



GOES-West Transition Plan - Swap of GOES-17/18

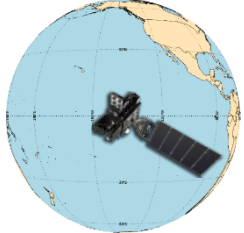
Date (Based on 3/1/22 Launch)	GOES-17		GOES-18	
	Location	Activity	Location	Activity
3/1 – 3/23	137.2°W	GOES-West Operations		Launch and Orbit Raising
3/24 – 5/15			89.5°W	GOES-18 PLT Part 1 <ul style="list-style-type: none"> Instrument Outgassing, Spacecraft PLT First ABI Image (Vis & IR) @ 89.5W
5/16 – 6/6			<i>Drift to 136.8W</i>	GOES-18 Drift from 89.5W to 136.8W <ul style="list-style-type: none"> PLT activities paused; Science data for GMAG, but no other data.
6/7			136.8°W	GOES-18 PLT Part 2 begins and PLPT begins
7/27			136.8°W	GOES-18 ABI reaches Provisional maturity <ul style="list-style-type: none"> GOES-18 ABI 'supplemental' data via Cloud for NWS until GOES-18 Ops
8/1-9/6	137.2°W	GOES-17 ABI Warm Period <ul style="list-style-type: none"> GOES-18 ABI interleaved in GOES-17 data 	136.8°W	GOES-18 ABI data interleaved in GOES-17 data
9/6-10/15	137.2°W	GOES-West Operations <ul style="list-style-type: none"> GOES-17 Nominal Distribution 	136.8°W	GOES-18 product maturation continues <ul style="list-style-type: none"> GOES-18 ABI 'supplemental' data via Cloud for NWS until GOES-18 Ops
10/15-11/11	137.2°W	GOES-17 ABI Warm Period <ul style="list-style-type: none"> GOES-18 ABI interleaved in GOES-17 data 	136.8°W	GOES-18 ABI data interleaved in GOES-17 data
11/11-1/3	137.2°W	GOES-West Operations <ul style="list-style-type: none"> GOES-17 Nominal Distribution 	136.8°W	GOES-18 product maturation continues <ul style="list-style-type: none"> GOES-18 ABI 'supplemental' data via Cloud for NWS until GOES-18 Ops
1/3	137.2°W	Full G-18 GRB relayed through GOES-17 GRB <ul style="list-style-type: none"> Users do not need to re-point antennas X-band downlink off and instruments shut down 	136.8°W	GOES-18 Declared operational GOES-West <ul style="list-style-type: none"> Begin full GOES-18 GRB broadcast (relay through GOES-17 GRB)
1/4 – 1/11		Full G-18 GRB relayed through GOES-17 during longitude shift	Slow drift to 137.2°W	GOES-18 gradual shift to 137.2
1/12	Drift to 105°W	End GOES-18 data relay through GOES-17 GRB GOES-17 drift to 105°W followed by storage mode	137.2°W	GOES-18 Nominal Distribution <ul style="list-style-type: none"> End GOES-18 GRB relay through G-17 GRB Begin GOES-18 GRB broadcast / nominal distribution SAR/DCS services transitioned to GOES-18



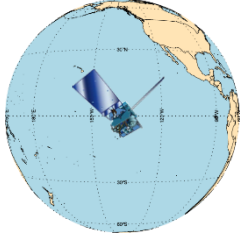
GOES Constellation

GOES-18 PLT Part 1: GOES-T achieves checkout orbit, designated GOES-18, pre-drift

