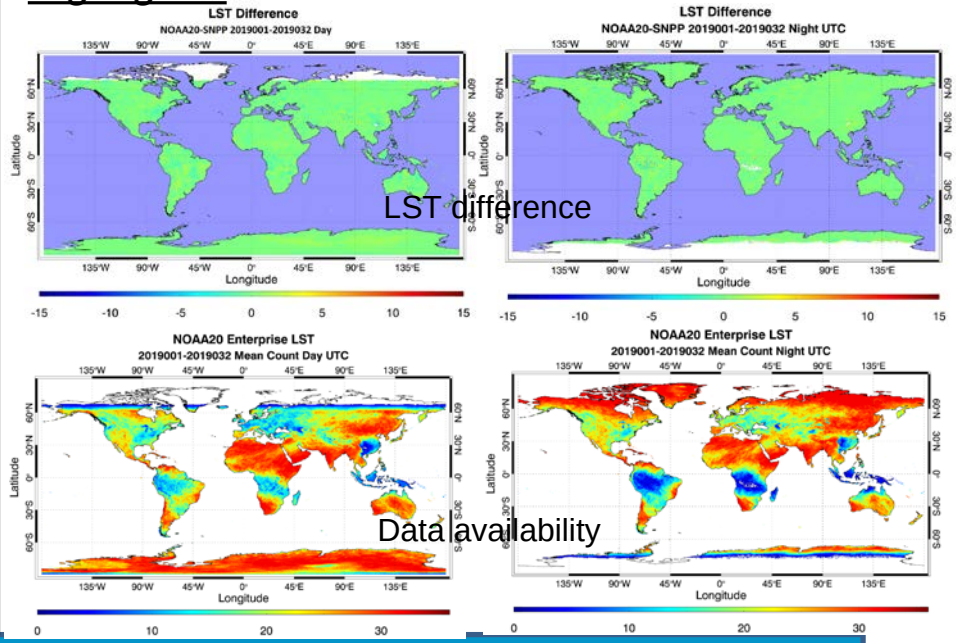
Issues/Risks:

None.

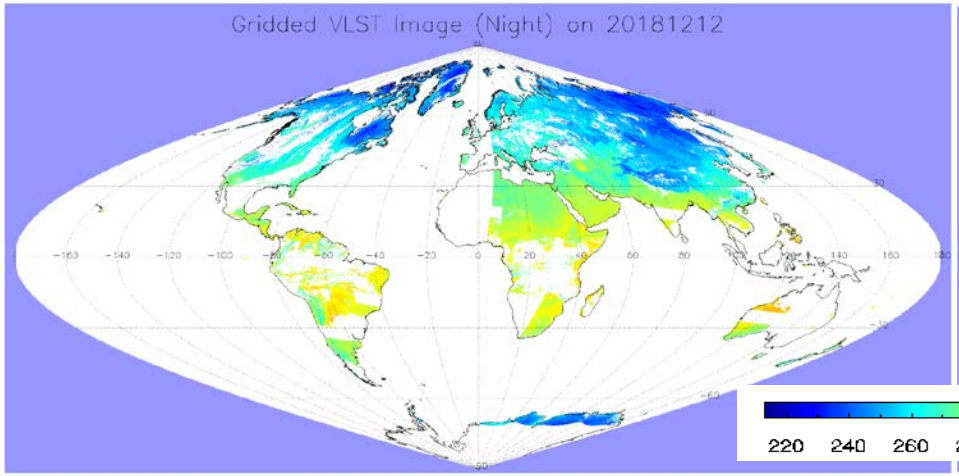
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Operational Readiness Review (ORR	Nov-18	Nov-18	11/16/18	
Provisional Maturity (N20 Cal/Val)	Feb-19	Feb-19	03/21/19	Impact of Shutdown
Final DAP (N20 Algorithm Adjustment)	Mar-19	Mar-19	03/11/19	Impact of Shutdown
NOAA-20 LUT update	Apr-19	Apr-19		
Cal/Val tool development (SNPP & J1 comparison)	Apr-19	Apr-19		
Deep-dive analysis software package for the anomaly watch	Sep-19	Sep-19		
Global gridded LST				
Critical Design Review (CDR)			10/23/18	
Unit Test Readiness Review (UTRR)	Feb-19	Feb-19	03/12/19	scheduled
Initial DAP to NDE	Mar-19	Mar-19	03/01/19	
Algorithm Readiness Review (ARR)	Jul-19	Jul-19		
Final DAP to NDE	Jul-19	Jul-19		

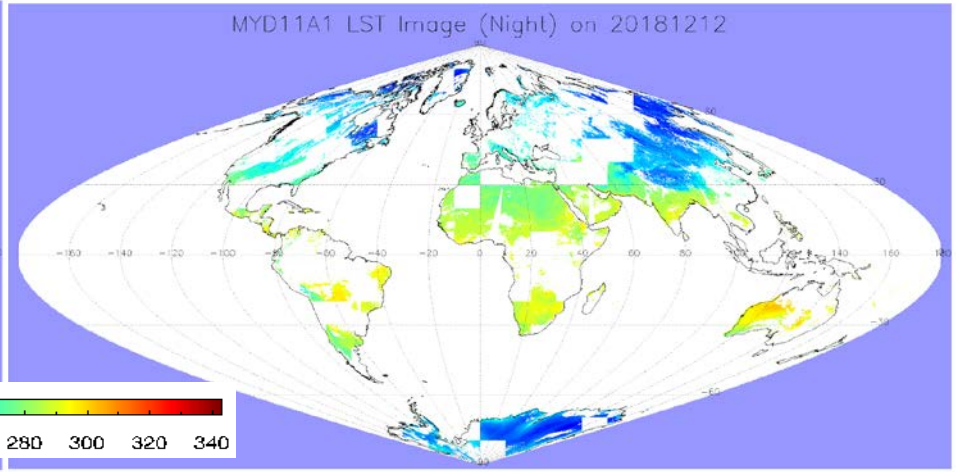
Highlights:

