NOAA's Newest Generation of Geostationary Weather Satellites

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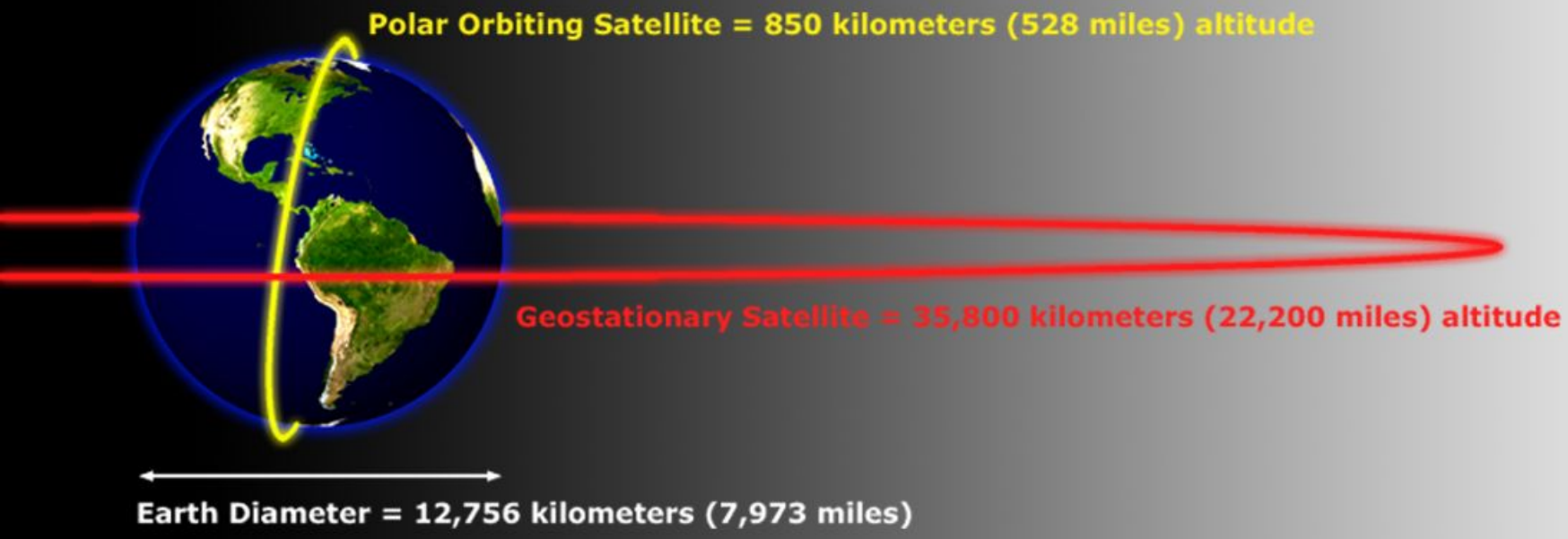
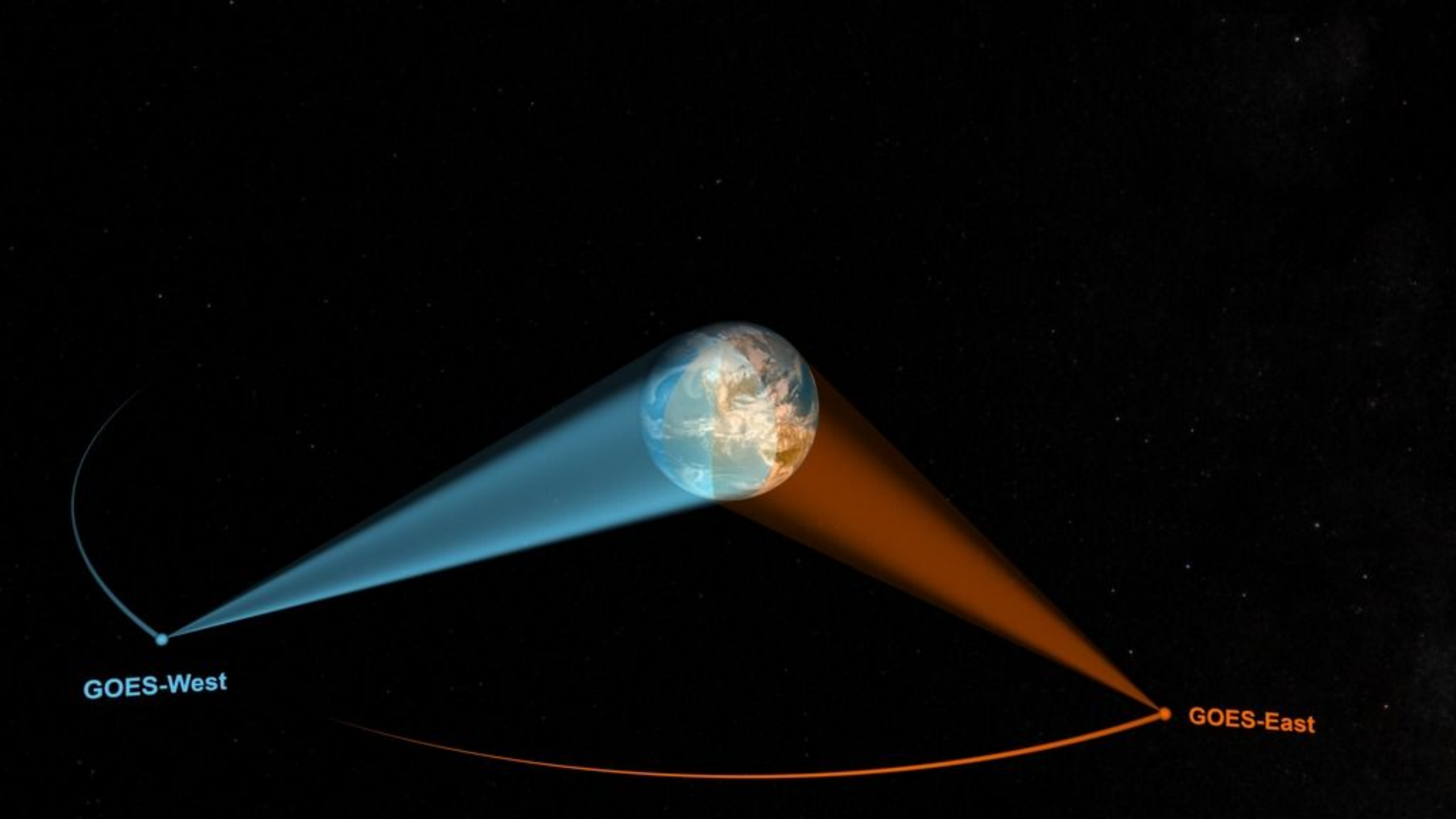