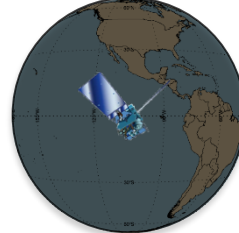
GOES-West
GOES-17
137.2° West



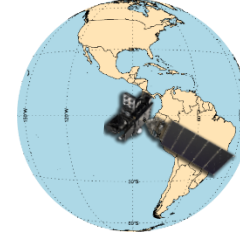
Supplemental Ops
GOES-15
128° West



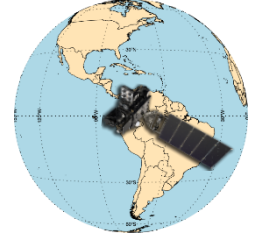
Standby
GOES-14
105° West



Checkout
GOES-18
89.5° West

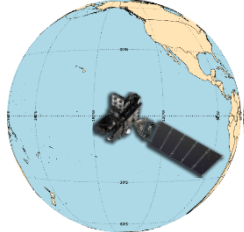


GOES-East
GOES-16
75.2° West

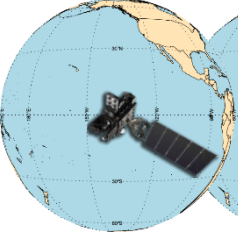


GOES-18 PLT Part 2: GOES-18 post-drift

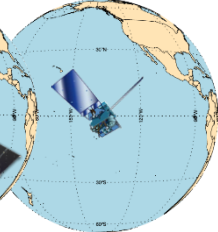
GOES-West
GOES-17
137.2° West



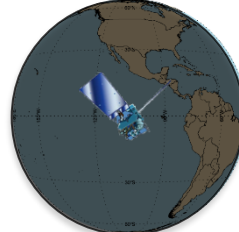
Checkout
GOES-18
136.8° West



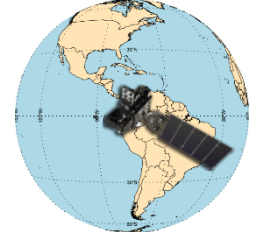
Supp. Ops.
GOES-15
128° West



