



NOAA JPSS Monthly Program Office

AMP/STAR FY23 TTA

Lihang Zhou, DPMS Deputy
Xingpin Liu, Algorithm Sustainment Lead
Ingrid Guch, Acting JPSS STAR Program Manager
Alisa Young, AMP Deputy for Science
& JPSS STAR Program Manager (on Detail)

Jan, 2023

Highlights from the Science Teams (December)

NOAA-21 ATMS declared Provisional

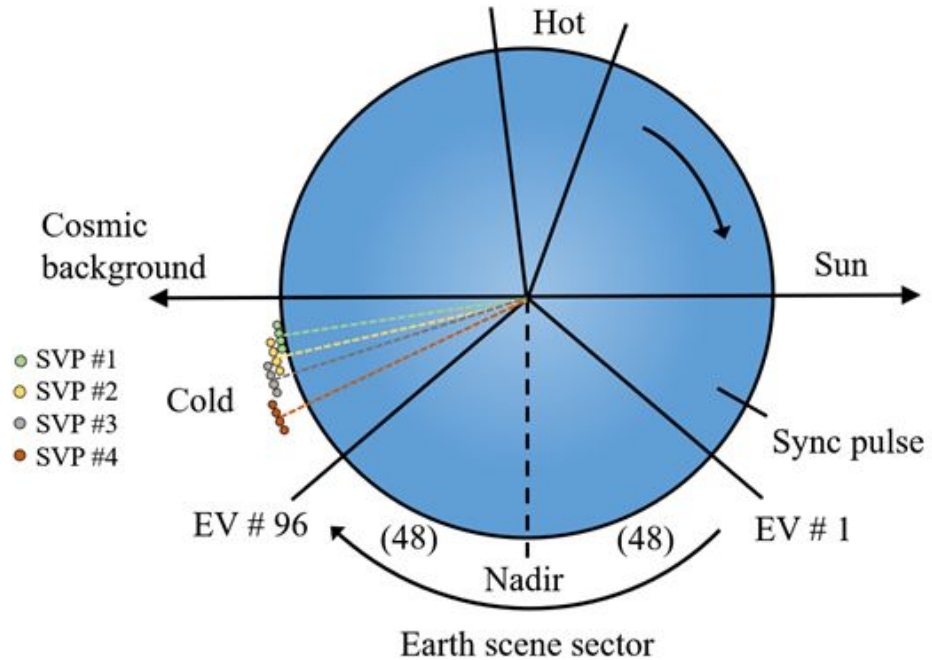


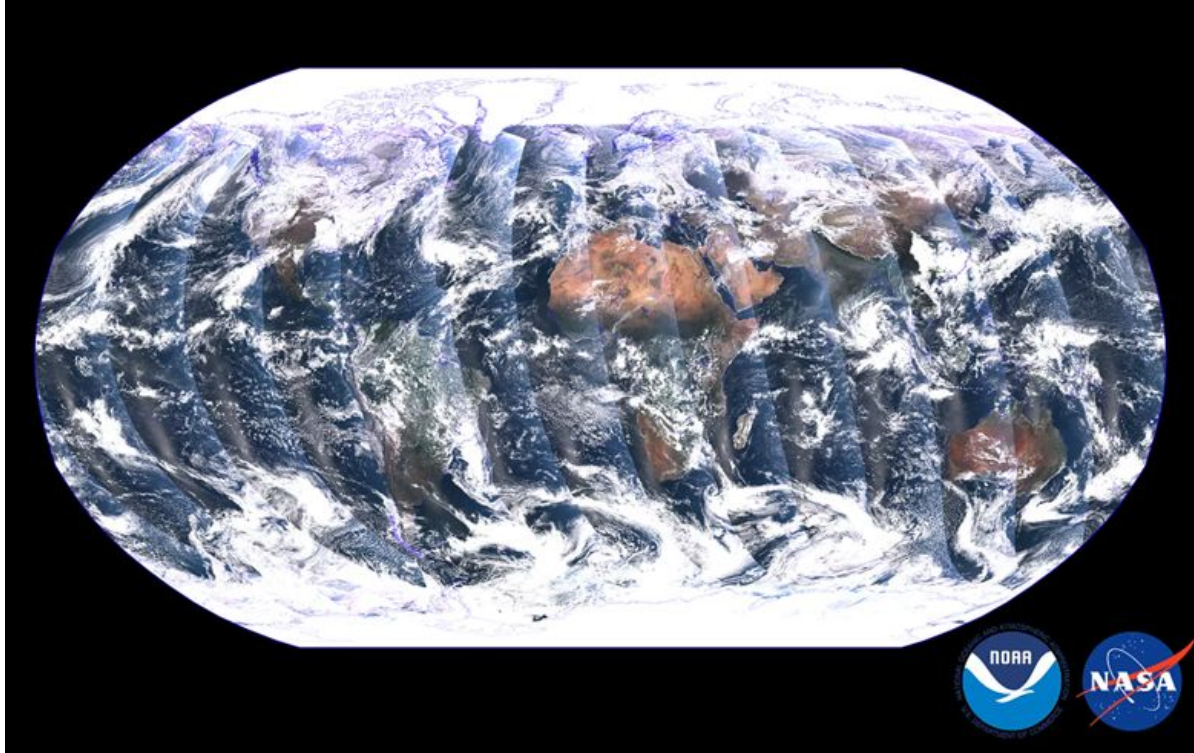
Figure. Schematic diagram of ATMS space view profiles

NOAA-21 ATMS science data quality has met the Provisional Maturity requirements. It has been officially declared that NOAA-21 ATMS TDR and SDR reach the Provisional Maturity effective from 23:49:55 UTC on 12/3/2022 at orbit #336

The additional assessment of ATMS science data after the Beta Maturity proves,

- Space view profile 1 has been selected as the optimal SVP in operation;
- NOAA-21 ATMS shows a better on-orbit channel-to-channels noise correlations than S-NPP and NOAA-20;
- NOAA-21 ATMS channel NE Δ Ts are stable and comparable to NOAA-20;
- Good agreement between nearly simultaneous NOAA-21/NOAA-20 and NOAA-21/S-NPP ATMS measurements;
- Low noise of NOAA-21 ATMS water vapor channels improves MiRS water vapor EDR performance;
- ECMWF Analysis showed “After bias correction, NOAA-21 ATMS is mostly in line with other ATMS instruments”.