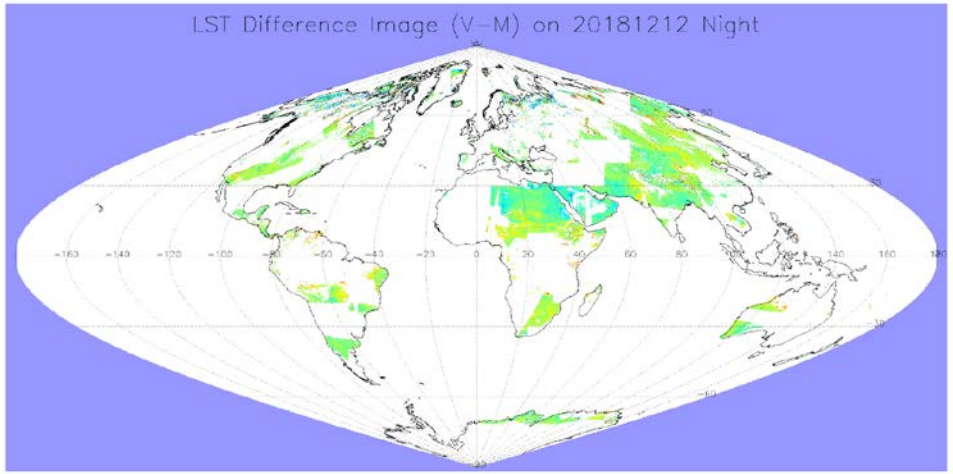
32-day mean LST comparison: N20 vs SNPP

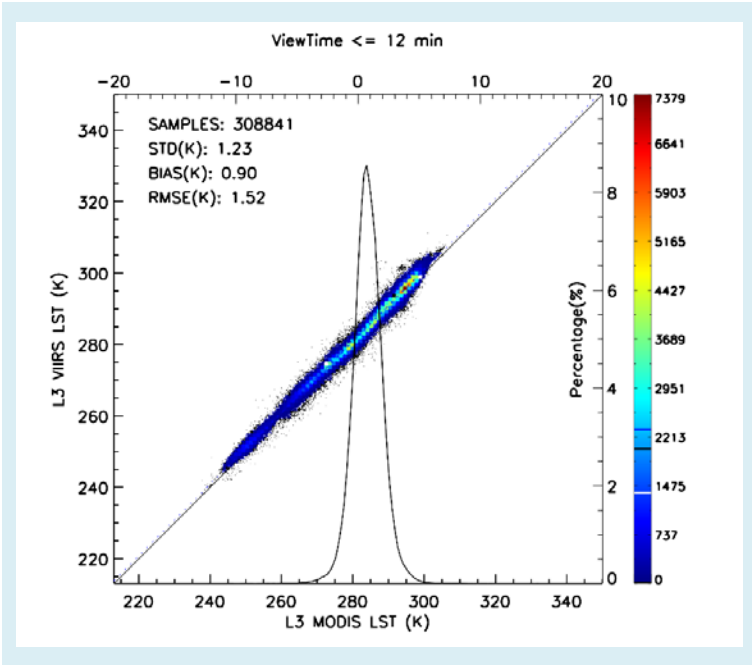


Nighttime comparison : gridded VLST vs MYD11A1

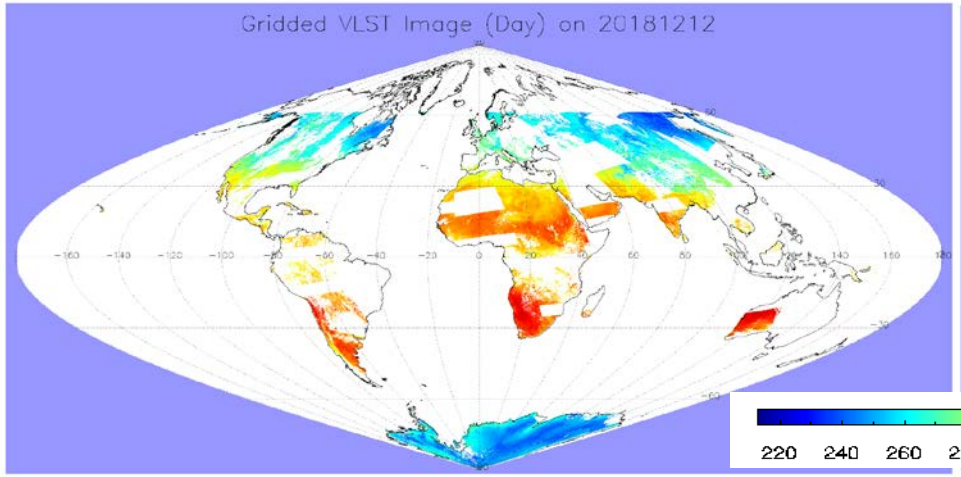


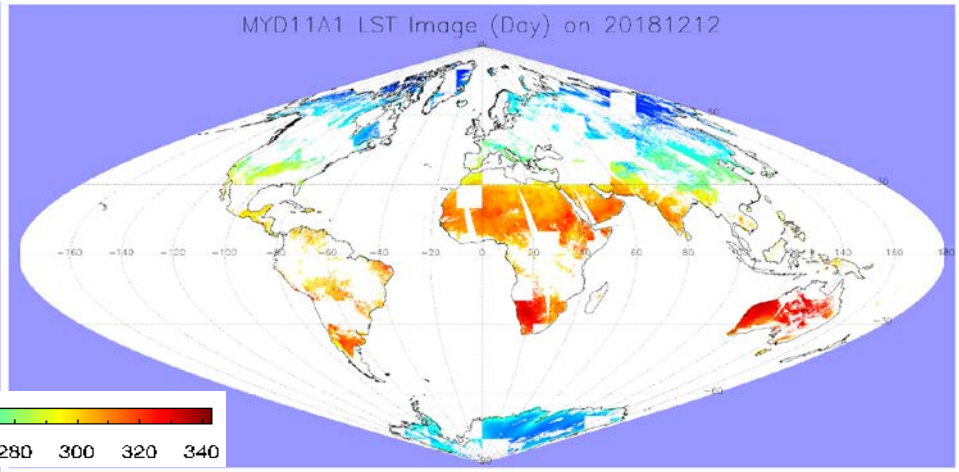


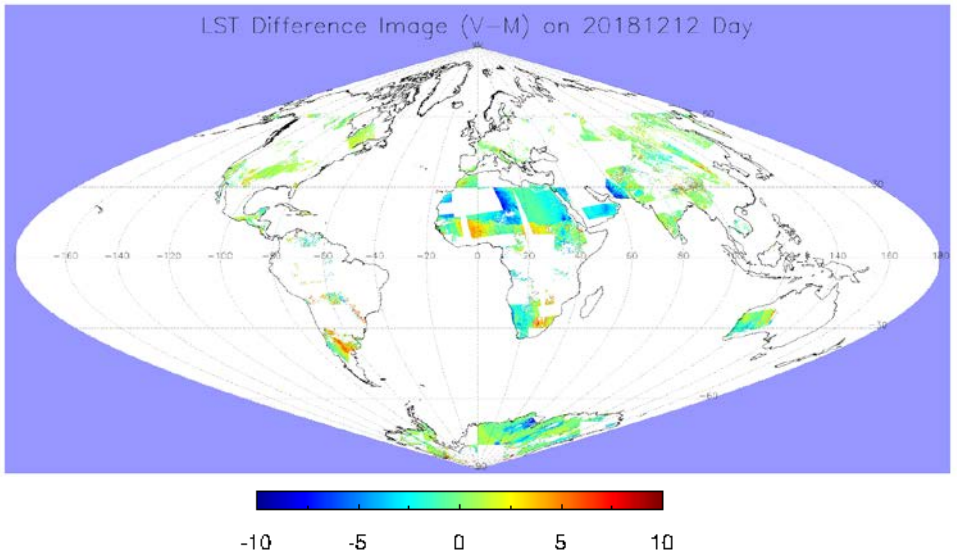


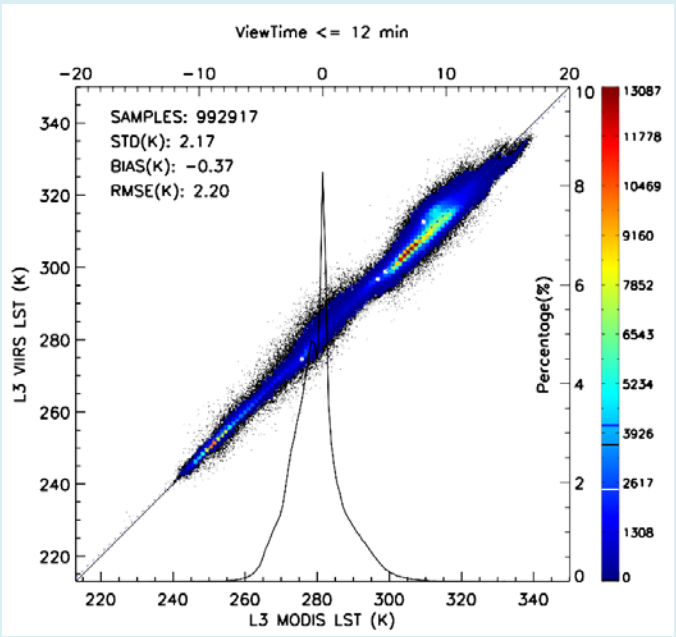


Daytime comparison : gridded VLST vs MYD11A1





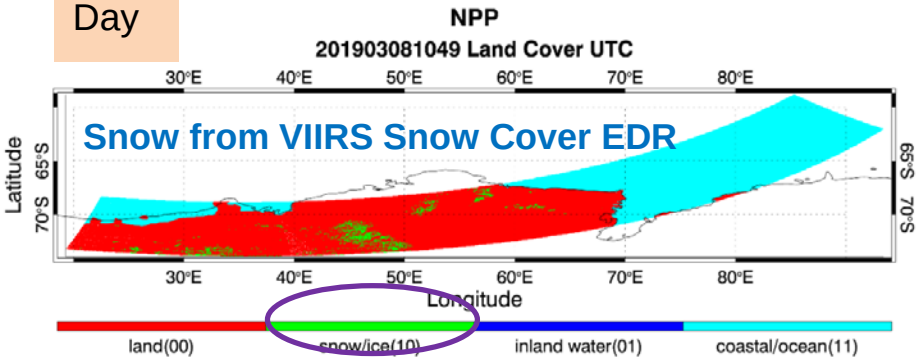




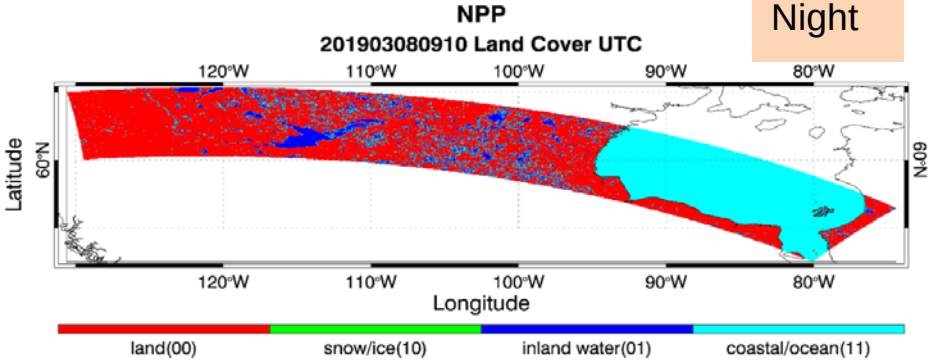
LST Snow flag updates

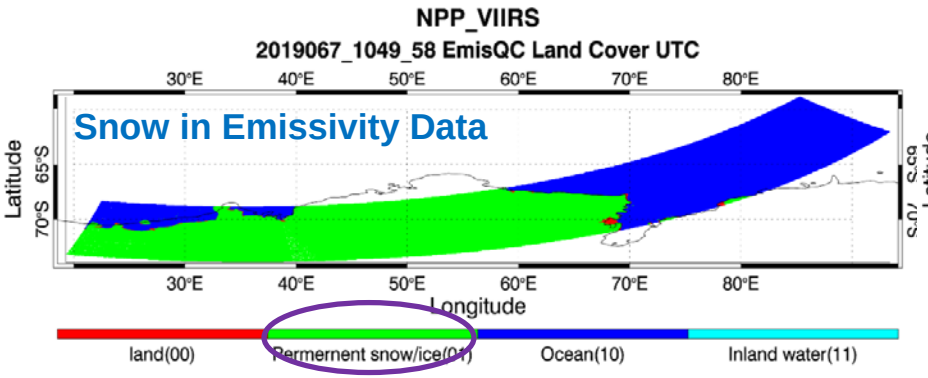
Snow= Snow cover EDR+ Permanent Snow

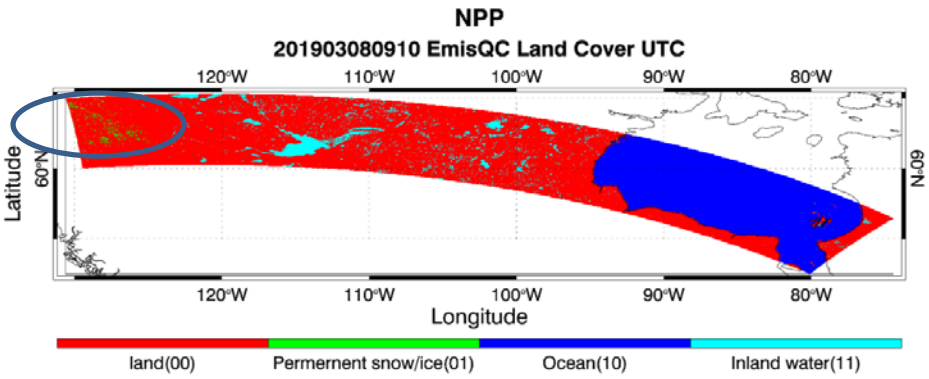
Day

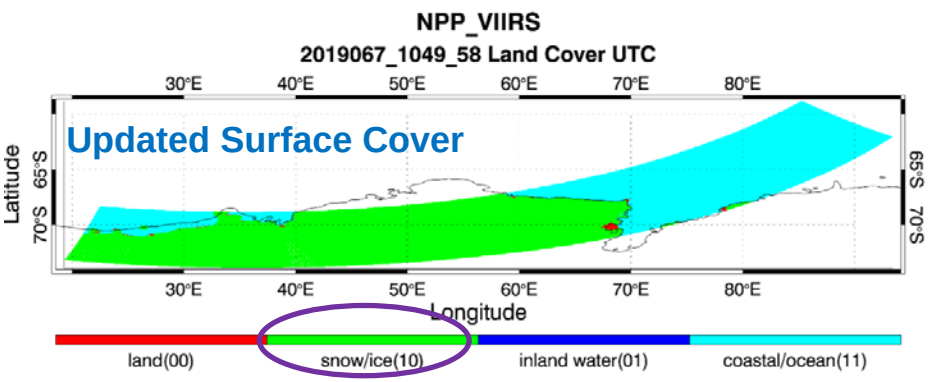


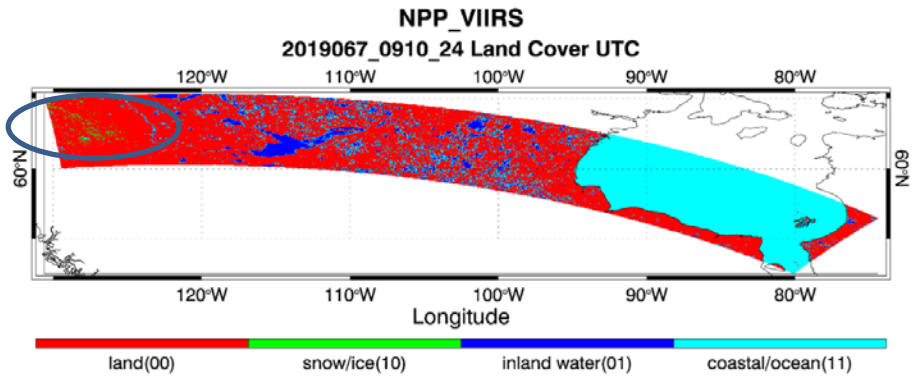
Night











Surface Albedo

March, 2019

Accomplishments / Events:

- Supported the integration of Level-3 gridded albedo product in the AIT framework
- Passed the Test Readiness Review (TRR) of Level-3 gridded albedo
- Presented the NOAA-20 VIIRS LSA Provisional Review materials
- Cross-compared VIIRS sea-ice albedo with CLARA-A2 sea-ice albedo and APP-x sea-ice albedo (both from AVHRR) (***highlight***)
- Investigated the influence of snow cover EDR on albedo quality (***Slide #2***)
- Tested the possible mitigation of using VIIRS annual surface type as the replacement of AVHRR surface type in albedo algorithm
- Updated the quality flag setting in Level-3 gridded albedo product (***Slide #3***)
- Collected data for testing the influence of SDR reprocessing on albedo quality

