



NOAA JPSS Monthly Program Office

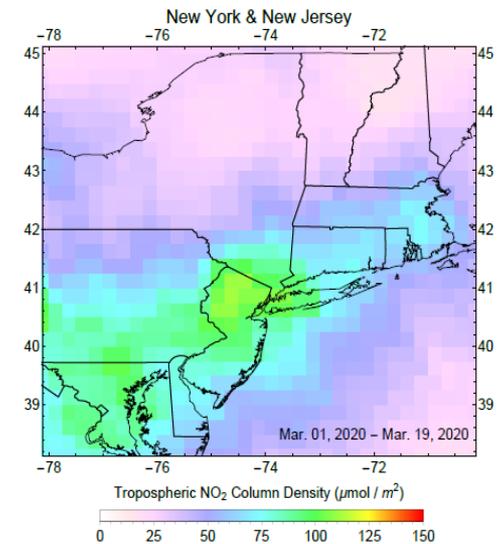
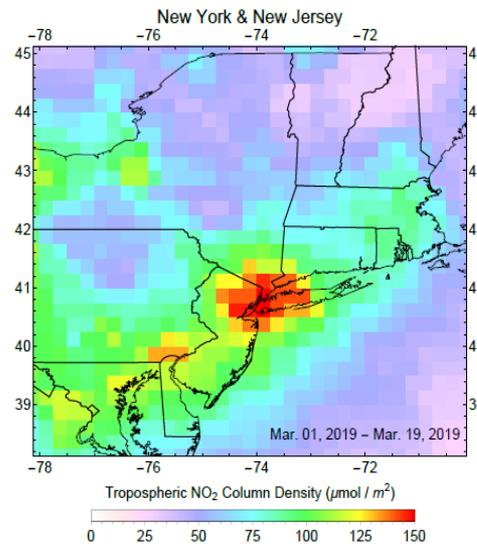
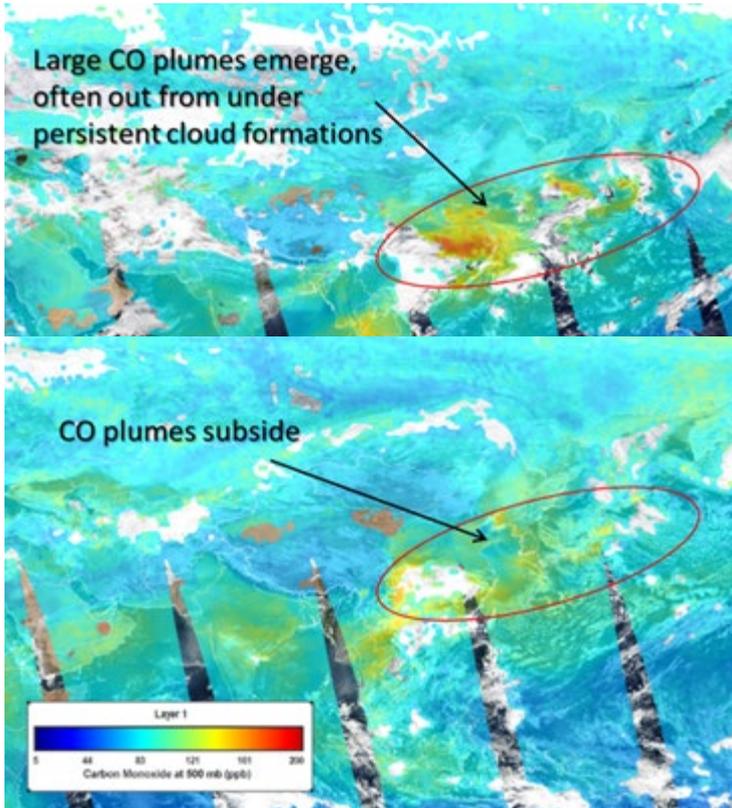
AMP/STAR FY20 TTA

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& JPSS STAR Program Managers

April 14, 2020

Impacts of COVID-19 Shutdowns Observed from Space

In December 2019, a respiratory virus now known as COVID-19 or the coronavirus began to show up in hospitals in Wuhan, China. The severity and contagiousness of the disease led China and then much of the rest of the world to shut down large sectors of their economies to slow its spread. In addition to flattening the transmission curve, these shutdowns have also had an impact on air pollution as commuting is reduced and factories shutdown. Several JPSS instruments including CrIS, VIIRS, and OMPS are equipped to detect changes in various forms of air pollution. As shown below, STAR teams have been tracking these changes in atmospheric composition.

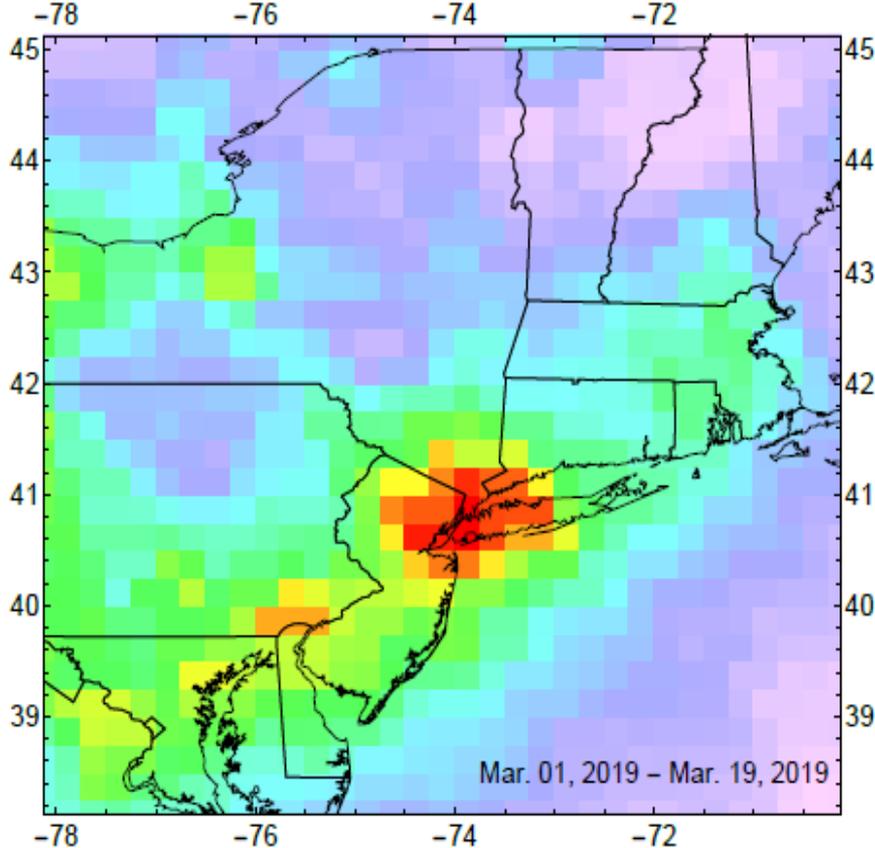


Carbon Monoxide detected by NUCAPS (left) shows declines over China in February. NO₂ (above) in the NYC area declined substantially in March.

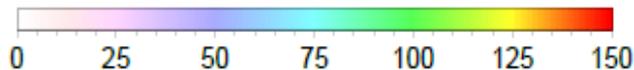
Highlights from the Science Teams

Impacts of COVID-19 Shutdowns Observed from Space (NO₂)

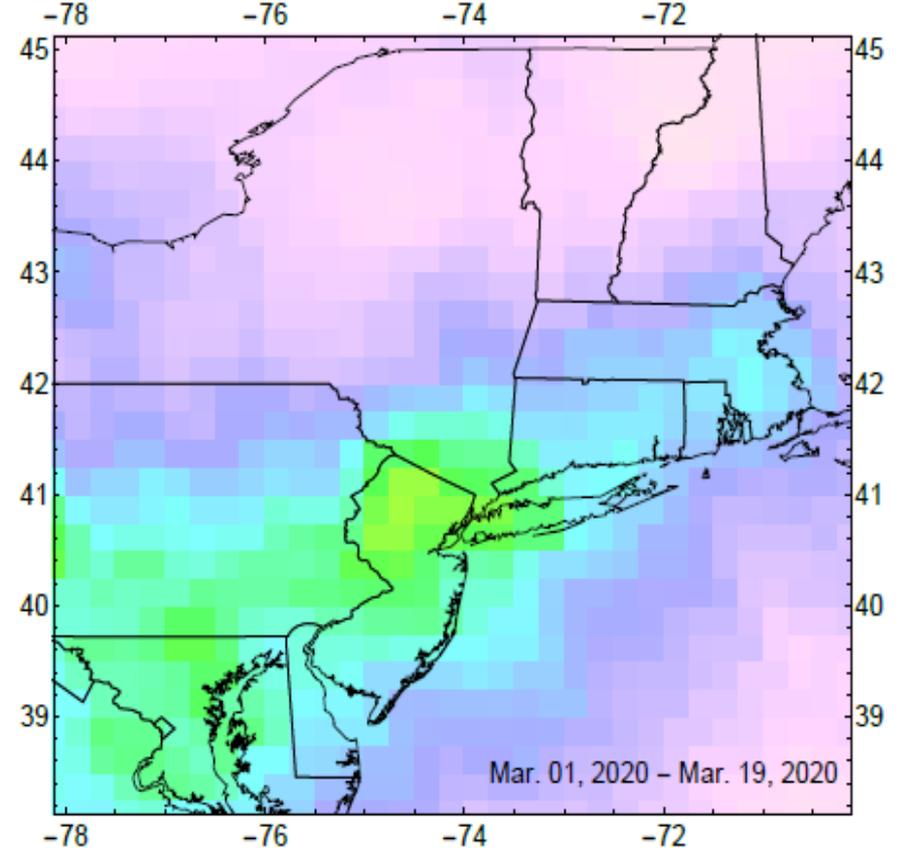
New York & New Jersey



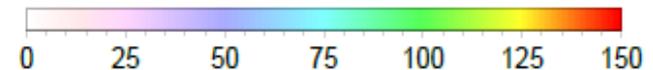
Tropospheric NO₂ Column Density ($\mu\text{mol} / \text{m}^2$)



New York & New Jersey

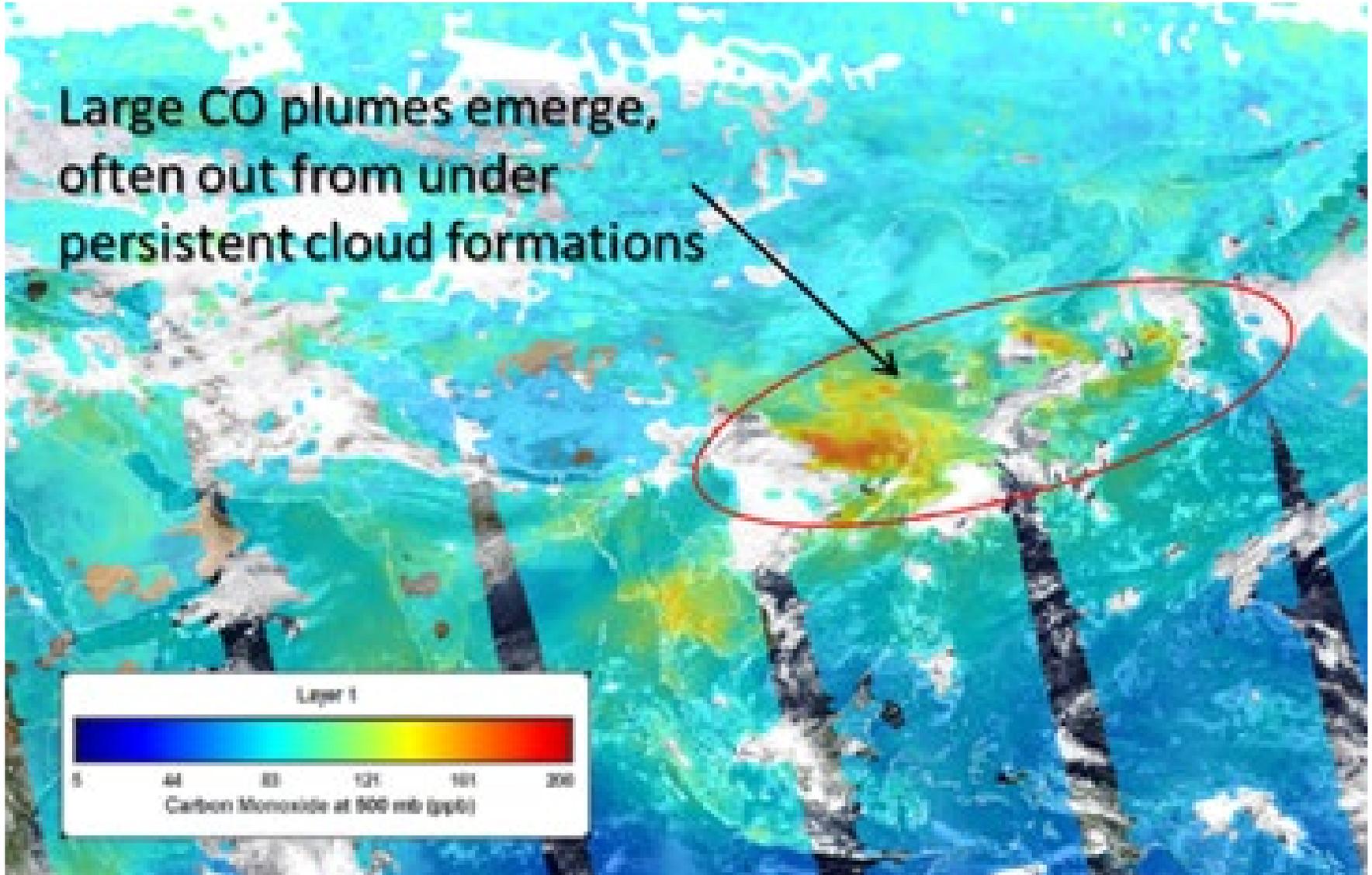


Tropospheric NO₂ Column Density ($\mu\text{mol} / \text{m}^2$)



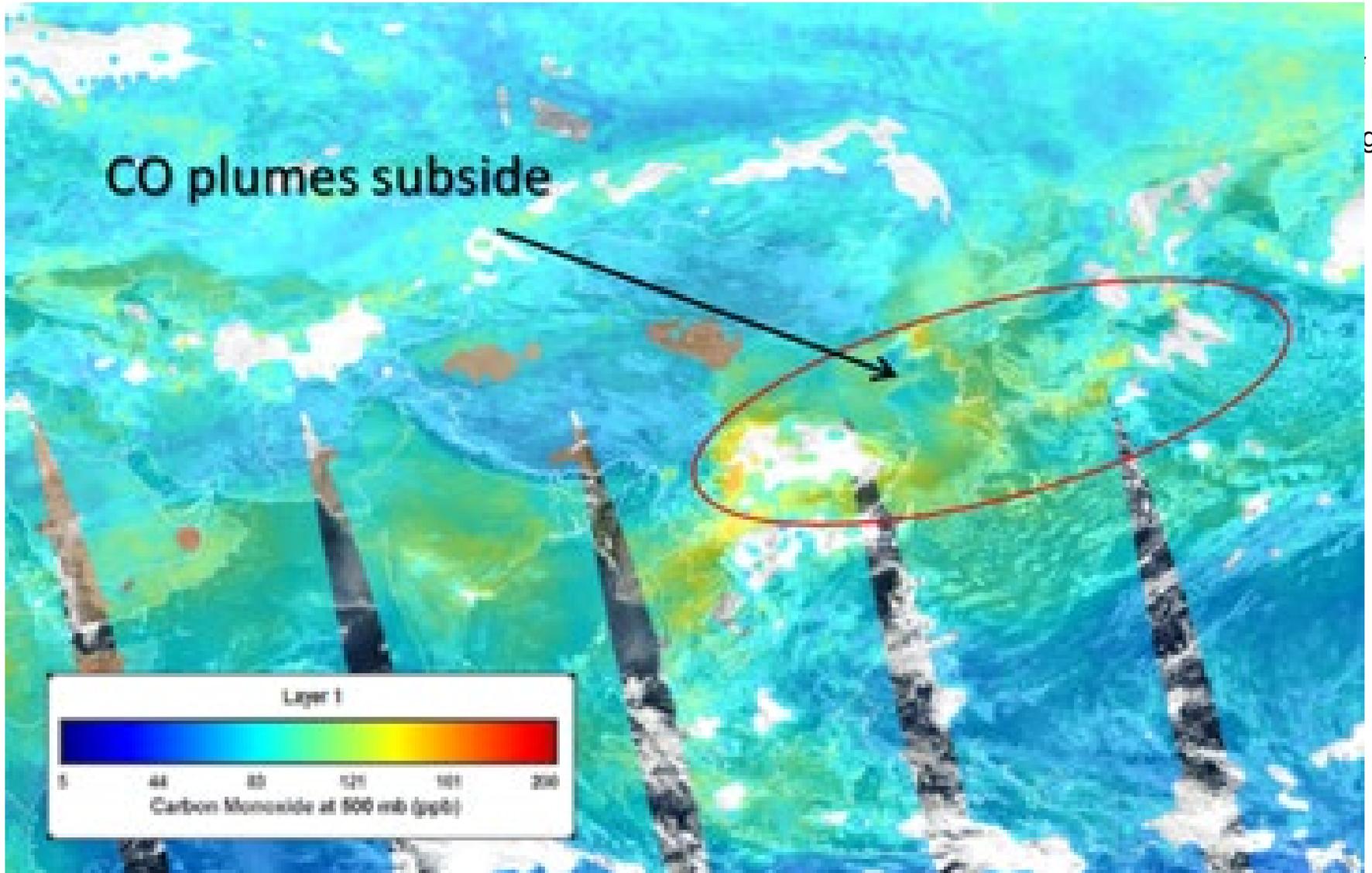
Highlights from the Science Teams

Impacts of COVID-19 Shutdowns Observed from Space (CO over China)



Highlights from the Science Teams

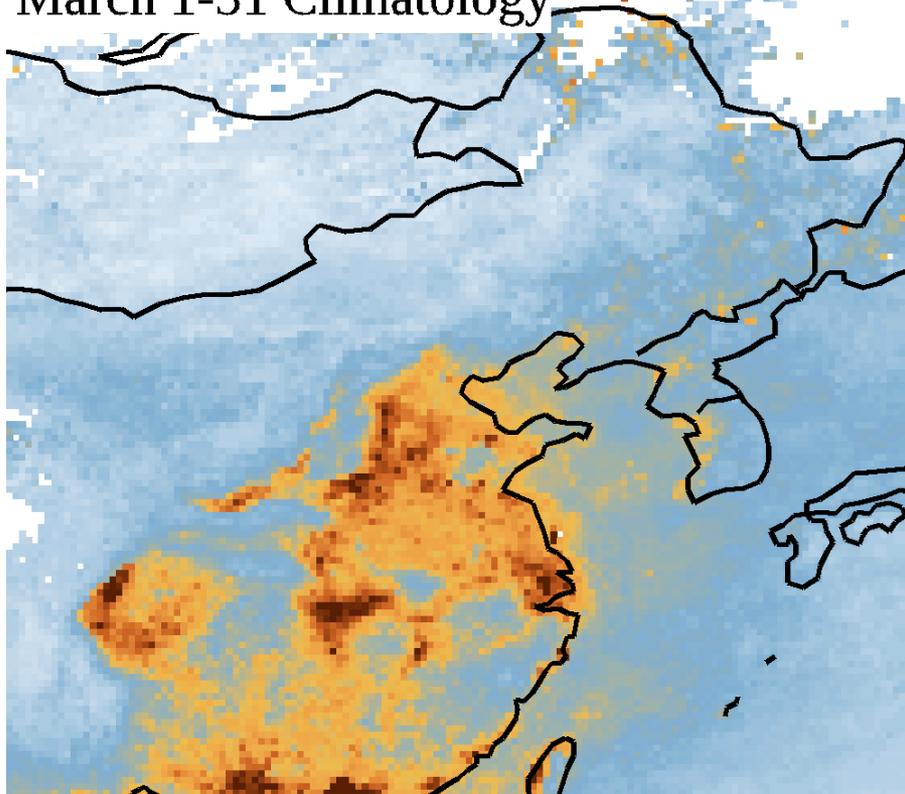
Impacts of COVID-19 Shutdowns Observed from Space (CO over China)



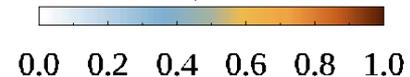
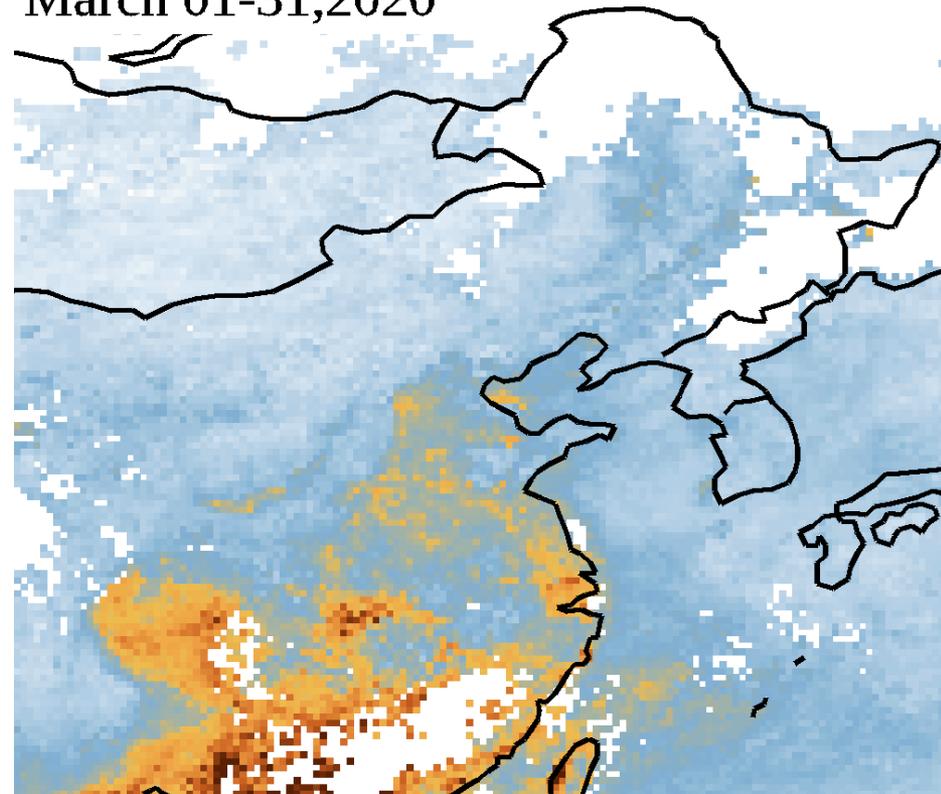
Highlights from the Science Teams

Impacts of COVID-19 Shutdowns Observed from Space (Aerosol Optical Depth over China)

March 1-31 Climatology



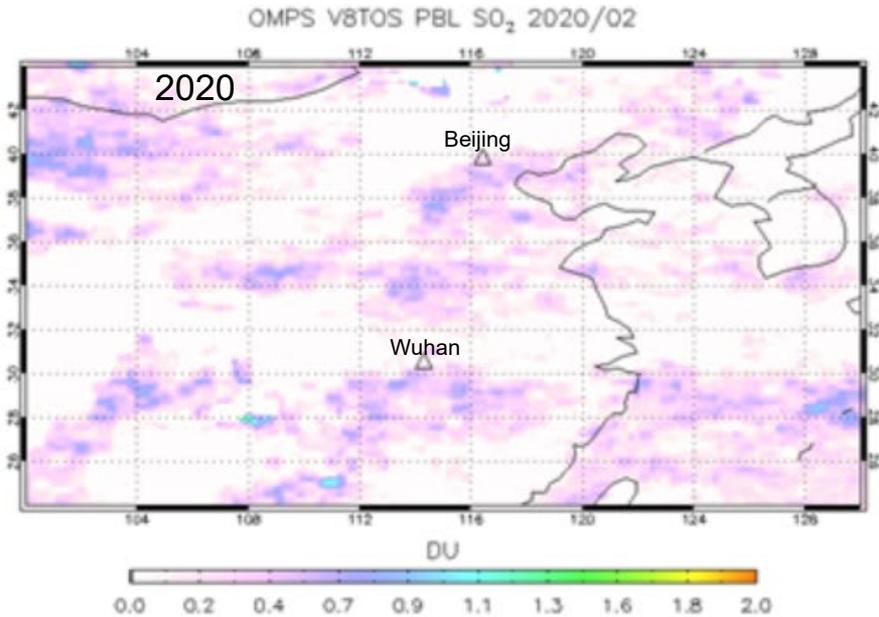
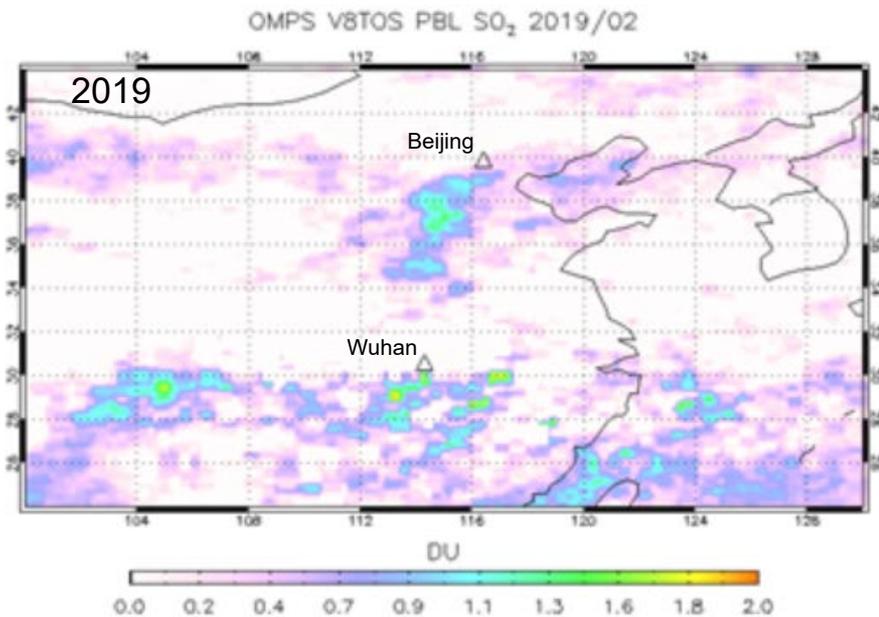
March 01-31, 2020