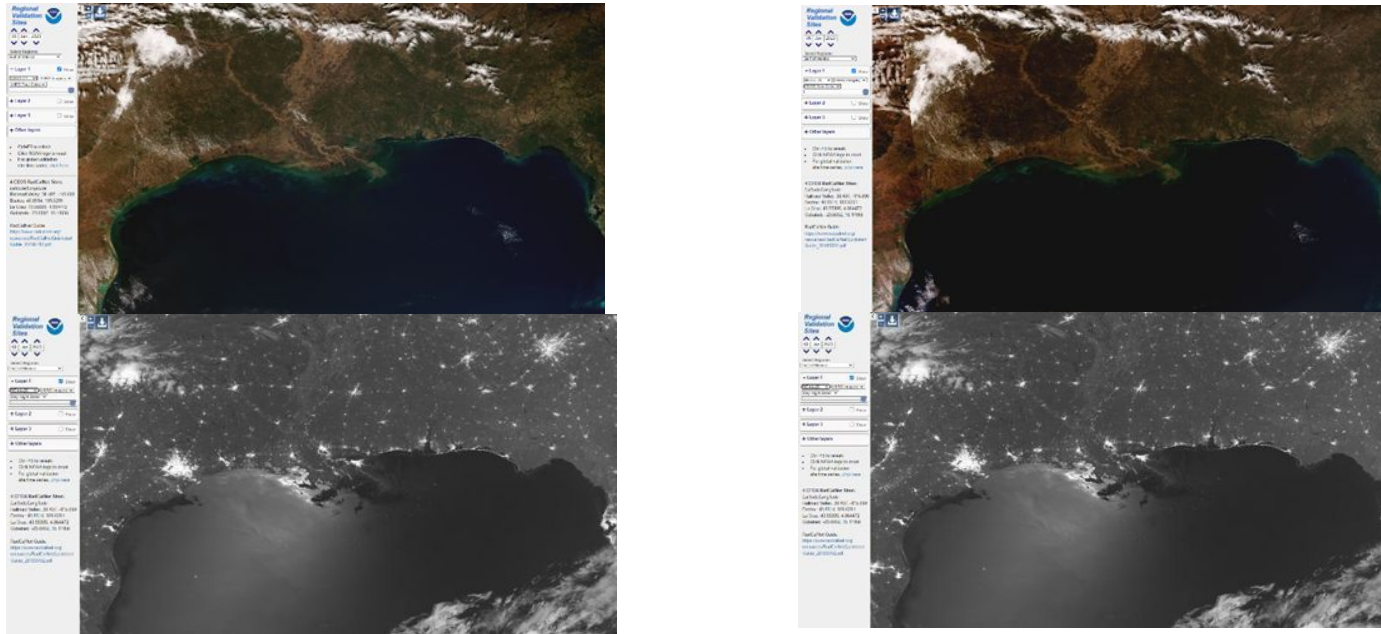
VIIRS First Light Visible Imagery



The NOAA STAR VIIRS SDR Cal/Val team prepared and delivered the NOAA-21 VIIRS “First Light” true color global image, which was selected by NESDIS for official release (see article on “First Image Released from NOAA-21 VIIRS instrument”, <https://www.nesdis.noaa.gov/news/first-image-released-noaa-21-viirs-instrument>) . VIIRS is the second instrument on NOAA-21 to be activated. The VIIRS thermal bands, CrIS, and OMPS will follow.

Figure 1. NOAA-21 VIIRS first light true color global image from Dec. 5 and Dec. 6, 2022 prepared by STAR VIIRS SDR Cal/Val team, which was selected for the NOAA/NESDIS official public release

Monitoring NOAA-21 Using Direct Broadcast Data



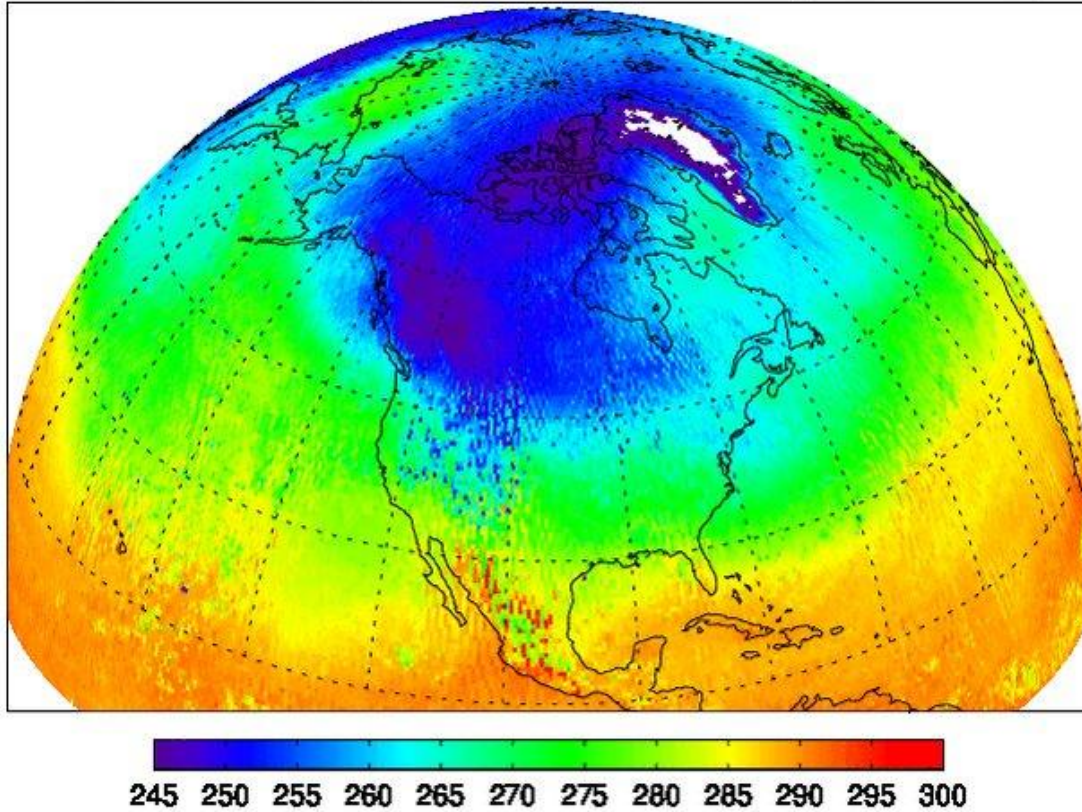
On December 17th, 2022 NOAA-21 developed a problem with its Ka-band transmitter. This has prevented the transmission of stored mission data to the receivers in Svalbard and Antarctica. However, the transmitter responsible for direct broadcast transmission is still operational, allowing those with receivers (such as the University of Wisconsin-Madison) to receive a subset of the NOAA-21 data. The SDR teams have been using this data to monitor the status and quality of the NOAA-21 VIIRS and ATMS instruments, which were active before the anomaly.