Standby
GOES-14
105° West

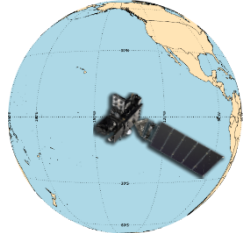


GOES-East
GOES-16
75.2° West

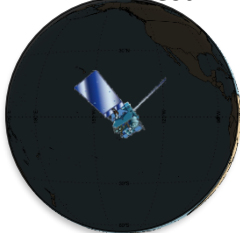


GOES-18 as GOES-West

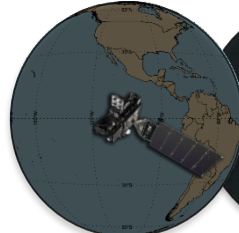
GOES-West
GOES-18
137.2° West



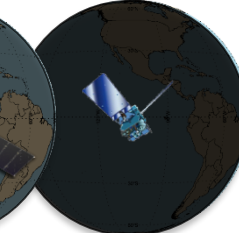
Storage
GOES-15
128° West



Standby
GOES-17
105° West



Storage
GOES-14
105° West



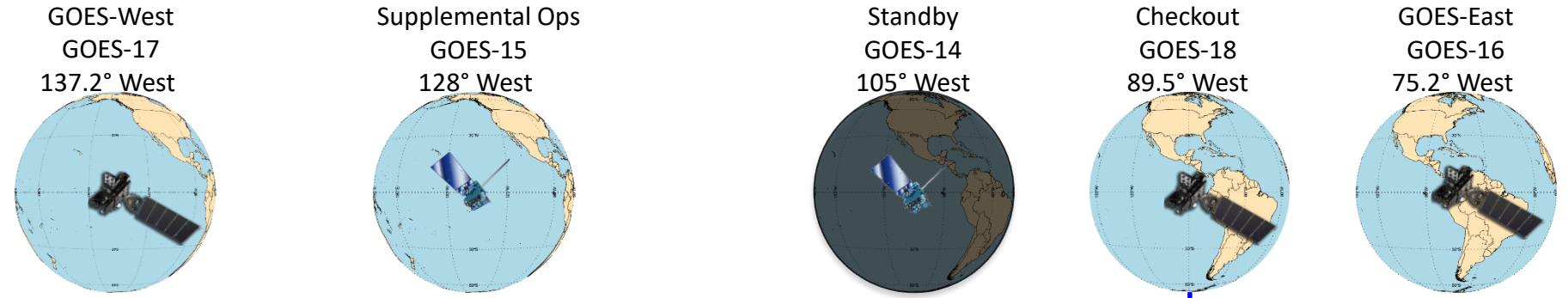
GOES-East
GOES-16
75.2° West



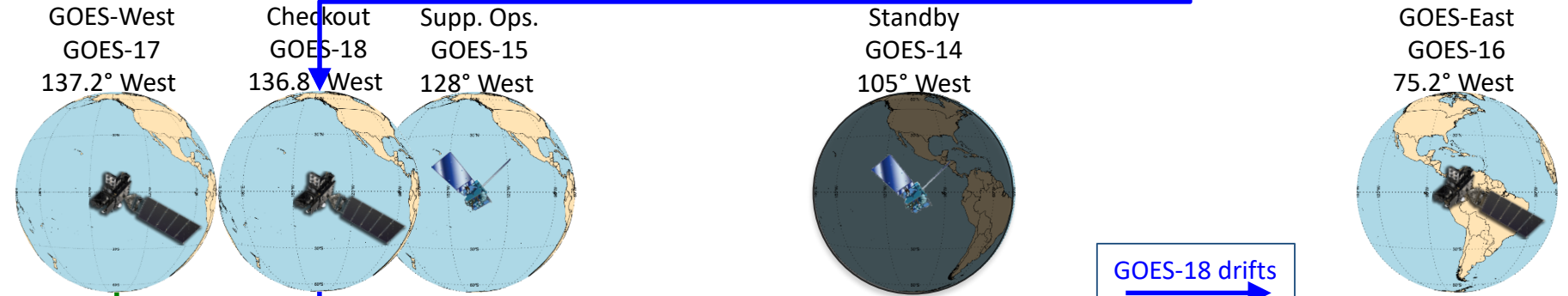


GOES Constellation

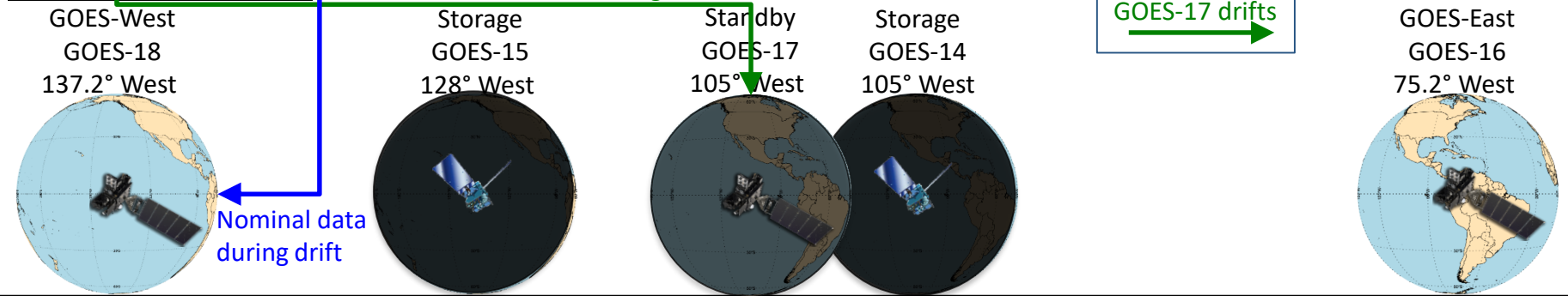
GOES-18 PLT Part 1: GOES-T achieves checkout orbit, designated GOES-18, pre-drift



