



SATELLITE OPERATIONS

Status of NOAA Satellite Operations & McIDAS at ESPC

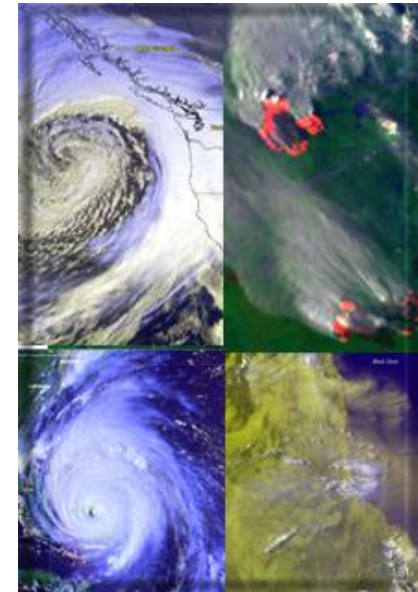
Monday, September 25, 2023

Clay Davenport



Presentation Outline

- Overview of the Office of Satellite and Product Operations (OSPO)
- Status of Satellite Operations
- Status of McIDAS at ESPC
- Q&A



The NESDIS Office of Satellite and Product Operations (OSPO) owns or operates the Nation's 17 environmental satellites

NOAA owns and operates ten satellites, which include:

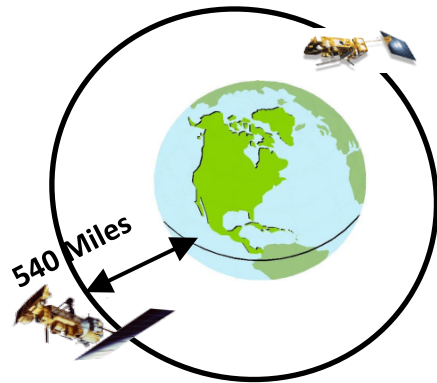
- Four geostationary (GOES-14, -16, -17 and -18)
- Five polar-orbiting (NOAA-15, -18, -19, -20, and -21)
- One deep space satellite (DSCOVR)

NOAA operates but does not own, seven satellites, which include:

- Suomi NPP (NOAA/NASA)
- Jason-3 (CNES owns)
- Three Defense Meteorological Satellite Program (DMSP) satellites (F-16, F-17, F-19)
- EWS-G1 and -G2 (Air Force owns, formerly GOES-13 and -15)

Three Observation Vantage Points

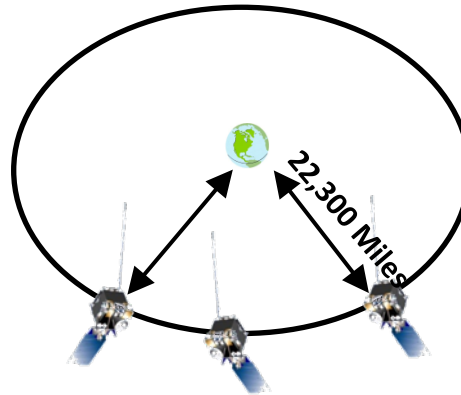
Polar-orbiting Operational Environmental Satellites



Each satellite covers the Earth twice per day

- Pole-to-pole orbit is 101 minutes and views each location at the same time of day; capability for ½ orbit dumps with JPSS-1
- Global coverage every 12 hours with one satellite
- EUMETSAT - mid-morning orbit
- NOAA - early afternoon orbit

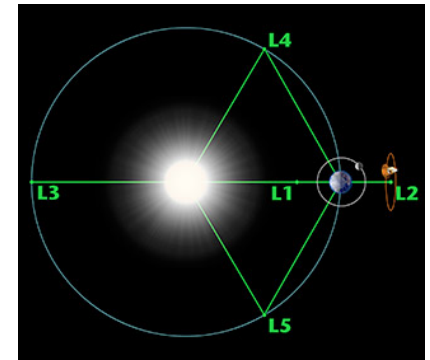
Geostationary Operational Environmental Satellites



Continuous monitoring of the Americas

- Coverage over the same geographic location
- Constant monitoring for nowcast purposes and for forecast applications (NWP, etc.)

Deep Space at Lagrange 1 Point



Continuous monitoring of the Sun

- Uninterrupted view of the sun
- Information is used for solar winds monitoring for Space Weather warnings

NOAA Constellation



OSPO's Key Roles

- Ground System Command & Control, Ingest, Generation, and Distribution
- Pre-Launch and Post-Launch Testing
- Operational Testing, Validation, and Verification
- User Readiness for Broadcast Services and Product Delivery
- Long-Term Continuity of Products and Services



OSPO Operational Facilities



Suitland, MD

Over 500 staff supporting or operating the satellites, receptors, and processing systems