Figure 1: Comparison of NOAA-21 and NOAA-20 true color image (VIIRS M3, M4, M5 band composite image) and DNB data over the Gulf of Mexico region on Jan. 6, 2023 using the NOAA/STAR GReVS system.

Highlights from the Science Teams (December)

JPSS records record cold and snow over Eastern US

NUCAPS Temperature at 852 hPa (i20221220)



852 mb Temperature as measured by NUCAPS on December 20 as the cold air began to move south from Canada.

On December 22, a strong Arctic air mass began to make its way into the Continental US east of the Rockies. Cities on the Front Range of the Rockies saw temperatures drop 40-50 degrees in a matter of hours. The same system brought record cold temperatures to most of the eastern US, and dumped several feet of snow on the Buffalo area.

The NUCAPS system was able to detect this mass of cold air as it covered much of the country.



Accomplishments

Delivery Date	Delivery Algorithm Packages (DAPs) – Enterprise Products:	Recipient
12/05/2022	IMS/SSMI Snow Mask Final CCAP	NCCF
12/05/2022	Delivery of updated manuals (EUM & SMM) for the Fractional Snow Cover	Google drive
12/05/2022	Delivery of updated manuals (EUM & SMM) for the CBH/CCL	Google drive
12/09/2022	EN Fires Preliminary CCAP for SEVIRI and VIIRS	Google drive
12/13/2022	VFM CCAP patch for JPSS reprocessing effort to address polar projection issues	NCCF
12/20/2022	JPSS Cloud COMP Final CCAP Patch to add missing N21 support	NCCF
12/21/2022	BUFR Toolkit v5.5 Final DAP Patch to address geolocation, ACSPO BT, OMPS NP, and OMPS LP issues.	Kite works for code, data, and documents
12/23/2022	V8PRO Preliminary CCAP to OSPO for SCR	NCCF, Google drive for SCR
01/06/2023	DMW Final CCAP Delivery to the Cloud	NCCF
01/11/2023	VIIRS SDR LUT Update (ASSISTT to DPMS 1/6) passed DPMS functional test	Package Drop https://auth.dpae.jpss.noaa.gov/my.policy
01/11/2023	Green Vegetation Fraction (GVF) and Vegetation Index (VI) Final CCAP Delivery	NCCF
01/18/2023	ATMS J2 PCT updates (STAR delivered to DPMS (1/10), passed DPMS functional Test	Package Drop https://auth.dpae.jpss.noaa.gov/my.policy
1/19/2023	OMPS J2 LUTs updated delivery (OMPS Team to ASSISTT, 1/7/2023) , ASSISTT-> DPMS	Package Drop https://auth.dpae.jpss.noaa.gov/my.policy