Highlights from the Science Teams

Impacts of COVID-19 Shutdowns Observed from Space (SO₂ over China)

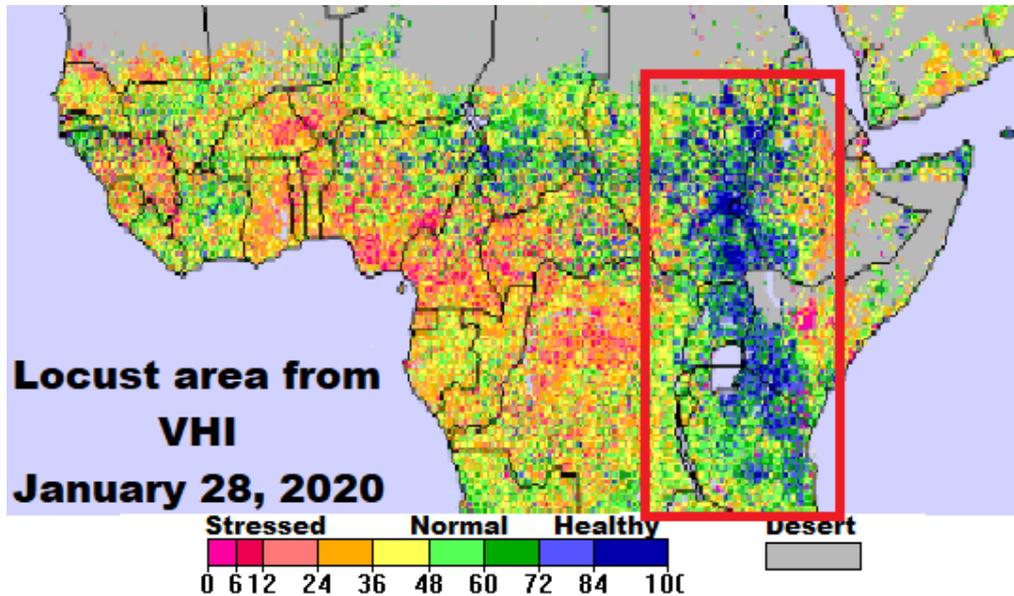
Less SO₂ over China in Feb 2020 compared to Feb 2019 due to COVID-19 travel restrictions



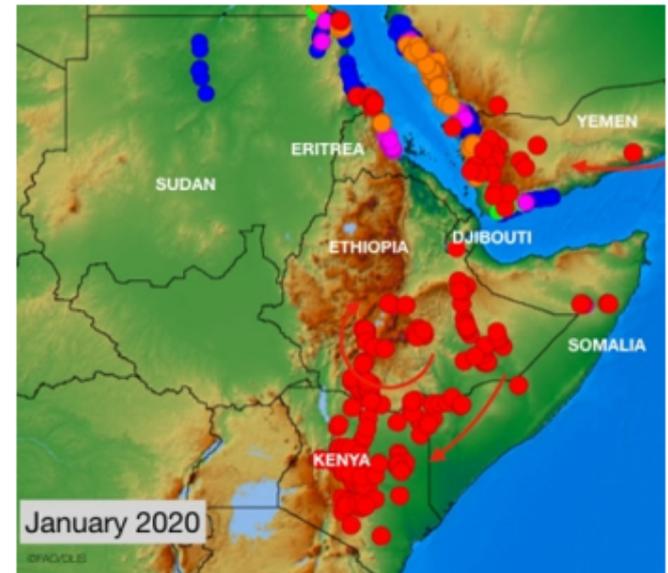
Highlights from the Science Teams

Vegetation Health Index (VHI) for desert locust detection

Vegetation Health Index derived from VIIRS 4 km² data was used for identifying area and intensity of desert locust infestations. In late 2019-early 2020 conditions in the arid regions of eastern Africa were excellent for development and spread of desert locusts. The image below shows VHI in sub-Saharan Africa. The Horn of Africa with healthy vegetation (VHI>60, blue color on the image below) is estimated as the area strongly affected by desert locusts. These results were confirmed with the reports (see image) from the Food and Agricultural Organization (FAO).



NOAA/NESDIS Vegetation Health Index (VHI)

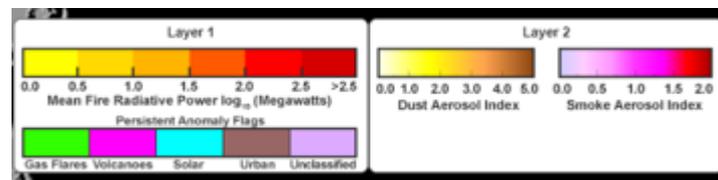
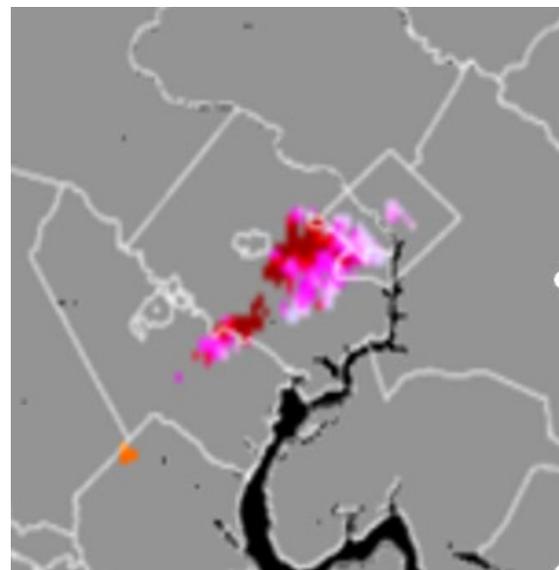
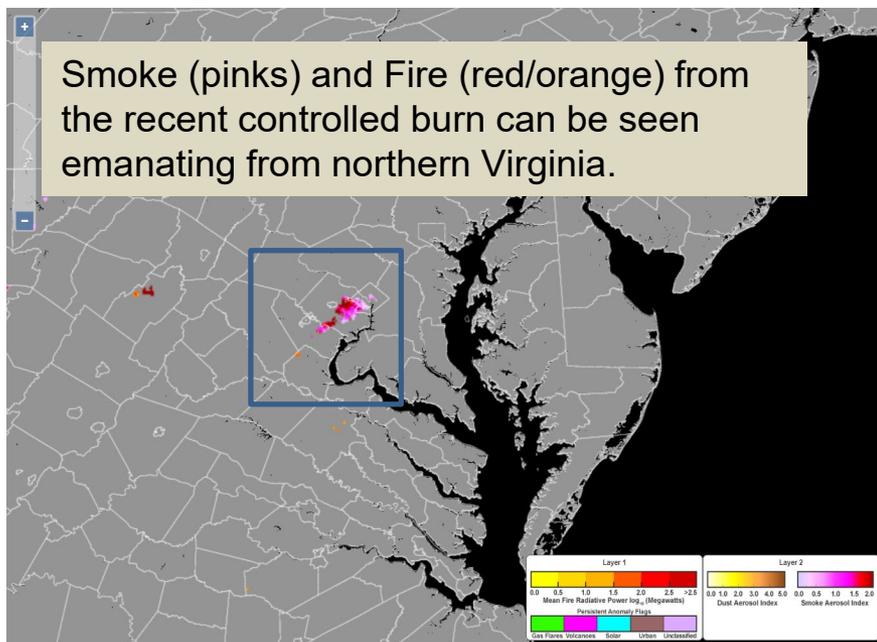


FAO estimates LOCUST area
(from country reports)

Highlights from the Science Teams

Near Real Time Smoke and Aerosol Products Used to Monitor Smoke Plume from Quantico Fire

On March 8, 2020, the National Park Service began a controlled burn in exurban Virginia that contributed to poor air quality in the DC area. The smoke plume from the fire, near Quantico Marine Base, was lofted to the northeast into Bethesda and other suburbs north and west of Washington DC and Baltimore. The JSTAR Mapper (<https://www.star.nesdis.noaa.gov/jpss/mapper>) was able to quickly detect the fire and the smoke plume, due to the near real time production of both Fire Radiative Power and Aerosol products for SNPP and NOAA-20.



Accomplishments

- **Delivery Algorithm Packages (DAPs) - Mission Unique Products:**
 - 3/25/2020: S-NPP VIIRS Geolocation LUTs Update DAP (ADR9254/CCR4963) delivered to DPES
 - 3/25/2020: ATMS SDR team delivered two day global JPSS-2 ATMS TDR, SDR, and geolocation data for MiRS/NUCAPS/ASSISTT teams for potential J2 algorithm/coefficient adjustment/testing
 - 3/25/2020: CrIS SDR team delivered one day Full Spectral Resolution (FSR) SDR and Geolocation JPSS-2 test data (generated from NOAA-20 CrIS SDR/Geolocation but with JPSS-2 data format: JPSS-2 satellite and sensor ID, and JPSS-2 metadata) to NUCAPS/ASSISTT teams for potential J2 algorithm/coefficient adjustment/testing
- **DAPs – Enterprise Products:**
 - NOAA-20 & NPP patch delivery for HEAP (CrIS only, HEAP v2.1) delivered to NDE on 3/5/2020, the DAP was promoted to I&T on 3/27/2020
 - N4RT BUFR v4-9-3 DAP delivered to NDE (for S-NPP & GCOM) on 3/31/2020
 - ASSISTT team delivered J1 Clouds/Winds DAP for the cloud pilot project on 3/30/2020
 - Cloud Mask Team delivered a new look-up table to address concerns over cold surfaces. This table has been tested by ASSIST, cryosphere and land surface albedo teams and is ready for next implementation opportunity.
- **New Data Distributions/Availability:**
 - VIIRS LST long-term-monitoring website ready to use: <https://www.star.nesdis.noaa.gov/smcd/emb/land/>
 - Near-real-time VIIRS winds are available online at <http://stratus.ssec.wisc.edu/products/rtpolarwinds/>
 - VIIRS Global Annual Surface Type AST-2018 is available for users to download from STAR FTP site (<https://www.star.nesdis.noaa.gov/jpss/>)
 - Data Distribution System for reprocessed S-NPP VIIRS V2 data is available at <http://viirs.astro.umd.edu/SatData/FileSearch/>, the system enable users to search the reprocessed S-NPP VIIRS V2 data set, and generate the scripts to download (FTP) data files
- **IDPS Builds Checkouts:**
 - STAR submitted Block 2.2 Mx0 I&T deploy regression review/checkout report to AMP/RTN/OSPO on 4/7//2020

Accomplishments – JPSS Cal Val Supports

- NOAA-20/S-NPP Operational Calibration Support:
 - S-NPP Weekly OMPS TC/NP Dark Table Updates: 03/03/20, 03/10/20, 03/17/20, 03/24/20, 03/31/20
 - NOAA-20 Weekly OMPS TC/NP Dark Table Updates: 03/03/20, 03/10/20, 03/17/20, 03/24/20, 03/31/20
 - S-NPP Bi-Weekly OMPS NP Wavelength & Solar Flux Update: 03/10/20, 03/24/20
 - NOAA-20 Bi-Weekly OMPS NP Wavelength & Solar Flux Update: 03/03/20, 03/17/20, 03/31/20
 - S-NPP Monthly VIIRS StrayLight LUTs Update: 03/03/20 (Mar), 04/01/20 (Apr)
 - S-NPP Monthly VIIRS LUT Update of DNB Offsets and Gains: 03/03/20 (Mar), 04/01/20 (Apr)
 - NOAA-20 Monthly VIIRS LUT Update of DNB Offsets and Gains: 03/03/20 (Mar), 04/01/20 (Apr)

- Simulated/Proxy JPSS-2 test data sets:

SDR	Data Type	Dates/Granules	Location
Proxy JPSS-2 ATMS SDR Data	ATMS TDR, SDR, and Geolocation (TATMS, SATMS, & GATMO)	2019-08-30 all granules 2020-03-20 all granules	/data/smcd5/qliu/J2_D ATA_Coeff/DATA_J2/A TMS/
Proxy JPSS-2 CrIS SDR Data	CrIS FSR (Full Spectral Resolution) SDR, and Geolocation (SCRIF & GCRSO)	2020-03-20 all granules	/data/data516/ychen/D ata/J2_SDR_TestData/ 20200320_j02/
Simulated JPSS-2 VIIRS SDR Data	DNB: SDR, and Geolocation (SVDNB & GDNBO) I-Band: SDR (SVI01-SVI05), and Geolocation (GIMGO & GITCO) M-Band: SDR (SVM01-SVM16), and Geolocation (GMODO & GMTCO)	2017-06-22 18 granules 2017-06-24 8 granules 2017-07-21 16 granules 2017-07-23 18 granules	/data/smcd5/SimJ2_VII RS_SDR/
OMPS SDR	Current resolution (May)	Coming soon	Coming soon

Upcoming Cal/Val Maturity Reviews

- April, 2020 Maturity Review (4/23/2020):
 - Provisional Maturity:
NUCAPS CO₂ product (S-NPP & NOAA-20)
 - Full Validated Maturity:
NUCAPS CH₄ product (S-NPP & NOAA-20)
Green Vegetation Fraction
Vegetation Index
OMPS NP SDR

- May, 2020 Maturity Review:
 - Full Validated Maturity:
Snow Cover (Binary Map & Snow Cover Fraction)
Surface Reflectance
OMPS NP Ozone EDR (V8Pro)

- June, 2020 Maturity Review:
 - Full Validated Maturity:
Ocean Color

- September, 2020 Maturity Review:
 - Provisional/Validated Maturity:
GST (Global Gridded Surface Type)

- December, 2020 Maturity Review:
 - Full Validated Maturity:
NUCAPS CO₂ product (S-NPP & NOAA-20)

- JSTAR Code/LUT/Product Deliveries:

DAP to DPES:

- Sep-20: NCC Imagery LUT N20 update
- Sep-20: Initial J2 LUTs (VIIRS & OMPS SDRs)
- ATMS SDR, ADR9035 DAP
- VIIRS SDR, ADR9171 DAP
- OMPS SDR, ADR9095 DAP

NOAA-20 Algorithm DAP to NDE/CoastWatch:

- May-20: I-band Active Fires
- Sep-20: Vegetation Health – N20 Final DAP (with init J2 DAP)
- Nov-20: Ocean Color – N20 Final DAP
- Sep-20: Initial J2-ready EDR DAPs (include NPP/N20 updates, all EDRs)
 - *{Per Program Request we are going to spread out these sep-20 deliveries, next Monthly will show new dates}*

FY20 STAR JPSS Milestones

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Algorithm Updates DAPs				
OMPS DAP: Remove VIIRS SnowIce and QST tile dependency (ADR8550)	Oct-19	Oct-19	10/28/19	
OMPS: J2 pre-launch sensor characterization report	Dec-19	Apr-20		Need NASA sharepoint access permission
ATMS: J2 pre-launch sensor characterization report	May-20	Jun-20		PSR changed
CrIS: J2 pre-launch sensor characterization report	May-20	Jul-20		PSR changed
J2 pre-launch Algorithm Updates Review - SDRs and Imagery	Jun-20	Jun-20		
J2 pre-launch Algorithms/PCT/LUT packages - SDRs and Imagery	Aug-20	Oct-20		PSR changed
OMPS: High resolution SDR implementation (17km x 17km OMPS TC)	Aug-20	Aug-20		
Imagery: All 16 M-bands as Imagery EDRs	Aug-20	Aug-20		
N20 NUCAPS final DAP to NDE	Nov-19	Nov-19	11/01/19	
N20 Vegetation Health final DAP to NDE	Mar-20	Sep-20		With init J2 DAP
I-band Active Fires DAP to NDE	Mar-20	May-20		With init J2 DAP
J2 pre-launch Algorithm Updates Review - EDRs	Aug-20	Aug-20		
Initial J2-ready EDR DAPs (include NPP/N20 updates)	Sep-20	Sep-20		
AST-2019 (VIIRS Annual Surface Type)	Sep-20	Sep-20		



FY20 STAR JPSS Milestones

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Algorithm Cal/Val				
J2 Cal Val Plans - Draft Delivery (all SDR/EDR products)	Jun-20	Jun-20		
N20 NUCAPS Full Validated Maturity (all NUCAPS products except CH4 & CO2)	Oct-19	Oct-19	10/28/19	
N20 Land Surface Temperature Full Validated Maturity	Nov-19	Nov-19	11/21/19	
N20 Surface Albedo Full Validated Maturity	Nov-19	Nov-19	11/21/19	
N20 OMPS NP SDR Full Validated Maturity	Jan-20	Apr-20		4/23/2020
N20 OMPS NP EDR (V8Pro) Full Validated Maturity	Jan-20	May-20		
N20 M-band and I-Band Active Fires Full Validated Maturity	Jan-20	Jan-20	02/06/20	Combined Jan/Feb review
N20 Green Vegetation Fraction Full Validated Maturity	Feb-20	Apr-20		4/23/2020
N20 Vegetation Index Full Validated Maturity	Feb-20	Apr-20		4/23/2020
NUCAPS CH4 Full Validated Maturity (N20 & NPP)	Feb-20	Apr-20		4/23/2020
NPP side-2 CrIs SDR Full Validated Maturity	Feb-20	Feb-20	02/06/20	
N20 Surface reflectance Full Validated Maturity	Apr-20	May-20		
N20 Snow Cover Full Validated Maturity	Apr-20	May-20		
N20 Ocean Color Full Validated Maturity	Jun-20	Jun-20		
N20 Surface Type Full Validated Maturity	Sep-20	Sep-20		



FY20 STAR JPSS Milestones

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Operational/Program Support				
S-NPP: Weekly OMPS TC/NP Dark Table Updates	Weekly	Weekly	10/01/19, 10/08/19, 10/16/19, 10/22/19, 10/29/19, 11/05/19, 11/13/19, 11/19/19, 11/26/19, 12/03/19, 12/11/19, 12/17/19, 12/30/19, 01/07/20, 01/14/20, 01/22/20, 01/28/20, 02/04/20, 02/11/20, 02/18/20, 02/25/20, 03/03/20, 03/10/20, 03/17/20, 03/24/20, 03/31/20	
S-NPP: Bi-Weekly OMPS NP Wavelength & Solar Flux	Bi-Weekly	Bi-Weekly	10/08/19, 10/22/19, 11/05/19, 11/19/19, 12/03/19, 12/17/19, 12/30/19, 01/14/20, 01/28/20, 02/11/20, 02/25/20, 03/10/20, 03/24/20	
S-NPP: Monthly VIIRS LUT update of DNB Offsets and Gains	Monthly	Monthly	10/08/19, 11/05/19, 12/10/19, 01/07/20 (Jan), 01/28/20 (Feb), 03/03/20, 04/01/20	
S-NPP: Monthly VIIRS Stray Light LUT Update	Monthly	Monthly	10/08/19, 11/06/19, 12/10/19, 01/07/20 (Jan), 01/29/20 (Feb), 02/12/20 (Feb updated), 03/03/20, 04/01/20	Re-use LUT after 12 months. The 12 th NPP LUT will be Apr-20
NOAA-20: Weekly OMPS TC/NP Dark Table Updates	Weekly	Weekly	10/01/19, 10/08/19, 10/16/19, 10/22/19, 10/29/19, 11/05/19, 11/13/19, 11/19/19, 11/26/19, 12/03/19, 12/11/19, 12/17/19, 12/30/19, 01/07/20, 01/14/20, 01/22/20, 01/28/20, 02/04/20, 02/11/20, 02/18/20, 02/25/20, 03/03/20, 03/10/20, 03/17/20, 03/24/20, 03/31/20	
NOAA-20: Bi-Weekly OMPS NP Wavelength & Solar Flux	Bi-Weekly	Bi-Weekly	10/01/19, 10/16/19, 10/29/19, 11/13/19, 11/26/19, 12/11/19, 01/07/20, 01/22/20, 02/04/20, 02/18/20, 03/03/20, 03/17/20, 03/31/20	
NOAA-20: Monthly VIIRS LUT update of DNB Offsets and Gains	Monthly	Monthly	10/08/19, 11/05/19, 12/10/19, 01/07/20 (Jan), 01/28/20 (Feb), 03/03/20, 04/01/20	
NOAA-20: Monthly VIIRS Stray Light LUT Update	Monthly	Monthly	10/08/19, 11/06/19, 12/10/19	Re-use LUT after 12 months. The 12 th N20 LUT will be Dec-19
Monthly quad-chart report (all SDR/EDR products)	Monthly	Monthly	10/31/19, 11/30/19, 12/31/19, 01/31/20, 02/29/20, 03/31/20	
IDPS Mx build SOL and I&T deploy regression verification review (bl2.1-Mx8/bl2.2-Mx0/1)	Nov-19 Mar-20 Jun-20	Nov-19 Mar-20 Jun-20	Block 2.1 Mx8 I&T report: 11/13/2019 Block 2.2 Mx0 SOL report: 02/14/2020 Block 2.2 Mx0 I&T report: 04/08/2020	
IDPS Cloud Implementation Verification (Based on Nov 2020 TTO)	Sep-20	Sep-20		

STAR JPSS Schedule

STAR JPSS Schedule: TTA Milestones

Task	2019			2020												2021									
	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	
ATMS SDR/TDR									▲▼			▲▲			▼										▲
CrIS SDR				■					▼	▲			▲▲		▼										▲
VIIRS SDR						◆			▲▼						▼										▲
OMPS SDR	◆	■					▲		◆▲▼						▼										▲
Imagery EDR									▼			◆	◆		▼										
Sea Surface Temperature									▼			◆	◆		▼										◆
Ocean Color									■▼			◆		◆	▼										◆
OMPS Ozone (TC: V8TOz)			◆						▼			◆			▼										◆
OMPS Ozone (NP: V8Pro)	◆					◆		■	▼			◆			▼										◆
Aerosol Optical Depth (AOD)			◆						▼			◆			▼										◆
Aerosol Detection (ADP)			◆						▼			◆			▼										◆
Volcanic Ash (VolAsh)			◆						▼			◆			▼										◆
Cloud Mask			◆						▼			◆			▼										◆
Cloud Properties			◆						▼			◆			▼										◆
Ice Surface Temperature			◆						▼			◆			▼										◆
Sea Ice (Age/Concentration)			◆						▼			◆			▼										◆
Snow Cover			◆					■	▼			◆			▼										◆
Active Fires				■				◆	▼				◆		▼										◆
Surface Reflectance								■	▼				◆		▼										◆
Surface Albedo	◆		■	◆					▼			◆			▼										◆
Land Surface Temperature	◆		■	◆					▼			◆			▼										◆
Vegetation Indices							■		▼				◆		▼										◆
Green Vegetation Fraction							■		▼				◆		▼										◆
Vegetation Health									▼				◆	◆	▼										◆
Annual Surface Type									▼				◆	◆	▼										◆
NUCAPS		◆					■		▼		◆				▼										◆
MiRS		◆							▼				◆		▼										◆
Snow Fall Rate (SFR)									▼				◆		▼										◆
VIIRS Polar Winds			◆						▼			◆			▼										◆
GCOM													◆												