Overall Status:

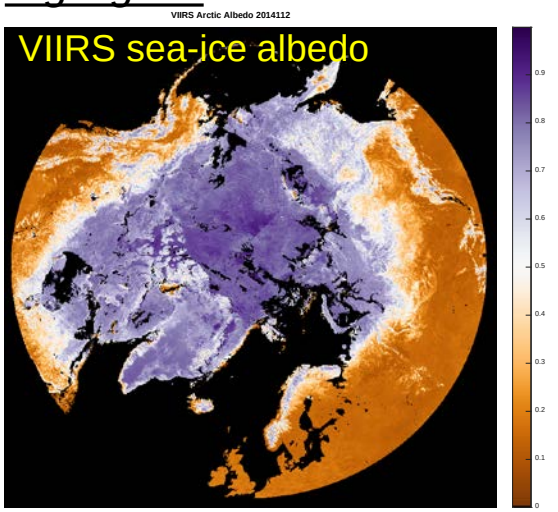
	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

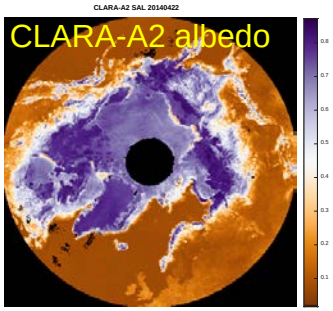
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

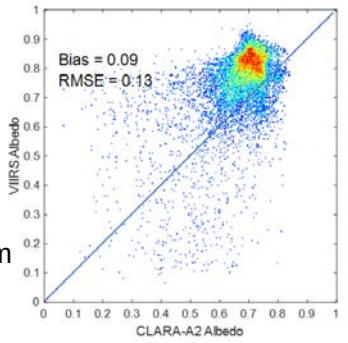
Issues/Risks:

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity (N20 Cal/Val)	Feb-19	Mar-21	Mar 21, 2019	
Final DAP (N20 Algorithm Adjustment)	Mar-19	Mar-21	Mar 11, 2019	
NOAA-20 LUT update	Apr-19	Apr-19		
New 1-km albedo climatology dataset delivery	Apr-19	Apr-19	Sep-18	Submitted
Cal/Val tool development (SNPP & J1 comparison)	Apr-19	Apr-19		
Deep-dive analysis software package for the anomaly watch	Sep-19	Sep-19		
Global gridded LSA				
Critical Design Review (CDR)			10/23/18	
Unit Test Readiness Review (UTRR)	Mar-19	Mar-19	03/12/19	
Initial DAP to NDE	Mar-19	Mar-19	03/01/19	
Algorithm Readiness Review (ARR)	Jul-19	Jul-19		
Final DAP to NDE	Jul-19	Jul-19		

Highlights:





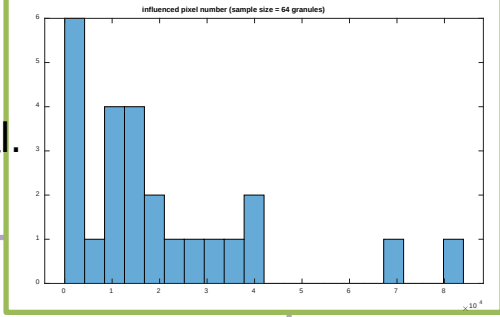


VIIRS albedo product provides gap-filled 750-m sea-ice albedo (left), compared with 25-km CLARA-A2 albedo (right) from AVHRR

Issue: Snow cover data inaccuracy

- Reason:
  a) snow cover EDR only provides information for clear-sky pixels
  b) snow cover EDR uses different cloud data than cloud mask EDR
- Influence:
  a) Some clear pixels will **go through wrong LUT** in albedo retrieval.
  b) Wrong land cover info goes into the retrieval path flag

How much pixels may suffer from wrong LUT in actual retrieval?