College Park, MD



Fairmont, WV*



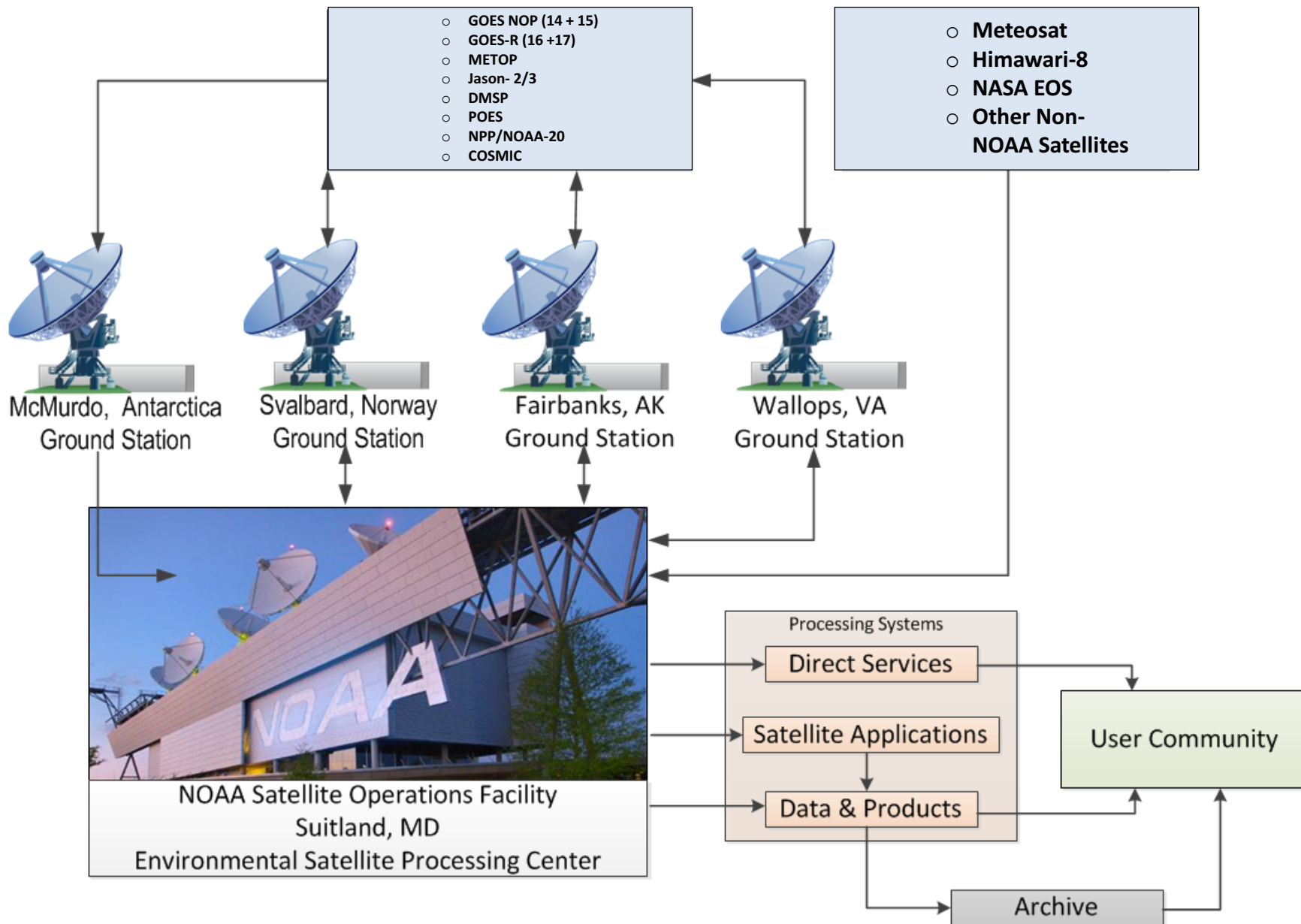
Wallops, VA



Fairbanks, AK

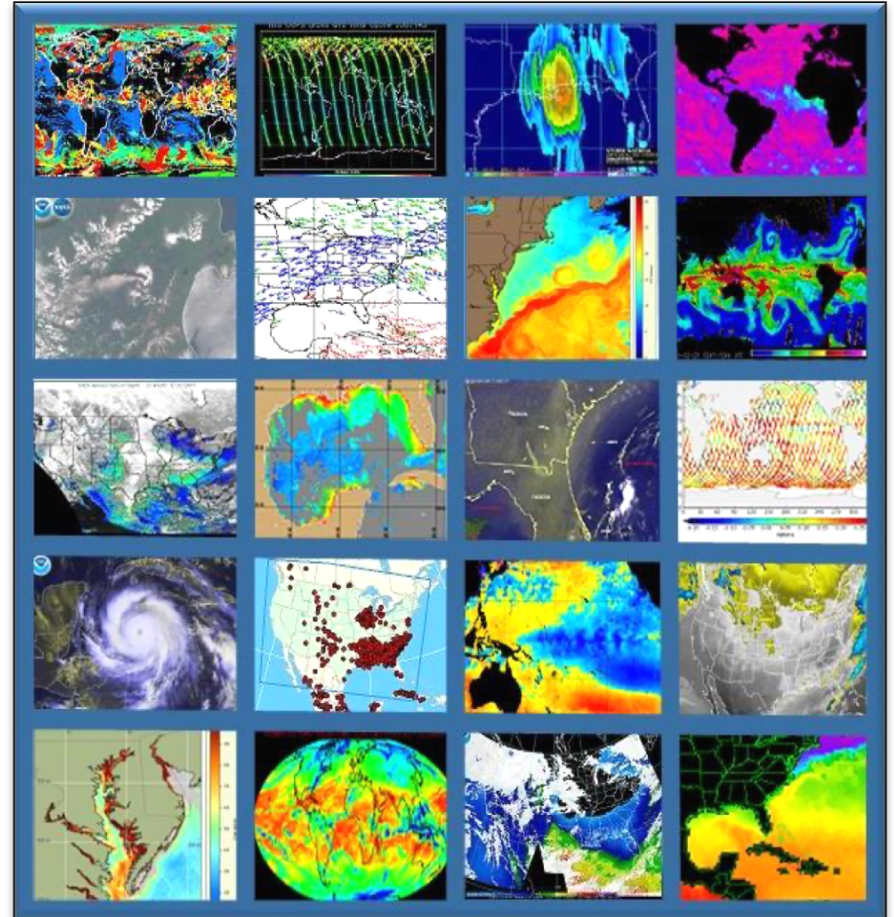
* GOES-R and JPSS (New) Backup Facility

Nominal Satellite Data Flow



OSPO's Satellite Products and Services Division

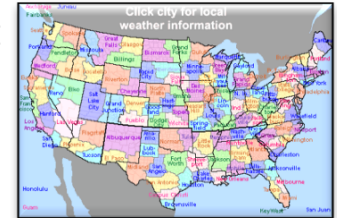
- Provides 24x7 interpretive analyses of satellite data
 - Atmospheric temp/moisture
 - Hurricane intensity & position
 - Volcanic Ash
 - Fire and Smoke
 - Oil Spills
- Manages automated environmental products
- Collaborates with partners to support transition of research products into operations



Direct Service Operations

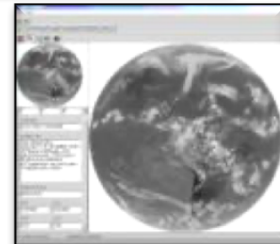
Emergency Managers Weather Information Network (EMWIN):

- NOAA satellites relay critical information to users across the country.



GOES Rebroadcast (GRB):

- The GRB provides the primary GOES-16 and GOES-17 relay of full resolution, calibrated, near-real-time direct broadcast Level 1b data from each instrument and Level 2 data from the Geostationary Lightning Mapper (GLM). <https://www.noaasis.noaa.gov/GOES/GRB/grb.html>



Data Collection:

- NOAA satellites are used to collect and relay scientific data from around the globe. <http://www.noaasis.noaa.gov/DCS/> <http://www.noaasis.noaa.gov/ARGOS/>



Search and Rescue Satellite Aid Tracking (SARSAT):

- NOAA satellites are used to relay distress alerts from aviators, mariners and land-based users (<http://www.sarsat.noaa.gov/>



Geonetcast Americas:

- Data from NOAA for diverse societal benefits - agriculture, energy, health, climate, weather, disaster mitigation, biodiversity, water resources, and ecosystems. <http://www.geonetcastamericas.noaa.gov/index.html>



GEO Status




Geostationary Operational Environmental Satellite (GOES-NOP) Performance Status – August 2023

<i>Payload Instrument</i>	EWS-G1 (GOES-IO) Launch: May 06 Activation: Apr 10	GOES-14 (Storage) Launch: Jun 09 Activation:	EWS-G2 (Storage) Launch: Mar 10 Activation: Dec 11
Imager	G	B	B
Sounder	R	B	Y/B
Energetic Particle Sensor (EPS)	B	B	Y/B
Magnetometers	G	G	G
High Energy Proton and Alpha Detector (HEPAD)	B	B	B
X-Ray Sensor (XRS)	B	B	B
Solar X-Ray Imager (SXI)	B	B	B
<i>Spacecraft Subsystems</i>			
Telemetry, Command & Control	G	G	G
Attitude and Orbit Control	G	G	G
Fuel for Inclination Control	G	G	G
Propulsion	G	G	G
Mechanisms	G	G	G
Electrical Power	G	G	G
Thermal Control	G	G	G
Communications Payloads	G	B	B

Key
Operational G
Functional (Off) B
Operational with limitations Y
Non-operational R
Spacecraft Issue but No User Impact S/C

Geostationary Operational Environmental Satellite (GOES-RSTU) Performance Status – August 2023

	GOES-16 (EAST) Launch: Nov '16 Activation: Dec '17	GOES-17 (BACKUP) Launch: Mar '18 Activation: Mar '19	GOES-18 (WEST) Launch: Mar '21 Activation: Jan '23
<i>Payload Instrument</i>			
Advanced Baseline Imager (ABI)	G	Y	G
Space Environment I-Situ Suite (SEISS)	G	G	G
Solar Ultraviolet Imager (SUVI)	G	G	G
EUV and X-ray Irradiance Sensors (EXIS)	G	G	G
Magnetometer	Y	G	G
Geostationary Lightning Mapper (GLM)	G	G	G
<i>Spacecraft Subsystems</i>			
Command Data & Handling (CD&H)	G	G	G
Guidance Navigation Control (GNC)	G	G	G
Electrical Power Subsystem (EPS)	G	G	G
Propulsion	Y	G	G
Mechanisms	G	G	G
Electrical Power	G	G	G
Thermal Control	G	G	G
Communications Payloads	G	G	G

Key
Operational  G
Operational with limitations  Y
Non-operational  R



NOAA Geostationary Satellite Programs Continuity of Weather Observations

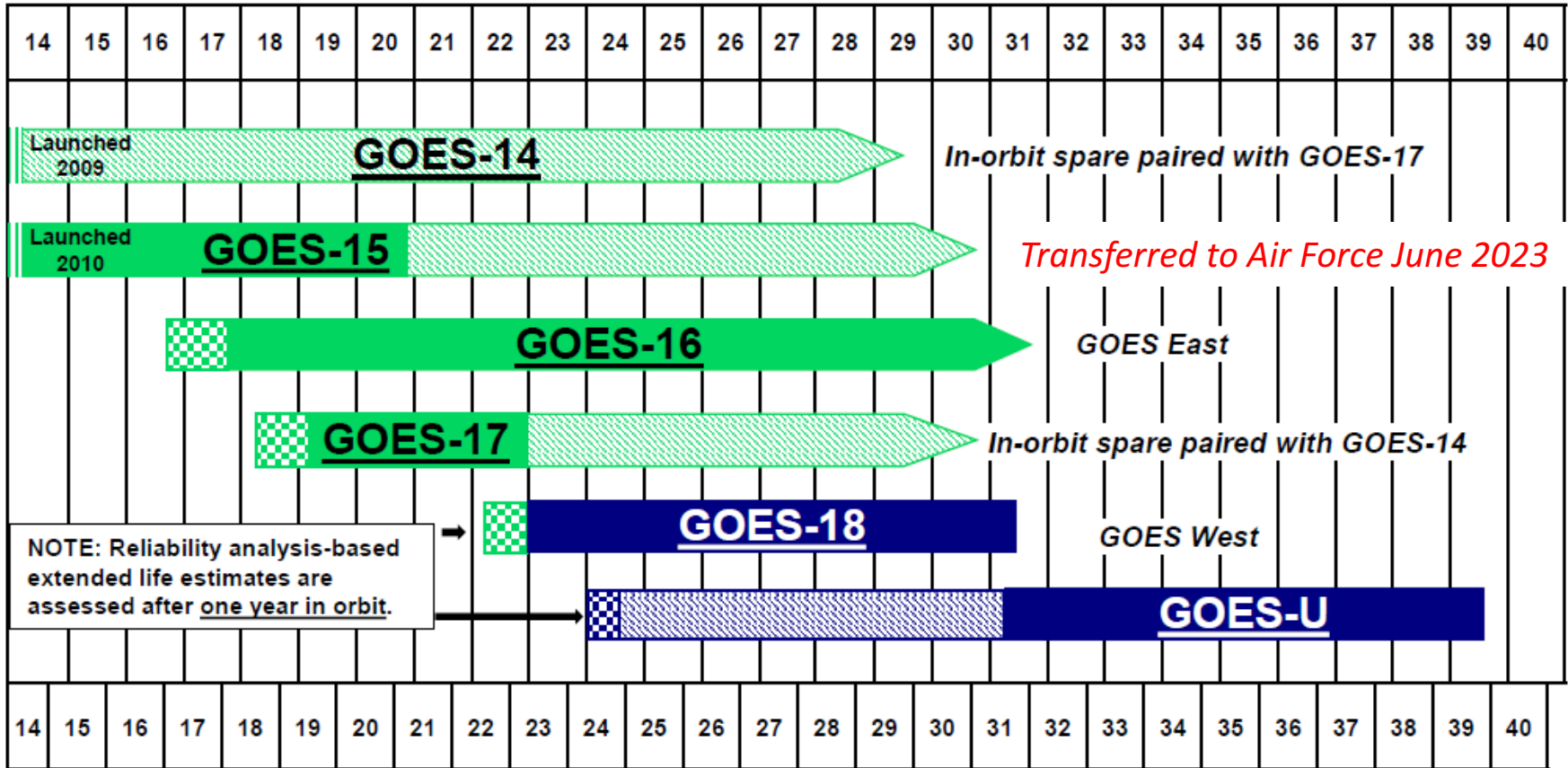


Scenario: GOES-16 is primary until end of life; GOES-U (-19) is in-orbit spare in East

Calendar Year

Click a satellite's name for the current status.

As of January 2023



NOTE: Reliability analysis-based extended life estimates are assessed after one year in orbit.