GOES-18 PLT Part 2: GOES-18 post-drift



GOES-18 as GOES-West





GOES-18 T2O Overview

Activity	March					April					May					June					July					August					September					October					November					December					January		
	3/1	3/8	3/15	3/22	3/29	4/5	4/12	4/19	4/26	5/3	5/10	5/17	5/24	5/31	6/7	6/14	6/21	6/28	7/5	7/12	7/19	7/26	8/2	8/9	8/16	8/23	8/30	9/6	9/13	9/20	9/27	10/4	10/11	10/18	10/25	11/1	11/8	11/15	11/22	11/29	12/6	12/13	12/20	12/27	1/3	1/10	1/17						
G18 Events	▲ Launch	▲ Raise Orbit		▲ PLT & PLPT Part 1 @ 89.5W					▲ Drift to 136.8W					▲ PLT & PLPT Part 2 @ 136.8W					▲ PLPT Continues					▲ Handover to OSPO					▲ G18 = GOES-West					▲ Nudge to 137.2W																			
G18 Maturity	◆ ABI 1st Public Image										▲ ABI Beta					◆ GLM 1st Public Image					▲ ABI L1b/CMI Provisional					▲ GLM Beta					▲ GLM Provisional					▲ ABI Groups 1-4 L2+ Provisional																	
	◆ GMAG 1st Public Data										▲ GMAG Beta					◆ SEISS 1st Public Data					▲ SEISS Beta					▲ GMAG Provisional					▲ SGPS					▲ MPS-Hi					▲ MPS-Lo Provisional												
	◆ EXIS 1st Public Data										▲ EXIS Beta					◆ SUVI 1st Public Image					▲ SUVI Beta					▲ EXIS Provisional					▲ SUVI Provisional																						
G18 ABI PD	GRB	Cal/Val Purposes										Cal/Val Purposes					Ops (L1b & CMI, not L2+)					Cal/Val					Ops (L1b & CMI, not L2+)					Cal/Val					Ops																
	PDA	Cal/Val Purposes										Cal/Val Purposes					Ops (L1b & CMI, not L2+)					Cal/Val					Ops (L1b & CMI, not L2+)					Cal/Val					Ops																
	LZSS	Cal/Val Purposes										Cal/Val Purposes					Ops (L1b & CMI, not L2+)					Cal/Val					Ops (L1b & CMI, not L2+)					Cal/Val					Ops																
	AWIPS	Cal/Val Purposes										Cal/Val Purposes					Ops (L1b & CMI, not L2+)					Cal/Val					Ops (L1b & CMI, not L2+)					Cal/Val					Ops																
	HRIT/EMWIN	Cal/Val Purposes										Cal/Val Purposes					Ops (L1b & CMI, not L2+)					Cal/Val					Ops (L1b & CMI, not L2+)					Cal/Val					Ops																
	GNC-A	Cal/Val Purposes										Cal/Val Purposes					Ops (L1b & CMI, not L2+)					Cal/Val					Ops (L1b & CMI, not L2+)					Cal/Val					Ops																
G17 ABI PD	G17 ABI Warm Period										G17 ABI Warm Period					G17 ABI Warm Period					G17 ABI Warm Period					G17 ABI Warm Period					G17 ABI Warm Period					G17 ABI Warm Period					G17 ABI Warm Period												
	GRB	Ops										Ops					Ops					Ops					Ops					Ops					Ops					Ops											
	PDA	Ops										Ops					Ops					Ops					Ops					Ops					Ops					Ops					Ops						
	LZSS	Ops										Ops					Ops					Ops					Ops					Ops					Ops					Ops					Ops						
	AWIPS	Ops										Ops					Ops					Ops					Ops					Ops					Ops					Ops					Ops						
	HRIT/EMWIN	Ops										Ops					Ops					Ops					Ops					Ops					Ops					Ops					Ops						
	GNC-A	Ops										Ops					Ops					Ops					Ops					Ops					Ops					Ops					Ops						
West PD	GLM	Ops										Ops					Ops					Ops					Ops					Ops					Ops					Ops					Ops						
	SpWx	Ops										Ops					Ops					Ops					Ops					Ops					Ops					Ops					Ops						

Legend: GOES-18 GOES-17 PD = Product Distribution G17 ABI Warm Period 17 w/ 18 ABI Interleave ◆ 1st Public Image ▲ Beta Maturity ▲ Provisional Maturity

Planning a ‘split’ Post Launch Test phase, beginning at 89.5°W and then drifting to 136.8°W in order to have early use of the GOES-18 Imager in the West location to mitigate the GOES-17 Imager thermal anomaly