■ Beta
 ■ Prov
 ■ Val
 ◆ iDAP
 ◆ fDAP
 ◆ mDAP
 ▲ Report
 ▲ Algo
 ▲ iLUT
 ▲ fLUT/MM
 ▼ iCVplan
 ▼ fCVplan



FY20 JPSS PSDI Milestones

Product Name	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
S-NPP and N-20 Flood Mapping Product				
-- CDR	Dec-19	Dec-19	Dec 2019	Completed
-- ARR	Oct-20	Oct-20		
-- ORR	Jan-21	Jan-21		
-- Operations	Feb-21	Feb-21		
VIIRS I-Band Active Fires Product				
-- SCR	Jan-20	Apr-20		Update was more significant than expected and the team has decided to add the J02 flow-through capability early to (1) avoid having to make a second delivery later in August and (2) get the software into operations to capture more of the 2020 summer-fall season.
-- ARR/AMR	Apr-20	Feb-20		The AMR occurred in Feb 2020; ARR is not required
-- ORR	Aug-20	Aug-20		
-- Operations	Sep-20	Sep-20		



Prior Year Funded JPSS PSDI Milestones

Product Name	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
S-NPP: OMPS Limb Profiler Products				
-- EDR and SDR ORR	Dec-16	--	12/02/2019	Completed
-- Operations	Mar-17	May-20		
NOAA-20: OMPS Ozone: V8Pro				
-- ORR	Jul-18	Mar-20	3/2/20	Completed
-- Operations	Aug-18	Apr-20	4/16/20	Completed
NOAA-20: NUCAPS including CrIS OLR				
-- CDR	Oct-16	--	10/27/16	Completed
-- SCR	Aug-18	--	01/25/19	Completed
-- Operations (Temp/H2O profiles)		--	3/7/2017	Completed
-- ARR	Sep-18	--	10/28/19	Completed
-- ORR	Jun-19	Apr-20		Has not integrated to NDE I&T yet
-- Operations	Jul-19	May-20		Dates relate to CO2 and CH4 components
NOAA-20: Enterprise Processing System: Global Gridding LST, and LSA				
-- CDR	Mar-18	--	10/22/18	Completed
-- TRR	Jul-18	--	3/12/2019	Completed
-- SCR	Sep-18	--	8/30/2019	Completed
-- ARR	Dec-18	Sep-19	9/24/2019	Completed
-- ORR	Mar-19	--	2/13/2020	Completed
-- Operations	Jun-19	--	2/20/2020	Completed



Prior Year Funded JPSS PSDI Milestones

Product Name	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
NOAA-20: Ocean Color				
-- CDR	Oct-16	-	10/27/2016	Completed
-- SCR	Jan-19			Completed
-- ARR	Mar-19	11/2018	11/2018	Completed
-- SRR	Apr-19	--		Waived
-- ORR	Apr-19	--		Waived
-- Operations	Jun-19	Jun-20		
NOAA-20: Microwave Tropical Cyclone Products				
-- CDR	Oct-16	-	10/27/2016	Completed
-- SCR	Apr-19	--	4/2/19	Completed
-- ARR	Oct-19	Aug-20		ASSISTT results are not as expected
-- ORR	Dec-19	Oct-20		
-- Operations	Feb-20	Nov-20		
NOAA-20: Blended Products Blended Ozone				
-- SCR	Aug-17	NA		SCR not required; already running in OPS
-- ORR	Jul-18	NA		No ORR is required
-- Operations	Oct-18	Jun-20		
NOAA-20: Blended Products Blended Snow and Ice				
-- SCR	Aug-18	--	7/9/2019	Completed
-- ORR	May-19	--	8/28/19	Completed
-- Operations	Jun-19	--	9/18/19	Completed
Microwave and Diurnal Corrected Blended SST w/ AMSR-2				
-- ORR	Nov-16	ON HOLD		
-- Operations	Nov-16	ON HOLD		



Prior Year Funded JPSS PSDI Milestones

Product Name	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Enhanced TOAST with S-NPP OMPS Limb Profiles				
-- CDR	Jan-17	NA		No longer required
-- SCR	Apr-17	NA		No longer required
-- ORR	May-17	Jun-20		
-- Operations	Jun-17	Jul-20		
Upgrade to the Multi-platform Satellite Tropical Cyclone Surface Wind Analysis Product				
-- PDR/CDR	Dec-17	--	1/26/2018	Completed
-- UTRR	Apr-18	--		Waived
-- SCR	May-18	Feb-20	1/24/2020	Completed
-- ARR	Oct-18	May-20		Integration time is longer than expected
-- ORR	Jan-19	Jun-20		
-- Operations	May-19	Jul-20		
Upgrades to the ADT Product				
-- PDR	Jul-17	--	8/23/2017	Completed
-- CDR	Jul-17	--	8/23/2017	Completed
-- SCR	Jun-18	--	2/25/2019	Completed
-- ARR	Oct-18	May-20		Longer integration time than expected
-- ORR	Apr-19	Jun-20		
-- Operations	Jun-19	Jul-20		
Product Monitoring Phase IV (JPSS RR, VIIRS AF)				
-- SRR/ORR	Jun-18	Jan-20	1/29/2020	Completed
-- Operations	Jul-18	--	3/25/2020	Completed
Product Monitoring VI (NDE J1)				
-- CDR	Dec-16	--	04/17/18	Completed
-- TRR	Sep-17	--	5/14/2019	Completed
-- SCR	Jun-19	--	Waived	Waived
-- ORR	Aug-19	Jan-20	1/29/2020	Completed
-- Operations	Sep-19	--	3/25/2020	Completed



JPSS Risk Summary

Top Risks



Status as of: 04/07/2020

Rank Risk ID	Summary	LxC Trend	Aprch	Status
1 AMP-19-002	Proxy data delay due to J2 10Hz Sampling Freq	4x3 ↔	W	04/01/2020: No update.
2 GJ-340	Data transfer via hard drive may be delayed due to offices being closed	4x3 NEW	W	04/03/2020: Risk Submitted
3 AMP-19-003	Some IDPS and STAR algorithms cannot use APIDs with 10Hz sample freq	3x2 ↔	M	04/01/2020: No update.
4 AMP-18-003	J2 APID Changes to Accommodate New S/C Bus	2x2 ↔	W	04/01/2020: CCR 4439 and 4892 have been incorporated.
5 GJ-331	ATMS & CrIS SDR J2 Algorithm Update Code Delivery	2x4 ↔	W	4/2/2020: CrIS TVAC: Completed Feb. 26, 2020. Continue to watch, hope to close May 2020
6 AMP-18-008	Data Product Requirements for OMPS-Limb	3x1 ↔	M	4/2/2020: The OMPS LP is going for the SPSRB briefing on April 15 2002, and is on schedule to be in operation in NDE May 2020, pending on a successful SPSRB briefing.
7 AMP-19-001	Algorithm testing & delivery impacts due to lag between IDPS and G-ADA moving to the Cloud	2x1 ↔	W	2/19/2020: After the successful cloud CDR held in Jan 2020, we would expect that the risk is lower and should be closed when the IDPS and G-ADA implemented in Cloud which is scheduled to be Dec 2020.
8 AMP-18-006	Impact on Testing Ability Due to Major Build Upgrades	1x1 ↔	W	4/1/2020: No change. Monitor until Block 2.2 MX0 TTO on May 11,2020

L I K E L I H O O D	5					
	4			1 2		
	3	6	3			
	2	7	4 5			
	1	8				
		1	2	3	4	5
		CONSEQUENCES				

Criticality
HIGH
MED
LOW

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

LxC Trend
↓ – Decreasing (Improving)
↑ – Increasing (Worsening)
↔ – Unchanged
NEW – Added this month



JPSS Top Risks



Rank	Risk ID	Risk Statement	Approach	Status
<div data-bbox="40 282 117 332" style="background-color: yellow; border: 1px solid black; padding: 2px; display: inline-block;">1</div> <p data-bbox="150 297 469 344">Proxy data delay due to J2 10Hz Sampling Freq</p> <div data-bbox="54 354 104 386" style="text-align: center;">↔</div>	AMP-19-002	<p data-bbox="685 287 1097 382">Given that: APID 11 (S/C Attitude and Ephemeris) and 30 (S/C Telemetry) sampling frequencies are at 10Hz on JPSS-2</p> <p data-bbox="685 415 1097 486">There is a possibility that: It will affect and delay the process of getting/producing simulated J2 data (proxy data) during JCT.</p> <p data-bbox="685 515 1097 715">Resulting in: Test data production during JCT will be more difficult. "Instead of using NPP and J01 Proxy, Attitude and Ephemeris would be manufactured by using STK. To compensate for the sample freq at 10Hz, the APID 11 packet will need to be converted to 10Hz causing unwanted delays.</p>	<p data-bbox="1193 287 1271 308">Watch</p>	<p data-bbox="1358 287 1586 308">04/01/2020: No update.</p> <p data-bbox="1358 339 1866 386">02/07/20: Waiting on Softbench data to see if J2 test data is making APID 11 at 10HZ.</p> <p data-bbox="1358 415 1866 462">12/18/19: Softbench version 5 currently being tested, expected delivery end of January 2020.</p> <p data-bbox="1358 491 1885 668">11/06/19: Proxy data delay due to J2 10Hz Sampling Frequency Softbench issues for JPSS-2 APID 11 are due to time issues. This risk remains until the next version of softbench is available and the JPSS-2 APID 11 is analyzed. 17 day test data currently uses JPSS-1 APID 11 data, repeated 1 HZ samples to create 10 HZ (all samples the same).</p> <p data-bbox="1358 696 1885 768">9/9/19: Data from the simulator has been received and bit busted by the SEI&T team. This includes the J2 APID 11 and J2 APID 30 and APID 37.</p>

Risk Owner: Tomi Ibronke



JPSS Top Risks



Rank	Risk ID	Risk Statement	Approach	Status
<p>2</p> <p>Data transfer via hard drive may be delayed due to offices being closed.</p> <p>↔</p>	<p>GJ-340</p>	<p>Given that: Seit Ops Like (SOL) data is transferred via hard drive and physically transported from Raytheon to STAR.</p> <p>There is a possibility that: the data transfer will be delayed due to Government Offices being closed.</p> <p>Resulting in: Scheduled testing of algorithm upgrades in SOL testing schedules for April 24 - May 8, 2020 to be delayed.</p>	<p>Watch</p>	<p>04/03/2020: Risk Submitted</p>

Risk Owner: Jeff Weinrich



JPSS Top Risks



Rank	Risk ID	Risk Statement	Approach	Status
<div style="background-color: #008000; color: white; padding: 2px; display: inline-block; border: 1px solid black;">3</div> Some IDPS and STAR algorithms cannot use APIDs with 10Hz sample freq 	AMP-19-003	<p>Given that: APID 11 (S/C Attitude and Ephemeris) and 30 (S/C Telemetry) sampling frequencies are at 10Hz on JPSS-2</p> <p>There is a possibility that: Some IDPS and STAR algorithms will not be able to use any science products that has APID 11 and 30 or any APIDs with a sampling frequency of 10Hz</p> <p>Resulting in: Delays since IDPS geolocation algorithms cannot use 10Hz APIDs. During JCT3 IDPS has to geolocate J2 RDRs with J2 S/C Diary and if the geolocation algorithm is not compatible with the 10hz freq, it will affect IDPS's ability to geolocate J2 RDRs. STAR needs to consider the effect 10Hz APIDs will have on their GEO and sensor product algorithms.</p>	Mitigate	<p>04/01/2020: No update.</p> <p>02/07/20: No updates</p> <p>12/18/19: IDPS Version 2.3 will include geolocation change.</p> <p>11/06/19: Geolocation algorithm to use only 1 sample of APID 11 10HZ. The JPSS-2 test data had to utilize J1 APID 11, but converted to 10 HZ (due to time issues in softbench for J2 AP11 thus far).Raytheon will hold the Detailed design review for the JPSS-2 S/C Attitude and Ephemeris RDR on November 7th. 10hz APID11 (xDR probably won?t use all samples; decimate to one sample)</p> <p>9/9/19: The TIM to discuss the 10Hz APID 11 was held between IDPS, STAR and Raytheon personnel. It was determined that J2 simulation data is needed to make a concrete decision on the correct action to take. Another TIM will be planned for the first quarter of 2020. IDPS Geolocation algorithm is planning to use only 1 sample of the 10/Hz APID.</p>

Risk Owner: Tomi Ibronke



JPSS Top Risks



Rank	Risk ID	Risk Statement	Approach	Status
<p>4</p> <p>J2 APID Changes to Accommodate New S/C Bus</p> <p>↔</p>	AMP-18-003	<p>Given that: J2 has a new S/C Bus manufacturer and some new APIDs compared to J1 and S-NPP</p> <p>There is a possibility that: the SDR algorithms will need to be updated to accommodate new RDR format/structure</p> <p>Resulting in: additional unplanned work for Ground.</p>	Watch	<p>04/01/2020: CCR 4439 and 4892 have been incorporated.</p> <p>02/07/20: CCR 4439 approved and waiting incorporation. CCR 4892 ? needs approval and incorporation</p> <p>12/18/19: CCR 4439 has been incorporation. Latest APID to VCID released Dec 4th, 2019.</p> <p>11/06/19: J2 APID Changes to Accommodate New S/C Bus Received and incorporated APID changes for JPSS-2 in CCR 4439 approved and being incorporated. No APID changes for JPSS-2 ATMS, CrIS, OMPS NP, OMPS TC, and VIIRS ? according to latest JPSS-2 APID to VCID mapping (June 25, 2019). These JPSS-2 products are included in CCR 4759. Very unlikely that there will be any further changes to the JPSS-2 APID to VCID mapping that will affect JPSS-2 data production.</p> <p>09/09/19: J2 GPS APIDs are currently not included in the J2 S/C TLM RDR, and all other Virtual Channel 0 APIDs are included in the S/C TLM RDR. Investigating the size of APID 133 and APID 144 to determine true size of J2 S/C TLM RDR (30 bytes vs. 38 bytes).</p>

Risk Owner: Tomi Ibrionke



JPSS Top Risks



Rank	Risk ID	Risk Statement	Approach	Status
<p>5</p> <p>ATMS & CrIS SDR J2 Algorithm Update Code Delivery</p> <p>↔</p>	<p>GJ-331</p>	<p>Given that: ATMS & CrIS TVAC and PSR have been delayed from original schedule which was:</p> <ol style="list-style-type: none"> 1. ATMS TVAC: July-2019 2. ATMS PSR: Sept 2019 3. CrIS TVAC: July 2019 4. CrIS PSR: Sept 2019 5. JCT3: Feb 2021 <p>There is a possibility that: ATMS & CrIS SDR JPSS-2 algorithm and PCT update package can not be delivered as scheduled</p> <p>Resulting in: Resulting in: the ATMS & CrIS JPSS-2 DAPs can not be implemented in IDPS build before JCT3 (the first E2E test event, IDPS build Code-cut-off date is about 6-7 months before TTO)</p>	<p>Watch</p>	<p>4/2/2020: CrIS TVAC: Completed Feb. 26, 2020. Continue to watch, hope to close May 2020</p> <p>03/03/2020: Nothing to report - schedule remain</p> <p>02/12/2020: Continue to watch as timeline of events unfold. New Schedule: 1. ATMS TVAC: Completed Dec 2019 2. ATMS PSR: Mar-2020 3. CrIS TVAC: Jan-2020 4. CrIS PSR: Apr-2020 5. ATMS & CrIS JPSS-2 DAPS delivery: Sep 2020 & Oct 2020 (PSR+6 months) 6. JCT3: May-2021</p> <p>12/05/2019: Continue to watch as timeline of events unfold. Date of JCT3 is now 5/26/2020.</p>

Risk Owner: Tess Valenzuela



JPSS Top Risks



Rank	Risk ID	Risk Statement	Approach	Status
<p data-bbox="40 282 117 332">6</p> <p data-bbox="150 297 452 344">Data Product Requirements for OMPS-Limb</p> <p data-bbox="54 354 104 386">↔</p> <p data-bbox="150 372 343 419">Expected Closure: 10/2020</p>	AMP-18-008	<p data-bbox="687 287 1103 334">Given that: There are no JPSS (or NOAA) data product requirements for OMPS-L</p> <p data-bbox="687 362 1103 486">There is a possibility that: benefits/impacts analysis from users based on NPP data products may demonstrate the need for NOAA processing of OMPS-L from JPSS-2/3/4</p> <p data-bbox="687 515 1087 611">Resulting in: Additional funding needed for delivering the algorithm, product generation/distribution/archive, and calval of the products.</p>	Mitigate	<p data-bbox="1358 287 1875 396">4/2/2020: The OMPS LP is going for the SPSRB briefing on April 15 2020, and is on schedule to be in operation in NDE May 2020, pending on a successful SPSRB briefing.</p> <p data-bbox="1358 429 1875 476">2/19/2020: Promotion to NDE operations is scheduled for May, 2020</p> <p data-bbox="1358 505 1885 629">12/05/2019: An OMPS Operations Readiness Review (ORR) was conducted on Dec. 2, 2019. This is the last major review before it goes into operations. Will keep risk open until the algorithm is promoted from NDE I&T to Operations.</p> <p data-bbox="1358 658 1885 782">9/23/2019: The OSPO PAL and STAR PI will schedule the ORR in Oct. 2019. The science team has been busy with NOAA-20 OMPS cal val during September and now the ORR for OMPS-LP is moved to October 2019.</p> <p data-bbox="1358 811 1875 882">8/8/2019: OSPO PAL and STAR PI are working on Operational Readiness Review (ORR) slides now and planning to hold ORR in September 2019.</p> <p data-bbox="1358 911 1875 958">7/12/2019: No change. There is still some issues with ancillary data with running OMPS-L on NDE I&T.</p> <p data-bbox="1358 986 1561 1011">5/1/2019: No change</p>

Risk Owner: Lihang Zhou



JPSS Top Risks



Rank	Risk ID	Risk Statement	Approach	Status
<p data-bbox="42 287 117 334">7</p> <p data-bbox="54 354 104 386">↔</p> <p data-bbox="150 297 475 368">Algorithm testing & delivery impacts due to lag between IDPS and G-ADA moving to the Cloud</p> <p data-bbox="150 396 343 444">Expected Closure: 12/2020</p>	AMP-19-001	<p data-bbox="687 287 1097 334">Given that: IDPS will be in the cloud prior to G-ADA being in the cloud,</p> <p data-bbox="687 361 1074 432">There is a possibility that: algorithm change testing and implementation may take longer</p> <p data-bbox="687 461 1089 508">Resulting in: delays to implementation of algorithm changes.</p>	Watch	<p data-bbox="1358 287 1879 408">2/19/2020: After the successful cloud CDR held in Jan 2020, we would expect that the risk is lower and should be closed when the IDPS and G-ADA implemented in Cloud which is scheduled to be Dec 2020.</p> <p data-bbox="1358 436 1831 484">12/05/2019: Lihang will look into whether this risk should be transferred to DPMS</p> <p data-bbox="1358 512 1837 559">8/8/2019: Suggest to transfer this risk to be under DPMS risk</p> <p data-bbox="1358 588 1852 659">7/12/2019: No update. AMP and STAR teams have been engaged with the IPR reviews and provided feedback/inputs related to the algorithms/cal val.</p> <p data-bbox="1358 688 1566 711">5/1/2019: No Update</p> <p data-bbox="1358 739 1875 861">3/6/19: Based on limited understanding from Ground Project as of February 2019, we believe that there is a real possibility that IDPS will be migrated to the Cloud prior to G-ADA being available in the Cloud (with proper training, etc).</p>

Risk Owner: Lihang Zhou



JPSS Top Risks



Rank	Risk ID	Risk Statement	Approach	Status
<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; background-color: #4CAF50; color: white; padding: 2px 5px; margin-right: 5px;">8</div> <div> <p>Impact on Testing Ability Due to Major Build Upgrades</p>  </div> </div>	AMP-18-006	<p>Given that: DPMS has had issues installing major Block/Build updates in the past on G-ADA</p> <p>There is a possibility that: this could occur again in the future (Block 2.2)</p> <p>Resulting in: delays to testing of instrument code and table updates.</p>	Watch	<p>4/1/2020: No change. Monitor until Block 2.2 MX0 TTO on May 11,2020</p> <p>2/5/2020: No change</p> <p>12/5/2019: Monitor until Block 2.2 MX0 is ready for operations on May 11,2020.</p> <p>11/7/2019: No change</p> <p>10/05/2019: No change. Continue to watch until Block 2.2</p> <p>9/5/2019: No issues. Continue to Watch</p> <p>7/11/2019: No issues. Continue to Watch</p> <p>3/6/19: Risk Owner changed from Cole to Jeff.</p>

Risk Owner: Jeff Weinrich

Color code:

Green:

Completed Milestones

Gray:

Non-FY20 Milestones

Accomplishments / Events:

S-NPP ATMS scan drive motor currents, in both the main motor and the compensator, officially stabilized after March 12, 2020, when the TDR/SDR main loop integral error quality flag disappeared in QF-9.

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:

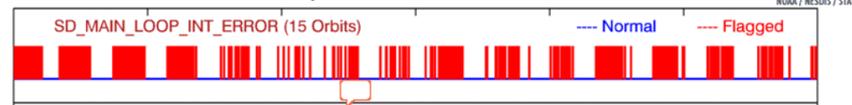
None

Highlights:

S-NPP ATMS SDR Quality Flag triggered due to Scan Drive anomaly returns to normal as of 3/12/2020

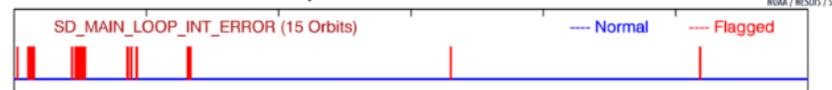
Suomi NPP ATMS Granule Healthy/Status Time Series - QF 9

Daily Status on 03/04/2020



Suomi NPP ATMS Granule Healthy/Status Time Series - QF 9

Daily Status on 03/12/2020



Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
J2 pre-launch test data (TVAC) review/analyze	Apr-20	Apr-20		TVAC: Dec-19
J2 pre-launch evaluation tools development	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Pre-launch sensor characterization report	Jun-20	Jun-20		PSR + 3m
Algorithm update based on pre-launch test data and other changes (e.g. APID, sampling frequency, FSW, and RDR)	Sep-20	Sep-20		PSR + 6m
PCT update based on pre-launch test data and other changes	Sep-20	Sep-20		PSR + 6m
Algorithm Updates Review	Jun-20	Jun-20		
J2 SDR data (based on TVAC) available for EDRs	Apr-20	Apr-20		
ATMS TDR/SDR discrepancy between ADL and IDPS over lunar intrusion regions (ADR 9035)	Sep-20	Sep-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Annual ATMS TDR/SDR performance report	Feb-20	Feb-20	Feb-20	
Verification of cloud implementation	Sep-20	Sep-20		
IDPS Mx build I&T deploy regression support:				
BL2.1 Mx 8 I&T ATMS data review/checkout	Nov-19	Nov-19	11/13/19	
BL2.2 Mx 0 I&T ATMS data review/checkout	Apr-20	Apr-20	04/01/20	
BL2.2 Mx 1 I&T ATMS data review/checkout	Jul-20	Jul-20		

Accomplishments / Events:

- Completed a study using a linear regression model to predict the metrology laser wavelength (**Figure (1)**), using the laser diode's temperature. Implementation with error correction produces a computed laser wavelength with an accuracy of 0.5 ppm over 5 years for SNPP CrIS (**Figure (2)**), and 0.5 ppm over 2 years for J1 CrIS.
- Completed a study of the effects of implementing the FCE algorithm operationally. The current FCE algorithm can handle up to 25% ES FCEs per granule for S-NPP and 18% for NOAA-20 for achieving IDPS latency requirement (**Figure (3)**). The FCE false alarm rate remains zero in this evaluation. Further monitoring the FCE false alarm is planned in the next CrIS reprocess.
- Per request from direct broadcast (DB) users, investigating the potential software updates and impacts for CrIS SDR processing with less than nine granules of RDRs to generate one granule SDR. Identified all the necessary changes for the configurations, source codes as well as PCT table updates for running CrIS SDR with 7 RDRs, 5 RDRs and 3 RDRs. SDR radiance products generated with less than 9 RDR granules are reasonable compared with operational products (**Figure (4)**).
- The J2 TVAC short term repeatability and long term repeatability has been calculated. The short and long term repeatability requirements are about the stability of the instrument noise over 2 hours (short term) and over 30 days (long term). The processing of the J2/CrIS TVAC data shows that the requirements are met with margin

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
NPP (side-2) Validated Maturity	Feb-20	Feb-20	02/06/20	Prov + 6m
J2 pre-launch test data (TVAC) review/analyze	Apr-20	Apr-20		TVAC: Jan-20
J2 pre-launch evaluation tools development	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Pre-launch sensor characterization report	Jul-20	Jul-20		PSR + 3m
Algorithm update based on pre-launch test data and other changes (e.g. APID, sampling frequency, FSW, and RDR)	Oct-20	Oct-20		PSR + 6m
PCT update based on pre-launch test data and other changes	Oct-20	Oct-20		PSR + 6m
Algorithm Updates Review	Jun-20	Jun-20		
J2 SDR data (based on TVAC) available for EDRs	Apr-20	Apr-20	03/26/2020	
Update Quality flag and threshold for Spike Detection algorithm (ADR8820)	Aug-20	Aug-20		
Optimize/update FCE detection and correction algorithm	Aug-20	Aug-20		
Turn off Truncated Spectrum CrIS Data (ADR8761)	Sep-20	Sep-20		OSPO & Users
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Annual CrIS SDR performance report	Feb-20	Feb-20	02/26/2020	
Verification of cloud implementation	Sep-20	Sep-20		
IDPS Mx build I&T deploy regression support:				
BL2.1 Mx 8 I&T CrIS data review/checkout	Nov-19	Nov-19	11/12/19	
BL2.2 Mx 0 I&T CrIS data review/checkout	Apr-20	Apr-20	04/01/20	
BL2.2 Mx 1 I&T CrIS data review/checkout	Jul-20	Jul-20		

Highlights:

(1) Response of Laser Diode wavelength to its temperature is found to be 0.089 nm/K, consistent with the literature

(2) Laser diode temperature linear regression model with correction can predict the laser temperature with an accuracy of 0.5 ppm over 5 years.