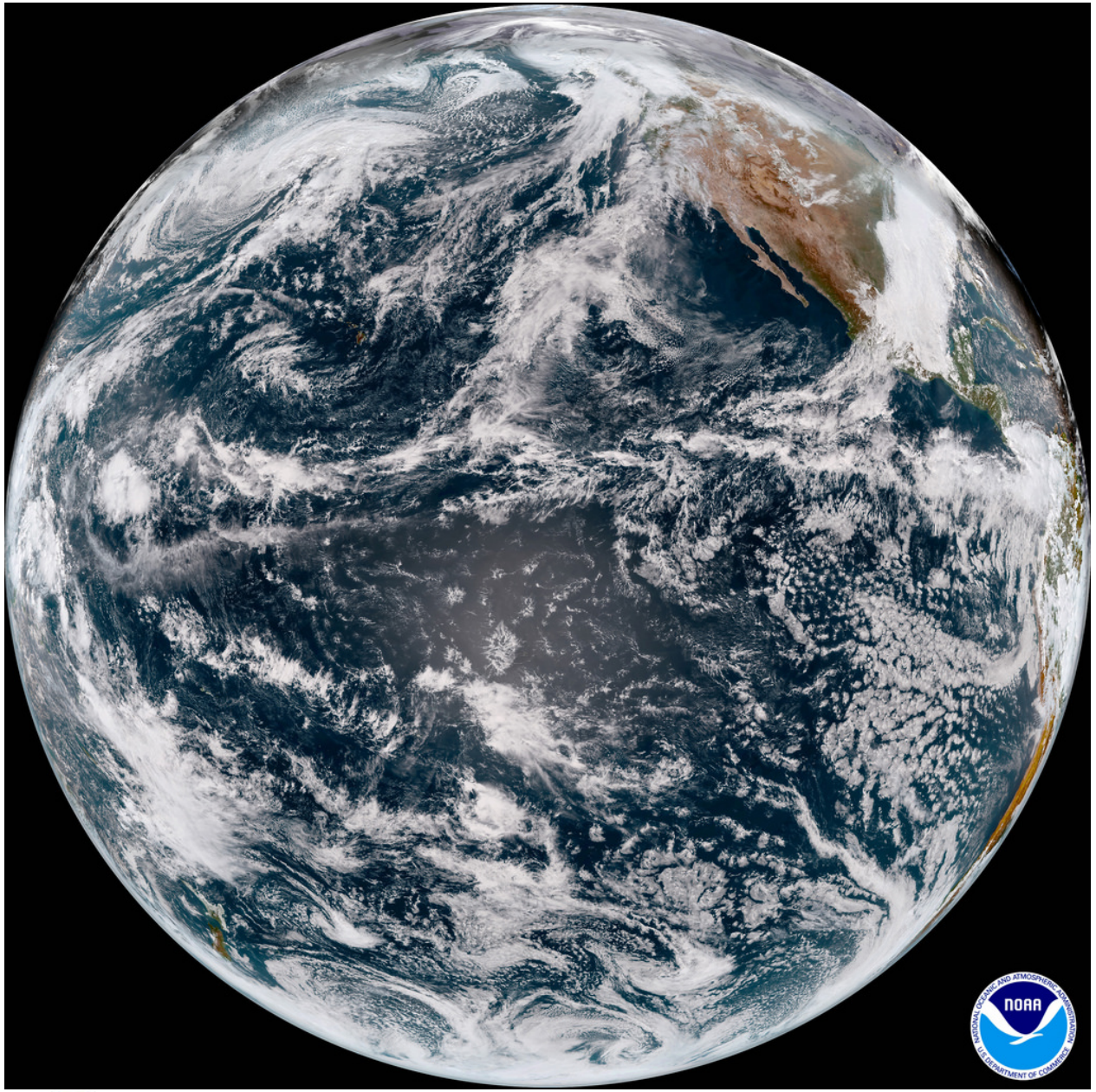
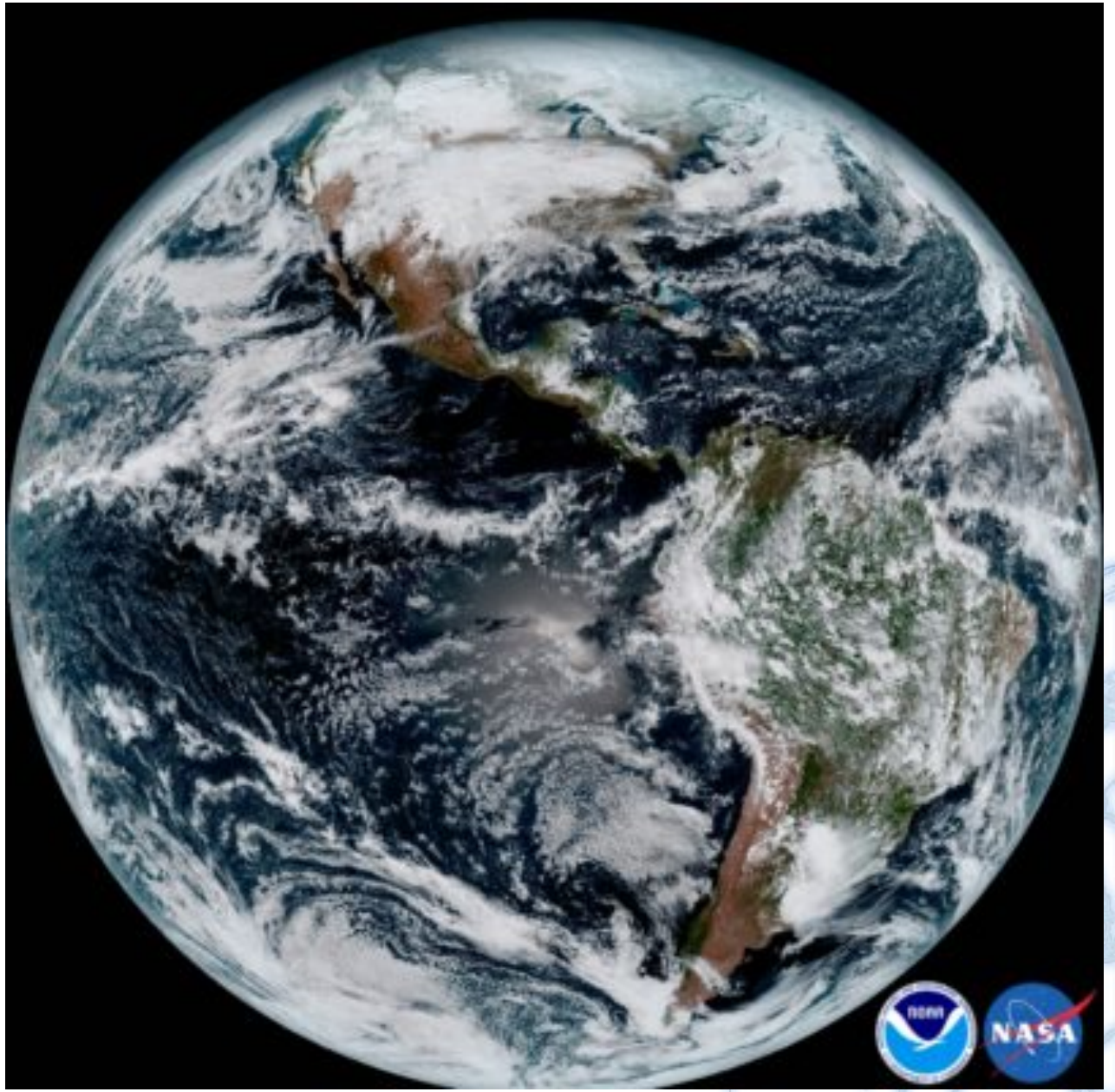