How much difference results from using wrong LUT?

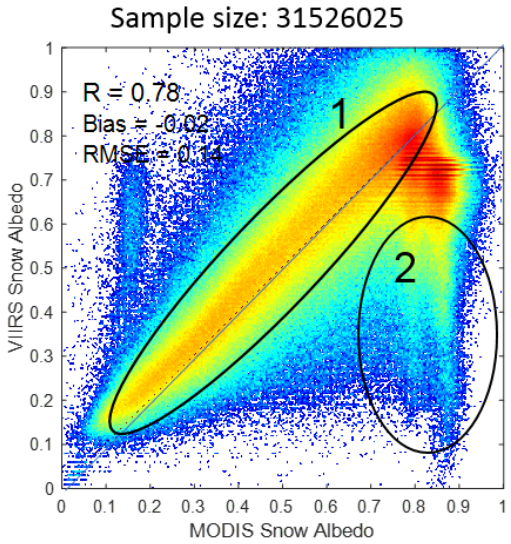


Figure 1 Using land LUT on snow pixels

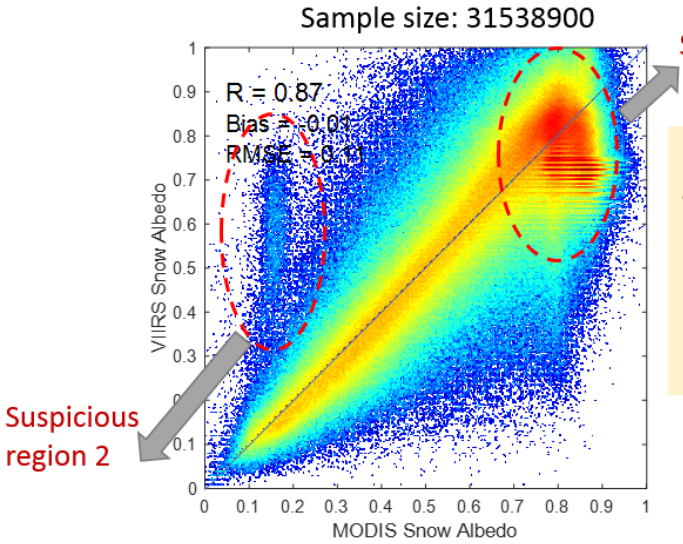


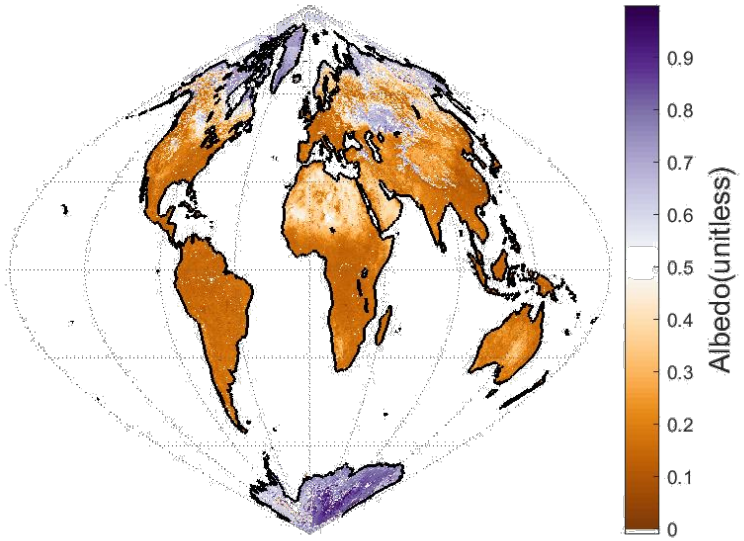
Figure 2 Using snow LUT on snow pixels

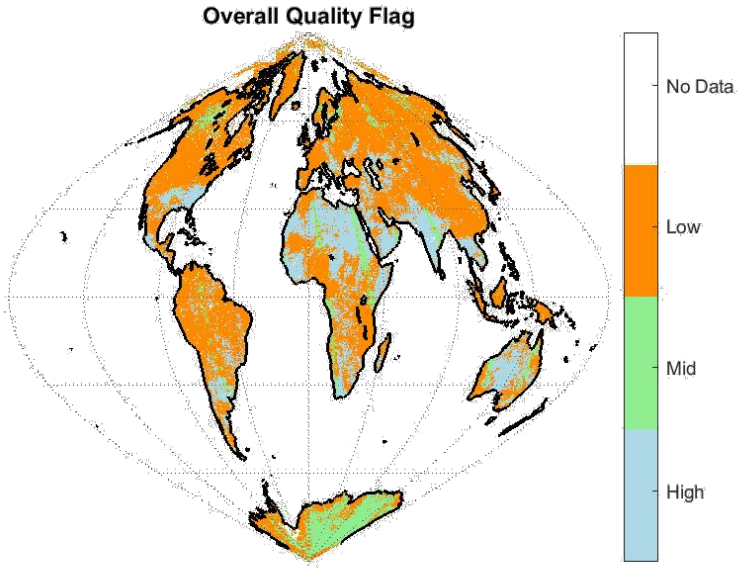
Here, the sample includes all snow pixels recognized by VIIRS or MODIS.

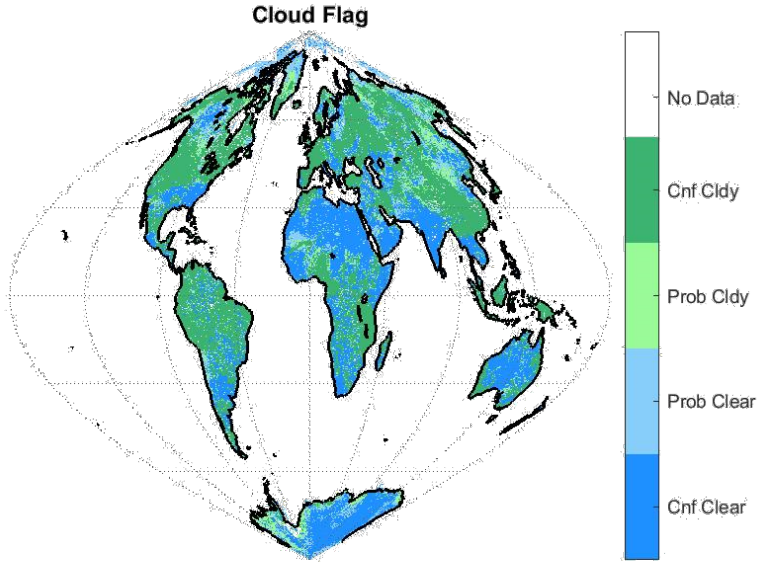
Effect of using correct LUT on snow pixels:
1. Lower the bias;
2. Reduce the outliers;

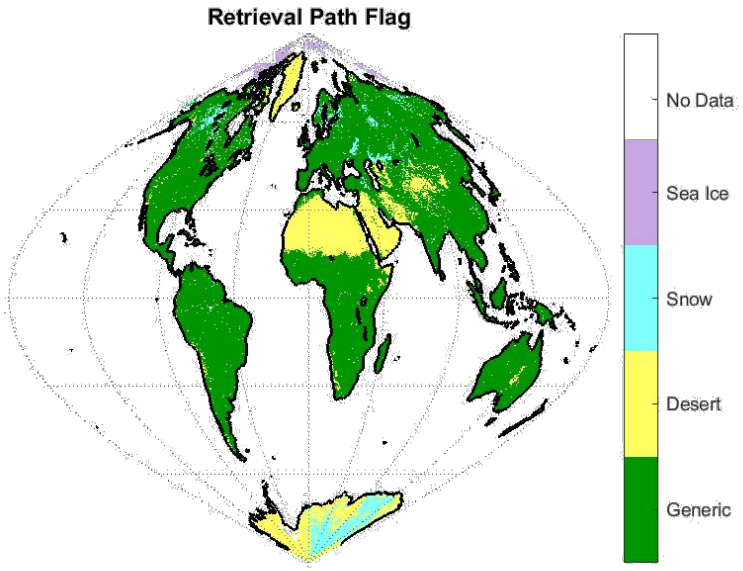
Remain existing apparent differences due to:
1. Increased uncertainty at larger zenith angles (**Slides 9**);
2. VIIRS recognizes fresh snow but MODIS can not (**Slide 10**);

Level-3 gridded albedo product









Green Vegetation Fraction

March, 2019

Accomplishments / Events:

- Validated NOAA-20 VIIRS GVF using the GVF derived from 30-m resolution Landsat 7 data for provisional maturity review
- Conducted the NOAA-20 VIIRS GVF product provisional maturity review on March 21, 2019
- Updated the GVF images, animations on 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/index.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			

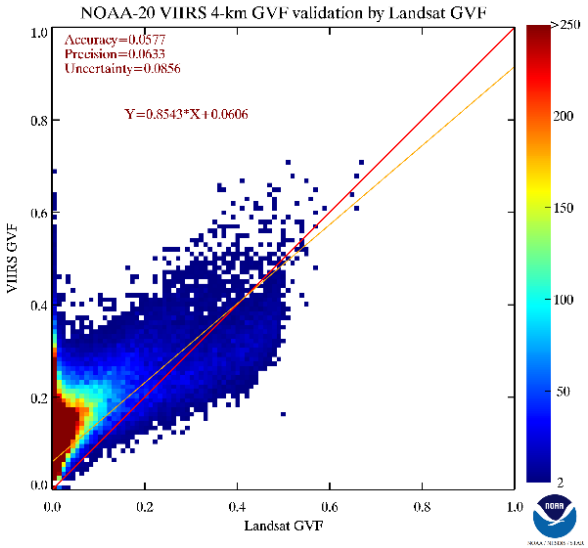
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity (N20 Cal/Val)	Mar-19	Mar-19	03/21/19	
Initial DAP (N20 Algorithm Adjustment)	Nov-18	Nov-18	11/30/18	11/15/18 to ASSISTT
Final DAP (N20 Algorithm Adjustment)	May-19	May-19		
NVPS algorithms optimization and improvement	Apr-19	Apr-19		
Cal/Val tool development (SNPP & J1 comparison)	Jun-19	Jun-19		
Deep-dive analysis software package for the anomaly watch	Sep-19	Sep-19		

Highlights:



The NOAA-20 GVF product has been evaluated using a reference GVF dataset computed from Landsat 7 ETM+ measurements. The scatter plots above show overall consistent between the two datasets.

NOAA-20 VIIRS GVF validation

- Validated NOAA-20 VIIRS GVF data using GVF derived from the 30-m Landsat 07 ETM+ data for provisional maturity review
  - Processed 107 scenes of Landsat 07 ETM+ surface reflectance data
  - Developed C/C++ programs to process the Landsat 07 ETM+ data
  - Selected training datasets for supervised classification of Landsat 07 ETM+ data
  - Classify Landsat images to 3 vegetation fraction levels and calculate GVF
  - Compared NOAA-20 GVF with Landsat derived GVF and calculated the accuracy, precision and uncertainty of the VIIRS GVF product

Global APU Estimates

Attribute	Threshold	Observed/validated
Measurement Accuracy		
1) Global	0.12	0.058
2) Regional	0.12	0.067
Measurement Precision		
1) Global	0.15	0.063
2) Regional	0.15	0.076
Measurement Uncertainty		
1) Global	0.17	0.086
2) Regional	0.17	0.101

Vegetation Index

March, 2019

Accomplishments / Events:

- Performed the NOAA-20 provisional maturity review on vegetation index products; the provisional maturity status is approved.
- Improved implementation of VIIRS VI production system to reduce output space
- Also, evaluated that the VI computation algorithm shall be update and the computation time can be reduced up to 70 percent. A while paper on this improvement will be submitted in April.
- Evaluated NOAA-20 VIIRS VI products using near-coincident observations with Aqua MODIS
- A beta version of the NVPS team VI & GVF website is on function. Current ly it is mostly for the team use.

Overall Status:

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

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

Issues/Risks:

None.

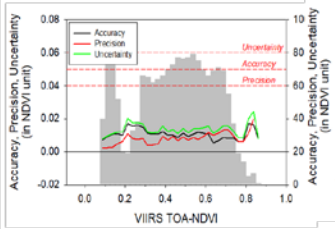
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity (N20 Cal/Val)	Mar-19	Mar-19	03/21/19	
Initial DAP (N20 Algorithm Adjustment)	Nov-18	Nov-18	11/30/18	11/15/18 to ASSISTT
Final DAP (N20 Algorithm Adjustment)	May-19	May-19		
NVPS algorithms optimization and improvement	Apr-19	Apr-19		
Cal/Val tool development (SNPP & J1 comparison)	Jun-19	Jun-19		
Deep-dive analysis software package for the anomaly watch	Sep-19	Sep-19		

Highlights:

NOAA-20 VIIRS Vegetation Index Product Evaluation Using Near-coincident Observations with Aqua MODIS

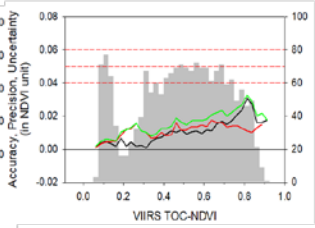
- APUs (accuracy, precision, and uncertainty) of all of the three VIIRS vegetation indices were very small, well below the Level 1 requirements, over their entire dynamic ranges.

TOA NDVI



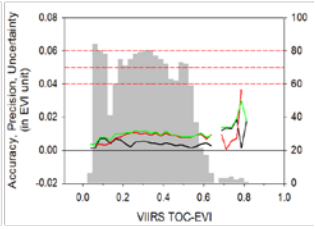
TOA-NDVI	Global APU	L1R
Accuracy	0.010	0.05
Precision	0.009	0.04
Uncertainty	0.014	0.06

TOC NDVI



TOC-NDVI	Global APU	L1R
Accuracy	0.010	0.05
Precision	0.014	0.04
Uncertainty	0.017	0.06

TOC EVI



TOC-EVI	Global APU	L1R
Accuracy	0.001	0.05
Precision	0.010	0.04
Uncertainty	0.010	0.06

Vegetation Health

March, 2019

Accomplishments / Events:

- Prepared Provisional Maturity Review
- Generated yearly VHP data and analysis
- Routinely maintained the VH data base and web site
- Compared VIIRS/VH with Soil moisture
- Submitted abstract to Climate Forum
- Communicated with users about VIIRS performance

Overall Status:

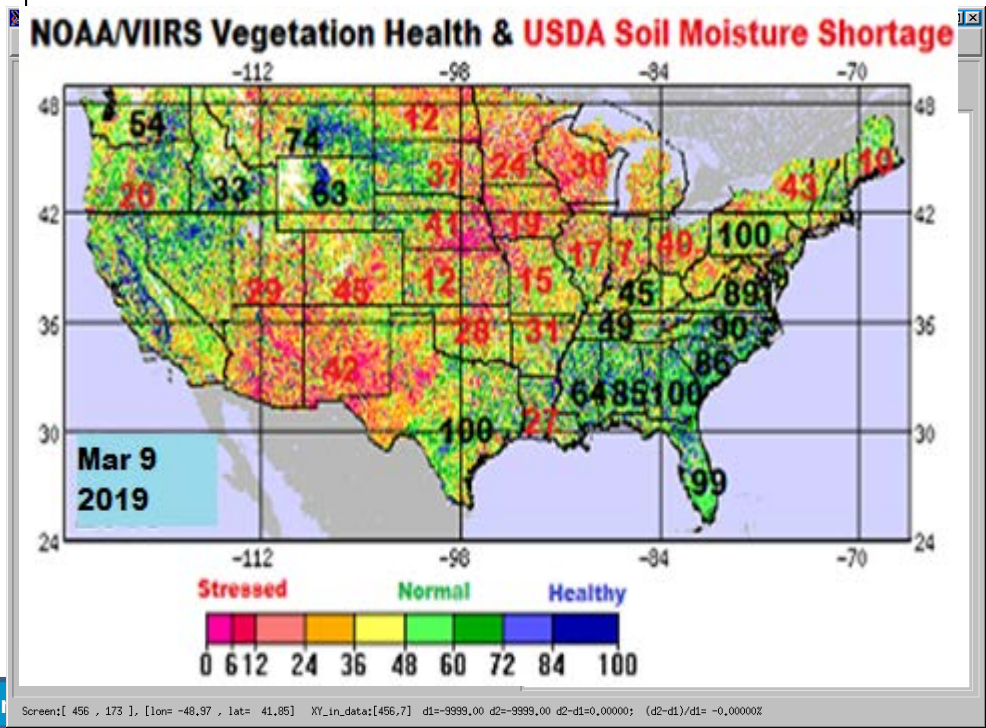
	Green[1] (Completed)	Blue[2] (On-Schedule)	Yellow[3] (Caution)	Red[4] (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

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

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity (N20 Cal/Val)	Feb-19	Mar-19	03/21/19	Feb/Mar combined
Validated Maturity (N20 Cal/Val)	Jun-20	Jun-20	03/21/19	Review Panel recommended
S-NPP / NOAA-20 data analysis	Sep-19	Sep-19		
Cal/Val tool development (SNPP & J1 comparison)	Sep-19	Sep-19		



Ocean Color

March, 2019

Accomplishments / Events:

- **Milestone:** The newest code (v1.3) for the ocean color enterprise processing system, Multi-sensor Level 1 to Level 2 (MSL12) which includes NOAA-20 was delivered to NOAA CoastWatch on 21 March 2019. CoastWatch will implement MSL12 to produce CoastWatch unique products and transfer the code to OSPO for high assurance production of VIIRS NOAA-20 ocean color.
- Carol Johnson (NIST) and Nick Tufillaro (Oregon State) presented updates of their work on the bi-weekly OC Cal/Val telecon.