Accomplishments – JPSS Cal Val Support

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

S-NPP	Weekly OMPS TC/NP Dark Table Updates	12/06/22, 12/13/22, 12/19/22, 01/03/23
NOAA-20	Weekly OMPS TC/NP Dark Table Updates	12/06/22, 12/13/22, 12/19/22, 01/03/23
S-NPP	Bi-Weekly OMPS NP Wavelength & Solar Flux Update	12/06/22, 12/19/22, 01/03/23
NOAA-20	Bi-Weekly OMPS NP Wavelength & Solar Flux Update	12/13/22,
S-NPP	Monthly VIIRS LUT Update of DNB Offsets and Gains	01/03/23
NOAA-20	Monthly VIIRS LUT Update of DNB Offsets and Gains	01/03/23

- **December, 2022 Maturity Review:**
 - ATMS TDR/SDR (Provisional Maturity)
- **January, 2023 Maturity Review:**
 - Maturity Reviews moved to February due to K-band transmitter anomaly/investigations
- **February, 2023 Maturity Review:**
 - VIIRS SDR (Beta Maturity, TBC based on resolving K-band transmitter anomaly)
 - VIIRS KPP Imagery EDRs (Beta Maturity, TBC based on resolving K-band transmitter anomaly)
 - CrIS SDR (Beta Maturity, TBC based on resolving K-band transmitter anomaly)
 - OMPS SDR (OMPS-NP & OMPS-TC, Beta Maturity based on resolving K-band transmitter anomaly)
 - VIIRS SDR (Provisional Maturity, TBC)
 - CrIS SDR ((Provisional Maturity, TBC)
 - OMPS SDR (OMPS-NP & OMPS-TC, (Provisional Maturity, TBC)
 - VIIRS KPP Imagery EDRs ((Provisional Maturity, TBC)
 - VIIRS non-KPP Imagery EDRs (Beta Maturity, TBC)
 - OMPS Ozone EDR (V8Pro & V8TOz, Beta Maturity, TBC)

- JSTAR Code/LUT/Product Deliveries:

- DAP to DPMS:

- Jan-23: CrIS J2 Eng Pkg update delivery
- Jan-23: OMPS J2 LUTs update delivery

- NOAA-20/JPSS-2 Algorithm DAP to NCCF: (only two remaining for J2-Ready)

- Mar-23: J2-ready OMPS LP DAP to NCCF (ASSISTT NCCF)
- Mar-23: J2-ready Ocean Color DAP to NCCF (ASSISTT NCCF)



FY23 STAR JPSS Milestones

Milestones	Original Date (column I)	Forecast Date	Actual Completion Date	Variance Explanation
Algorithm Updates DAPs/CCAPs				
ATMS J2 PCT updates (as needed)	Jan-23	Jan-23		
CrIS J2 Eng Pkg update delivery	Jan-23	Jan-23		
VIIRS J2 LUTs update delivery	Jan-23	Jan-23		
OMPS J2 LUTs update delivery	Jan-23	Jan-23		
OMPS LP J2 ready DAP (to NCCF)	Mar-23	Mar-23		
Ocean Color J2 ready DAP (to NCCF)	Mar-23	Mar-23		
CCAP to NCCF (Aerosol AOD & ADP)	Oct-22	Oct-22	10/26/22	
CCAP to NCCF (CM, Phase, Height, CBH, CCL, COMP)	Oct-22	Oct-22	10/26/22	
CCAP to NCCF (VPW, Cryosphere, Volcanic Ash)	Nov-22	Nov-22	11/15/2022, 11/18/2022, VPW: 01/06/2023	
CCAP to NCCF (LST, LSA)	Nov-22	Nov-22	Delayed to 12/15/2022 Delayed: 01/20/2023	
CCAP to NCCF (VI, GVF)	Nov-22	Nov-22	11/15/2022, 1/11/2023	
CCAP to NCCF (MiRS, OMPS NP V8Pro)	Jan-23	Jan-23	MiRS:12/31(separate delivery) Delivered: OMPS 12/23	
CCAP to NCCF (HEAP, N4RT)	Mar-23	Mar-23		
CCAP to NCCF (ACSPO SST)	Apr-23	Apr-23		
Enterprise Fires	Apr-23	Apr-23		
CCAP to NCCF (VH, VOLCAT Phase 1, OMPS V8TOz)	May-23	May-23		
CCAP to NCCF (Gridded Land)	Jul-23	Jul-23		