(3) Latency estimate if FCE Algorithm is enabled.

(4) Radiance impact for S-NPP CrIS SDR radiances generated with different sliding window sizes

	Latency Requirement (minutes per granule)	Max ES FCEs Allowed (per granule)	Max ES FCE Ratio (per granule)
S-NPP	1.74	(1.74-0.5)*60/2.5 = 30	25% ¹
NOAA-20	1.37	(1.37-0.5)*60/2.5 = 21	18% ¹

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 3/24/2020
- Delivered for deployment in IDPS operations an updated S-NPP VIIRS DNB stray light correction LUT generated from the March 2020 data
- Delivered for deployment in IDPS operations updated S-NPP VIIRS geolocation LUTs that correct an increase in the SDR geolocation errors since a star tracker reset in March 2019
- Analyzed TEB Calibration data acquired for S-NPP on March 10-12, 2020, and for NOAA-20 on March 17-19, 2020, during OBC BB warm-up/cool-down (WUCD) tests and confirmed that the last year IDPS code change has significantly improved accuracy of the VIIRS SDR TEB calibration during these tests
- Analyzed VIIRS lunar measurements collected on 3/5/2020 to derive the lunar F-factors and to compare them with the solar calibration F-factors; Coordinated verification of predictions for the NOAA-20 VIIRS lunar calibration opportunities on 4/4/2020
- Re-optimized NOAA-20 and S-NPP VIIRS geolocation LUT parameters necessary for the VIGMU code change in IDPS: reprocessed 16 days of data for each satellite to validate the updated LUTs

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			

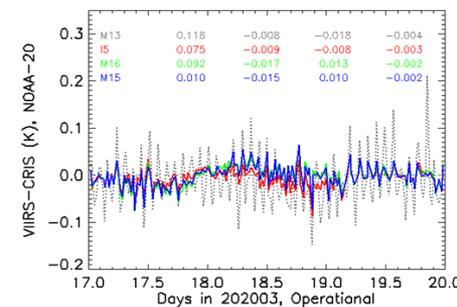
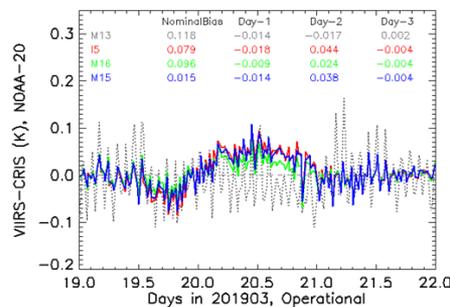
1. Project has completed.
2. Project is within budget, scope and on schedule.
3. Project has deviated slightly from the plan but should recover.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

none

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
J2 pre-launch test data (TVAC) review/analyze	Jan-20	Jan-20	1/31/2020	
J2 pre-launch evaluation tools development	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Launch-ready LUTs (initial delivery)	Jun-20	Jun-20		
Algorithm Updates Review	Jun-20	Jun-20		
Simulated J2 SDR data available for EDRs	Jan-20	Jan-20	1/31/2020	
DAP: Lunar contamination (code & LUT updates)	Jun-20	Jun-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Annual VIIRS SDR performance report	Feb-20	Feb-20	2/28/2020	
Verification of cloud implementation	Sep-20	Sep-20		
IDPS Mx build I&T deploy regression support:				
BL2.1 Mx8 I&T VIIRS data review/checkout	Nov-19	Nov-19	11/06/2019	
BL2.2 Mx0 I&T VIIRS data review/checkout	Apr-20	Apr-20	04/01/2020	
BL2.2 Mx1 I&T VIIRS data review/checkout	Jul-20	Jul-20		

Highlights:



Comparison of NOAA-20 VIIRS and CrIS brightness temperature measurements during OBC BB WUCD tests in March 2019 (left), before the IDPS code improvements, and in March 2020 (right), after the code change: better agreement between the two instruments can be seen

Accomplishments / Events:

- Conducted a dry run for NOAA-20 NP SDR validated review and follow-up meeting towards the actions from the dryrun
- Worked on the actions from the dryrun to refine the NP SDR review presentation
- Investigated the root cause of the latitude dependency of the 32-day averaged differences between SNPP and NOAA-20
- Made regular weekly/biweekly deliveries for OMPS dark table, SNPP/NOAA-20 OMPS-NP wavelength and solar flux
- Analyzed the NASA dark table package

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: The top priority of the project is to achieve the validated review of NOAA-20 OMPS NP in March 2020. We are also experiencing the leave of one contractor from SDR team, causing some adjustment of the tasks. The last but not least, we are still working on getting the TVAC data.

Highlights:

Global 32-Day Nvalue Average Difference Distribution between SNPP and NOAA-20 NP SDR Data

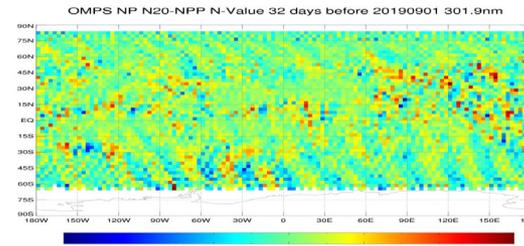


Fig. 1 Global Nvalue difference (32-day averages of the differences) between SNPP and NOAA-20 NP SDR at 301.9 nm, where the latitude dependency of the differences are observed

NOAA-20 NP SDR radiance differences (%) against Tomrad Simulations

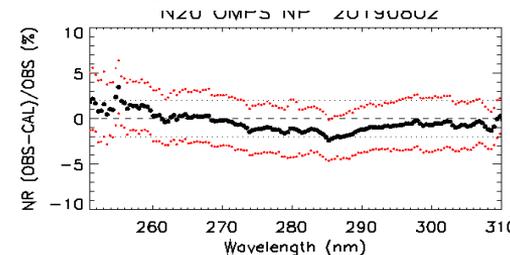


Fig. 2 On average, NOAA-20 NP radiometric radiance difference remain within $\pm 2\%$ against TomRad simulations except short wavelengths smaller than 255 nm or greater than 308 nm where the differences could exceed 2%

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity: OMPS-NP	Jan-20	Apr-20		Refer to Issue Note
J2 pre-launch test data (TVAC) review/analyze	Apr-20	Apr-20		
J2 pre-launch evaluation tools development	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Pre-launch sensor characterization report	Dec-19	Apr-20		Access/priority
Algorithm update based on pre-launch test data and other changes (e.g. APID, sampling frequency, FSW, and RDR)	Jun-20	Jun-20		
Launch-ready LUTs (initial delivery)	Jun-20	Jun-20		
Algorithm Updates Review	Jun-20	Jun-20		
J2 SDR data (based on TVAC) available for EDRs	Apr-20	Apr-20		
Remove VIIRS Snowice and QST tile dependency (ADR8550/CCR4589)	Oct-19	Oct-19	10/28/19	8/1/19 to ASSISTT
NaN Values in SOMPS Products (ADR8526)	Jun-20	Jun-20		
High resolution SDR implementation (17km x 17km OMPS TC)	Aug-20	Aug-20		Jun-20 ?
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Annual OMPS SDR performance report	Feb-20	Feb-20	Feb-20	
Verification of cloud implementation	Sep-20	Sep-20		
IDPS Mx build I&T deploy regression support:				
BL2.1 Mx 8 I&T OMPS data review/checkout	Nov-19	Nov-19	11/12/19	
BL2.2 Mx 0 I&T OMPS data review/checkout	Apr-20	Apr-20	04/07/20	
BL2.2 Mx 1 I&T OMPS data review/checkout	Jul-20	Jul-20		

Accomplishments / Events:

- The frame of data dissemination interface for VIIRS reprocessed data is available at <http://viirs.astro.umd.edu/SatData/FileSearch/>
- New round of SNPP CrIS reprocessing is scheduled
- New round of SNPP OMPS reprocessing is scheduled
- Preparation of a peer-review journal paper for SNPP SDR Reprocessing is ongoing (highlights)
- Transition of the reprocessed SNPP SDR data to NCEI/CLASS is ongoing
- The production of on-demand one-month (May 2016) Cloud mask (CM) using reprocessed VIIRS SDR is completed and the data is delivered to STAR aerosol team for evaluation
- The production of one-year (2016) CM using reprocessed VIIRS SDR is ongoing

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			

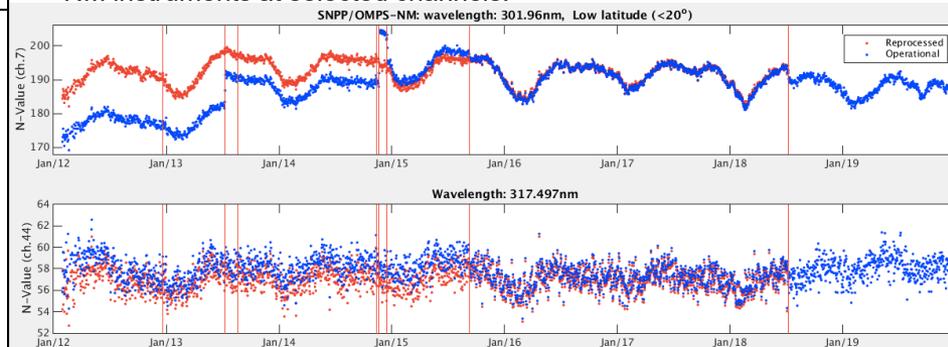
1. Project has completed.
2. Project is within budget, scope and on schedule.
3. Project has deviated slightly from the plan but should recover.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

None

Highlights: Consistency Analysis of Reprocessed SNPP OMPS NM Data

- Daily N-value time series for data over the tropical region (20S-20N) for the NM instruments at selected channels.



- Timeline for the SNPP/OMPS/NM calibration LUTs updates.

Weekly Dark Current calibration started	12/21/2012
Stray light calibration LUT update	07/10/2013, 08/20/2013, 11/21/2014, 12/18/2014, 09/09/2015, 07/09/2018
Observed Solar LUT update	11/13/2014
wavelength calibration LUT update	
Solar LUT update	09/09/2015
Wavelength calibration LUT update	
Calibration constant update	

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Development of VIIRS reprocessed data dissemination interface	Sep-20	Sep-20	Feb-20	
Optimize SDR reprocessing package	Sep-20	Sep-20		
Evaluation of impact of reprocessed VIIRS SDR data on cloud mask product	Sep-20	Sep-20		
Finish V2 SNPP CrIS reprocessing	Sep-20	Sep-20		
Finish V2 SNPP OMPS reprocessing	Sep-20	Sep-20		
Develop reprocessing data website	Sep-20	Sep-20		
Analyze the quality of reprocessed data in a journal paper	Sep-20	Sep-20		
Readme for reprocessed SNPP ATMS, CrIS, OMPS and VIIRS data	Sep-20	Sep-20		

Accomplishments / Events:

- Updated ICVS GSICS web portal to include JPSS CrIS/VIIRS vs GOES ABI inter-sensor comparison updated results
- Presented ICVS GSICS web portal and provided products in GSICS IR subgroup annual meeting
- Developed CrIS FSR vs IASI inter-sensor comparison products for CrIS FSR data stability monitoring
- Prepared responses to reviewers' comments of ATMS gap filling paper
- Validated ATMS I&T TDR/SDR data quality for new release IDPS version
- Kept updating ICVS dynamic web site by adding multiple trending products within one monitoring window

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.
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Issues/Risks:

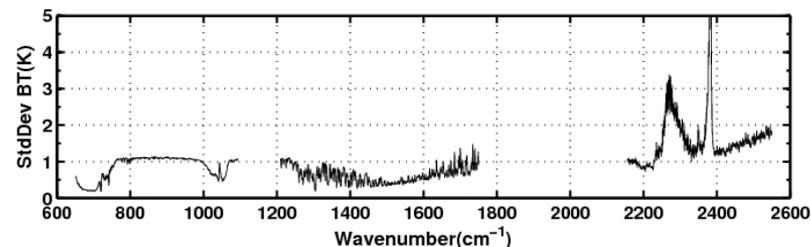
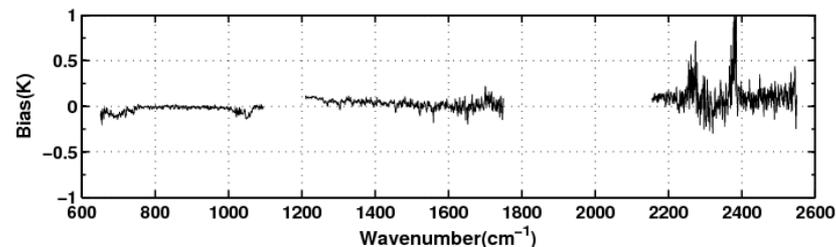
None

Highlights: Significantly contribute to STAR SDR Teams

NPP CrIS vs Metop-C IASI Inter-sensor Bias (upper) and Standard Deviation (lower)

NPP CrIS vs M03 between 02/01/2020 and 02/29/2020

Created at 03/04/2020 – 22:50:08 UTC



Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
<ul style="list-style-type: none"> ICVS Intersensor web site beta version (e.g., direct, CRTM, 3rd instrument as transfer) ICVS-J2 prototype beta version using J1 as proxy data ICVS-reprocessing tool prototype 	Dec-19	Dec-19		
<ul style="list-style-type: none"> ICVS interactive modules: beta version OMPS geolocation error development Cloud mask module improvement using AI-based cloud detection algorithm: beta version 	Mar-20	Sep-20		Low priority and schedule conflict with the new task
<ul style="list-style-type: none"> Develop a LEO-GEO GSICS portal (ABI. vs. CrIS, IASI and VIIRS) (new task) (beta version March 2020) 	Jun-20	Jun-20		
<ul style="list-style-type: none"> ICVS intersensor and reprocessing web site improvement (operational version) ICVS Interactive modules: operational version ICVS Module improvements (each instrument on both SNPP and NOAA-20) (with proper QCs in particular cloud mask over snow-free land) ICVS-AI modules for each instrument lifetime performance assessment: beta version OMPS geolocation error monitoring module 	Jun-20	Jun-20		
<ul style="list-style-type: none"> ICVS-AI modules for each instrument lifetime performance assessment: operational version ICVS-AI modules for each instrument SDR data quality assessment: beta version ICVS upgrade (if new servers are ready) 	Sep-20	Sep-20		
JPSS-ICVS System Standardization and ICVS Annual Performance Review	Feb-20	Feb-20	Feb-20	



STAR ICVS Home

Intersensor Comparisons

- ATMS
- CrIS FSR
- VIIRS
- OMPS
- [GSICS Portal >>](#)

On-orbit Events & Anomalies

- Suomi NPP
- NOAA-20

ICVS Severe Weather Watch

NOAA-20

- Spacecraft
- ATMS
- CrIS
- CrIS FSR
- VIIRS
- OMPS Nadir Mapper
- OMPS Nadir Profiler

Suomi NPP

- Spacecraft
- ATMS
- CrIS
- CrIS FSR
- VIIRS
- OMPS Nadir Mapper
- OMPS Nadir Profiler
- OMPS Limb Profiler

MetOp-C

- AMSU-A
- MHS
- AVHRR

MetOp-B

- AMSU-A

GSICS: Global Space-based Inter-Calibration System

18 Mar 2020 - 22:07 ET / 02:07 UTC

[Animate Selected Product](#) [Animate All Products](#) [Finder](#)

Select a Date:

Select GEO Instrument & Platform

- GOES-16 (ABI) GOES-17 (ABI)

Select LEO Instrument

- VIIRS CrIS

Select LEO Platform

- S-NPP NOAA-20

Select ABI Channel/Band

- Band07 (3.90 μm) Band08 (6.20 μm)
 Band09 (6.90 μm) Band10 (7.30 μm)
 Band11 (8.60 μm) Band12 (9.60 μm)
 Band13 (10.4 μm) Band14 (11.2 μm)
 Band15 (12.4 μm) Band16 (13.3 μm)

Select Node

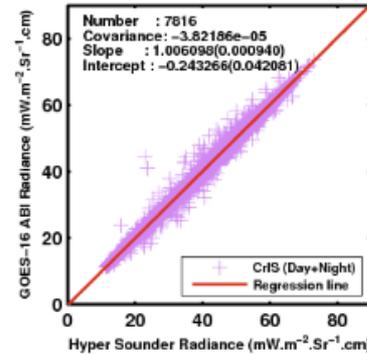
- Ascending Descending Both

Select Data Type to Display

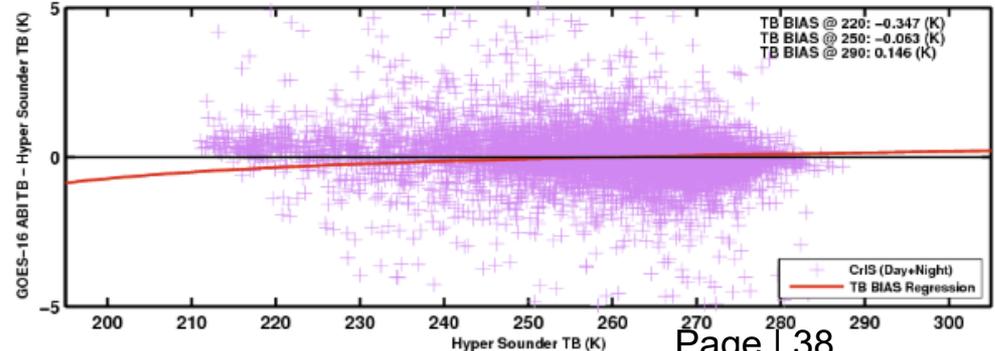
- Time Series
 BT Difference Regression coef.
 Statistics for GSICS Correction
 Scatter plot

Push the button to get GSICS Correction statistics csv file
(Please select LEO data before download)

GOES-16 ABI Band 12 vs. NPP CrIS, (Period: 18 Feb 2020 to 17 Mar 2020)



GOES-16 ABI Band 12 vs. NPP CrIS, (Period: 18 Feb 2020 to 17 Mar 2020)



Select a Date:

< 03-16-2020



Submit

Daily CrIS-ABI inter-sensor bias time series

SNO: N20 CrIS FSR SDR minus GOES-16 ABI

Created at 03/18/2020 – 18:59:19 UTC



Select GEO Instrument & Platform

- GOES-16 (ABI)
- GOES-17 (ABI)

Select LEO Instrument

- VIIRS
- CrIS

Select LEO Platform

- S-NPP
- NOAA-20

Select ABI Channel/Band

- Band07 (3.90 μm)
- Band08 (6.20 μm)
- Band09 (6.90 μm)
- Band10 (7.30 μm)
- Band11 (8.60 μm)
- Band12 (9.60 μm)
- Band13 (10.4 μm)
- Band14 (11.2 μm)
- Band15 (12.4 μm)
- Band16 (13.3 μm)

Select Data Type to Display

Time Series

- BT Difference
- Regression coef.

Statistics for GSICS Correction

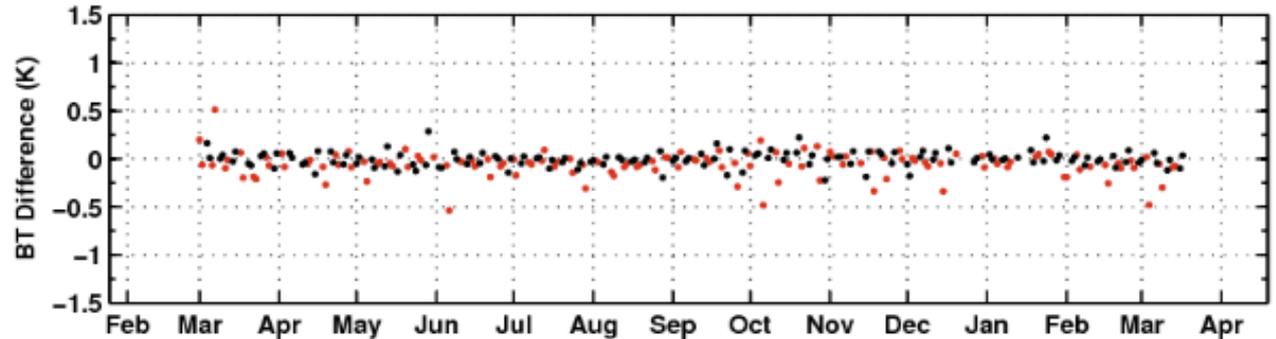
- Scatter plot

Push the button to get GSICS Correction statistics csv file

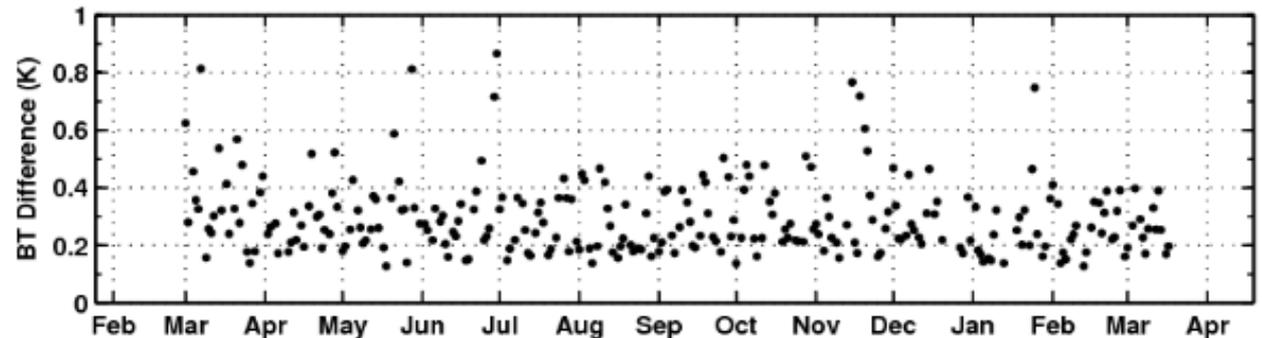
(Please select LEO data before download)

Download

BT Difference: CH12 (9.6 μm) Day Night



Standard Deviation



Accomplishments / Events:

- **JPSS/GOES-R Summit happenings:** D. Hillger gave an invited oral presentation titled “Imagery - Global coverage, product generation, and distribution” as one of 6 (3 users and 3 developer) members on an Imagery panel session. Hillger also hosted a VIIRS EDR Imagery Team breakout/splinter meeting to discuss both the Terrain Correction and NOAA-20 NCC LUT issues, and to meet face-to-face with other Team members who normally only hear each other on monthly Imagery Team teleconferences. And, along with Steve Finley, met with Weizhong Chen of StAR ASSISTT, to coordinate testing of a new NOAA-20 NCC LUT developed at RAMMB/CIRA. This meeting also set the groundwork for running an ADL framework at RAMMB/CIRA for testing VIIRS EDR Imagery code and LUT changes.