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			

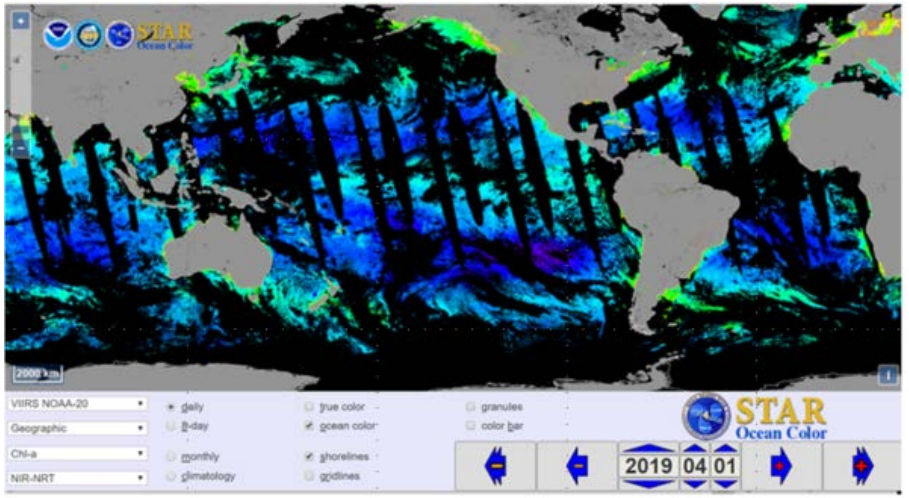
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

Big jumps in NOAA-20 SDR have impacted the schedule for validation of NOAA-20 MSL12 ocean color EDR

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Beta Maturity (N20 Cal/Val)	Nov-18	Nov-18	11/27/18	
Provisional Maturity (N20 Cal/Val)	Mar-19	Mar-19	11/27/18	
Init N20 DAP to CoastWatch (data)	Feb-19	Feb-19	Feb-19	
Init N20 DAP to CoastWatch (code)	Apr-19	Apr-19	03/21/19	
Vicarious calibration for VIIRS-NOAA-20 using MOBY in situ data	Dec-18	Dec-18	Dec-18	
NOAA-20 polarization effect correction validation, evaluation, and analysis	Jun-19	Jun-19		
Cal/Val team complete the fourth VIIRS cruise report and in situ data analyses (e.g., improve in situ data quality)	Jun-19	Jun-19		
In situ data collections including NOAA dedicated cruise in May 2018 and continue Cal/Val for VIIRS ocean color EDR, report	Aug-19	Aug-19		

Highlights:



VIIRS NOAA-20 MSL12 daily near real-time chlorophyll displayed on OCView

Sea Surface Temperature

March, 2019

Accomplishments / Events:

- ACSPO 2.61 will replace the currently operational 2.60 in Apr 2019. (LUTs updated to mitigate hi-lat biases; No code change)
- Reprocessing of complete NPP/N20 records (RAN2) is underway to replace the incomplete and piece-meal holdings in PO.DAAC and NCEI with a consistent long-term RAN2 2.61-based record
- Currently processed are 3 years of NPP (2016-2018) and 1 year of N20 (2018). 4 years of NPP remain to be processed.
- Work commenced transition of RAN2 data from STAR to PO.DAAC/NCE. Data throughput is slow, working w/STAR IT.
- We consider deferring delivery of 2.80 to Dec-19, to allow full archival of 2.61 in PO.DAAC and NCEI. The current v2.61 is accurate and stable enough, to support current users. Our priority is to fully archive the complete NPP & N20 RAN2 SST Records

Overall Status:

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

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

Issues/Risks:

None

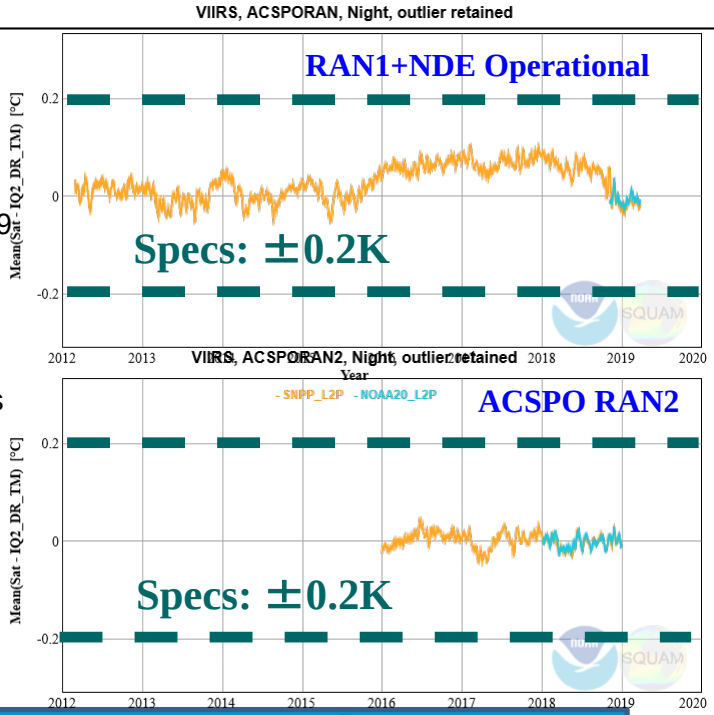
Milestones	Original Date	Forecast Date	Actual Completion Date
NOAA-20 Calibration/Validation			
Beta Maturity			04/18/18
Provisional Maturity			04/18/18
Validated Maturity	Apr-19	Apr-19	
NOAA-20 Algorithm Adjustments			
Initial DAP (ACSPO 2.60)			07/05/18
Interim DAP (2.61) (update LUTs as needed)	Feb-19	Feb-19	02/12/19
Final DAP (ACSPO 2.80)	Aug-19	Dec-19	
JPSS-2 Schedule			
J2 Cal/Val Plan - draft delivery	Jun-20	FY20	
J2 Cal/Val Plan - final delivery	Dec-20	FY21	
Planned Algorithm Updates/Cal-Val			
VIIRS RAN2 N20 archived PO.DAAC/NCEI	Jun-19	Jun-19	
VIIRS RAN2 NPP archived PO.DAAC/NCEI	Dec-19	FY20	
ACSPO 2.80 – Improved SST for data fusion	Aug-19	Dec-19	

Highlights:

ACSPO 2.61 will be operational in NDE 10 Apr 2019

2nd Reanalysis (RAN2) of VIIRS SST (based on ACSPO v2.61) is underway

Work started w/PO.DAAC & NCE to archive full 2.61 records of NPP and N20



VIIRS Polar Winds

March, 2019

Accomplishments / Events:

New Dual VIIRS winds product being generated. Starting this month (March 2019), a new wind product is being generated at CIMSS that uses cloud tracking features from S-NPP and NOAA-20 together. With both satellites in the same orbit but separated by approximately 50 minutes, and both having VIIRS, we now have the capability of generating a "tandem" winds product.

Overall Status:

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

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
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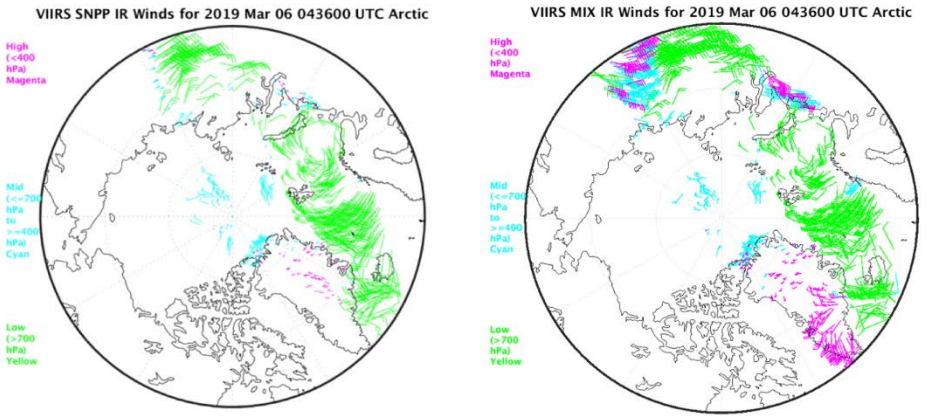
Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Beta/Provisional Maturity			10/02/18	
Validated Maturity (N20 Cal/Val)	May-19	May-19		
Final DAP (N20 Algorithm Adjustment)	Mar-19	Mar-19	03/11/19	
Introduce and evaluate a parallax correction in the winds algorithm (it is needed for the mixed-satellite product)	Sep-19	Sep-19		
Finalize development and begin routine processing of combined (mixed-satellite) S-NPP/NOAA-20 global winds	Sep-19	Sep-19		
Implementation of the shortwave IR (2.25 µm) band winds	Sep-19	Sep-19		

Highlights:



Plots of IR winds at the same date and time over the Arctic, 06 March 2019 at 0436 UTC, from S-NPP alone (left) and from the combination of S-NPP and NOAA-20 (right).