Key

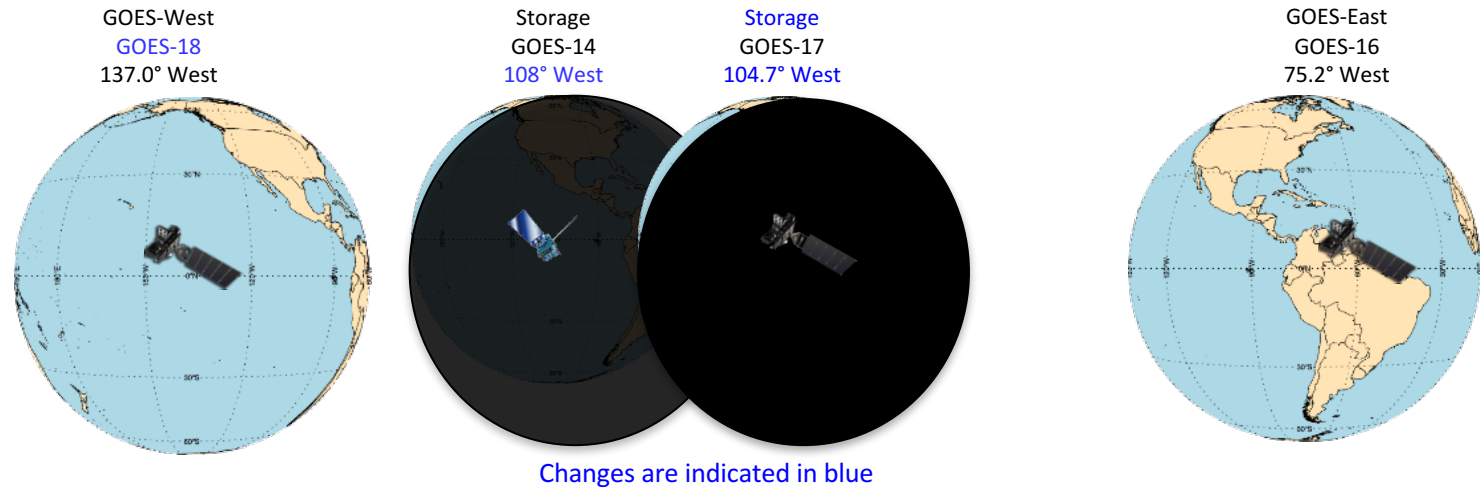
- In-orbit and operational
- In-orbit storage
- In-orbit checkout
- Planned mission life
- Planned in-orbit storage
- Planned in-orbit checkout

Approved: VOLZ.STEPHEN.MICHAEL.1504223694
 Digitally signed by VOLZ.STEPHEN.MICHAEL.1504223694
 Date: 2023.01.24.15:50:19 -05'00'

Assistant Administrator for
Satellite and Information Services

Operational satellite extended life estimates (indicated by an arrow) are based on July 2022 reliability analyses (60% confidence) for satellites in orbit for at least one year. GOES: Geostationary Operational Environmental Satellites

GOES Constellation



- GOES-15 has been transferred over to U.S. Space Force and is drifting to new location over Indian Ocean
- GOES-17 & GOES-14 are now in Storage/Standby, and are ready to provide backup capabilities in the event of a GOES-East or GOES-West anomaly

M. Seybold, D. Pogorzala

GOES- R Series Data Access

Acronym	System Name
GRB	GOES Rebroadcast
HRIT/ EMWIN	High Rate Information Transmission/ Emergency Managers Weather Information Network
PDA	Product Distribution and Access
CLASS	Comprehensive Large Array-data Stewardship System
GNC-A	GEONETCast Americas
Websites	Websites on the Internet
NODD	NOAA Open Data Dissemination
SBN/NOAAPort	NWS Satellite Broadcast Network

GOES-18 L1b Science Product Validation Status

ABI L1b Product	Beta	Provisional	Full
Radiances	5/11/2022	7/28/2022	FY23 Q4
GLM L2 Product			
Lightning: Events, Groups, Flashes	9/16/2022	10/31/2022	FY24 Q1
SEISS L1b Products			
Energetic Heavy Ions	8/1/2022	11/15/2022	FY23
Magnetospheric e ⁻ /p ⁺ : Low Energy	8/1/2022	11/29/2022	FY23
Magnetospheric e ⁻ /p ⁺ : High Energy	8/1/2022	10/11/2022	FY23
Solar & Galactic Protons	8/1/2022	9/13/2022	FY23
EXIS L1b Products			
Solar Flux: EUV	7/18/2022	11/17/2022	FY23
Solar Flux: X-ray Irradiance	7/18/2022	11/17/2022	FY23
SUVI L1b Product			
Solar EUV Imagery	8/1/2022	11/22/2022	FY23
GMAG L1b Product			
Geomagnetic Field	7/11/2022	9/16/2022	FY23

Validation Maturity Levels:

Not Validated	Beta Maturity	Provisional Maturity	Full Maturity
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Ver: 11/29/22 E. Kline

GOES-18 L2+ Science Product Validation Status

L2+ Products	Beta	Prov	Full
Cloud and Moisture Imagery (CMI) and Sectorized CMI (KPP)	5/11/2022	7/28/2022	FY23
Aerosol Detection (Smoke & Dust)	5/11/2022	11/9/2022	
Aerosol Optical Depth	5/11/2022	11/9/2022	
Clear Sky Mask ^E	5/11/2022	9/28/2022	
Cloud Cover Layers ^E	5/11/2022	5/16/2023	
Cloud Optical Depth ^E	5/11/2022	11/21/2022	
Cloud Particle Size Distribution ^E	5/11/2022	11/21/2022	
Cloud Top Height ^E	5/11/2022	9/28/2022	
Cloud Top Phase* ^E	5/11/2022	9/28/2022	
Cloud Top Pressure ^E	5/11/2022	9/28/2022	
Cloud Top Temperature ^E	5/11/2022	9/28/2022	
Derived Motion Winds	5/11/2022	9/28/2022	
Derived Stability Indices	5/11/2022	9/12/2022	
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 ^E	5/11/2022	12/29/2022	
Ice Concentration & Extent ^E	5/11/2022	12/29/2022	
Ice Motion	N/A	FY24Q1	
Land Surface Albedo ^E	5/11/2022	11/9/2022	
Land Surface Reflectance ^E	5/11/2022	11/9/2022	
Land Surface Temperature ^E	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	11/9/2022	
Reflected S/W Radiation: TOA	5/11/2022	11/9/2022	
Sea Surface Temperature	5/11/2022	11/21/2022	
Snow Cover ^E	N/A	12/9/2022	
Total Precipitable Water	5/11/2022	10/12/2022	

Validation Maturity Levels:

Not Validated	Beta Maturity	Provisional Maturity	Full Maturity
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6/8/23 E. Kline

12/29/22

^E These products are generated using an Enterprise Algorithm.

* Previously discovered issue that caused an over-categorization of water clouds as ice clouds in the GOES-18 Cloud Top Phase product has been resolved as of 5/31/23

Documentation of Product Status

A comprehensive listing of data quality assessments for GOES-16/17/18 ABI L2 products:

https://www.noaasis.noaa.gov/GOES/product_quality.html



The screenshot shows the NOAA Satellite Information System website. The header includes the NOAA logo and the text "NOAA SATELLITE INFORMATION SYSTEM NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE". The navigation bar contains links for HOME, GOES, POLAR, GNC-A, SARSAT, and ADDITIONAL INFO. A sidebar on the left lists various product categories, with "Product Quality" expanded to show "Product Quality Overview", "GOES-16 PS-PVRs", and "GOES-17 PS-PVRs". The main content area is titled "Product Quality Overview" and contains two paragraphs of text and a bulleted list of entities involved in calibration and product validation.

Product Quality Overview

Product Quality determination across all science products on GOES-R series satellites is overseen by a cross-collaborative group as part of the calibration/validation (cal/val) coordination team (CVCT). Instrument cal/val as well as Level-1b (L1b) and Level 2+ (L2+) product validations are essential to GOES-R series mission success. Pre-launch verification determines that an instrument system, subsystem or component is functioning within requirements. Calibration and characterization continue after launch as a means to maintain quality of the GOES-R L1b and L2+ data products. Validation is the process of determining that the deliverable item satisfies its intended use in its intended environment. Most all GOES-R instrument, L1b, and L2+ product validation is fully realized after launch with actual earth observations.

There are many entities involved in calibration and product validation. Overall, the Ground Segment Project (GSP) is responsible for executing L1b and L2+ product science validation. Within the GSP, the Product Readiness and Operations (PRO) team coordinates the CVCT. The CVCT is comprised of groups responsible for validation testing post-launch of the science products, including:

- The Calibration Working Group (CWG)
 - Scientists from Satellite Applications and Research (NOAA/NESDIS/STAR) and the National Centers for Environmental Information (NOAA/NESDIS/NCEI)