FY23 STAR JPSS Milestones

Milestones	Original Date	Forecast Date	Actual Date	Variance Explanation
Algorithm Cal/Val/LTM				
JPSS-2 First Light Images (Nov-22: ATMS; Dec-22: CrIS, VIIRS, OMPS)	Dec-22	Dec-22	11/22/2022 ATMS	
FY22 End of Year Science Team Presentations (all teams)	Nov-22	Nov-22	12/31/2022	JSTAR Calendar Year Top 10 Highlights and ancillary information
FY24 Program Management Review (all teams)	Jun-23	Jun-23		
AST-2022 (VIIRS Annual Surface Type)	Sep-23	Sep-23		
Transfer reprocessed S-NPP SDR data to CLASS (finish by Oct-2023); Start EDR reprocessing for some products	Sep-23	Sep-23		
JPSS-3 pre-launch test data review/analyze (SDR teams); JPSS-3/JPSS-4 activities/reviews support	Sep-23	Sep-23		
Maintain / Update ICVS (develop ICVS JPSS-2 modules to support various activities: monitoring, inter-sensor comparison, ...)	Sep-23	Sep-23		
Maintain / Expand (to include JPSS-2 products) JSTAR Mappers	Sep-23	Sep-23		
Images of the Month	Monthly	Monthly		