NUCAPS Products

March, 2019

Accomplishments / Events

- Additional tests on the newly generated CrIS SDR files containing a polarization correction have been performed. We are seeing a slight degradation over the polar region in the water vapor field. Ongoing tests will be performed in the trace gas domain.
- Completed tests on ATMS calibration update. No significant impacts were observed.
- Completed modification of current namelist to use specific carbon monoxide QC.
- Completed first verification of current supersaturation problem in the first guess. Made plans for re-training the first guess to mitigate the issue.
- A significant addition to the existing ATom validation ensemble was concluded that will serve to augment the validation capability in view of the oncoming NOAA20 maturity

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity: Ozone, CO, OLR			10/02/18	
N20 Provisional Maturity: CH4	Apr-19	Sep-19		VPN was slow during shutdown; sources of error (forward model, upstream retrieval steps) need more investigation
SNPP & N20 Validated Maturity: CO	Sep-19	Sep-19		Same as above
Validated Maturity: S-NPP &N20 CH4	Sep-19	Mar-20		Same as above
Validated Maturity: SNPP- N20 CO2	Apr-19	Dec-20		Same as above
DAP (N20 Algorithm Adjustment)	Apr-19	Sep-19		Same as above
DAP (N20 Algorithm Adjutment)	Apr-19	Mar-20		Same as above
DAP (N20 Algorithm Adjustment)	Apr-19	Dec-20		Same as above
Generate regression coefficients (OLR)	Apr-19	SEP-19		VPN was slow during shutdown; Task was transferred to new hire. Need more time for training on IDL programming and OLR codes
Validation with NPP CERES radiation products (OLR)	Sep-19	Sep-19		Same as above
Improve NOAA-20 CO, CH4 and CO2 retrieval algorithm	Dec-18	Dec-18		
Validation against NUCAPS SNPP trace gas EDRs, other instruments (MOPITT, AIRS, IASI) and in situ measurements (TCCON, ATom, WE-CAN, KORUS)	Sep-19	Sep-19		
Optimize NOAA-20 AVMP/AVTP/O3 retrieval algorithm	Dec-18	Dec-18		
Validation against model data and radiosondes; SNPP and J1 EDRs cross comparisons	Sep-19	Sep-19		

Overall Status:

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

1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
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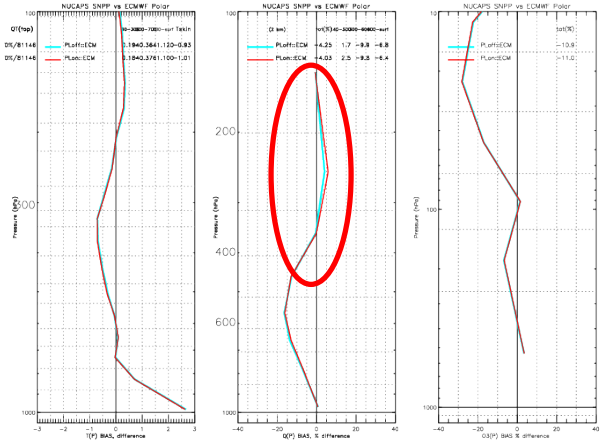
Issues/Risks:

Disk space: we are running out of disk space needed to store training ensembles and validation data sets.

Highlights:

2019-01-01 **polar** statistics: Polarization OFF/ ON



Temperature Water Vapor Ozone

- We tested both SNPP and NOAA20 polarization correction using NUCAPS
- BIAS, RMS SDV
- Only BIAS SNPP shown for brevity
- Noticeable impact was expected in the coldest regions.
- **We see it in the polar UTH statistics, although not significant.**

MiRS Products

March, 2019

Accomplishments / Events:

- Prepared and delivered MiRS v11.4 DAP to operations. This DAP includes updated bias corrections for N20, as well as science improvements and an updated version of the snowfall rate (SFR) algorithm, which is planned for provisional maturity status.
- DAP also included an updated sea ice climatology, used to avoid false ice detection, as well as rainfall false alarms near sea ice boundaries. The updated climatology was based on the last 9 years of operational IMS ice analyses. See figure.

Overall Status:

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

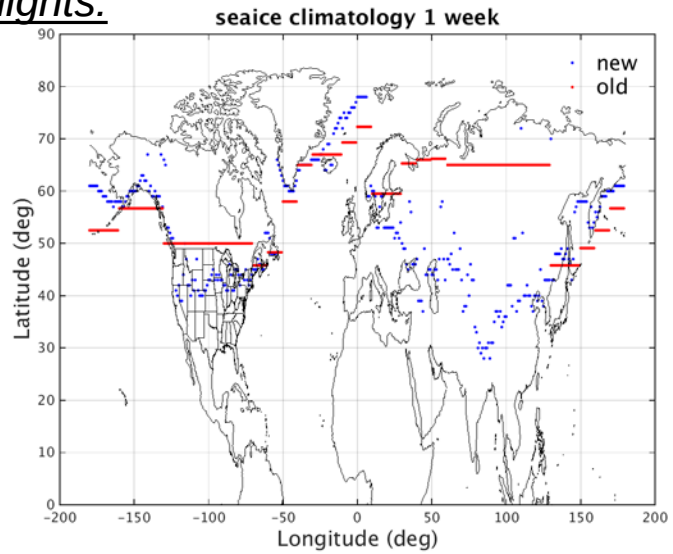
1. *Project has completed.*
2. *Project is within budget, scope and on schedule.*
3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity (N20 Cal/Val)	Sep-19	Sep-19		
Final DAP (N20 Algorithm Adjustment)	Mar-19	Mar-19	Mar-19	
Bias correction for NOAA-20	Mar-19	Mar-19	Mar-19	
Validation against ECMWF data and radiosondes	Sep-19	Sep-19		
Validation against other reference data for other EDRs	Sep-19	Sep-19		

Highlights:



Old (v11.3) and new (v11.4) sea ice climatology in the Northern Hemisphere. Example is for the first week of January.

Snowfall Rate

March, 2019

Accomplishments / Events:

- Worked closely with the MIRS team on the integration of the NOAA-20 SFR.
- The test output data from the development team and from the MIRS team were compared to ensure the fidelity of the integrated SFR in the MIRS system.
- The MiRS v11.4 DAP including the NOAA-20 SFR was delivered to NDE on March 29.
- Validation study is ongoing for the NOAA-20 SFR Provisional Maturity Review. The study will include both the validation of the Snowfall Detection algorithm against ground observations and the validation of the Snowfall Rate algorithm against radar and gauge combined precipitation analyses.
- The NOAA-20 SFR Provisional Maturity Review will be combined with CDR and ARR and will be held on May 16, 2019.

Overall Status:

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

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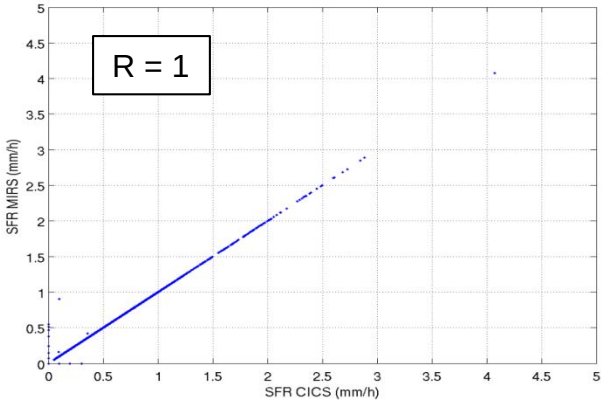
Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity: NOAA-20 and S-NPP SFR	Jun-20	Jun-20		
Provisional Maturity: NOAA-20 SFR	Mar-19	May-19		05/16/19
Final DAP (N20 SFR)	Mar-19	Mar-19		
Update radiometric bias correction coefficients	Dec-18	Dec-18	Dec-18	
Deliver updated SFR package to MiRS team (for Mar-19 DAP delivery)	Feb-19	Feb-19	Feb-19	

Highlights:



Comparison of global NOAA-20 SFR from March 7, 2019 as retrieved by the SFR developing team (SFR CICS) and by the MIRS team (SFR MIRS). The two sets of data are highly consistent. Only 0.0023% of the total 3110400 data points are different due to system (compiler, operating system etc.) differences.