POES Status



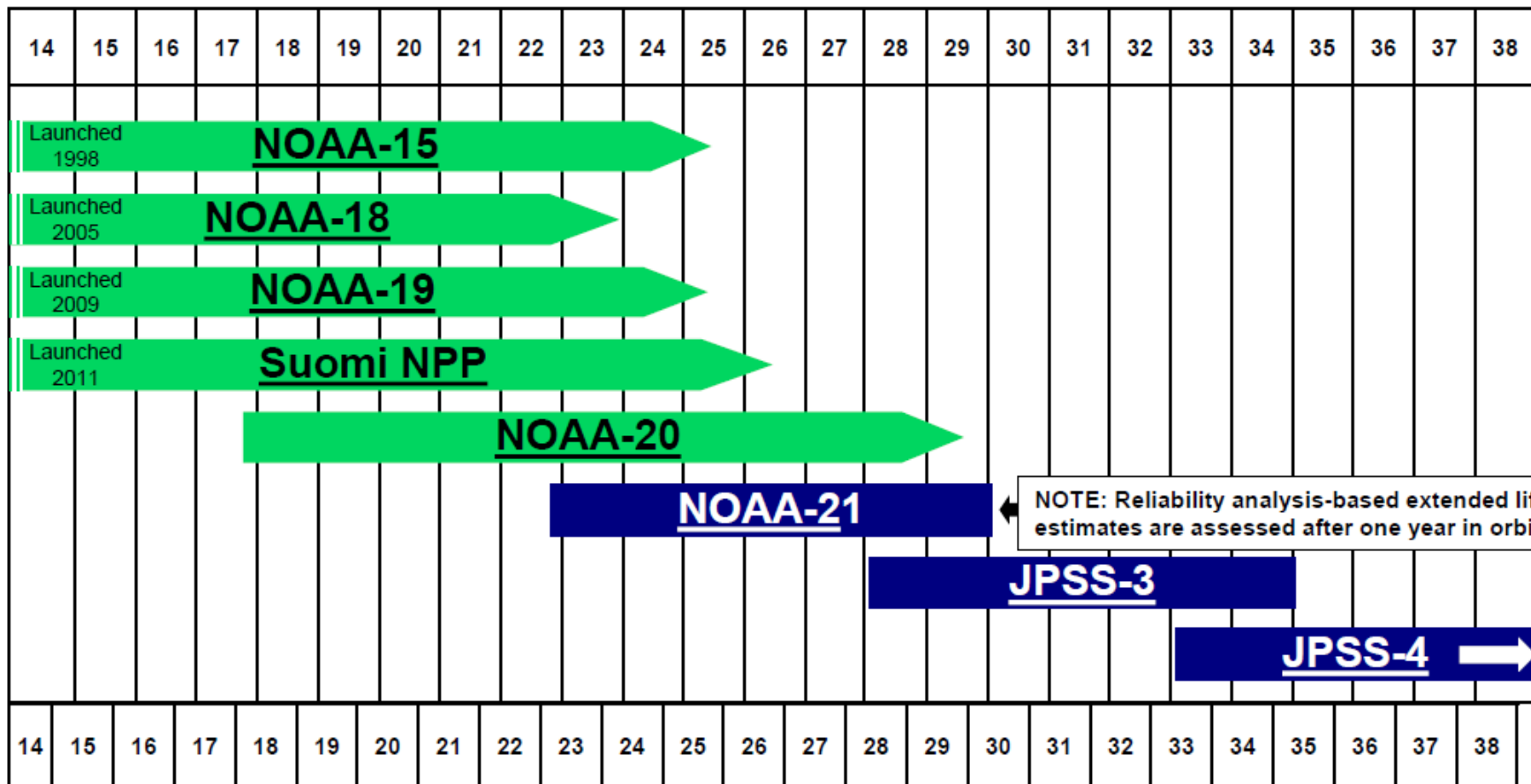
NOAA Polar Satellite Programs Continuity of Weather Observations



Calendar Year

Click a satellite's name for the current status.

As of January 2023



Fiscal Year

Key In-orbit and operational Planned mission life → Planned mission life beyond 2038

Approved:

VOLZ.STEPHEN.MICHAEL.1504223694
 Digitally signed by VOLZ.STEPHEN.MICHAEL.1504223694
 Date: 2023.01.24 15:50:51 -05'00'

Assistant Administrator for
Satellite and Information Services

Operational satellite extended life estimates (indicated by an arrow) are based on July 2022 reliability analyses (60% confidence) for satellites in orbit for at least one year.
 Suomi NPP: Suomi National Polar-orbiting Partnership; JPSS: Joint Polar Satellite System

Overall Mission Status | S-NPP

Spacecraft	S-NPP
Launch Date	Oct 28, 2011
Mission Category	LTAN 1325 (PM) (Secondary/Ops) +/- 10 mins (Secondary PM)

Payload Instruments	Status
ATMS	G
CERES	G
CrIS	Y
OMPS – Nadir	G
OMPS – Limb	G
VIIRS	G

Spacecraft Subsystem	Status
TLM, Command & Control	G
ADCS	G
EPS	G
Thermal Control	G
Communications	G
CDP	G
SCC	G
GPS	G
1553	G
1394	G

- Operational (or capable of)
- Operational with limitations (or in standby)
- Operational with degraded performance
- Not functional
- Functional but turned off
- No status reported



Additional Notes:

All instruments operating normally

- CrIS operating on side-1 electronics, Long-Wave recovered and at validated level of maturity (operational) as of July 13, 2020 but CrIS Mid-Wave digital signal processor is inop on side-1.
- Extensive monitoring of the S-NPP ATMS scan drive motor current loads and temperatures is ongoing, ATMS scan drive reversal occurs 2Xs per orbit
- Spacecraft and sub-systems are power positive and operating nominally
 - Middle solar panel inop, power positive on 2/3s of the solar array

Overall Mission Status | NOAA-20

Spacecraft	NOAA-20/JPSS-1
Launch Date	Nov 18, 2017
Mission Category	LTAN 1325 (PM) +/- 10 mins (Primary PM)

- Operational (or capable of)
- Operational with limitations (or in standby)
- Operational with degraded performance
- Not functional
- Functional but turned off
- No status reported

Payload Instruments	Status
ATMS	G
CERES	G
CrIS	G
OMPS – Nadir	G
OMPS – Limb	G
VIIRS	G

Spacecraft Subsystem	Status
TLM, Command & Control	G
ADCS	G
EPS	G
Thermal Control	G
Communications	G
CDP	G
SCC	G
GPS	G
1553	G
SpaceWire	G

Additional Notes:

All instruments operating nominally and are meeting/exceeding their established performance specifications.



Overall Mission Status | NOAA-21

Spacecraft	NOAA-21/JPSS-2
Launch Date	Nov 10, 2022
Mission Category	LTAN 1325 (PM) +/- 10 mins (Tertiary PM)

Payload Instruments	Status
ATMS	G
CrIS	G
OMPS – Nadir	G
OMPS – Limb	G
VIIRS	G

Spacecraft Subsystem	Status
TLM, Command & Control	G
ACS	G
EPS	G
Thermal Control	G
Communications	G
PIE (Payload Interface Electronics)	G
IEM (Integrated Electronics Module)/SC CPU	G
GPS	G
1553	G
SpaceWire	G

- Operational (or capable of)
- Operational with limitations (or in standby)
- Operational with degraded performance
- Not functional
- Functional but turned off
- No status reported

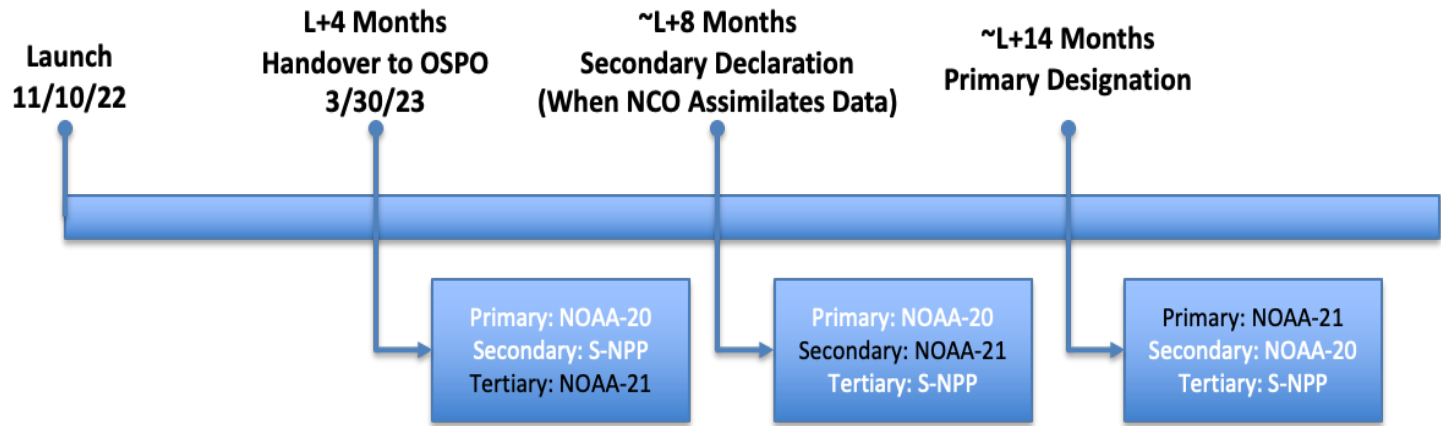


Additional Notes:

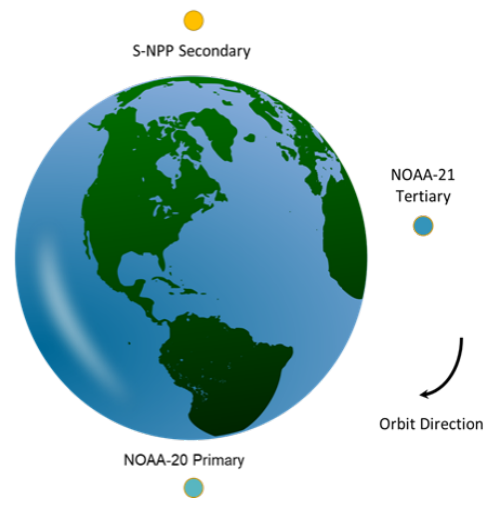
All instruments operating nominally and are meeting/exceeding their established performance specifications.

Primary SMD downlink performed by Ka-2 Transmitter; Ka-1 Transmitter considered inoperative. KaTX1 Failed December 5, 2022.