FY23 STAR JPSS Milestones

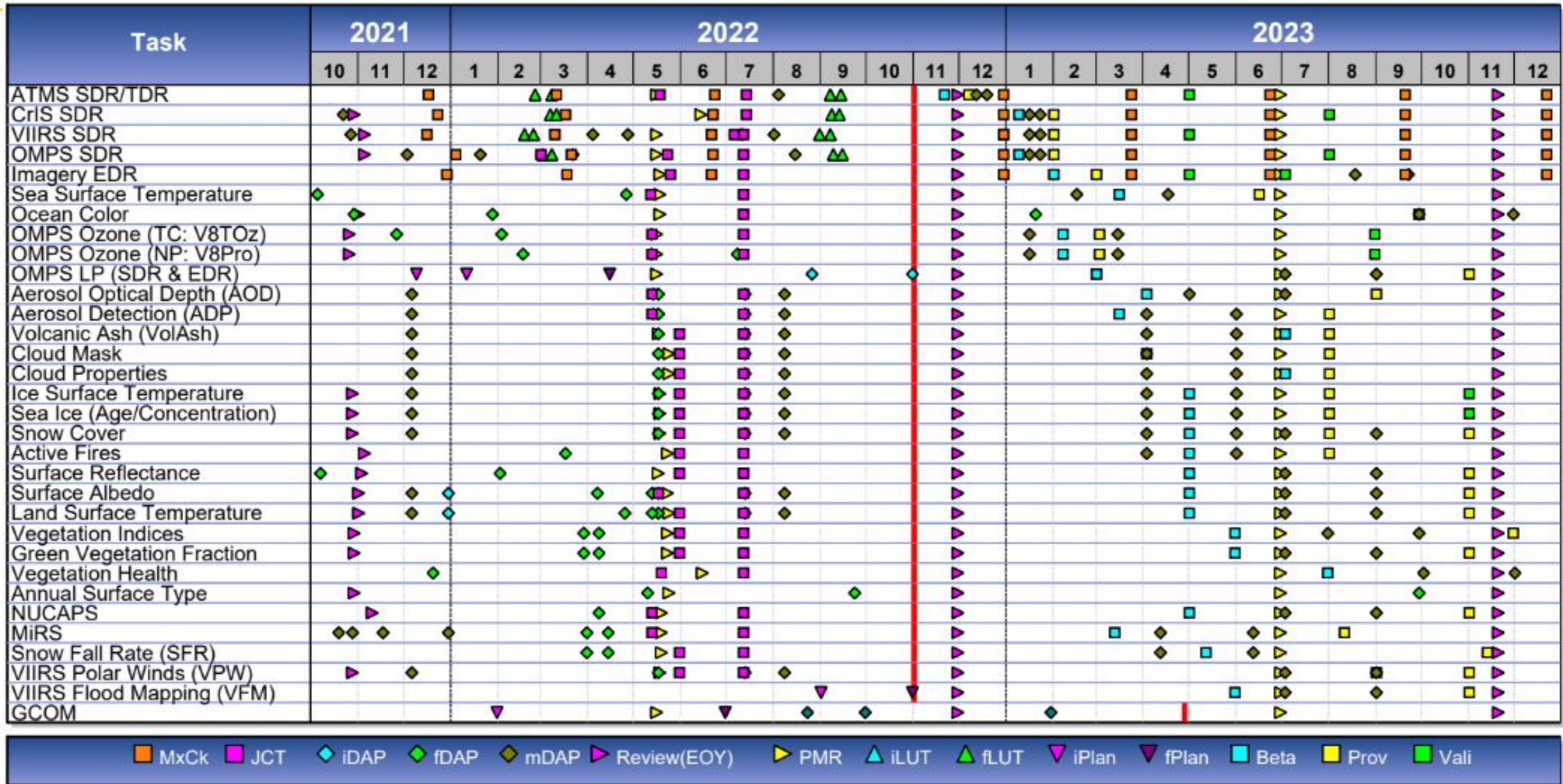
Milestones	Original Date	Forecast Date	Actual Date	Variance Explanation
NOAA-21 Cal/Val Maturity Reviews				
ATMS TDR/SDR (B/P: Dec-2022; V: May-2023)	May-23	May-23	Provisional Achieved 12/15	
CriS SDR (B: Jan-23; P: Feb-23; V: Aug-23)	Aug-23	Aug-23	Beta Moved to Feb 16, P: TBD	K-band Transmitter anomaly
VIIRS SDR (B: Dec-22; P: Feb-23; V: May-23)	May-23	May-23	Beta Moved to Feb 16, P: TBD	K-band Transmitter anomaly
OMPS SDR (B: Jan-23; P: Feb-23; V: Aug-23)	Aug-23	Aug-23	Beta Moved to Feb 16, P: TBD	K-band Transmitter anomaly
KPP VIIRS Imagery (B: Jan-23; P: Feb-23; V: May-23)	May-23	May-23	Beta Moved to Feb 16, P: TBD	K-band Transmitter anomaly
Non-KPP VIIRS Imagery (B: Feb-23; P: Mar-23; V: Jul-23)	Jul-23	Jul-23	TBC	K-band Transmitter anomaly
Clouds (B: CM: Apr-23; Others: Jul-23; P: Aug-23)	Aug-23	Aug-23	TBC	K-band Transmitter anomaly
Aerosol AOD (B: Apr-23; P: Sep-23)	Sep-23	Sep-23	TBC	K-band Transmitter anomaly
Aerosol ADP (B: Mar-23; P: Aug-23)	Aug-23	Aug-23	TBC	K-band Transmitter anomaly