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
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Algorithm Updates Review	Jun-20	Jun-20		
N20 NCC LUT update	Sep-20	Sep-20		
All 16 M-bands as Imagery EDRs	Sep-21	Sep-21		Work-under-pcr
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization tool development/improvement (increase Polar SLIDER storage for longer archive and more imagery/combo products with multiple satellites)	Sep-20	Sep-20		
Annual VIIRS Imagery performance report	Feb-20	Feb-20	Feb-20	
Verification of cloud implementation	Sep-20	Sep-20		
IDPS Mx build I&T deploy regression support:				
BL2.1 Mx 8 I&T ATMS data review/checkout	Nov-19	Nov-19	11/12/19	
BL2.2 Mx 0 I&T ATMS data review/checkout	Apr-20	Apr-20	04/01/20	
BL2.2 Mx 1 I&T ATMS data review/checkout	Jul-20	Jul-20		

Highlights

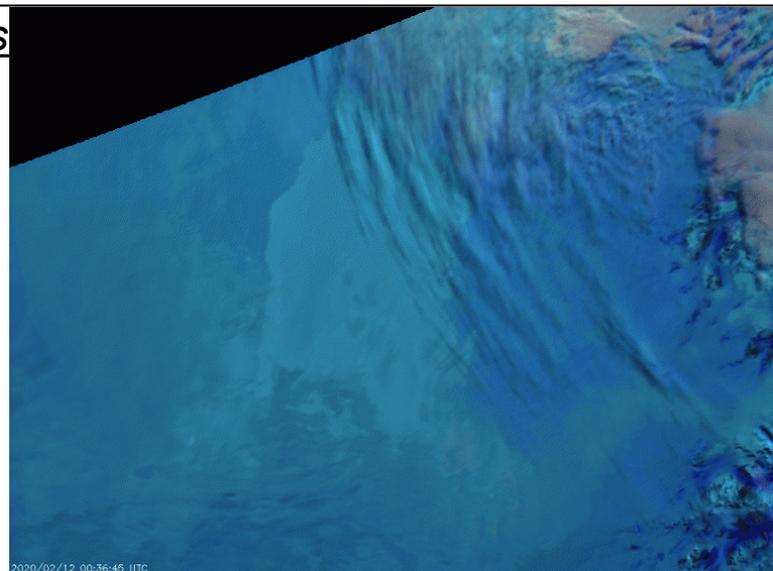


Figure: VIIRS Snowmelt RGB image (12-13 February 2020) revealing different snow surfaces, from a VIIRS Imagery Team blog

<http://rammb.cira.colostate.edu/projects/npp/blog/index.php/uncategorized/puttippoq-aatsuu/>

Accomplishments / Events:

- The ACHA team has delivered an updated code with the kd-tree optimization for integration into the SAPF
- The new ECM1 LUT was delivered to ASSISTT for integration
- Hooks for the DNB Lunar reflectance were added to the SAPF bridge code for DCOMP and ECM
- Work continues on the ECM2 LUT
- Cloud Team is preparing for April Algorithm update delivery.

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

Highlights: New ACHA cirrus cloud first guess

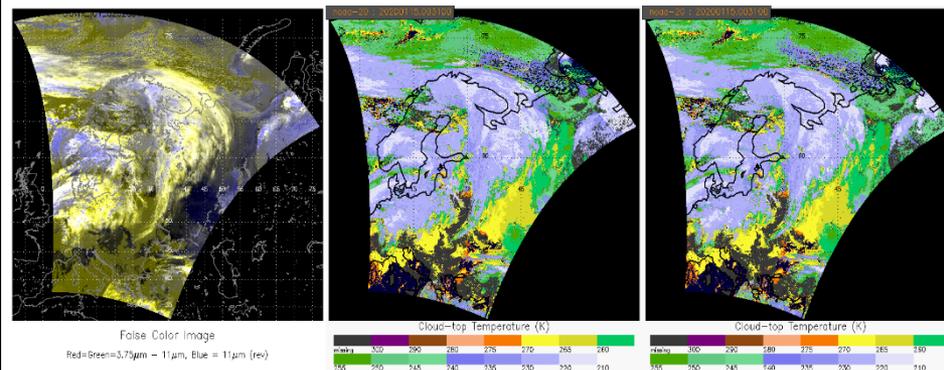


Fig. 1. a) A false color image, b) previous cloud top temperature first guess, and c) new cloud top temperature first guess using the kd-tree method for NOAA-20 VIIRS granules between 0020 and 0031UTC on 01/15/2020.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
<ul style="list-style-type: none"> Cloud Mask: Implement DNB Cloud Mask: Implement DNB Cloud Phase/Type: Optimize cloud phase thresholds for NOAA-20 ACHA: Improving multilayer ACHA CBH: Leverage DCOMP nighttime COD (DNB) to improve performance over IR-only CCL: Include super-cooled and convective fraction DCOMP: Incorporate improved surface reflectance for DCOMP channels NCOMP: Extend NCOMP cloud optical depth range to include larger values 	Mar-20	Apr-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20	Feb-20	
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val Visualization tool and LTM webpage development/improvement	Sep-20	Sep-20		
Support Alaska Demo and ESRL usage	Sep-20	Sep-20		

Accomplishments / Events:

- Delivery of assimilation ready VIIRS aerosol products to NWS: New hire (Ethan Hughes) by IMSG to work on VIIRS AOD product with NWS for assimilation work
- Analyzed VIIRS AOD to understand the effect of the shutdown related to COVID-19 in different parts of the globe: China, Italy, US, and India.

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		

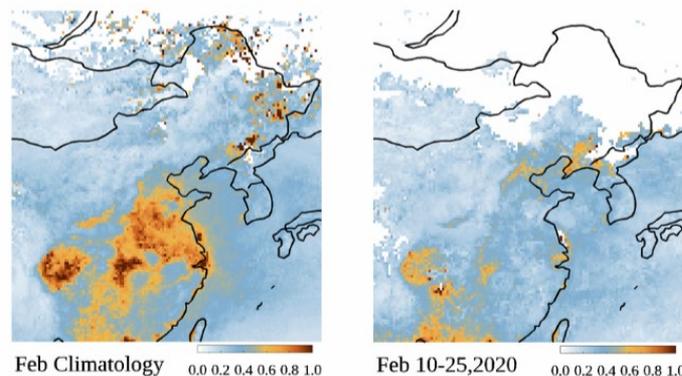
1. Project has completed.
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Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion on Date	Variance Explanation
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
<ul style="list-style-type: none"> ▪ Re-derive surface reflectance (dark and bright land) relationships ▪ Update thresholds in internal tests of sea ice and heavy aerosol over water for NOAA-20 ▪ Fix issue with misidentification of bright surface. Retrieve AOD using dark-surface relationship ▪ ADP algorithm updates to improve correct detection and minimize false detection over high latitudes 	Mar-20	Apr-20		Part of SuperDAP
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20	Feb-20	
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement, update aerosol cal/val & AerosolWatch website	Sep-20	Sep-20		

Impact of Coronavirus related Shutdown in China as Observed by Suomi NPP VIIRS Aerosol Optical Depth



POC: Shobha Kondragunta (STAR) and Hai Zhang (IMSG)

Accomplishments / Events:

- Added to list of known NOAA-20 observations of non-trivial ash clouds
- Working FY20 cal/val activities, including continuous assessment and comparisons to validation data
- Continued development of multi-sensor algorithms for end-end application (see highlight)
- A VOLCAT cloud (computing) pilot project was approved by NESDIS leadership

Overall Status:

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

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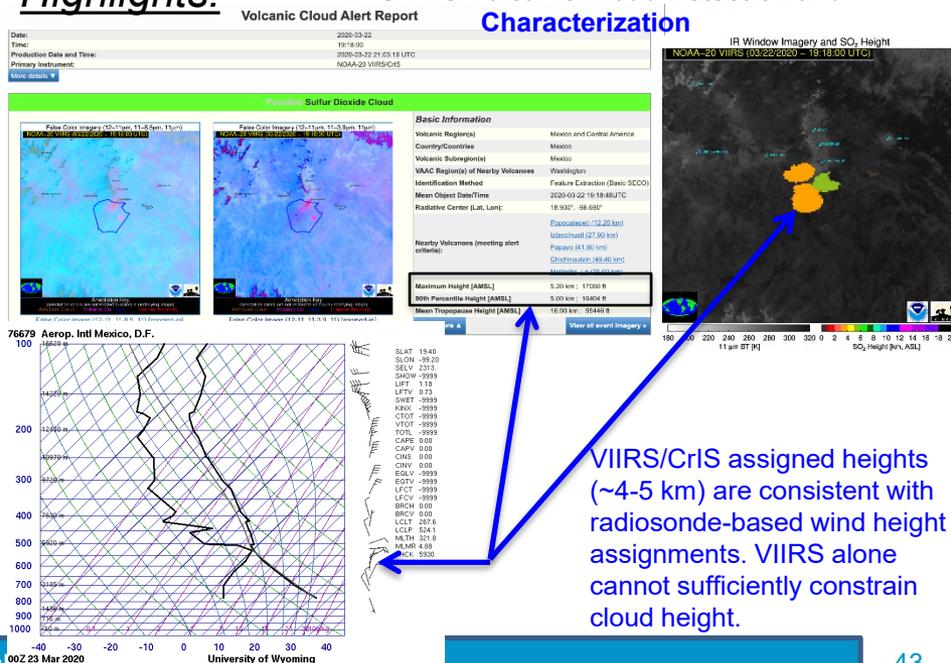
Issues/Risks:

NESDIS leadership has approved a VOLCAT cloud (computing) pilot project, so a short-term path forward for eventual VOLCAT R2O has been identified. JSTAR should consider closing the existing VOLCAT risk/issue given that the uncertainty about next steps has been addressed.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
J2 Cal/Val Plan - final delivery	Dec-20	Dec-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Final J2 ready DAP to NDE (include NPP/N20 updates)	Jun-21	Jun-21		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
<ul style="list-style-type: none"> Refine thresholds and LUT's for S-NPP and NOAA-20 as needed 	Mar-20	Apr-20		
Pursue algorithm enhancements, including eventual transition to VOLCAT	Sep-20	Sep-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20	Feb-20	User Summit
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Highlights:

VIIRS/CrIS Volcanic Cloud Detection and Characterization



Accomplishments / Events:

- NOAA-20 VIIRS and AMSR2 Sea Ice Concentration were compared over the Arctic and Antarctic for Dec 2019 – Feb 2020. Agreement is very good, particularly over the Arctic. (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			

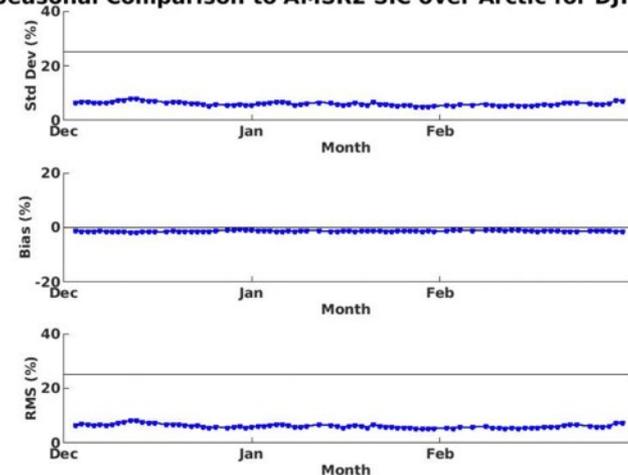
1. Project has completed.
2. Project is within budget, scope and on schedule.
3. Project has deviated slightly from the plan but should recover.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

None

Highlights:

Seasonal Comparison to AMSR2 SIC over Arctic for DJF 2020



NOAA-20 VIIRS and AMSR2 Arctic Sea Ice Concentrations (SIC) compared for Dec 2019 – Feb 2020.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity: Snow Cover (Binary Map & Snow Cover Fraction)	Apr-20	May-20		CM LUT
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
<ul style="list-style-type: none"> ▪ Add passive microwave filters to improve ice products ▪ Implement I-band ice products ▪ Evaluation of two Enterprise snow algorithms (VIIRS and ABI) and possible replacement 	Mar-20	Apr-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20	Feb-20	
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Accomplishments / Events:

- Delivered I-band product DAP to ASSIST
- The new algorithm includes and improved land-water mask a flags for persistent anomalies
- Worked with ASSIST and NDE on implementation options related to and I-band persistence tracking intermediate file
- Per consultation with ASSIST and OSPO, started preparations for the delivery of a combined I-band and J2-ready DAP
- Started working with the RealEarth™ team on the inclusion of global I-band data
- Started systematic production of global I-band data at STAR for testing and evaluation purposes

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		OSPO / NDE implementation

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:

Delay in OSPO / NDE's readiness to implement I-band algorithm

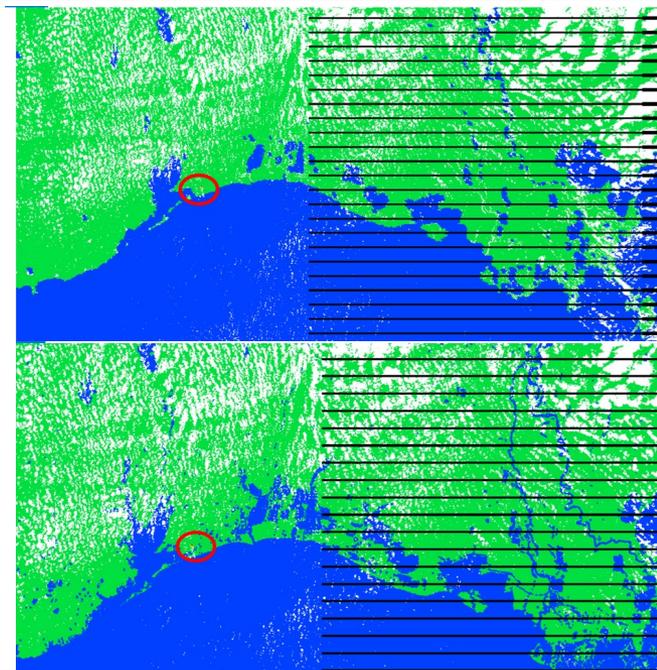
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity (M-Band & I-Band)	Jan-20	Jan-20	02/06/20	Scheduled: 2/6/20
Initial DAP (I-Band)	Mar-20	May-20		Code review
Final DAP (I-Band)	Sep-20	Sep-20		With initial J2 DAP
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Sep-20	Sep-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT: ▪ I-band algorithm improvements	Jun-20	Jun-20		
ATBD update	Dec-19	Jan-20	01/29/20	M-band update
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20	Feb-20	
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Highlights:

Suomi NPP VIIRS I-band active fire masks on February 26, 2020 at 19:38 UTC. Green: clear land; blue: clear water; white: cloud. A fire event is circled in red.

Top: current operational 1-km land-water mask.

Bottom: new 500m land-water mask implemented as part of the new I-band algorithm.



Accomplishments / Events:

- Implemented granule subsetting tool provided by NASA science lead to generate validation datasets over AERONET sites
- Generated subsets of surface reflectance data over for 17 days for consistency check with NASA implementation of the new aerosol flag

Overall Status:

	Green ¹ (Completed)	Blue ² (On-Schedule)	Yellow ³ (Caution)	Red ⁴ (Critical)	Reason for Deviation
Cost / Budget			X		Temporary funding delay
Technical / Programmatic			X		Large data volume for validated analysis
Schedule			X		Delay validated review

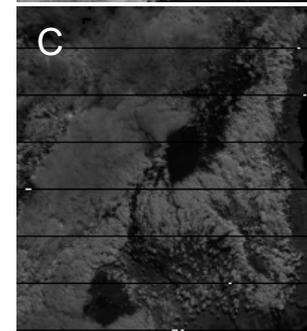
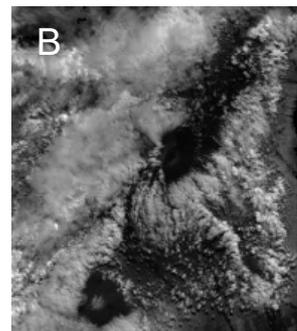
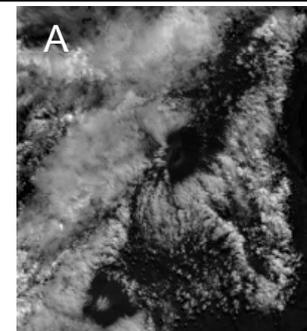
1. Project has completed.
2. Project is within budget, scope and on schedule.
3. Project has deviated slightly from the plan but should recover.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks: delay in preparation for validated review. Low impact on product performance.

Highlights:

NOAA-20 VIIRS Surface Reflectance subsets around the Mauna Loa AERONET site on February 5, 2020

- A: VIIRS band I1**
B: VIIRS band I2
C: VIIRS band I3



Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity	Apr-20	May-20		
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Sep-20	Sep-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
<ul style="list-style-type: none"> ▪ Update aerosol and cloud quality information and their use ▪ Possibly adjust of some retrieval LUTs ▪ Streamline internal processing code ▪ Make product content compatible with CEOS Analysis Ready Data for Land requirements 	Jun-20	Jun-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20	Feb-20	
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Accomplishments / Events:

- Downloaded and processed S-NPP and NOAA-20 VIIRS observations acquired in February 2020 to create daily mosaics (up to the writing of this report).
- The team is on track in developing the 2019 Annual Surface Type (AST) product
 - Monthly composites have been created and evaluated for all 12 months.
 - Started to create and evaluate annual metrics using the 2019 monthly composites.
 - Continue to improve and update the training data needed for creating the 2019 AST 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.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

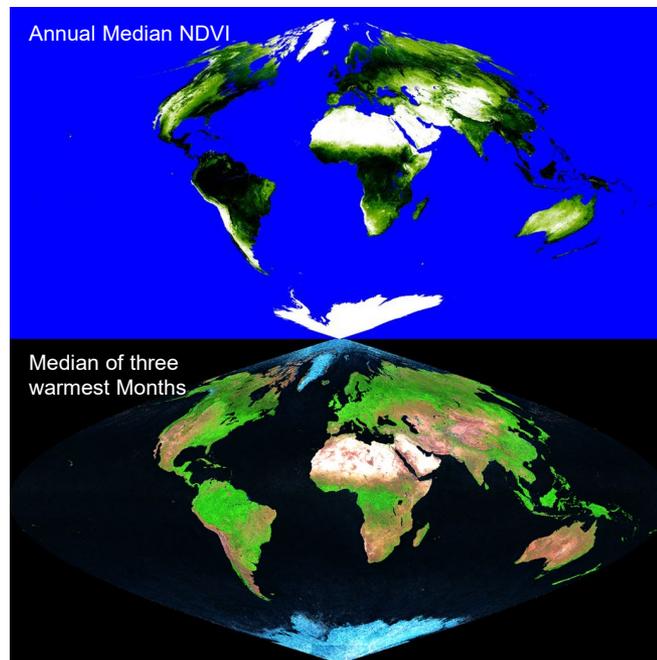
Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Provisional Maturity	Sep-20	Sep-20		
Validated Maturity	Sep-20	Sep-20		
Annual performance report	Feb-20	Feb-20	Feb-20	
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
AST19 (Annual Surface Type):				
Collaborate with land teams on daily and monthly product gridding and compositing for NDE Enterprise Algorithm (SR/NDVI/EVI/Temperature)	Sep-20	Sep-20		
Complete monthly composites of global gridded VIIRS data (9 land bands + thermal bands) for VIIRS AST19 based on 2019 VIIRS data	Aug-20	Aug-20		
Generate VIIRS AST19 based on 2019 VIIRS data using SVM algorithm	Aug-20	Aug-20		
Comparison of AST19 with surface type validation data (Accuracy statistics of the new AST19 and LWM)	Aug-20	Aug-20		
Delivery of AST19 (available for users through STAR FTP)	Sep-20	Sep-20		
AST18 NDE delivery (ASSISTT)				
<ul style="list-style-type: none"> Download AST18 from JSTAR web Chain-run to make sure the delivery works for the down-stream products Deliver AST18 DAP to NDE 	Aug-20	Aug-20		With JRR DAP

Highlights:

The VIIRS AST product is generated based on a set of 76 annual metrics using the advanced SVM algorithm calibrated using globally representative training samples. These metrics are designed to provide globally consistent data that are not contaminated by cloud or shadow and are indicative of different surface types, not the seasonal and geographical variations of the same surface type. Two example 2019 metrics are shown to the right.



Accomplishments / Events:

- The L2 VIIRS LST long-term-monitoring (LTM) website ready to use (Highlight)
- Further investigated the issue of abnormal LST pattern caused by the cloud mask. The problem remains in Feb. 2020 LST data.
- LST angular correction based on three kernel model using ground matchups between VIIRS and SURFRAD observations. Also studied on the temporal correction. Further tests are needed (slide 2 and 3).
- Submitted the CICS annual report for JPSS LST project
- Submitted the CISESS proposal for JPSS LST project
- Conducted the radiance based LST validation using the latest LUT and cross compared with MODIS LST product.
- Added the long term monitoring of the L3 VIIRS LST at CONUS and global scales. Achieve and data sharing of the L3 VIIRS LST data at STAR FTP site to users.(slide 4)

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity	Nov-19	Nov-19	11/21/19	
Validation of global gridded LST product (B/P/V ?)	Sep-20	Sep-20		
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
<ul style="list-style-type: none"> ▪ Update of coefficients with better stratification for TPW ▪ Uncertainty study of the JPSS LST product ▪ Additional cloud filtering ▪ Improved emissivity dataset ▪ LUT update 	Mar-20	Apr-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20	Feb-20	
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

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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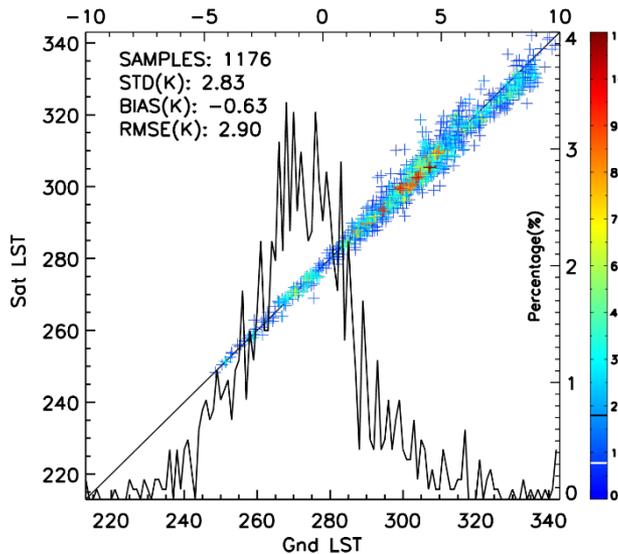
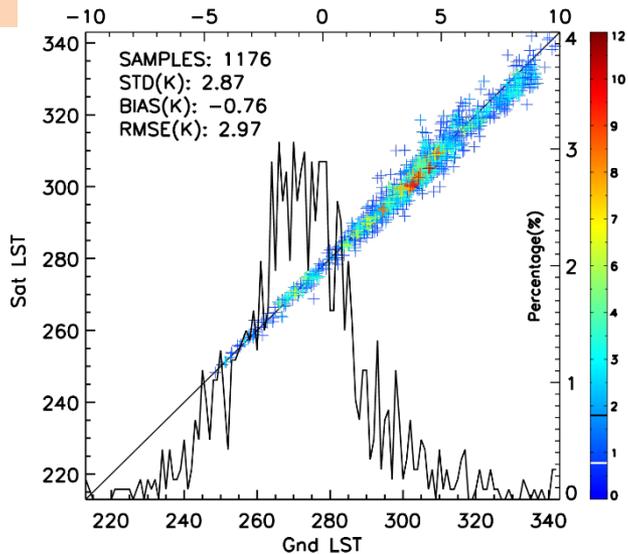
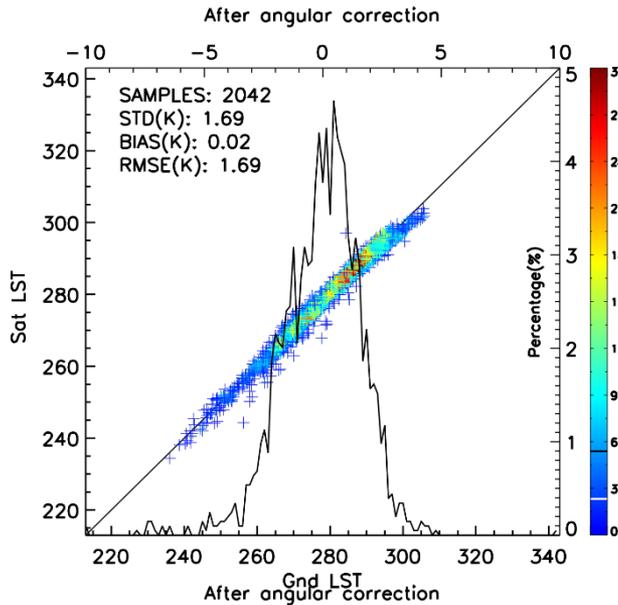
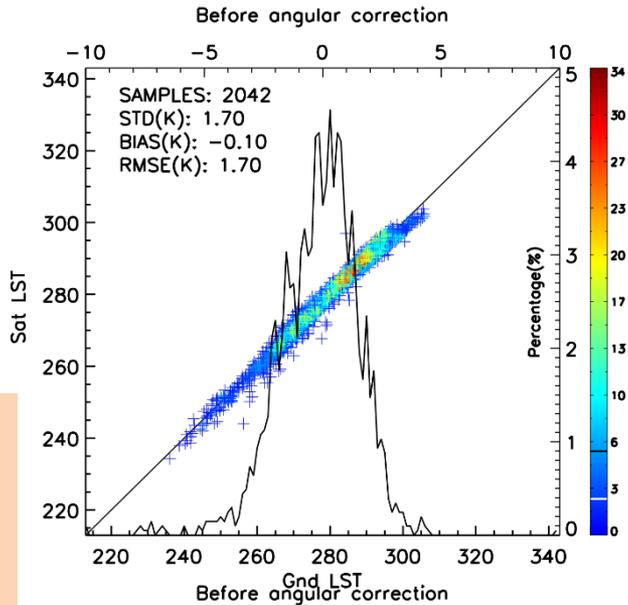
Issues/Risks:

Schedule change due to the government shutdown

Highlights:

VIIRS LST long term monitoring website at <https://www.star.nesdis.noaa.gov/smcd/emb/land/>

J01 LST



Using the matchups from the comparisons of SNPP, J01 LST with SURFRAD LST. The three kernel model is used for the coefficient calculation. All matchups were used together for the coefficients derivation.