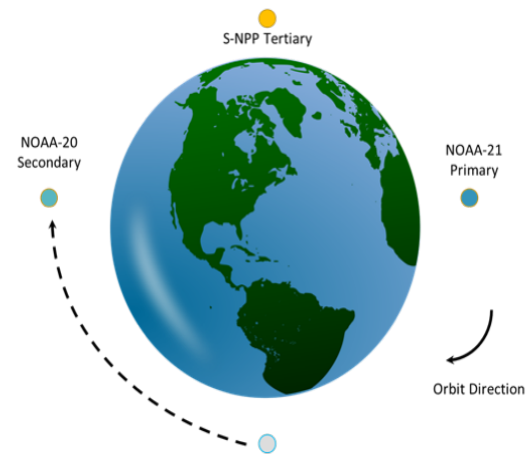
Notional NOAA-21 Schedule



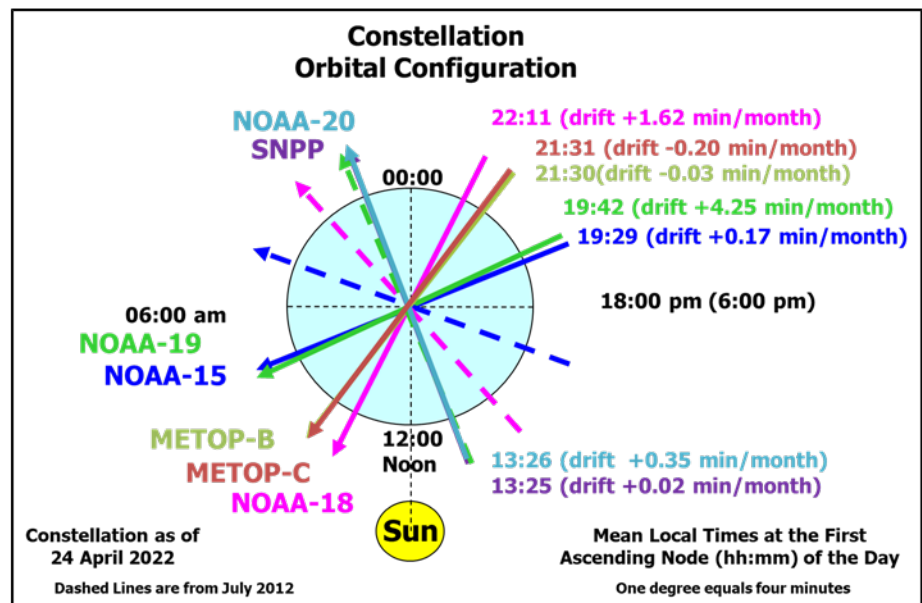
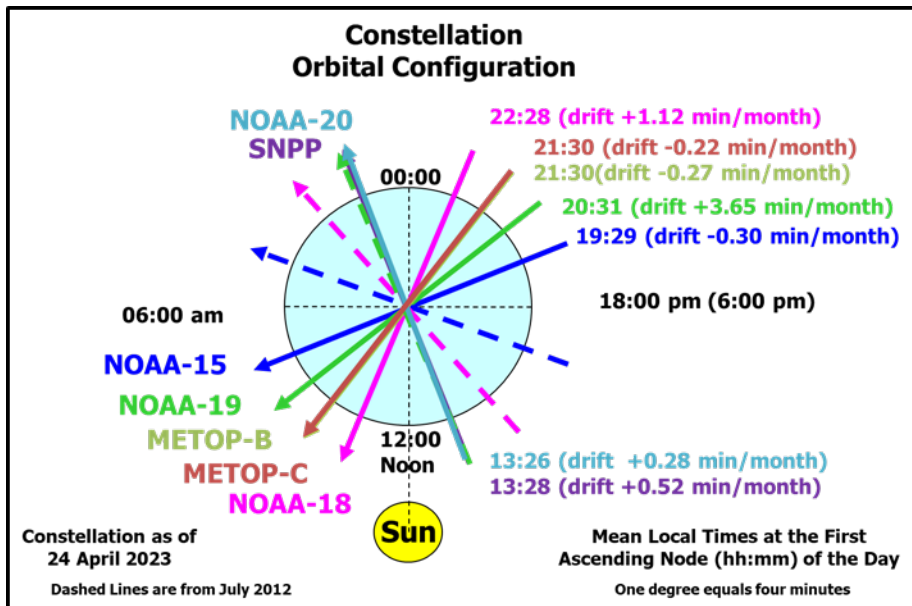
Operational Orbit Location (Launch to ~L+14 Months)



Operational Orbit Location (~L+14 Months to Post Primary Designation)



O'clock diagram IJPS OWG/FtF Meeting updates April of 2023 compared to April of 2022



April 2023 versus April 2022

Polar Operational Environmental Satellite (POES) Operational Status Aug 24, 2023

Spacecraft Subsystems	METOP-B	METOP-C	NOAA-19	NOAA-18	NOAA-15
Launch Date	Sept 2012	Nov 2018	Feb 2009	May 2005	May 1998
Operational Date	April 2013	April 2019	Jun 2009	Aug 2005	Dec 1998
Mission Data Category	Primary (AM)	Operational (AM)	Prime Services Mission (PM)	Secondary (PM)	Secondary (AM)
Payload Instruments					
AVHRR	G	G	G	G	Y
HIRS	R	N/A	Y	Y	Y
AMSU-A1	P	G	G	P	Y
AMSU-A2	G	G	G	G	G
AMSU-B	N/A	N/A	N/A	N/A	R
MHS	G	G	Y	R	N/A
SEM	G	G	G	G	G
SBUV	N/A	N/A	S/C	R	N/A
Spacecraft Subsystems					
Telemetry, Command & Control	G	G	G	G	G
ADACS	G	G	S/C	Y	Y
EPS	G	G	G	G	G
Thermal Control	G	G	G	G	Y
Communications	G	G	G	G	Y
APT/LRPT	R	R	G	G	G
DCS	N/A	N/A	N/A	G	G
ADCS	Y	G	G	N/A	N/A
SAR	Y	N/A	G	G	Y

Operational	G
Spacecraft Issue but no User Impact	S/C
Possible Impact to Products	P
Operational with Limitation	Y
Non-Operational	R
Not Applicable	N/A

Defense Meteorological Satellite Program (DMSP) Performance (August 2023)

Slide Provided
By USSF 19th
OL-A

Slide Provided
By USSF 19th
OL-A

Spacecraft Subsystem Status Change**

Flight Number	F-16		F-17		F-18	
Operations Number	54		51		53	
LTAN (+/- 5 Mins)	1720		1826		1559	
Launch Date	10/18/2003		11/4/2006		10/18/2009	
Spacecraft Subsystems [Bus]						
Command & Control						
Power						
Attitude Control						
Communications						
Primary sensors & recorders						
Visible/IR Imager (OLS)						
Individual Recorder Status	1*	2*	1*	2*	1*	2*
	3*	4*	3*	4*	3*	4*
Microwave Imager/Sounder						
Spacecraft transmitters						
Transmitter Status	DDT	PDT1	DDT	PDT1	DDT	PDT1
		PDT2		PDT2		PDT2
	EDT1	EDT2	EDT1	EDT2	EDT1	EDT2
Secondary sensors						
Magnetometer (SSM)						
Ionosphere (SSI-ES2/-ES3)						
Electron/Proton (SSJ4/SSJ5)						
UV Limb Imager (SSULI)						
UV Spectrographic Imager (SSUSI)						

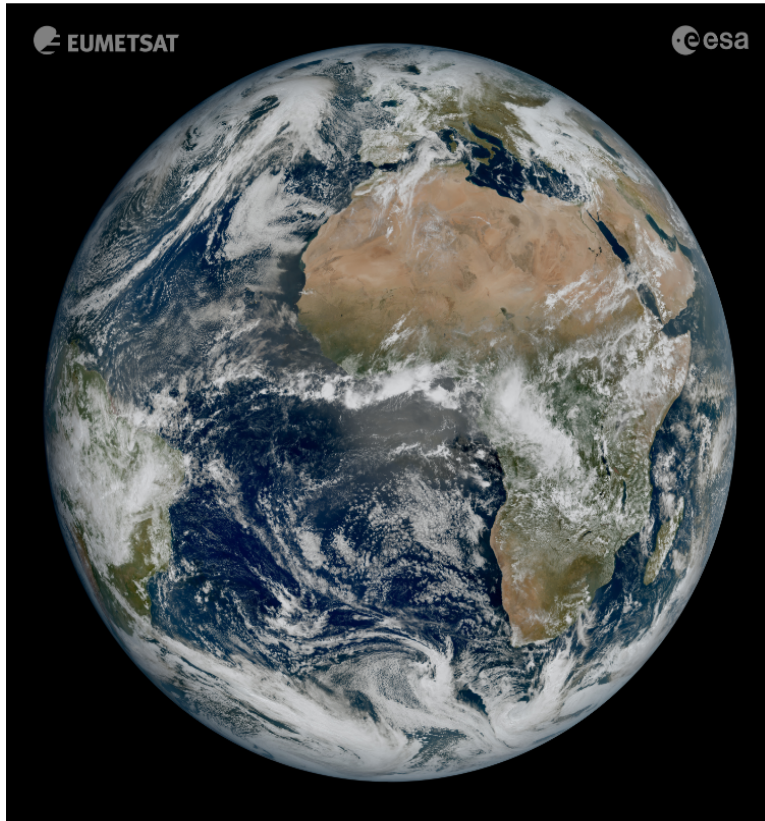
	Fully Mission Capable
	Capable
	Not Mission Capable

POES Extended Life Mission

- In 2022, NOAA selected a team led by Parsons Corporation (NYSE: PSN) to provide engineering services, information technology functionality, and flight operations support to assume on-orbit operations for the Polar Operational Environmental Satellites (POES) NOAA-15, NOAA-18, and NOAA-19.
- Transfer of operations for NOAA-18 took place in September 2023; NOAA-15 and -19 will follow soon
- Parsons will perform C3 functions via a Cloud Ground Station as a Service environment with subsidiary KSatLite for the remainder of the POES Extended Mission (through at least FY25)
- Data will remain accessible to NOAA and NCEP models, with reduced reliability criteria

Meteosat and Himawari

Meteosat Program Updates



First image of the full Earth disc from Meteosat Third Generation – Imager 1 (MTG-I1). The image was captured at 11:50 UTC on 18 March 2023 by the Flexible Combined Imager (FCI) on MTG-I1.

Current Meteosat Constellation

SATELLITE	LIFETIME	POSITION	SERVICES
Meteosat-11	15/07/2015 – Fuel lifetime is until 2033	9.5°E	Rapid Scan Service. Real-time Imagery.
Meteosat-10	05/07/2012– Fuel lifetime is until 2030	0°	0° SEVIRI Image Data. Real-time Imagery.
Meteosat-9	28/08/2002 – Fuel lifetime is until 2022	45.5° E	Primary IODC service started 6/1/22.
MTG-I1	Launched 12/13/2022	0°	Will replace Meteosat-10 at 0° around February 2024.