GOES-18 L1b Science Product Validation Status

ABI L1b Product	Beta	Provisional	Full
Radiances	5/11/2022	7/27/2022	FY23
GLM L2 Product			
Lightning: Events, Groups, Flashes	9/19/2022	10/31/2022	FY23
SEISS L1b Products			
Energetic Heavy Ions	7/28/2022	11/15/2022	FY23
Magnetospheric e ⁻ /p ⁺ : Low Energy	7/28/2022	11/17/2022	FY23
Magnetospheric e ⁻ /p ⁺ : High Energy	7/28/2022	10/11/2022	FY23
Solar & Galactic Protons	7/28/2022	9/13/2022	FY23
EXIS L1b Products			
Solar Flux: EUV	7/22/2022	11/14/2022	FY23
Solar Flux: X-ray Irradiance	7/22/2022	11/14/2022	FY23
SUVI L1b Product			
Solar EUV Imagery	8/2/2022	11/22/2022	FY23
GMAG L1b Product			
Geomagnetic Field	7/11/2022	9/6/2022	FY23

*EXIS and SUVI Provisional dates may be affected by final scheduling of ECI test

Validation Maturity Levels:

Not Validated	Beta Maturity	Provisional Maturity	Full Maturity
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GOES-18 L2+ Science Product Validation Status

L2+ Products	Beta	Prov	Full
Cloud and Moisture Imagery (CMI) and Sectorized CMI (KPP)	5/11/2022	7/27/2022	FY23
Aerosol Detection (Smoke & Dust)	5/11/2022	11/9/2022	
Aerosol Optical Depth	5/11/2022	11/9/2022	
Clear Sky Mask	5/11/2022	9/24/2022	
Cloud Cover Layers	5/11/2022	9/24/2022	
Cloud Optical Depth	5/11/2022	10/12/2022	
Cloud Particle Size Distribution	5/11/2022	10/12/2022	
Cloud Top Height	5/11/2022	9/24/2022	
Cloud Top Phase	5/11/2022	9/24/2022	
Cloud Top Pressure	5/11/2022	9/24/2022	
Cloud Top Temperature	5/11/2022	9/24/2022	
Derived Motion Winds	5/11/2022	9/24/2022	
Derived Stability Indices	5/11/2022	10/12/2022	
Downward S/W Radiation: Surface	5/11/2022	11/9/2022	

L2+ Products	Beta	Prov	Full
Fire/Hot Spot Characterization	5/11/2022	10/12/2022	FY23
Ice Age & Thickness	5/11/2022	11/21/2022	
Ice Concentration & Extent	5/11/2022	11/21/2022	
Ice Motion	5/11/2022	11/21/2022	
Land Surface Albedo	5/11/2022	11/9/2022	
Land Surface Reflectance	5/11/2022	11/9/2022	
Land Surface Temperature	5/11/2022	11/9/2022	
Legacy Vertical Moisture Profile	5/11/2022	10/12/2022	
Legacy Vertical Temperature Profile	5/11/2022	10/12/2022	
Rainfall Rate/QPE	5/11/2022	10/12/2022	
Reflected S/W Radiation: TOA	5/11/2022	11/9/2022	
Sea Surface Temperature	5/11/2022	11/21/2022	
Snow Cover	5/11/2022	11/21/2022	
Total Precipitable Water	5/11/2022	10/12/2022	

Validation Maturity Levels:

Not Validated	Beta Maturity	Provisional Maturity	Full Maturity
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All L2+ products with previous 12/1/22 Provisional placeholder are now grouped:

09/24/2022 -- Group 1: DMW, Cloud Mask, Cloud Top Props, Cloud Phase

10/12/2022 -- Group 2: FHS, LAP, RR, COMP

11/09/2022 -- Group 3: LST, LSA/BRF, SRB, AOD, ADP

11/21/2022 -- Group 4: SST, all cryo products



GOES-18 Data Sharing Policy

Not Allowed
Caveats
Allowed

	Images/Social Media	Data Files	Publications
Between Launch and "First Light" Public Release	Not allowed	Not allowed	Allowed; You may include pre-Provisional instrument data/images/plots as long as it will not be published until after Provisional validation is declared for that instrument. Exercise caution in publishing data regarding apparent anomalies or artifacts especially during ongoing instrument and product tests (PLTs and PLPTs).
Between First Public Release and Beta Certification	Allowed; must contain the caveat: "GOES-18 Preliminary, Non-Operational Data"	Not allowed	
Between Beta and Provisional	Allowed; must contain the caveat: "GOES-18 Preliminary, Non-Operational Data"	Not allowed	
ABI Interleaved Data	Allowed (ABI Only)	Allowed (ABI Only)	
Between Provisional (or Interleave Period(s) for ABI) and Operational Declaration	Allowed; must contain the caveat: "GOES-18 Preliminary, Non-Operational Data"	Allowed; must contain the caveat: "GOES-18 Preliminary, Non-Operational Data"	
GOES-West Operations onwards	Allowed	Allowed	

Table description: Policy for sharing images on social media, data files, and publications as it evolves during post-launch phases of satellite testing and data maturity.



GOES-18 Schedule w/ Interleave Overlays

Activity	March					April					May					June					July					August					September					October					November					December					January																			
	3/1	3/8	3/15	3/22	3/29	4/5	4/12	4/19	4/26	5/3	5/10	5/17	5/24	5/31	6/7	6/14	6/21	6/28	7/5	7/12	7/19	7/26	8/2	8/9	8/16	8/23	8/30	9/6	9/13	9/20	9/27	10/4	10/11	10/18	10/25	11/1	11/8	11/15	11/22	11/29	12/6	12/13	12/20	12/27	1/3	1/10	1/17																							
G18 Events	▲ <i>Raise Launch</i>		▲ <i>Orbit</i>		PLT & PLPT Part 1 @ 89.5W					Drift to 136.8W					PLT & PLPT Part 2 @ 136.8W					▲ Handover to OSPO					PLPT Continues					▲ G18 = GOES-West Nudge to 137.2W																																								
G18 Maturity	ABI 1st Public Image					▲ ABI Beta					GLM 1st Public Image					▲ GLM Beta					▲ ABI L1b/CMI Provisional					▲ GLM Provisional					▲ ABI Groups 1-4 L2+ Provisional																																							
	GMAG 1st Public Data					▲ GMAG Beta					SEISS 1st Public Data					▲ SEISS Beta					▲ GMAG Provisional					▲ SGPS					▲ MPS-Hi					▲ EHIS, MPS-Lo Provisional																																		
	SEISS 1st Public Data					EXIS 1st Public Data					▲ EXIS Beta					SUVI 1st Public Image					▲ SUVI Beta					▲ SUVI Provisional																																												
G18 ABI PD																																																																						
GRB						Cal/Val Purposes					Cal/Val Purposes					Ops (L1b & CMI, not L2+)					Cal/Val					Ops (L1b & CMI, not L2+)					Cal/Val					Ops																																		
PDA						Cal/Val Purposes					Cal/Val Purposes					Ops (L1b & CMI, not L2+)					Cal/Val					Ops (L1b & CMI, not L2+)					Cal/Val					Ops																																		
LZSS						Cal/Val Purposes					Cal/Val Purposes					Ops (L1b & CMI, not L2+)					Cal/Val					Ops (L1b & CMI, not L2+)					Cal/Val					Ops																																		
AWIPS																G18 ABI L1b & SCMI 'supplemental' via GeoCloud for NWS GOES-West Users																				Ops - GS																																		
HRIT/EMWIN																																									Ops																													
GNC-A																																														Ops																								
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GNC-A Ops																																																																						
West PD																																																																						
GLM Ops																																																																						
SpWx Ops																																																																						

Legend: GOES-18 (green), GOES-17 (yellow), PD = Product Distribution (orange), G17 ABI Warm Period (pink), 17 w/ 18 ABI Interleave (orange with diagonal lines), 1st Public Image (pink with diamond), Beta Maturity (blue triangle), Provisional Maturity (red triangle)