Volcanic Ash (B: Jul-23; P: Aug-23)	Aug-23	Aug-23	TBC	K-band Transmitter anomaly
Cryosphere (B: May-23; P: Aug-23 for Sea Ice & Binary Snow)	Aug-23	Aug-23	TBC	K-band Transmitter anomaly
Active Fires (B: May-23; P: Aug-23)	Aug-23	Aug-23	TBC	K-band Transmitter anomaly
LST/LSA/SR/GVF/VI (B: May-23)	May-23	May-23	TBC	K-band Transmitter anomaly
Vegetation Health (B: Jul-23)	Jul-23	Jul-23	TBC	K-band Transmitter anomaly
Ocean Color (B: Sep-23)	Sep-23	Sep-23	TBC	K-band Transmitter anomaly
SST (B: Mar-23; P: Jun-23)	Jun-23	Jun-23	TBC	K-band Transmitter anomaly
VPW (B: Sep-23)	Sep-23	Sep-23	TBC	K-band Transmitter anomaly
VFM (B: May-23)	May-23	May-23	TBC	K-band Transmitter anomaly
NUCAPS (B: May-23)	May-23	May-23	TBC	K-band Transmitter anomaly
MiRS (B: Mar-23; P: Aug-23)	Aug-23	Aug-23	TBC	K-band Transmitter anomaly
SFR (B: May-23)	May-23	May-23	TBC	K-band Transmitter anomaly
OMPS NP EDR V8Pro & V8TOz (B: Feb-23; P: Mar-23)	Mar-23	Mar-23	TBC	K-band Transmitter anomaly
OMPS LP (B: Mar-23)	Mar-23	Mar-23	TBC	K-band Transmitter anomaly