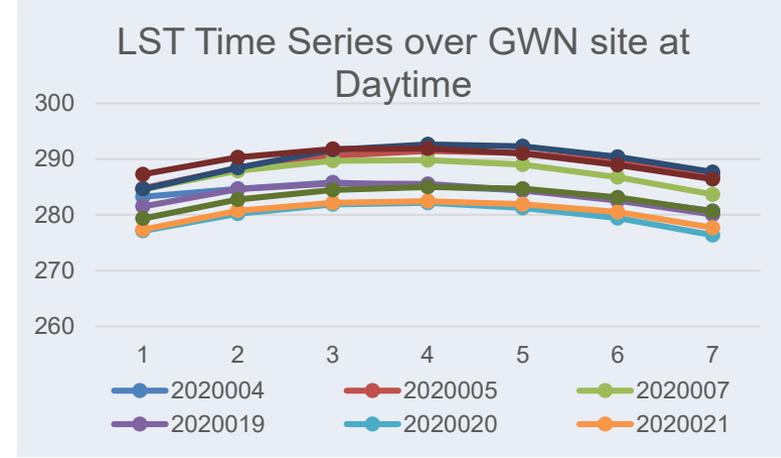
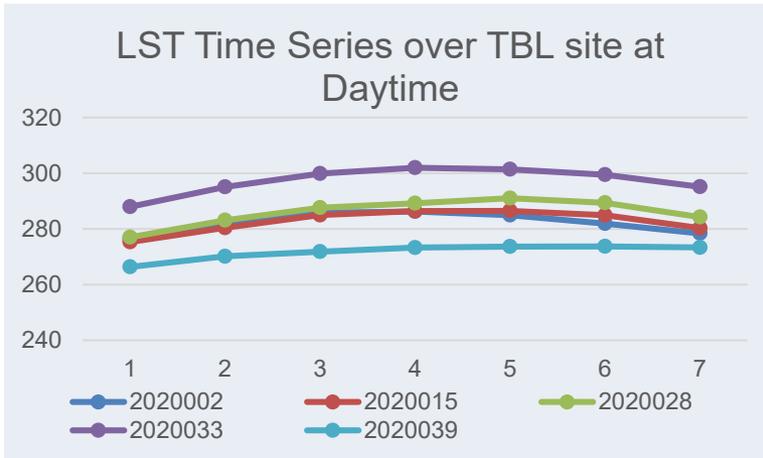
Before (left) and after (right) angular correction for nighttime (top) and daytime(bottom)

Slight improvement has been observed from the comparison result for both daytime and nighttime.

Studies on the LST temporal correction

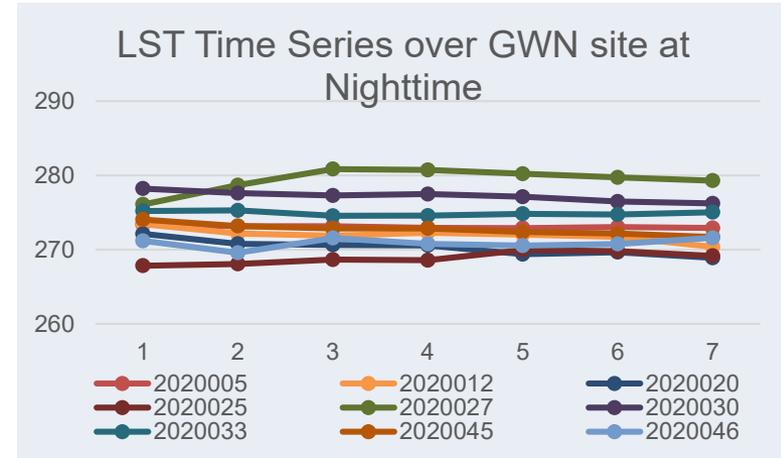
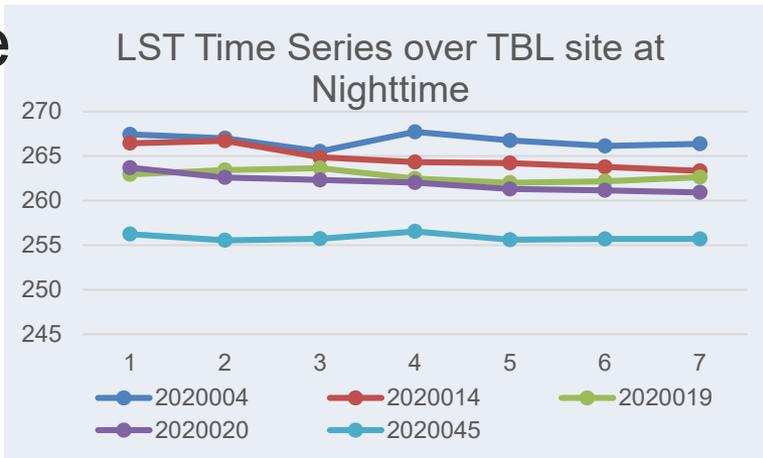
Daytime

From UTC 16-22



Nighttime

From UTC 05 -11



GOES-R LST is used to analyze the LST temporal variations for 50 minutes temporal difference between SNPP and NOAA20. The x axis represents the UTC time from 16 to 22, and y axis is the GOES-R LST value with kelvin unit.

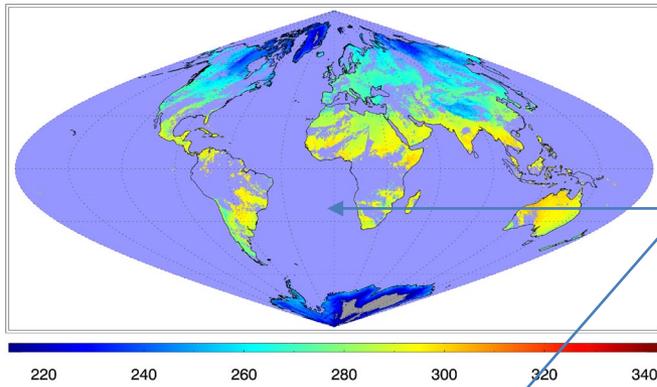


Index of /pub/smcd/emb/yliu/L3_VIIRS_LST/

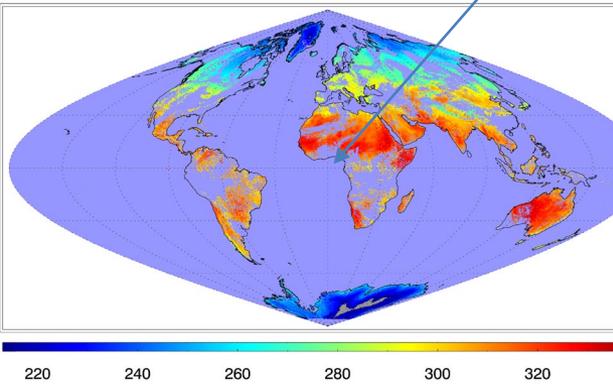
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NPP/		3/26/20, 10:00:00 AM

N20 LST on 20200317 Night

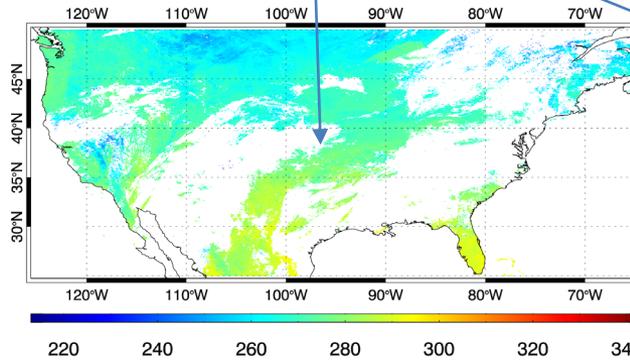


N20 LST on 20200317 Day

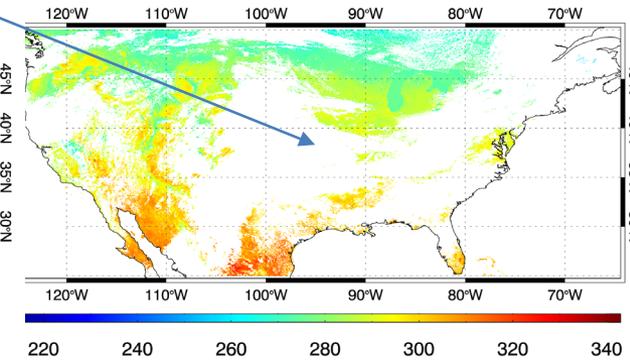


The LTM includes the regional LST over CONUS and global LST monitoring for daytime and nighttime. Both NPP and NOAA20 are included.

J01 LST on 20200317 Night



J01 LST on 20200317 Day



Index of /pub/smcd/emb/yliu/L3_VIIRS_LST/NPP/

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GRIDDED-VIIRS-LST-D_v1r0_n20_s20200325_e20200325_c202003260503260.nc	263 MB	3/26/20, 10:00:00 AM

Accomplishments / Events:

- Explored the factors causing the VIIRS polar albedo issues, including the Arctic albedo coverage variation and Antarctic albedo discontinuity
- Mitigation test of using IMS/SSMI snow/ice mask, and new VIIRS cloud mask as input for VIIRS albedo retrieving which has significantly improved the albedo continuity
- Improving polar surface albedo climatology to reduce the spatial inconsistency
- Prepared for and delivered the annual report about VIIRS albedo product and METimage albedo products to CISSSS
- Keep tracking the NDE L3 gridded albedo issue: the NDE produced albedo has data missing over Antarctic
- Started telework

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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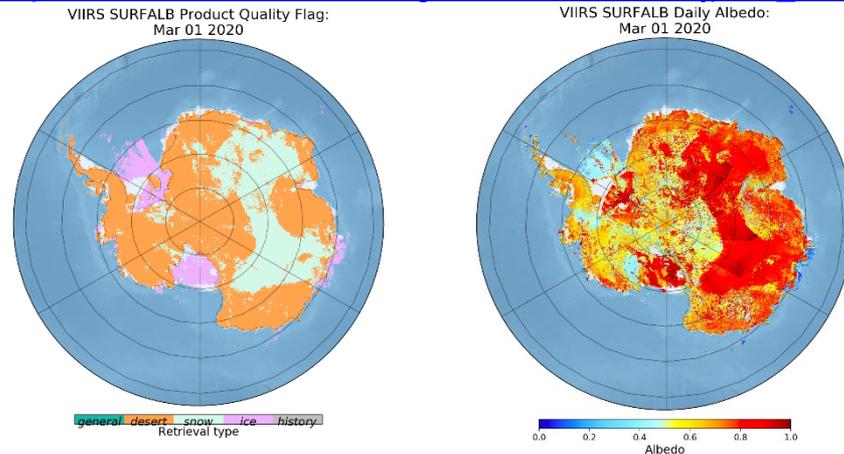
Issues/Risks:

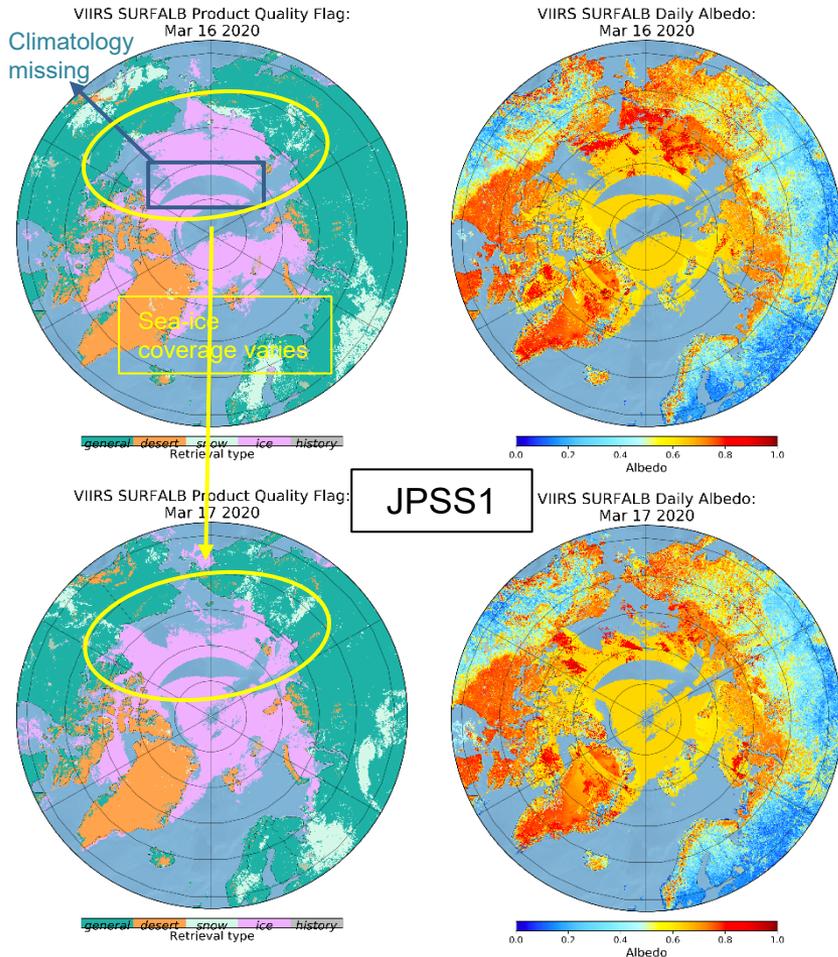
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity	Nov-19	Nov-19	11/21/19	
Validation of global gridded SURFALB product (B/P/V ?)	Sep-20	Sep-20		
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
▪ Improve the heterogeneity uncertainty analysis method	Mar-20	Apr-20	Mar-20	Data ready, would pack to deliver
▪ Refining the 1-km climatology LSA				
Developing a blended albedo product	Sep-20	Sep-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20	Feb-20	
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Highlights:

The Strong spatial discontinuity is observed in the Antarctic region due to 1) the misuse of desert LUT for snow surface when the snow is not detected by upstream snow cover EDR; 2) the uncertainty in snow albedo LUT at different solar/view angles; 3) difference between clear-sky direct retrieval and cloudy filled retrieval using climatology. We are working on fixing these issues.

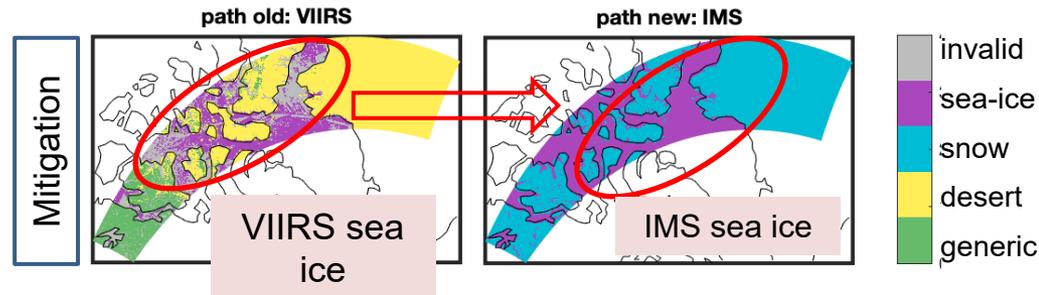
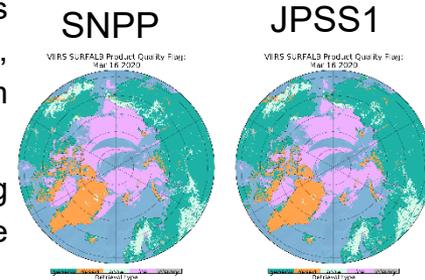
https://www.star.nesdis.noaa.gov/smcd/emb/land/jpss1_lsa.php





Arctic sea-ice albedo coverage variation

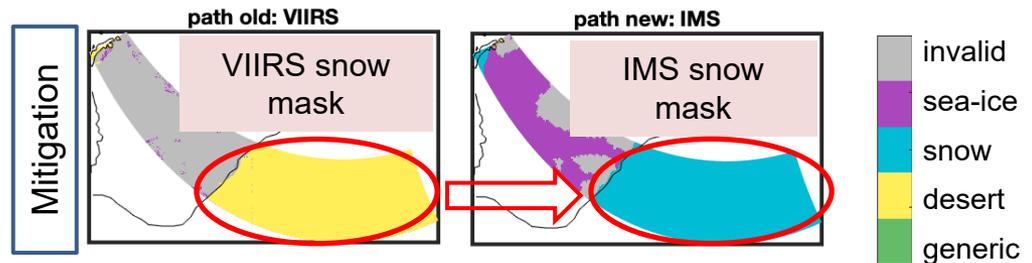
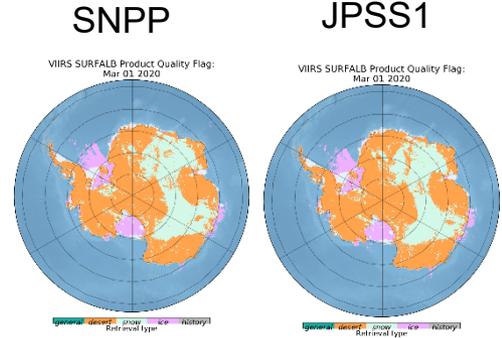
- Spatial coverage of sea-ice albedo varies from day to day following the upstream ice concentration dataset
- One artificial data gap is observed in the Arctic Ocean due to a missing of climatology over two tiles during delivery
- The SDR quality and the cloud condition have been checked and proved irrelevant to the issue
- The ice concentration variation between SNPP and JPSS1 is generally consistent with local minor difference
- The retrieval type plot comes from the albedo quality flag, which comes from the upstream EDR input
- The planned mitigation is using IMS sea-ice mask as substitute input



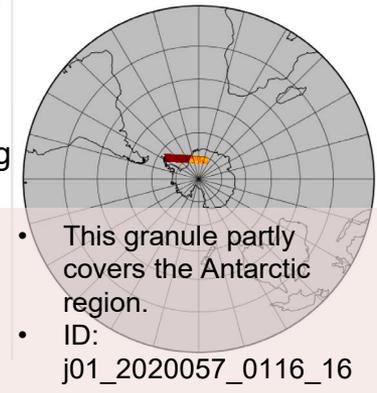
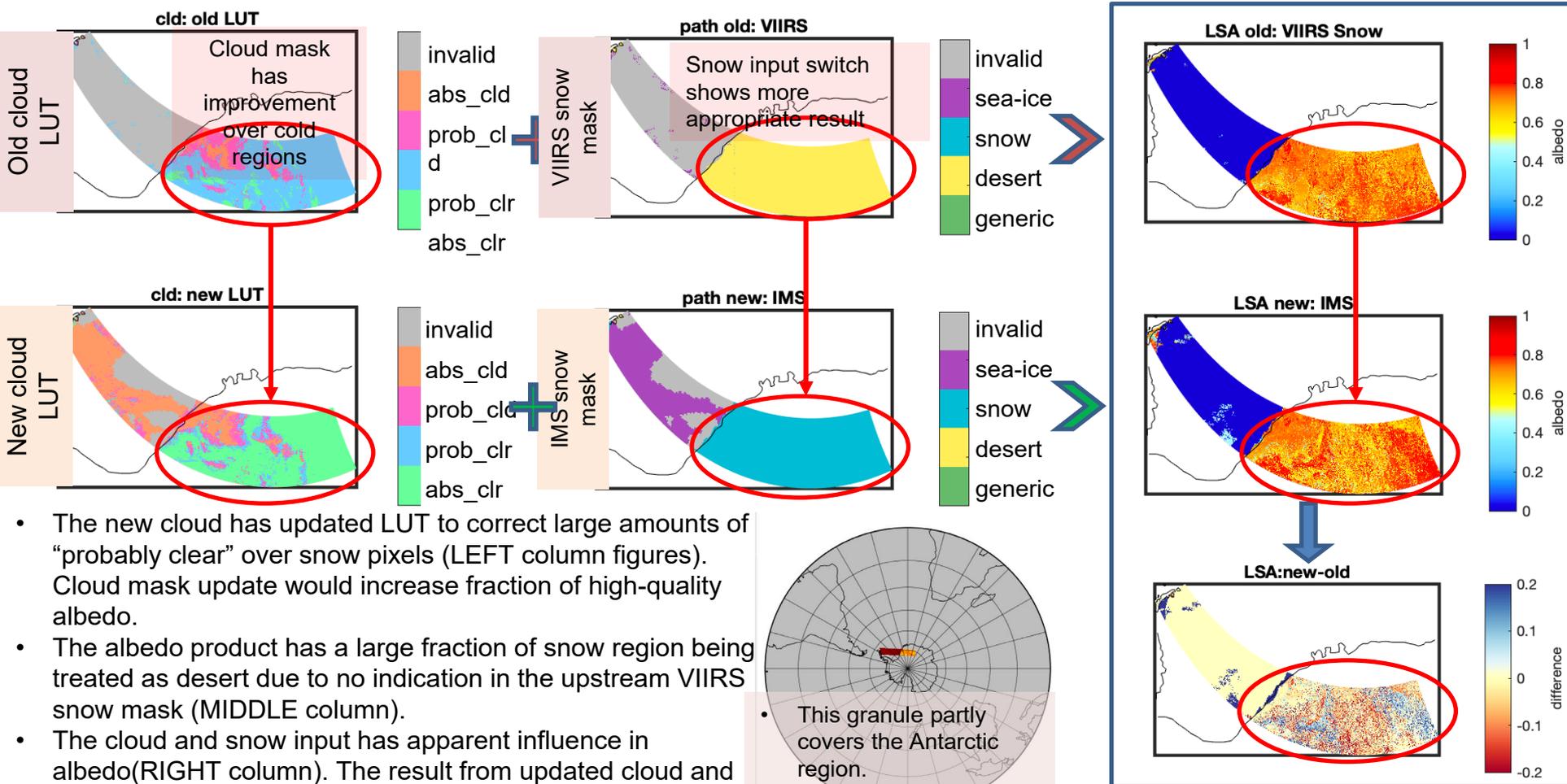
- Antarctic snow albedo discontinuity

- The main reason causing the Antarctic albedo discontinuity is the snow underestimation so that some pixels are retrieved using desert LUT
- The second reason is the LUT continuity which demonstrate patterns varying with orbits
- It is also related to the difference between temporally filtered albedo and the directly retrieved albedo, which is not as significant as the previous two factors
- The snow mask distribution between SNPP and JPSS1 is generally consistent with local minor difference
- The planned mitigation is using IMS snow mask as substitute