GND-006
G18 GRB

GND-009
18 ABI 89.5W

GND-008
18 ABI

Jul/Aug Interleave
18 ABI

Oct/Nov Interleave
18 ABI



PLTs of Interleave vs Nominal Interleave

	G18 PLT Test "GND-006"	G18 PLT Test "GND-009"	G18 PLT Test "GND-008"	Nominal Interleave
Description	Test of GRB interleave logic early during G18 PLT	Pre-drift test of Interleave	Post-drift test of Interleave	Early ops access to G18 ABI data as a mitigation for G17 ABI saturated images
Duration	2 hours	30 minutes	2-4 hours	36 days
Dates	May 9, 2022 prior to drift	~May 11, 2022 prior to drift after test "GND-006"	June 15, 2022 prior to Interleave	1 st : August 1 – September 6, 2022 2 nd : October 15 – November 11, 2022
GRB Content	<u>G18 GRB</u> at 89.5° West: <ul style="list-style-type: none"> G16 ABI L1b G17 GLM L2+, Space Wx L1b <u>G16 GRB</u> at 75.2° West: G16 L1b <u>G17 GRB</u> at 137.2° West: G17 L1b	<u>G18 GRB</u> at 89.5° West: <ul style="list-style-type: none"> N/A <u>G16 GRB</u> at 75.2° West: G16 L1b <u>G17 GRB</u> at 137.2° West: <ul style="list-style-type: none"> G18 ABI L1b (from 89.5° West)* G17 GLM L2, Space Wx L1b ~1 hour post-test impact to GRB user's trending of G17 ABI L2+ products (e.g., CSPP Geo products) 	<u>G18 GRB</u> at 136.8° West: <ul style="list-style-type: none"> N/A <u>G16 GRB</u> at 75.2° West: G16 L1b <u>G17 GRB</u> at 137.2° West: <ul style="list-style-type: none"> G18 ABI L1b (from 136.8° West) G17 GLM L2, Space Wx L1b 	<u>G18 GRB</u> at 136.8° West: <ul style="list-style-type: none"> N/A <u>G16 GRB</u> at 75.2° West: G16 L1b <u>G17 GRB</u> at 137.2° West: <ul style="list-style-type: none"> G18 ABI L1b (from 136.8° West) G17 GLM L2, Space Wx L1b
PDA Content	Nominal G16/17 G18 L1b and L2 products will not be distributed to PDA	<ul style="list-style-type: none"> Potential G17 GLM, Space Wx metadata inaccuracies All other G16/17/18 data nominal 	Nominal G16/17/18	Nominal G16/17/18
AWIPS NCF Content	Nominal G16/17 SCMI		G18 ABI SCMI Nominal G16	G18 ABI SCMI Nominal G16
LZSS Content	Nominal G16/17 The G18 GRB interleave products will not go to LZSS		Nominal G16/17/18	Nominal G16/17/18

*G18 ABI L1b mapped to 89.5°W but delivered via G17 GRB at 137.2°W



GRB Interleave Spacecraft IDs & Metadata

		G17 GRB Nominal as GOES-West	G18 GRB Interleaved w/ G16 ABI, G17 non-ABI	G17 GRB Interleaved w/ G18 ABI, G17 non-ABI	G18 GRB Nominal as GOES-West
Interleave Test Configurations		N/A	GND-006 (May 9, 2022)	GND-009 (May 11, 2022), GND-008 (June 30, 2022)	N/A
Operational Interleave Periods		N/A	N/A	Aug 1, 2022 - Sep 6, 2022 Oct 15, 2022 - Nov 11, 2022	N/A
Data Relay	GRB Spacecraft ID (SCID) AOS frame header (8 bits)	0x82	0xE4	0x82	0xE4
Data Source	platform_ID metadata within ABI packets	G17	G16	G18	G18
	instrument_ID metadata within ABI packets	FM2	FM1	FM3	FM3