OMPS Ozone

March, 2019

Accomplishments / Events:

- S-NPP V8Pro CDR in validation.
- Creating new V8Pro code delivery for NDE with significant updates – Outlier filtering, consistency with SBUV/2 for reflectivity and averaging kernels, dual adjustment tables for smooth soft calibration changes and area weighted matchup nadir mapper FOVs. TIM/Review scheduled on 4/4/2019.
- V2Limb NDE at I&T in validation phase (See Figure.)
- Testing of TOAST with V2Limb.
- Testing of BUFR for V2Limb

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, code change

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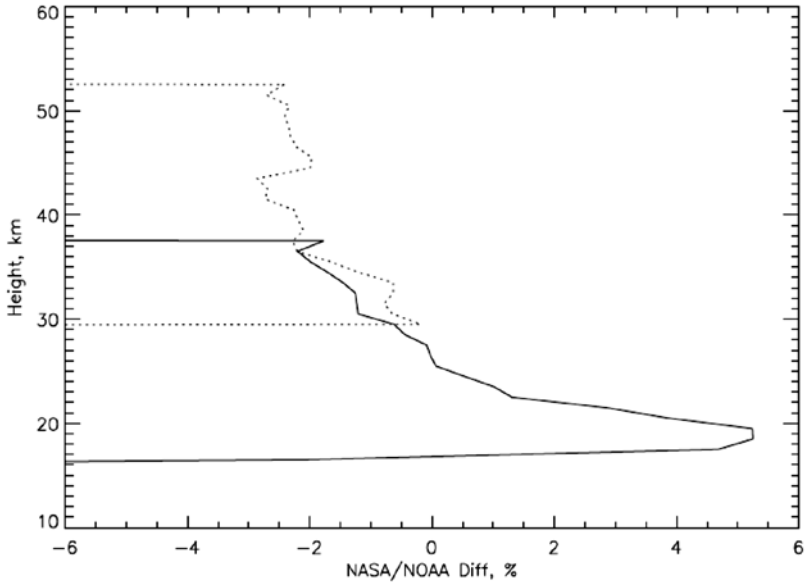
Issues/Risks:

Code Changes for OMPS V8Pro EDR on path to maturity will not be implemented at NDE until May 2019.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity: V8TOz			10/03/18	
Provisional Maturity: V8Pro	Feb-19	Jun-19		Requires code
Validated Maturity: V8TOz	Mar-19	Jun-19		SDR
Validated Maturity: V8Pro	Apr-19	Jul-19		SDR, code
N20 Final DAP: V8Pro	Apr-19	Apr-19		
Trending of ground-based comparisons	Mar-19	May-19		
Algorithm improvements (EOFs, solar, Wavelengths, bandpasses)	Sep-19	Aug-19		
RT Tables for NOAA-20	Sep-19	Aug-19		

OMPS Limb Profile Retrieval Differences, NASA/NDE for March 27, 2019 for 20N-20S zonal mean.



GCOM-W1 Products

March, 2019

Accomplishments / Events:

- Continue to provide information to NESDIS IA regarding AMSR-3 channel selections (as requested by JAXA)
- Continued product cal/val; all products meeting requirements
- CICS-M developing monthly product monitoring cabability
- GAASP product upgrades/testing with OSPO continues

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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3. *Project has deviated slightly from the plan but should recover.*
4. *Project has fallen significantly behind schedule, and/or significantly over budget.*

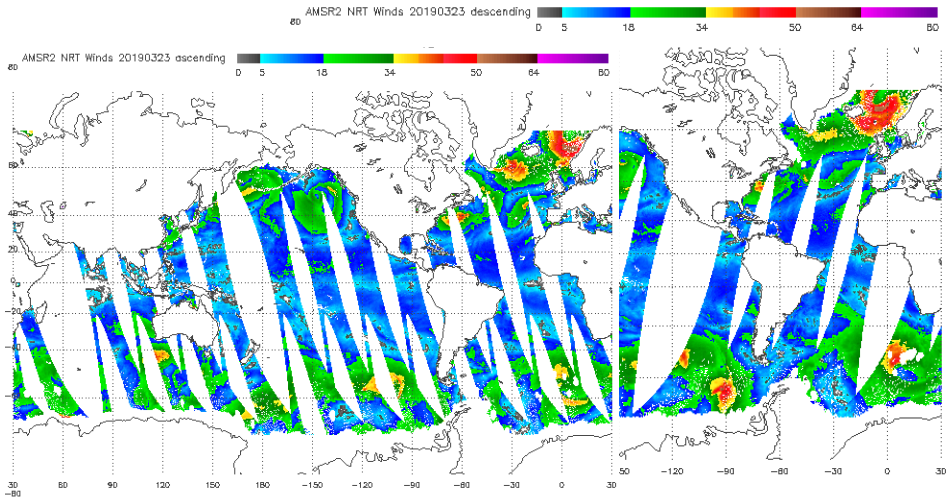
Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Deliver updated TPW algorithm for integration into GAASP	Dec-18	Dec-18	Dec-18*	*Validation results did not warrant an update
Deliver updated CLW algorithm for integration into GAASP	Apr-19	Apr-19		
Deliver updated rain rate algorithm for integration into GAASP	Apr-19	Apr-19		
Updated GAASP package delivered to NDE/OSPO	Jul-19	Jul-19		
Reprocessing of AMSR-2 mission	Sep-19	Sep-19		
GAASP emergency update DAP (fixed some typo's in the Longitude metadata in 4 of the netCDF template files)			02/11/19	
GAASP_v2-5 DAP (update to the Ocean SSW algorithm and the Precipitation algorithm, with some other minor updates)			To NDE: 03/19/19 To CSPP: 03/20/19	

Highlights:

03 March 2019 AMSR2 wind speed – high winds off Norway coast associated with Viking cruise ship incident on March 24.



NOAA Products Validation System (NPROVS) and EDR Long Term Monitoring (LTM)

March, 2019

Accomplishments / Events:

- Provided inputs on NUCAPS problem areas at bi-weekly review meetings; super-saturation and (surface) bias concerns noted
- Affirmed the "reprocessed" NPROVS Special radiosondes and satellite collocations through 10/30/18
- Observations from the ongoing Radiosonde Inter-comparison and VALidation (RIVAL) campaign stewarded (NPROVS)
- JPSS supports AEROSE campaign dedicated radiosonde campaign in Saharan Air Layer **(Highlight)**
- Publication: https://journals.ametsoc.org/doi/abs/10.1175/JTECH-D-18-0081.1
- The EDR-LTM team is adding blended products to its long term monitoring website beginning with the NOAA CPC Morphing (CMORPH) technique which blends precipitation from microwave and infrared retrievals.

Overall Status:

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

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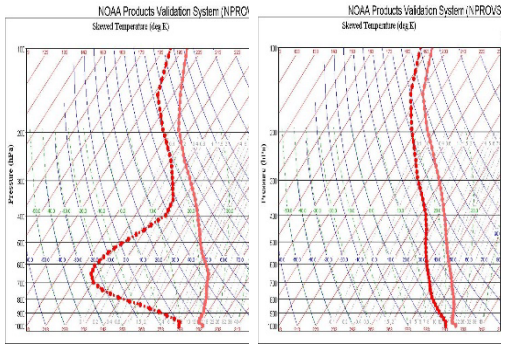
Issues/Risks:

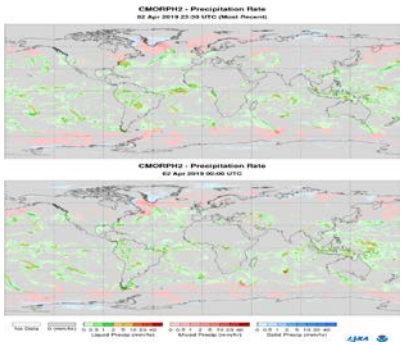
None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
LTM				
Complete NOAA-20 JMAPPER/EDR-LTM	Sep-19	Sep-19		
NPROVS				
Maintain NPROVS and support R2O transition of NOAA-20 and NUCAPS upgrades to correct identified problems for IR+MW and MW sounding	Jan-19	Jan-19	March - 19	Shutdown; upgrades pending
Maintain JPSS dedicated radiosonde program including AEROSE and RIVAL observations stored in NPROVS Special	Mar-19	Mar-19	Mar-20	Program Extended
Support NWS Raob Transition Monitoring and NUCAPS AWIPS-2 users	May-19	May-19		

Highlights:



NPROVS: NUCAPS moisture profiles (dashed) show dramatic "dry feature" (left panel) associated with the Saharan Air Layer (SAL); right panel outside SAL. Analysis coordinated with AEROSE campaign during March, 2019.



LTM: Capture of the CMORPH animation for 4/2/19. The top image shows the most recent interval for the day (23:30 UTC) and the bottom will cycle through each time interval over the course of the day (00:00 to 23:30 UTC @ 00.30 intervals)