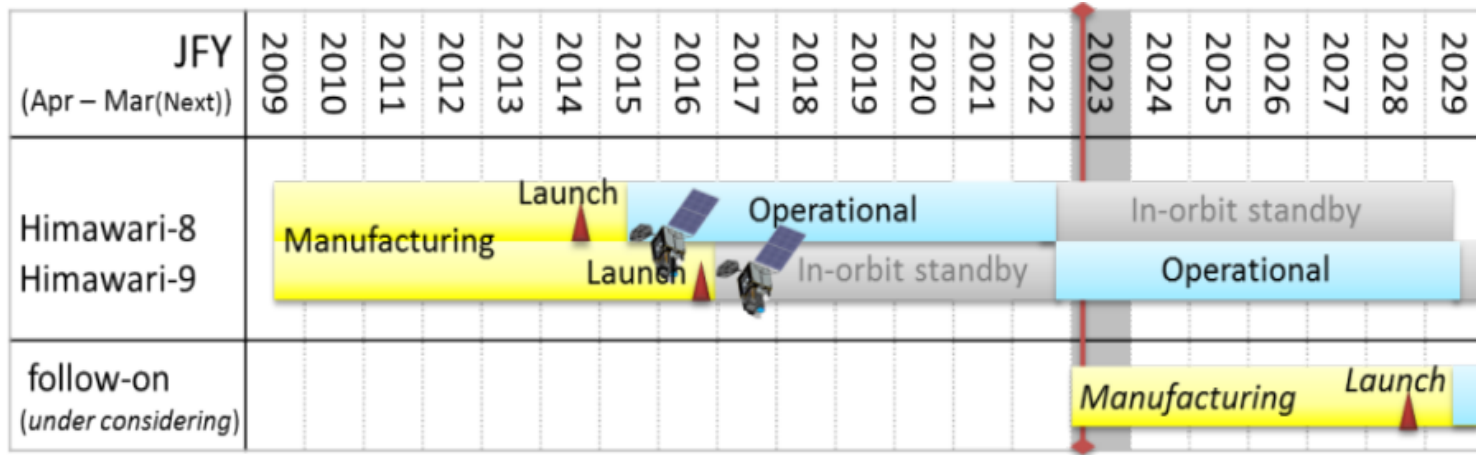
Primary Imaging Operations

Meteosat Configuration Plans

- The relocation of Meteosat-10 to 0° and Meteosat-11 to 9.5°E occurred March 21, 2023.
 - After the swap, Meteosat-11 will began support of Rapid Scanning Service (RSS) at 9.5°E. Meteosat-10 began support of Full Disc Scan Service (FDSS) at 0°.
 - Products and subscriptions were toggled to use the MET-10 imagery.
- MTG-I1 launched December 13, 2022 from French Guiana.
- MTG-I1 will be assigned to Full Disk Scan Service (FDSS) when starting Prime operations at 0° ~ February 2024.
 - There will be a 6-12 month overlap between MET-10 and MTG-I1 at this location prior to MTG-I1 becoming the primary operational satellite at this location/for this service.
- First images were captured in March 2023 and released May 4, 2023
- NOAA's data policy should be largely the same between MSG and MTG

Himawari-8/9/10 Constellation Plans

- Himawari-9 is operational at 140.7E.
- Himawari-8 was placed in standby mode on December 13, 2022. It remains at or near 140.7E.
- Lingering Level-2 H-9 products are partially operational.
 - L2 Cloud and Wind products went operational in the NCCF on June 13, 2023 and are available for subscription in the PDA.
 - L2 Rainrate and SST products are scheduled to be worked late summer through early fall. It is likely that products will not be operational until late Fall 2023.
- Work is progressing on Himawari-10 with the contractor selections completed and announced. It is still slated to launch in 2028 and take over operations from H-9 in 2029.



Revamped OSPO Imagery Webpage for Himawari

- The OSPO Imagery webpage has been revamped. It is now organized by satellite type (Geostationary, Polar, etc.)
- Within each imagery type, imagery is organized by satellite mission for easy access.
- Southern Hemisphere and Guam/Pacific Island sectors remain the same, just cleanly organized and migrated to the new OSPO page (off of the goes.noaa.gov domain)
- The original goes.noaa.gov page with the sectors will remain active for a few months as users transition - a warning banner will direct users to the new location.

Office of Satellite And Product Operations

Organization Services Products Operations

Guam Sectors

Regional Sectors

- Infrared**
Loop
- Visible**
Loop
- Water Vapor**
Loop
- Enhanced Infrared**
Loop

Individual Sectors

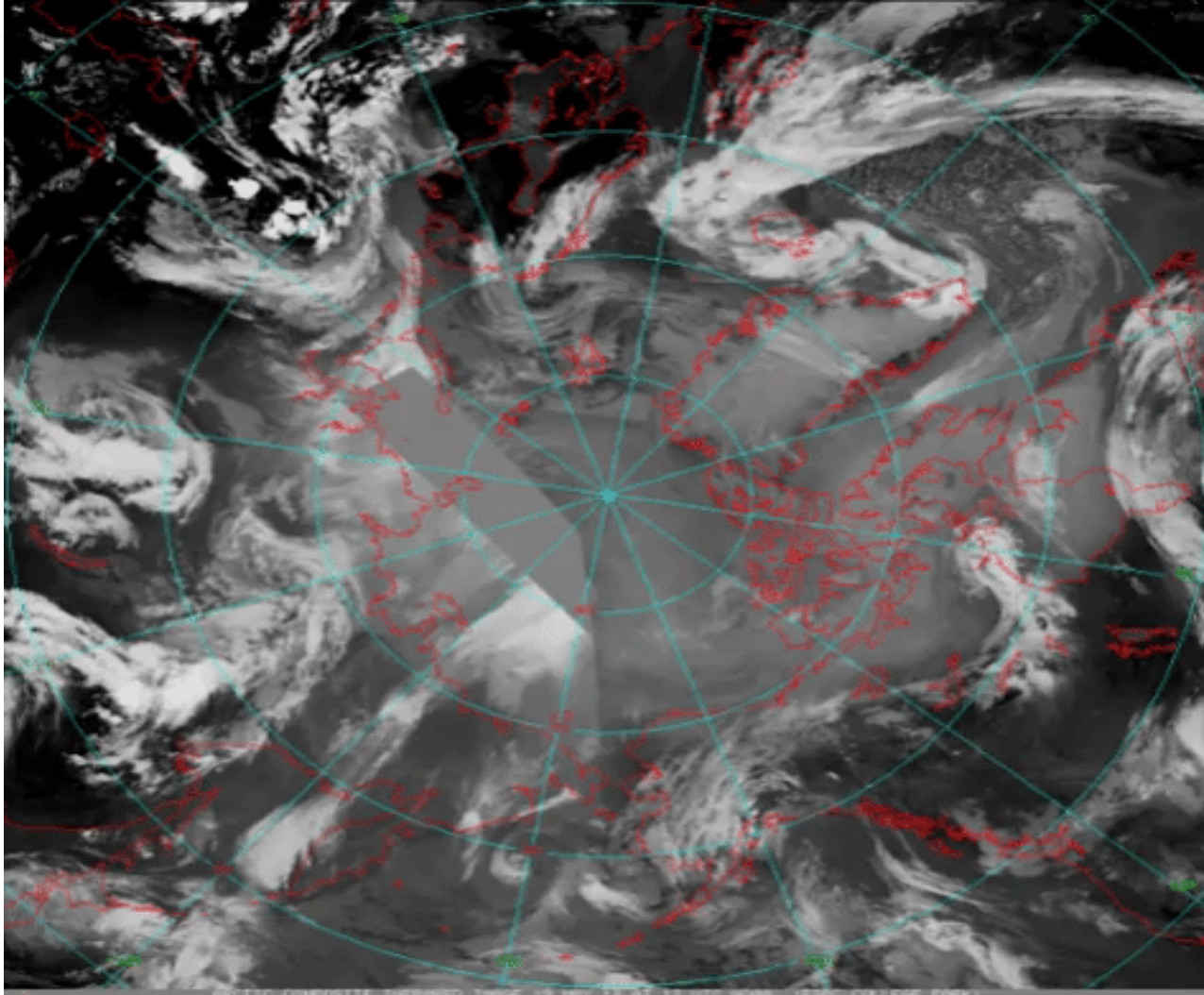
McIDAS at ESPC

NOAA Usage of McIDAS to Decline

1. Cloud Migration

- NESDIS is currently in a multi-year project to migrate almost all production from in-house hardware to the AWS (Amazon) cloud
- Many (most?) existing apps being rewritten as Enterprise Algorithms
- Directly ingesting satellite data

Arctic Composite Imagery



Precipitation Products Updates

Enterprise Satellite Rainfall Rate Estimates

Operation status:

1. Enterprise Satellite Rainfall Rate Estimates (RR) will be installed on NCCF on 09/2023.

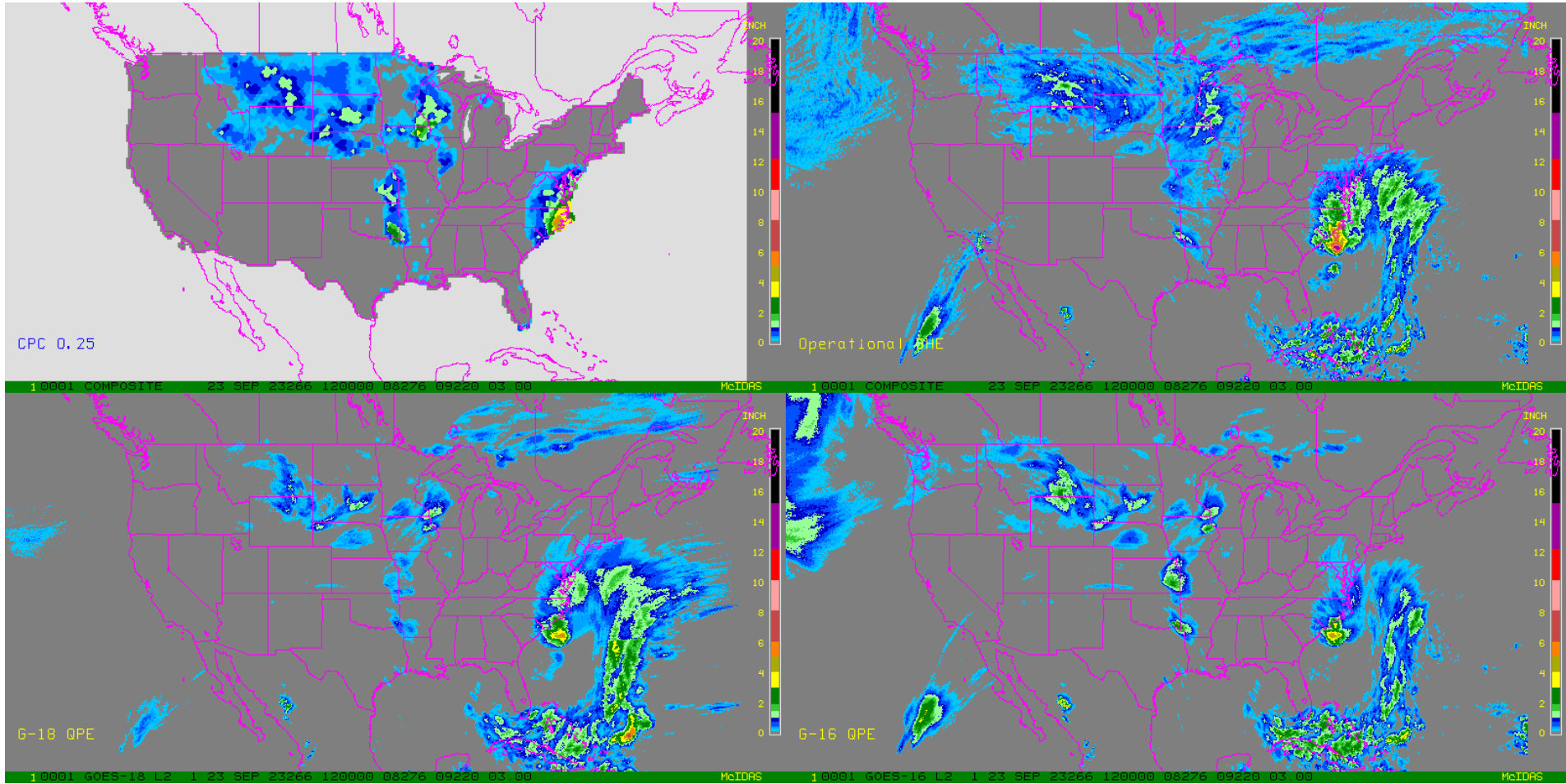
EN RR is the new version of GHE.

EN RR will be only generating global netcdf products.

No CONUS GRIB2 file will be generated from EN RR!!!!

2. Legacy GHE products will be retired ~~30 days~~ **6-12 months** after EN RR is transitioned into operation on NCCF. (Part of cooperative agreement with WMO)

GHE Validation



NOAA Usage of McIDAS to Decline

2. SAB Tropical Desk Divestiture

- NOAA is seeking NWS approval to terminate the SAB tropical program. NWS HQ will approve when NWS or its international counterparts, or a combination, are performing the functions currently done by the SAB tropical program.
- Progress has been slow and no NWS HQ approved plan currently exists.
- SAB has been a key user of McIDAS products, but has also been affected by the cloud migration and are leaning into AWIPS

looprgb.sh script for SAB

```
McIDAS-X 2018.1beta1: cdavenpo@grsn02.espc.nesdis.noaa.gov
!looprgb.sh
shell script to display pre-made RGB loops; components
for G16/ASHF are stored in G16/ASHFR, ASHFG, and ASHFB

example:
!looprgb.sh RGB=G16/ASHF LOOP=1 10
MAG=3 STA=DCA LAT=35 95 DAY=18218 TIME=20:11:24

RGB=G16/ASHF          name of RGB file
LOOP=1 10 or FRAME=1 10  set start and end frame
MAG=3                  magnification, like IMGDISP
STA=DCA                station id at center
LAT=35 95              set LAT/LON at center
DAY=18218              date of last image in loop
TIME=20:11:24          time of last image in loop (def=latest)

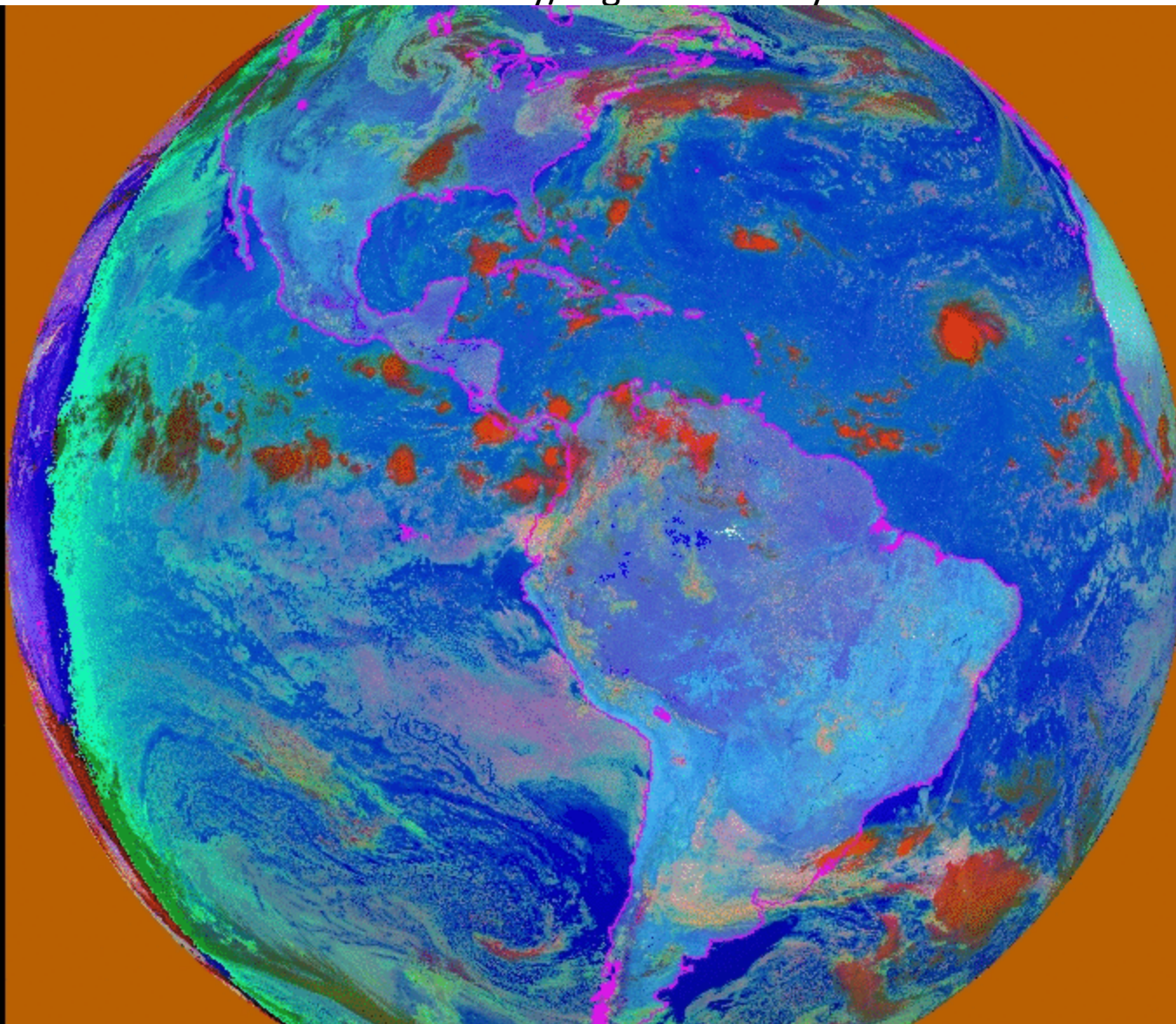
LIST G16                show available components in given group

Key words can be given in upper or lower case
  IMA  GRA  Bounds  Switches          Date          Time          T
    1   1   1-10                24 Sep 2023267  20:01:07  0
```

RGBs in SAB

- Background script continuously builds/saves RGB components for fast loading
- 17 RGBs being made full-time in FDSK
 - Volcano: PAVA, PAVB, ASH, SO2
 - Weather: DTMP, NTMP, AIRMAS, SEVST, DNMP
 - Imagery: TRUE, NATCOL, SNOW
 - Air quality: SMOKE, DUST
 - Fire: DayFire7, DLCFIRE, FireT
- 8 in CONUS
 - PAVA, ASH, SMOKE, TRUE, DTMP, NTMP, DNMP, FireT