JPSS1

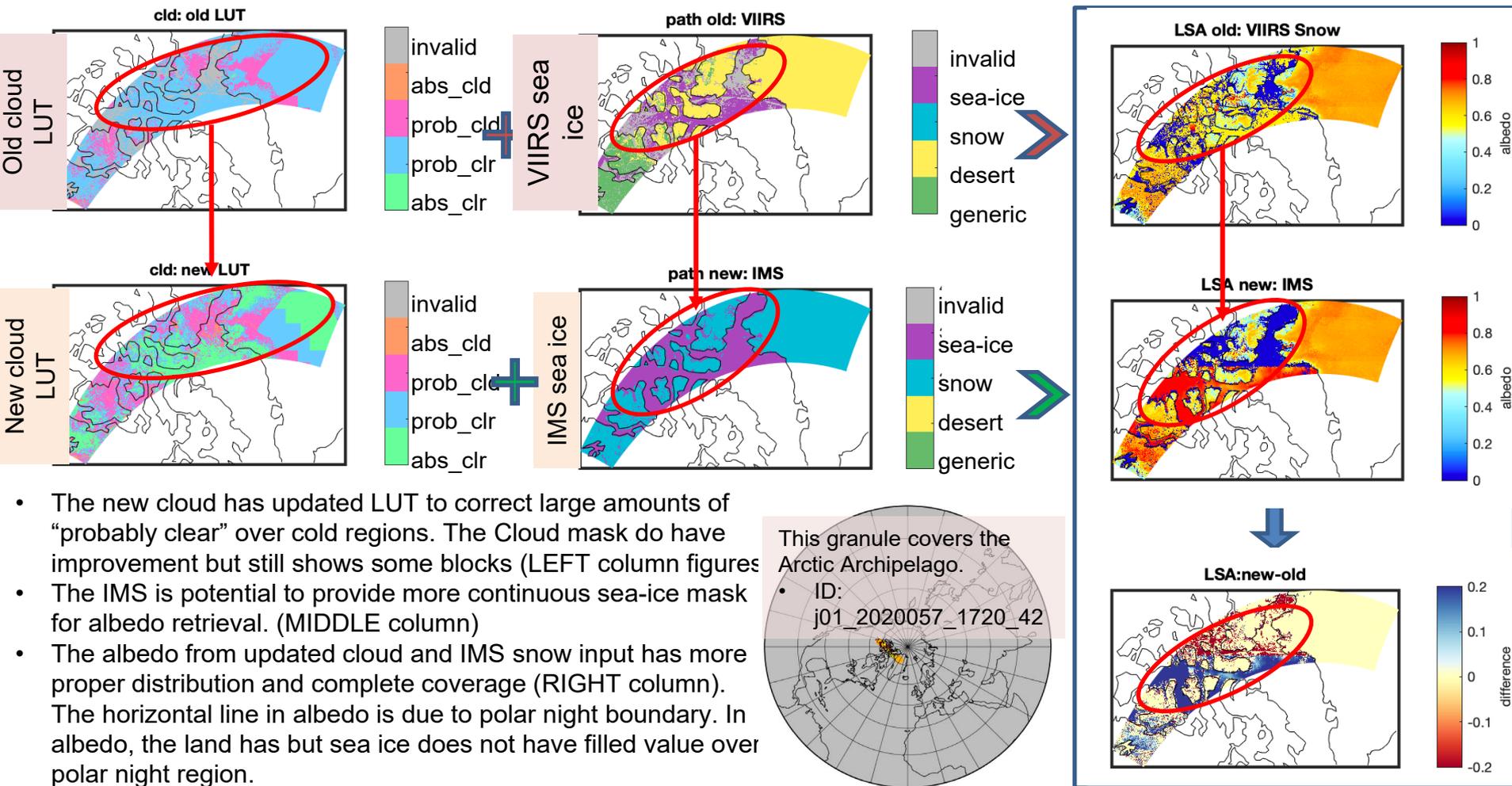


VIIRS Surface Albedo product comparison with original and new input



- The new cloud has updated LUT to correct large amounts of “probably clear” over snow pixels (LEFT column figures). Cloud mask update would increase fraction of high-quality albedo.
- The albedo product has a large fraction of snow region being treated as desert due to no indication in the upstream VIIRS snow mask (MIDDLE column).
- The cloud and snow input has apparent influence in albedo (RIGHT column). The result from updated cloud and IMS snow input is more reasonable.
- The testing has not reached operational yet

VIIRS Surface Albedo product comparison with original and new input



- The new cloud has updated LUT to correct large amounts of “probably clear” over cold regions. The Cloud mask do have improvement but still shows some blocks (LEFT column figures)
- The IMS is potential to provide more continuous sea-ice mask for albedo retrieval. (MIDDLE column)
- The albedo from updated cloud and IMS snow input has more proper distribution and complete coverage (RIGHT column). The horizontal line in albedo is due to polar night boundary. In albedo, the land has but sea ice does not have filled value over polar night region.
- These testing has not reached operational yet

Summary:

- **Background:** The albedo climatology is used for filtering VIIRS clear sky retrieval results to get the all-sky continuous surface albedo. The old version has the issue of spatial inconsistency at polar regions. We used interpolation algorithm to fill the polar night values, but the previous algorithm produced the issue of spatial inconsistency under certain circumstances.
- **Solution:** We improved the interpolation and smoothing algorithm and fixed the programming errors to generate the climatology with spatial and temporal consistency.

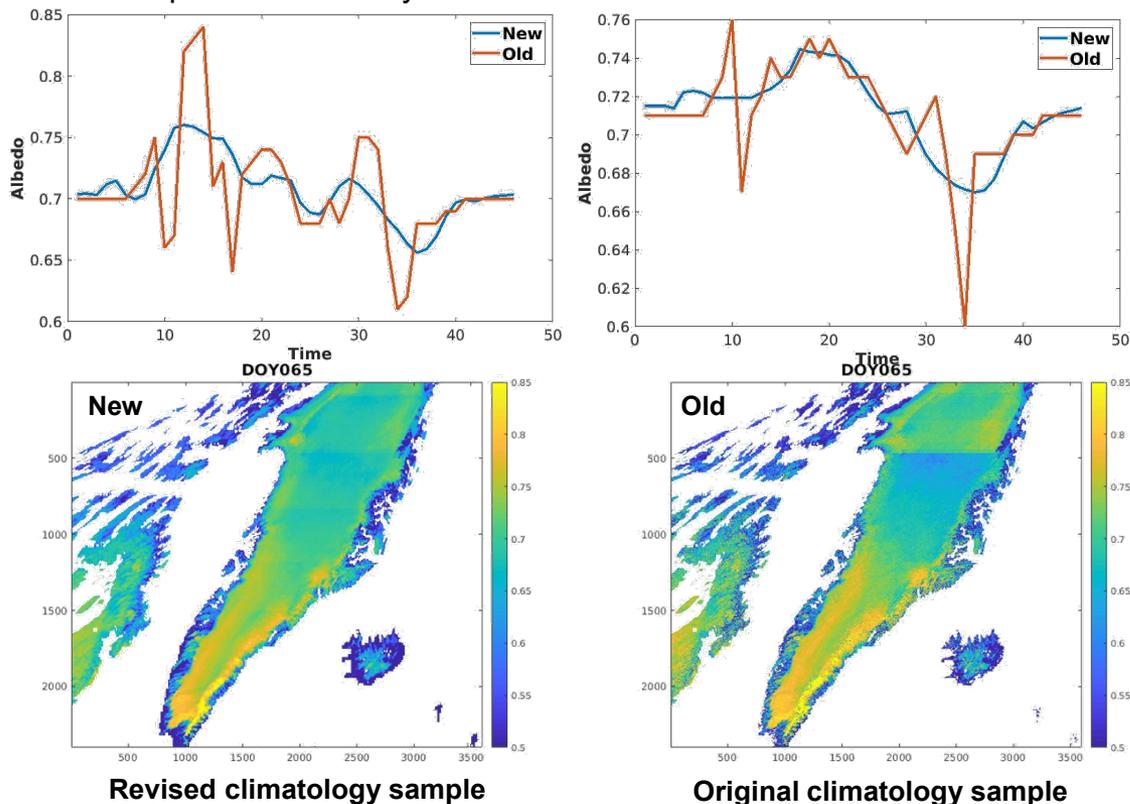


Figure. Spatial and temporal variation of the old and new version of albedo climatology. The new version shows improved spatial consistency at the Northern Greenland.

Accomplishments / Events:

- Data analysis for Vegetation Index and Green Vegetation Fraction validated readiness review nearly complete
- NOAA-20 and NPP GVF time series data over 50 PhenoCam sites were compared and validated with Ground measured greenness (GCC) time series data.
- Global NOAA-20 GVF data were compared with NPP GVF data and good agreement was found between the two datasets.

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

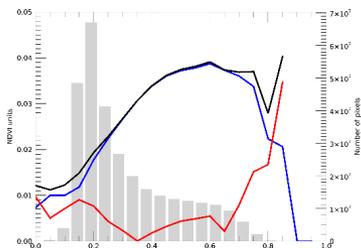
Highlights:

See attached slides

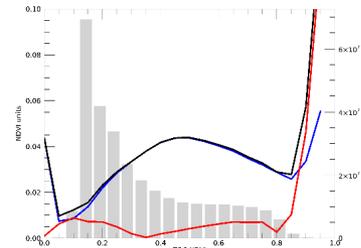
Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity	Feb-20	Apr-20		Combine review
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Sep-20	sep-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
<ul style="list-style-type: none"> ▪ NVPS algorithms optimization and improvement (to reduce the process time) ▪ Sensitivity analysis of the GVF/V1 gridding algorithms 	Jun-20	Jun-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20	Feb-20	
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		
Deep-dive analysis for the anomaly watch	Sep-20	Sep-20		

NOAA 20 VIIRS VI vs SNPP VIIRS VI

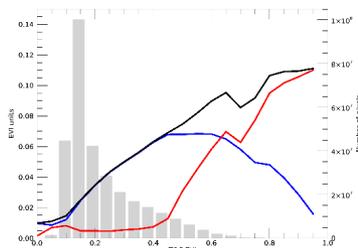
Daily global TOA NDVI



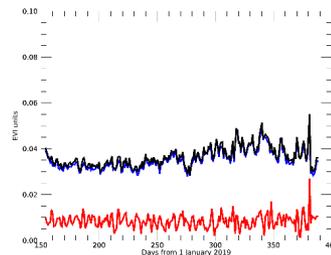
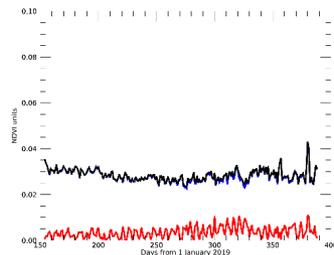
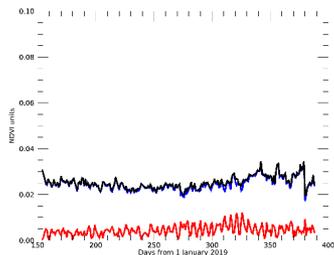
Daily global TOC NDVI



Daily global TOC EVI



Stratified
by NPP
VI



Time
series

Accuracy
Precision
Uncertainty

	TOA NDVI	TOC NDVI	TOC EVI
Accuracy	0.0042	0.0031	0.0083
Precision	0.0246	0.0284	0.0349
Uncertainty	0.0250	0.0285	0.0359

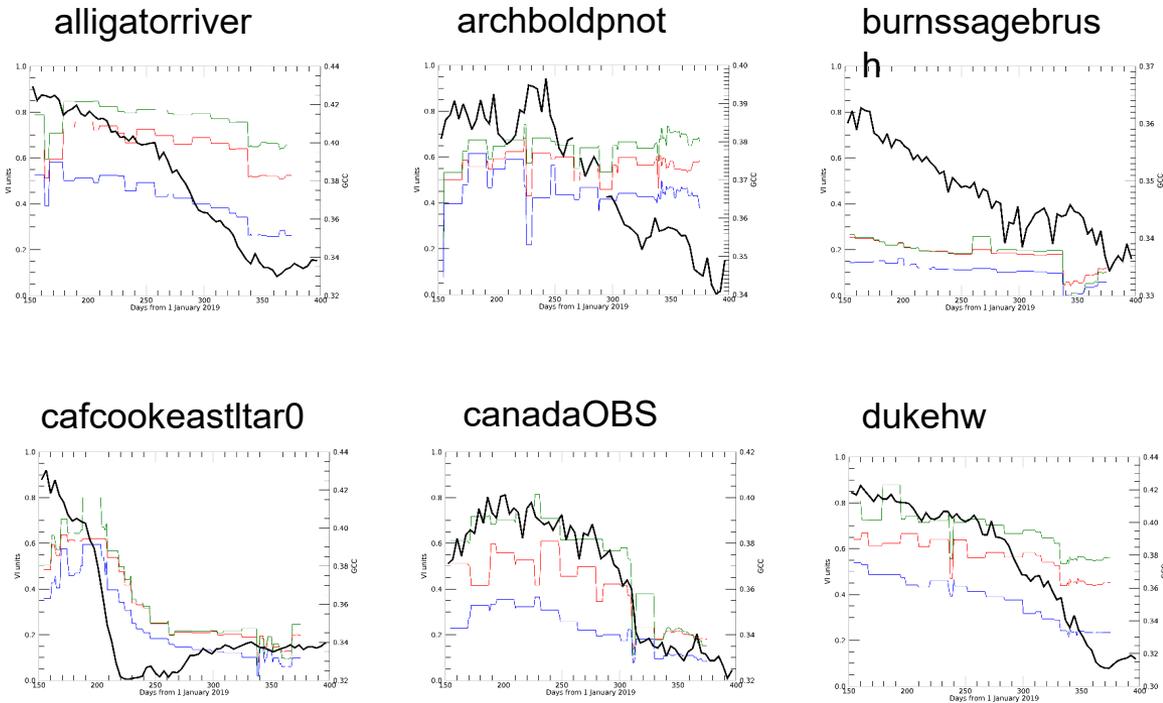
- Analysis carried out for pixels flagged as high quality only
- Global accuracy and precision meet specifications across time series
- VI values are clustered at low values. Accuracy and precision at low VI values meet specifications.
- Higher accuracy and precision values for the small number of high VI pixels should be investigated.

VI validation with PhenoCam data

Correlation coefficient (R^2) between PhenoCam GCC and nearest pixel VI taken from global biweekly NOAA20 data

PhenoCam Site	TOA NDVI	TOC NDVI	TOC EVI
alligatorriver	0.237	0.209	0.843
archboldpnot	0.016	-0.068	0.221
burnssagebrush	0.753	0.516	0.744
cafcookeastltar01	0.577	0.549	0.549
canadaOBS	0.798	0.833	0.896
dukehw	0.788	0.758	0.962
jurong	0.542	0.647	0.720
luckyhills	0.698	0.751	0.521
mandani2	0.344	0.322	0.351
mead2	0.697	0.677	0.796
monteblanco	0.087	0.494	-0.084
morganmonroe2	0.904	0.903	0.933
NEON_D04_GUAN	0.103	0.211	-0.088

VI validation with PhenoCam data (3)

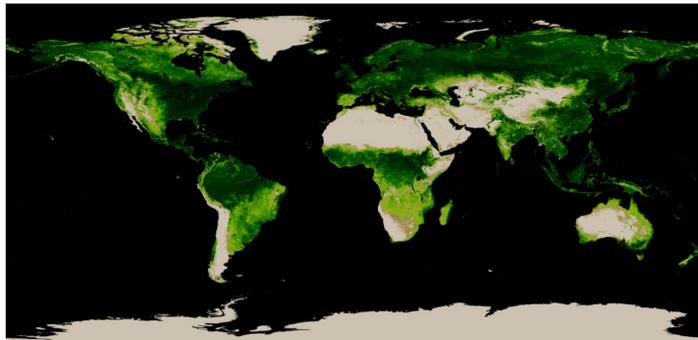


TOA NDVI
TOC NDVI

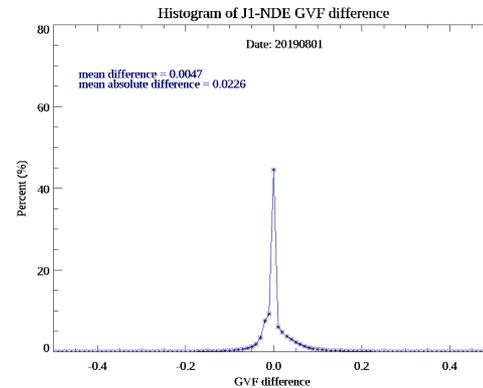
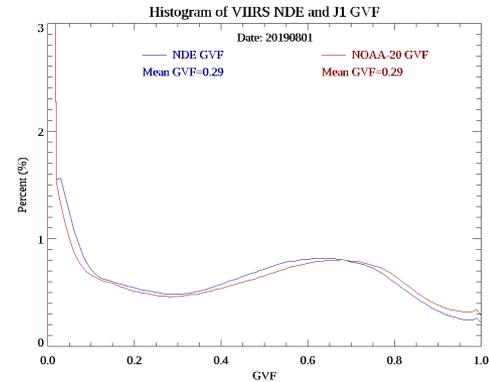
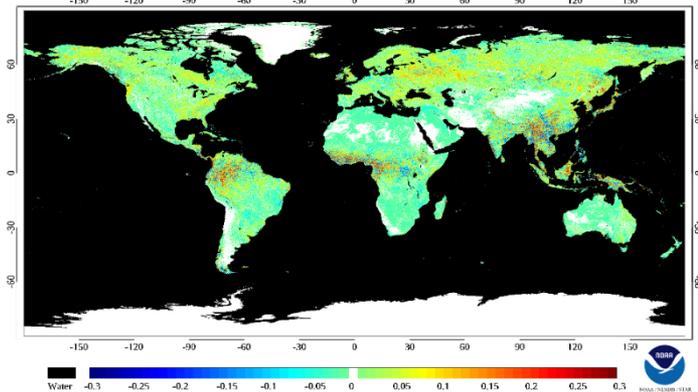
TOC EVI
GCC

- Validation results
- For most sites, both VI and GCC showed decreasing trend because time period is from northern hemisphere summer to winter. Some sites have limited variation in both VI and GCC. Not all sites show consistent trends due to factors such as spatial inhomogeneity.

SNPP and NOAA-20 GVF comparison

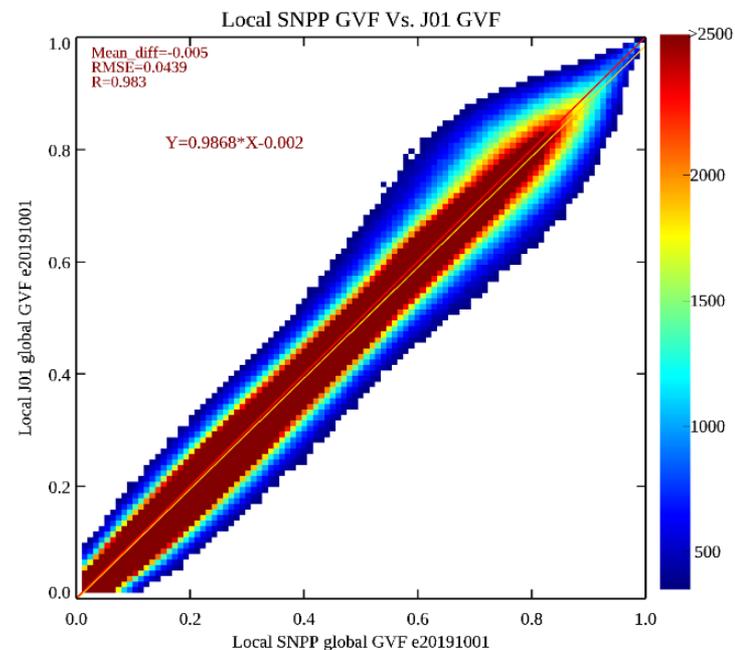
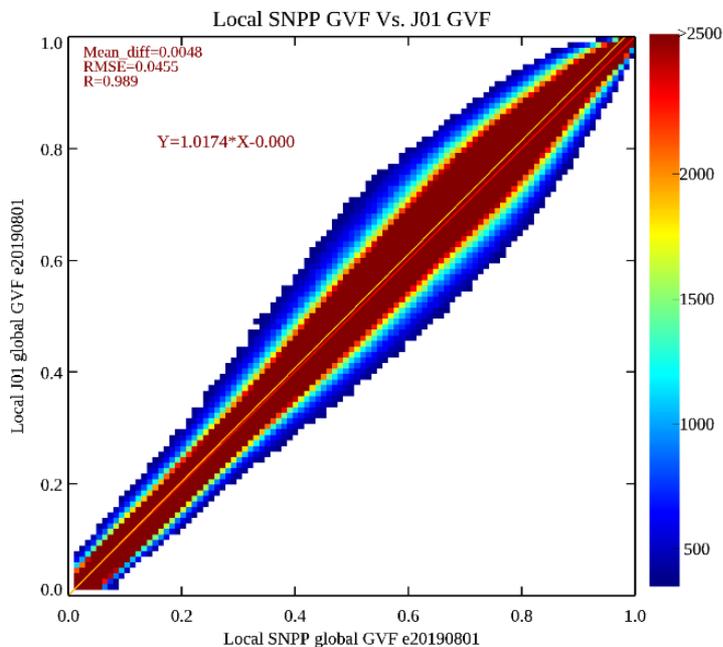


Weekly GVF difference (NOAA-20 - NDE SNPP) Jul 26 - Aug 1, 2019



- GVF difference (SNPP-N20) map showed small difference between them with mean difference=0.004

SNPP and NOAA-20 GVF comparison



- Scatter plots between global SNPP and NOAA-20 GVF data showed strong agreement between them with RMSE=0.04 and R=0.98

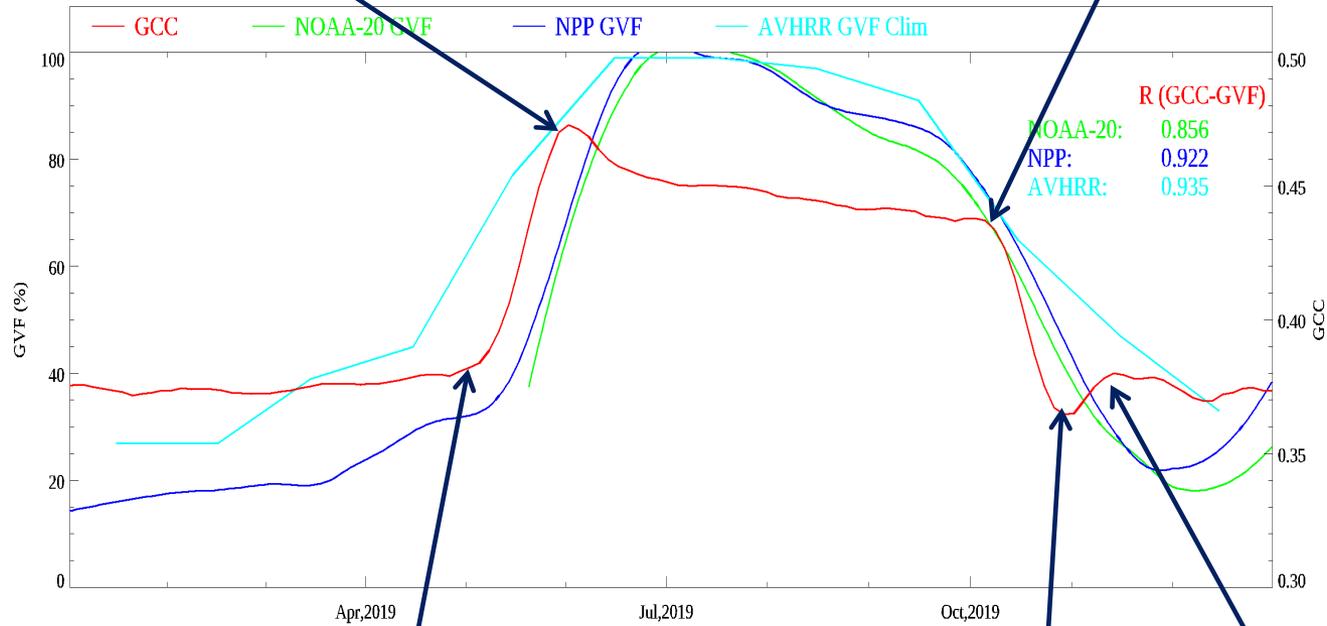
5/28/2019

Harvard forest

10/11/2019



GVF and GCC at harvard (42.5378,-72.1715)



- Both N20 and NPP GVF time series matched the ground measured GCC time series very well at the Harvard forest site
- AVHRR GVF climatology data showed an earlier green-up date compared with the ground data

Accomplishments / Events:

- Developed/tuned/Ran the IDL program for comparing EMD corrected VH vs current VH dataset; tested another two rounds (Round 4 and 5) (Highlighted);
- Literature research on remote sensing on monitoring locust activity, test if vegetation health product can reveal locust activity in Africa and India;
- Re-submitted the paper entitled “A novel re-compositing approach to create continuous and consistent cross-sensor/cross-production global NDVI datasets” to Remote Sensing of Environment after major revision;

Overall Status:

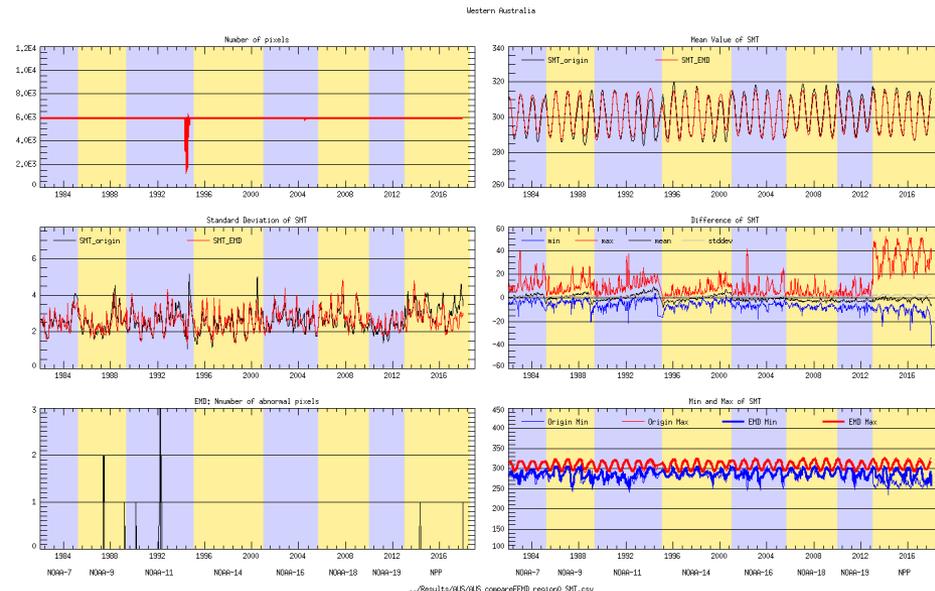
	Green ¹ (Completed)	Blue ² (On-Schedule)	Yellow ³ (Caution)	Red ⁴ (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

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: SMT before and after EMD Correction



Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
N20 Final DAP	Sep-20	Sep-20		Combine with init J2 ready DAP
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Sep-20	Sep-20		With final N20
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT: ▪ Algorithm updates/improvements	Jun-20	Jun-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20	Feb-20	
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Accomplishments / Events:

Continue the work for the improvement of the MSL12 ocean color data processing system.
 Continue the work for the improvement of the OCView tool and ocean color product routine data monitoring system functions well.
 Continue the work for the improvement of VIIRS-NOAA-20 ocean color products, in preparing for the delivery of the validation status for VIIRS-NOAA-20.
 Worked on the NOAA-20 ocean color data improvement for the validation status in the summer 2020.