FY23 STAR JPSS Milestones

Milestones	Original Date	Forecast Date	Actual Completion Date
Operational/Program Support			
S-NPP: Weekly OMPS TC/NP Dark Table Updates	Weekly	Weekly	10/04/22, 10/12/22, 10/19/22, 10/26/22, 11/01/22, 11/08/22, 11/15/22, 11/22/22, 11/28/22, 12/06/22, 12/13/22, 12/19/22, 01/03/23
S-NPP: Bi-Weekly OMPS NP Wavelength & Solar Flux	Bi-Weekly	Bi-Weekly	10/12/22, 10/26/22, 11/08/22, 11/22/22, 12/06/22, 12/19/22, 01/03/23
S-NPP: Monthly VIIRS LUT update of DNB Offsets and Gains	Monthly	Monthly	10/04/22, 11/01/22, 11/28/22, 01/03/23
NOAA-20: Weekly OMPS TC/NP Dark Table Updates	Weekly	Weekly	10/04/22, 10/12/22, 10/19/22, 10/26/22, 11/01/22, 11/08/22, 11/08/22, 11/15/22, 11/22/22, 11/28/22, 12/06/22, 12/13/22, 12/19/22, 01/03/23
NOAA-20: Bi-Weekly OMPS NP Wavelength & Solar Flux	Bi-Weekly	Bi-Weekly	10/04/22, 10/19/22, 11/02/22, 11/15/22, 11/29/22, 12/13/22,
NOAA-20: Monthly VIIRS LUT update of DNB Offsets and Gains	Monthly	Monthly	10/04/22, 11/01/22, 11/28/22, 01/03/23
NOAA-21: Weekly OMPS TC/NP Dark Table Updates	Weekly	Weekly	No update expected until January
NOAA-21: Bi-Weekly OMPS NP Wavelength & Solar Flux	Bi-Weekly	Bi-Weekly	No update expected until January
NOAA-21: Monthly VIIRS LUT update of DNB Offsets and Gains	Monthly	Monthly	No update expected until January
Mx builds deploy regression review/checkout (Mar-23 Mx8; Jun-23 Mx9; Sep-23 Mx10; SDRs and VIIRS Imagery teams)			NOAA-20 MX8 SOL STAR 'Go/No GO' Report Due: Mid-February NOAA-20 MX8 I & T STAR 'Go/NOGO' Report Due: Mid-March

STAR JPSS Schedule: TTA Milestones



- Chart not updated for status as of end November 2022 ~ awaiting Quality Assurance (QA) Analyst replacement.