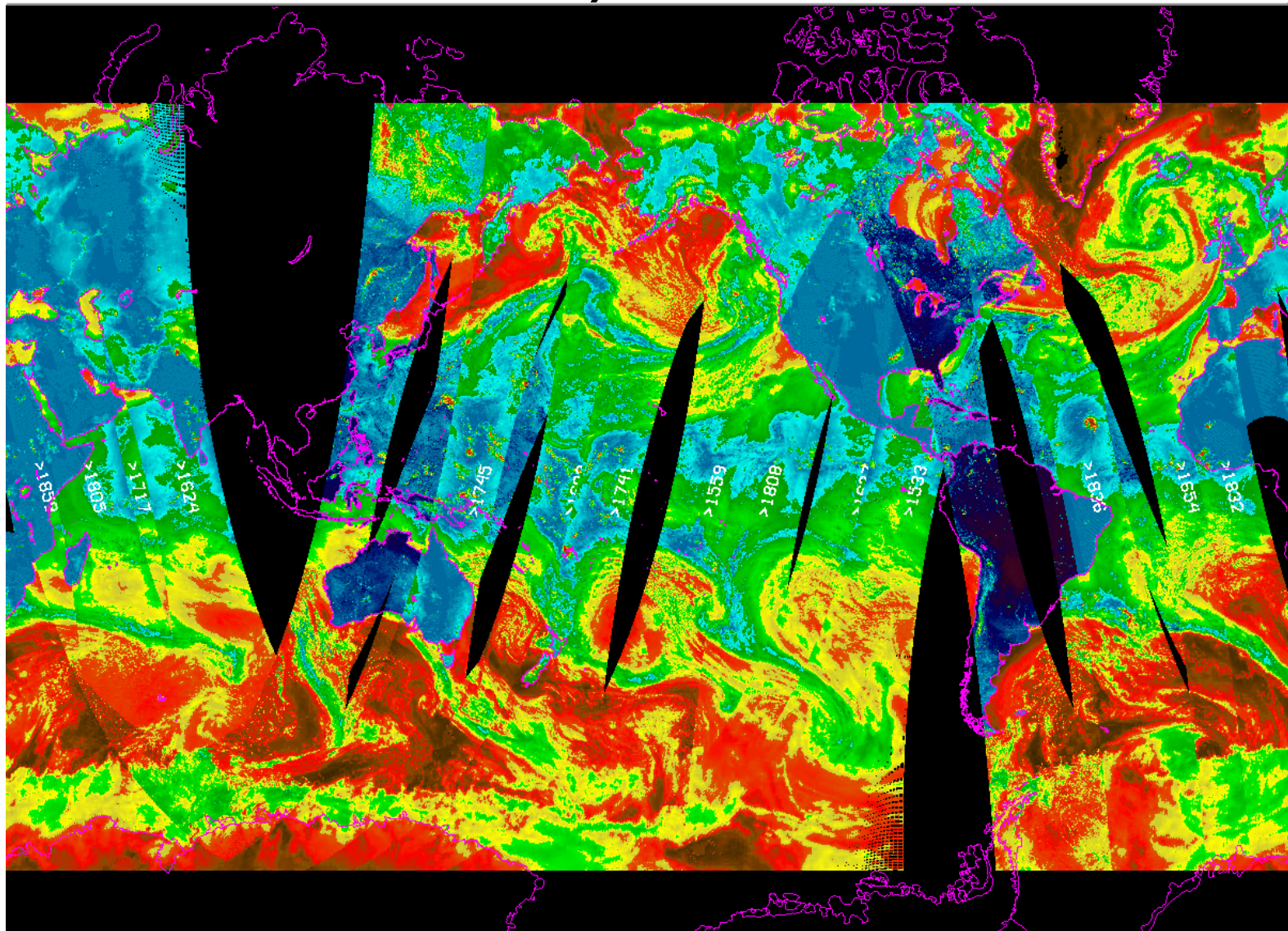
Combined Day/Night MicroPhysics



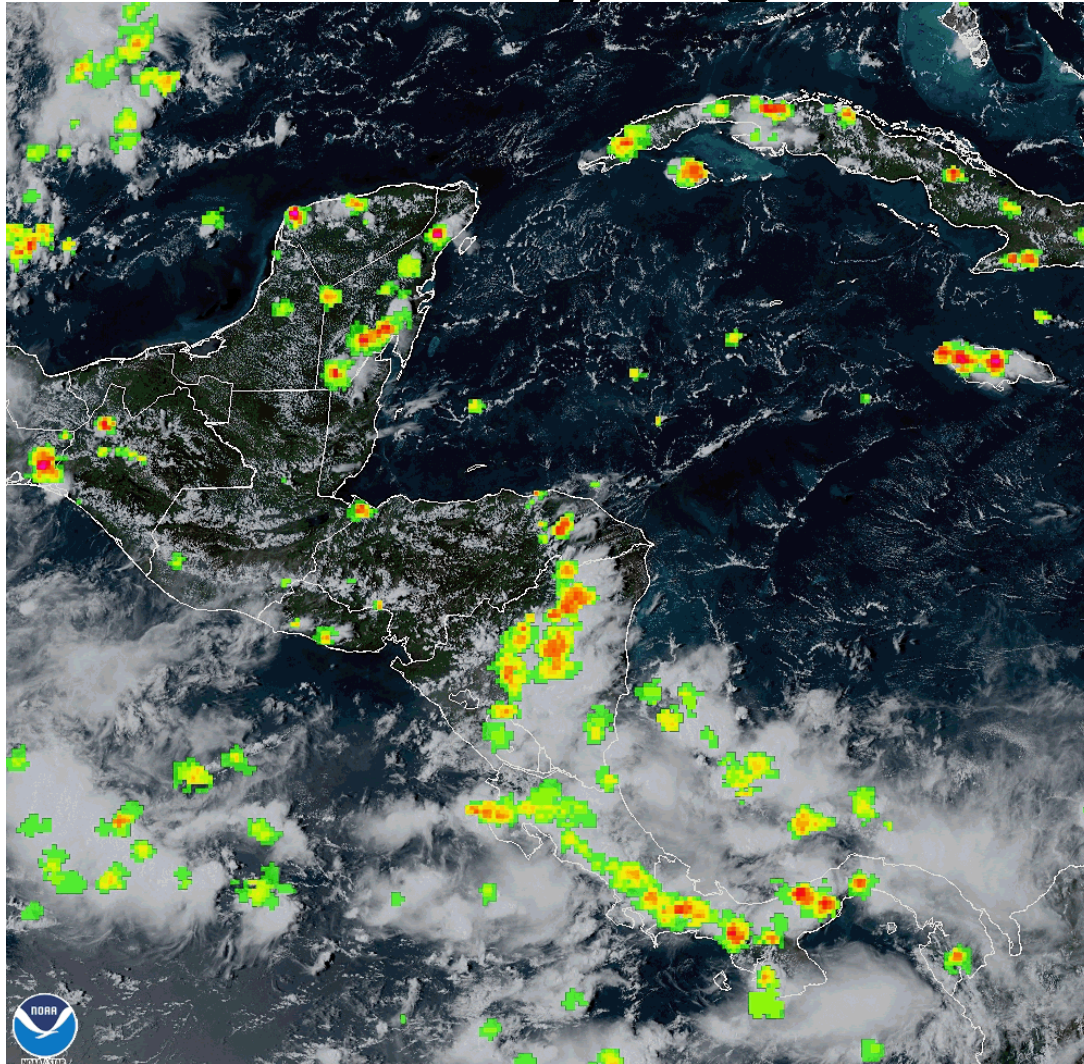
1 0001 G-16 IMG 1 24 SEP 23267 151020 01281 32.00

McIDAS

3-hour 89GHz Composite 20 orbits, 10 satellites!



NOAA/STAR GLM Overlay, log scaled



17 Sep 2023 19:56 NOAA/NESDIS/STAR GOES-East GLM FED over ABI 19:50 Geocolor

NOAA Open Data Dissemination

- Formerly Big Data, AWS Open Source Directory for many NOAA products

Registry of Open Data on AWS



Explore the catalog [↗](#)

The Registry of Open Data on AWS is now available on AWS Data Exchange

All datasets on the Registry of Open Data are now discoverable on AWS Data Exchange alongside 3,000+ existing data products from category-leading data providers across industries. Explore the catalog to find open, free, and commercial data sets. [Learn more about AWS Data Exchange](#)

NOAA Open Data Dissemination Program



Amazon Web Services has entered into a [research agreement](#) with the US National Oceanic and Atmospheric Administration (NOAA) to explore sustainable models to increase the output of open NOAA data. Publicly available NOAA data drives multi-billion dollar industries and critical research efforts. Under this agreement, AWS and its collaborators will look at ways to push more NOAA data to the cloud and build an ecosystem of innovation around it.

Search datasets (currently 48 matching datasets)

Add to this registry

If you want to add a dataset or example of how to use a dataset to this registry, please follow the instructions on the [Registry of Open Data on AWS GitHub repository](#).

Unless specifically stated in the applicable dataset documentation, datasets available through the Registry of Open Data on AWS are not provided and maintained by AWS. Datasets are provided and maintained by a variety of third parties under a variety of licenses. Please check dataset licenses and related documentation to determine if a dataset may be used for your

NOAA Geostationary Operational Environmental Satellites (GOES) 16, 17 & 18

[agriculture](#) [disaster response](#) [earth observation](#) [geospatial](#) [meteorological](#) [satellite imagery](#)
[weather](#)

NOTICE: As of January 10th 2023, GOES-18 assumed the GOES-West position and all data files are deemed both operational and provisional, so no 'preliminary, non-operational' caveat is needed. GOES-17 is now offline, shifted approximately 105 degree West, where it will be in on-orbit storage. GOES-17 data will no longer flow into the GOES-17 bucket. Operational GOES-West products can be found in the GOES-18 bucket.

NEW GOES-18 Data!!! GOES-18 is now provisional and data has begun streaming. Data files will be available between Provisional and the Operational Declaration of the satellite, however, data will have the caveat GOES-18 Preliminary, Non-Operational Data. The exception is during the interleave period when ABI Radiances and Cloud and Moisture Imagery data will be shared operationally via the NOAA Open Data Dissemination Program.

GOES satellites (GOES-16, GOES-17, & GOES-18) provide continuous weather imagery and monitoring of meteorological and space environment data across North America. GOES satelli

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[Details](#) →

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ESPC Notifications, Status, and Contacts

Information	Web Link/Email Address
ESPC Messages	http://www.ospo.noaa.gov/Operations/messages.html
24/7 Help Desk	ESPCOperations@noaa.gov
User Services	SPSD.UserServices@noaa.gov
Data Access	NESDIS.Data.Access@noaa.gov
Webmaster	SSDWebmaster@noaa.gov
Facebook	https://www.facebook.com/NOAASatellites/
Twitter	www.twitter.com/noaasatellites
Satellite Ops Status	https://www.ospo.noaa.gov/Operations/satellite_operations.html
Press releases	https://www.nesdis.noaa.gov/press
NOAA Open Data	https://registry.opendata.aws/collab/noaa/
Web	www.ospo.noaa.gov

Thank you!

Thank you!

Questions?