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		

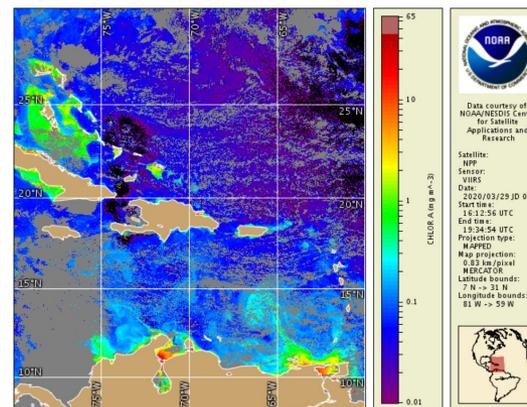
1. Project has completed.
2. Project is within budget, scope and on schedule.
3. Project has deviated slightly from the plan but should recover.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

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

Highlights:

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity	Jun-20	Aug-20		Complex N20 SDR analysis
N20 Final DAP to CoastWatch	Nov-20	Nov-20		Cpmbine with init J2 DAP?
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		CoastWatch ?
Algorithm Updates Review	Sep-20	Sep-20		
Improve the merged VIIRS OC data from SNPP and NOAA-20	Sep-20	Sep-20		
Vicarious calibration for VIIRS-NOAA-20 using MOBY in situ data	Jun-20	Jun-20		
Complete the Sixth VIIRS ocean color dedicated cruise	Apr-20	Apr-20		
Complete the fifth VIIRS cruise report and in situ data analyses (e.g., improve in situ data quality)	Sep-20	Sep-20		
Routine ocean color data production for both NRT and science quality data streams	Sep-20	Sep-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20	Feb-20	
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		



Ocean Color product for 3/29/2020 on a particularly cloud-free day. These products are used for quality control monitoring purposes.

Accomplishments / Events:

- SST experienced two major IT disruptions. (1) STAR web outage on 1 Mar (~10 days) made all SST web tools (SQUAM, iQuam, ARMS) unavailable. (2) SST cluster lost large amounts of code/data on 4 Mar, due to IT upgrade/human factor. Some code, data, products and monitoring systems have been restored. Efforts continue and will take an estimated 3-4 weeks. COVID-19 disruptions did not help. Some deadlines will likely be affected.
- Two meetings where SST results will be presented, SPIE Symp (late Apr) and GHRSSST (early June), have been converted to teleconferencing modes. Preparation for those continues.
- SQUAM monitoring of the newly developed L3S product is restored. Time series below suggest that coverage of individual L3Us 25% improves to 35%, when the two are fused together.

Overall Status:

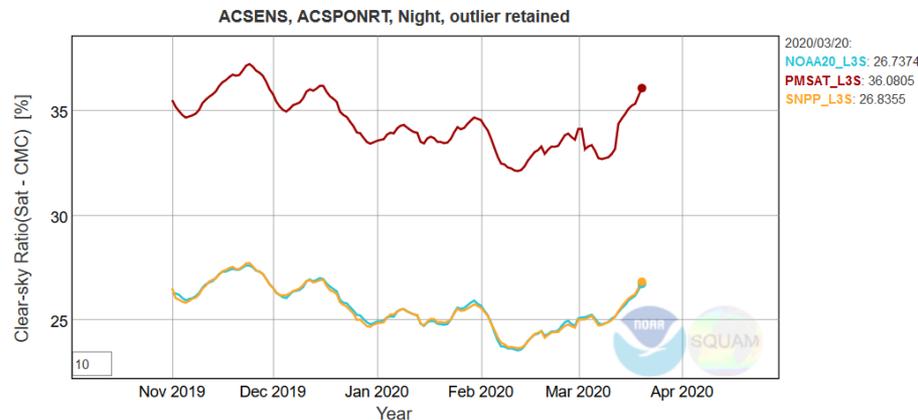
	Green ¹ (Completed)	Blue ² (On-Schedule)	Yellow ³ (Caution)	Red ⁴ (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule		X			

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
Updated DAP (ACSP0 2.80, implement thermal fronts. improvements to support data fusion, J2 readiness)	Sep-20	Sep-20		With initial J2 DAP
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Sep-20	Sep-20		ACSP0 2.80
Algorithm Updates Review	Sep-20	Sep-20		
Complete VIIRS RAN2 archival with PO.DAAC & NCEI	Aug-20	Aug-20	Dec-19: DAAC	
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20	Feb-20	
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		
Maintain SQUAM/iQuam/ARMS. Resolve anomalies	Sep-20	Sep-20		



Global coverage by nighttime L3Us from NPP and N20 is consistent and around $\sim(25\pm 2)\%$. The L3S-PM produced by fusing NPP and N20, provides increased coverage of $(35\pm 2)\%$. The performance statistics (global mean biases and SDs wrt. in situ SSTs) for L3S are comparable to individual L3Us, or improved.

Accomplishments / Events:

- STAR ASSISTT's "Framework" code has been installed by the CIMSS polar winds team. Adapting the polar winds code to utilize the Framework is underway.
- Near-real-time plots of VIIRS winds are available online at <http://stratus.ssec.wisc.edu/products/rtpolarwinds/>

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			

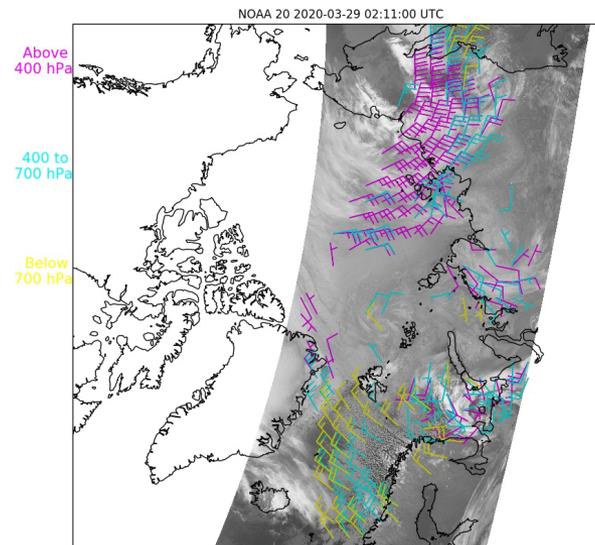
- Project has completed.
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- Project has deviated slightly from the plan but should recover.
- Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Algorithm Updates Review	Sep-20	Sep-20		
Wind product updates/improvements: continue routine generation of combined S-NPP/NOAA-20 global winds	Sep-20	Sep-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20	Feb-20	
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Highlights:



Near-real-time plots of VIIRS winds are available online.

Accomplishments / Events

- Continued preparations for the upcoming S-NPP/NOAA-20 CH4 validated maturity S-NPP/NOAA-20 CO2 provisional reviews, and addressing action items identified in the last validated maturity review. Some of the algorithm optimizations included, (1) implementing updated MW-only climatology to improve MW-only retrievals over polar regions, (2) implementation of super-saturation flag as part of QA for improved temperature and water vapor retrievals, (3) CH4 quality flags, channel selection for CO2, and recent CO2 a-priori updates.
- Progressed towards NUCAPS implementation for MetOp-C, (a) SARTA wrapper Implementation at STAR for MetOp-C, collection of Focus day data sets for tuning and regression, and code updates related to all-sky and clear regression and tuning LUT development.
- Initial results of new CO2 a-priori implementation showed expected positive changes in the CO2 retrieval. Favorably, the a-priori implementation did not affect any of the other retrieval products such as the Temperature product.
- Completed preliminary evaluation of the current performance of the NUCAPS/CrIS OLR product. The comparison does show good agreement between the S-NPP and NOAA-20 OLR products for the focus day of March 21, 2020. This comparison will be extended to include JPSS and Aqua-AIRS OLRs.

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			

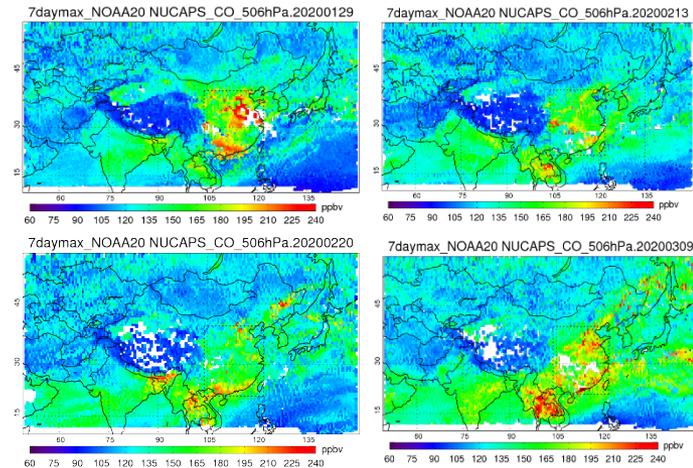
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- Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

Metop C NUCAPS delivery has been postponed to FY2020, TBD.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity: CH4 (S-NPP & NOAA-20)	Feb-20	Apr-20		Combine review
Provisional Maturity: CO2 (S-NPP & NOAA-20)	Feb-20	Apr-20		Combine review
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT:				
<ul style="list-style-type: none"> Optimization of CO related look up tables Improve NOAA-20 CH4/CO2 algorithms J2 HEAP algorithm 	Jun-20	Jun-20		
Validation against NUCAPS SNPP trace gas EDRs, other instruments (MOPITT, AIRS, IASI) and in situ measurements (TCCON, ATom, WE-CAN, KORUS)	Sep-20	Sep-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20	Feb-20	
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		
Peer reviewed paper on NUCAPS HEAP cal/val	Sep-20	Sep-20		

Highlights



Members of the STAR NUCAPS sounding team are currently investigating the observed global impact of the COVID-19 pandemic, specifically the regional impact on the economic activity in Southeast (SE) Asia, using the carbon monoxide (CO) environmental data record (EDR) product routinely retrieved from the NOAA-20 and SNPP operational NUCAPS algorithm. These images appear to show reduced CO emissions during the period of nation-wide travel and other restrictions in China which were successful at curbing the spread of the COVID-19 virus by mid-February, followed by a marked increase in CO emissions during the first week of March.

Accomplishments / Events:

- Conducted an evaluation of modified version of CLW handling in MiRS 1dvar. CLW retrieval can affect retrieval of light rainfall. Operational and experimental rain rates were compared daily for the period Oct 2018 – Jan 2020 using both Stage IV and MRMS ground-based estimates as a reference. The time series of pentad rainfall over the CONUS from N20/ATMS shows that the experimental rain rates generally have a smaller bias and higher correlation, particularly after March 2019. Based on these results we will consider implementing the experimental CLW handling in the operational version of MiRS. See 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			

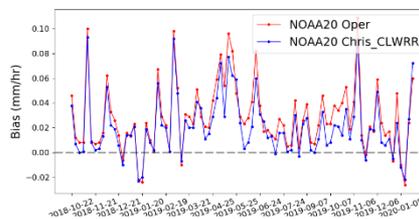
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Issues/Risks:

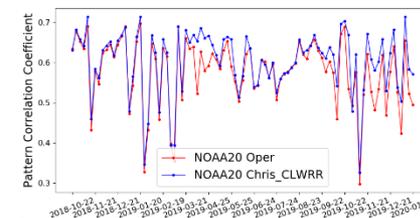
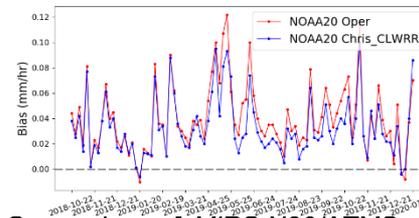
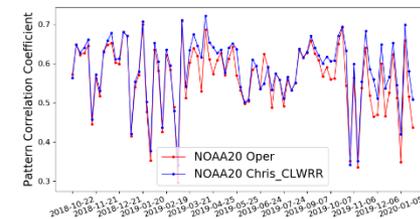
None

Highlights:

Bias (mm/d)



Correlation



Comparison of MiRS N20/ATMS rain rate bias (left) and correlation (right) for 5-day averages over CONUS using Stage IV (top) and MRMS (bottom) as the reference. Statistics are shown for operational (red) and experimental (blue) versions.

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Sep-20	Sep-20		
Algorithm Updates Review	Sep-20	Sep-20		
Algorithm update DAP to ASSISTT: <ul style="list-style-type: none"> Optimize MiRS for NOAA-20 and SNPP SFR integration; Algorithm test and verification 	Jul-20	Jul-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
Annual algorithms/products performance report	Feb-20	Feb-20	Feb-20	
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Accomplishments / Events:

- Work has started to improve the microphysics in the radiative transfer model (RTM) employed in the SFR 1DVAR. Two ice particle single scattering databases are being examined especially on their optical properties of non-spherical ice habits.
- A new CISESS employee, Yongzhen Fan, started his position at the beginning of March. Dr. Fan has excellent background in both atmospheric radiative transfer modeling and machine learning. He will focus on the enhancement of the snowfall detection and snowfall rate estimation algorithms.
- The CISESS SFR team is producing Metop-C SFR from direct broadcast data made available by University Wisconsin. NASA SPoRT has incorporated Metop-C SFR in the data stream going to some NWS forecast offices.
- The project PI remotely participated in the NOAA Snow Workshop on March 18-19 and presented the operational SFR 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			

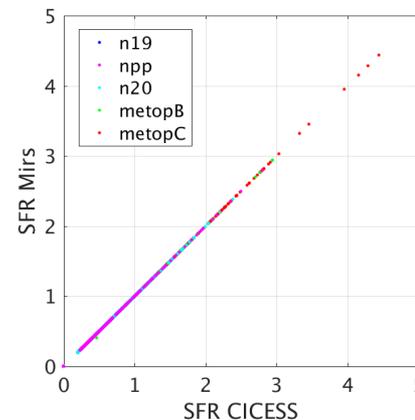
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3. Project has deviated slightly from the plan but should recover.
4. Project has fallen significantly behind schedule, and/or significantly over budget.

Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Annual algorithms/products performance report	Feb-20	Feb-20	Feb-20	
Enhance the calibration method to mitigate existing issues including reducing non-convergence rate	May-20	May-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Deliver updated SFR package to MiRS team	Jun-20	Jun-20		
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Sep-20	Sep-20		
Algorithm Updates Review	Sep-20	Sep-20		
Verification of direct readout EDRs	Sep-20	Sep-20		
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Sep-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Highlights:



A comparison study was conducted between the CISESS version of SFR and the SFR produced by MiRS after the recent update for S-NPP, NOAA-19/20, and Metop-B/C. This study was to ensure the consistency between the two systems. The results shown in the above figure show that the MiRS SFR essentially replicates the CISESS SFR.

Accomplishments / Events:

Validating OMPS V2Limb SDRs and EDRs.
Operational Readiness Review completed 12/2019.
Product is at Provisional maturity performance on NDE I&T. Submitted Operational Briefing to SPSRB.

Investigating S-NPP / NOAA-20 OMPS product differences. Refined V8Pro model fidelity DAP.

Tested GOME-2 with enterprise application of V8TOz algorithm for Cloud and GSICS applications.

Submitted revised OMPS SO₂ journal paper

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Validated Maturity: V8Pro	Jan-20	May-20		Bandpass differences
Limb SDR and EDR to operations	Feb-20	Apr-20		NDE errors
J2 pre-launch test/proxy data review/analyze	Sep-20	Sep-20		
J2 Cal/Val Plan - draft delivery	Jun-20	Jun-20		
Initial J2 ready DAP to NDE (include NPP/N20 updates)	Aug-20	Aug-20		
Algorithm Updates Review	Sep-20	Sep-20		
RT Tables with Wavelengths, Bandpasses	Mar-20	Mar-20		
V8TOz with Cloud top optical centroid algorithm	Aug-20	Aug-20		With Aug-20 DAP
Annual algorithms / products performance report	Feb-20	Feb-20	Feb-20	
NOAA-20 and S-NPP cross-calibration/comparison	Sep-20	Jun-20		
Cal/Val visualization and LTM tool development/improvement	Sep-20	Sep-20		

Overall Status:

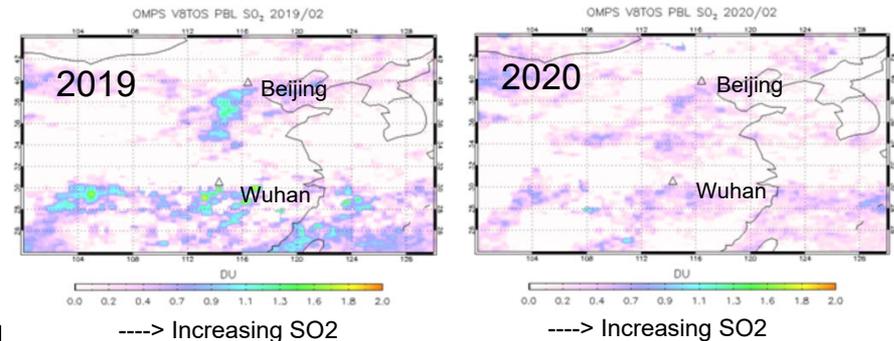
	Green ¹ (Completed)	Blue ² (On-Schedule)	Yellow ³ (Caution)	Red ⁴ (Critical)	Reason for Deviation
Cost / Budget		X			
Technical / Programmatic		X			
Schedule			X		# SDR Schedule, code change

1. Project has completed.
2. Project is within budget, scope and on schedule.
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 V8Pro EDR on path to maturity will not be implemented at NDE until April 2020.

Highlights: Less SO₂ over China in Feb 2020 compared to Feb 2019 due to COVID-19 travel restrictions



Accomplishments / Events:

- Activities continue with NESDIS IA and JPSS to discuss AMSR3 and AMSR2 progress/plans
 - TIM with JAXA on hold due to travel restrictions from COVID-19
- Continued product cal/val; all products meeting requirements; Annual cal/val report for 2019 under development
- Portions of GCOM system under consideration for EPS-SG MWI; EDR formulation underway

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.
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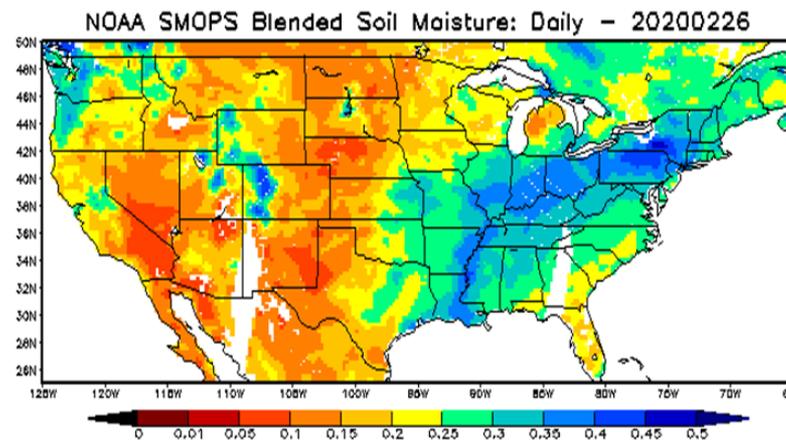
Issues/Risks:

None

Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
Annual report on AMSR2 algorithms and data products performance	Feb-20	April-20		Just running a little late on this
Algorithm Cal/Val	Sep-20	Sep-20		
Algorithm improvement/bug fix	Sep-20	Sep-20		
Deliver updated algorithm DAP to NDE	Sep-20	Sep-20		
Long-term monitoring tool/website development/improvement	Sep-20	Sep-20		
Complete reprocessing of entire mission dataset of AMSR2	Sep-20	Sep-20	Mar-20	

Highlights: Soil Moisture Changes X. Zhan (STAR)

AMSR2 derived soil moisture is a critical component into the SMOPS operational multi-sensor soil moisture product. This example, from February 26, 2020, shows a very moist soils conditions over the central to north eastern US, in response to above normal precipitation.



Accomplishments / Events:

- Continued routine compilation of NPROVS collocation datasets, approximately 30,000 individual comparisons per day
- Joint ARM/GRUAN/JPSS Radiosonde Inter-comparison VALidation (RIVAL) campaign completed; final dataset compilation underway.
- DOC general Council cleared JPSS / ARM Agreement to fund dedicated radiosonde program, 2020; fund transfer to DOE underway
- Initiated NUCAPS sounding task to investigate seasonal bias differences in sounding products
- Provided input for AEROSE, Australia Brush Fire and Modified NUCAPS (AWIPS-2) campaign and case studies (**Highlight**)
- The EDR LTM team added the VIIRS Land Surface Albedo product to the JSTAR Mapper website for SNPP and NOAA-20 (**Highlight**)

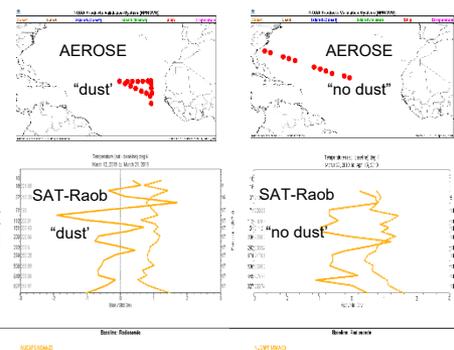
Overall Status:

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

1. Project has completed.
2. Project is within budget, scope and on schedule.
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Milestones	Original Date	Forecast Date	Actual Completion Date	Variance Explanation
LTM				
Maintain / expand existing EDR LTM web pages and mappers and provide monthly reports	Sep-20	Sep-20		
NPROVS				
Provide COSMIC (C2) geophysical profiles (T, H2O) assessment	June 20	June 20		
Provide NPROVS User Guide final / approved document [Q4] and updated NPROVS Publication approved draft for submission [Q4]	Sept 20	Sept-20		
Facilitate and provide assessment report supporting R2O transition of NUCAPS for MetOp-C (Q3).	June 20	June 20		

Highlights:



NUCAPS NOAA-20 temperature soundings show characteristic bias (solid) and standard deviation (dash) differences versus JPSS funded AEROSE campaign radiosonde inside (left) and outside (right) the Saharan Air Layer (SAL) dust plume

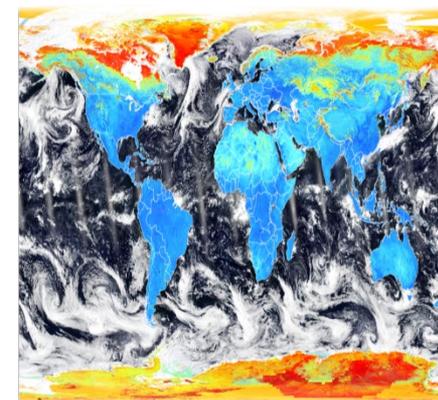


Image of NOAA-20 VIIRS NDE Land Surface Albedo for March 19, 2020; **global product image is produced daily.**