Polar Orbiting Satellite = 850 kilometers (528 miles) altitude
Geostationary Satellite = 35,800 kilometers (22,200 miles) altitude
Earth Diameter = 12,756 kilometers (7,973 miles)


GOES-West
GOES-East


GOES West
137.2°w
GOES East
75.2°w


NOAA


NOAA
NASA

GOES 4-7

- Vertical Profiling

GOES 13,14,15

- Simultaneous, independent imaging, sounding

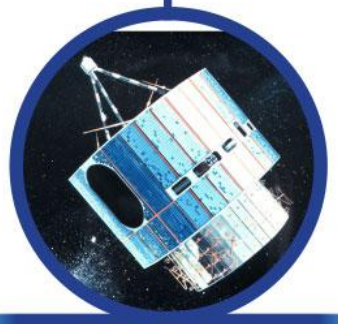
1975

1980

1994

2006

2016

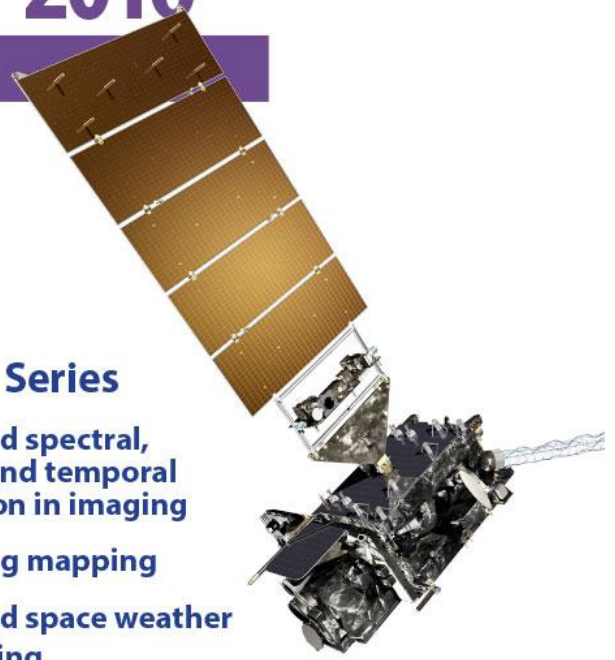


GOES 1-3

- NOAA's First GOES
- Spin-stabilized

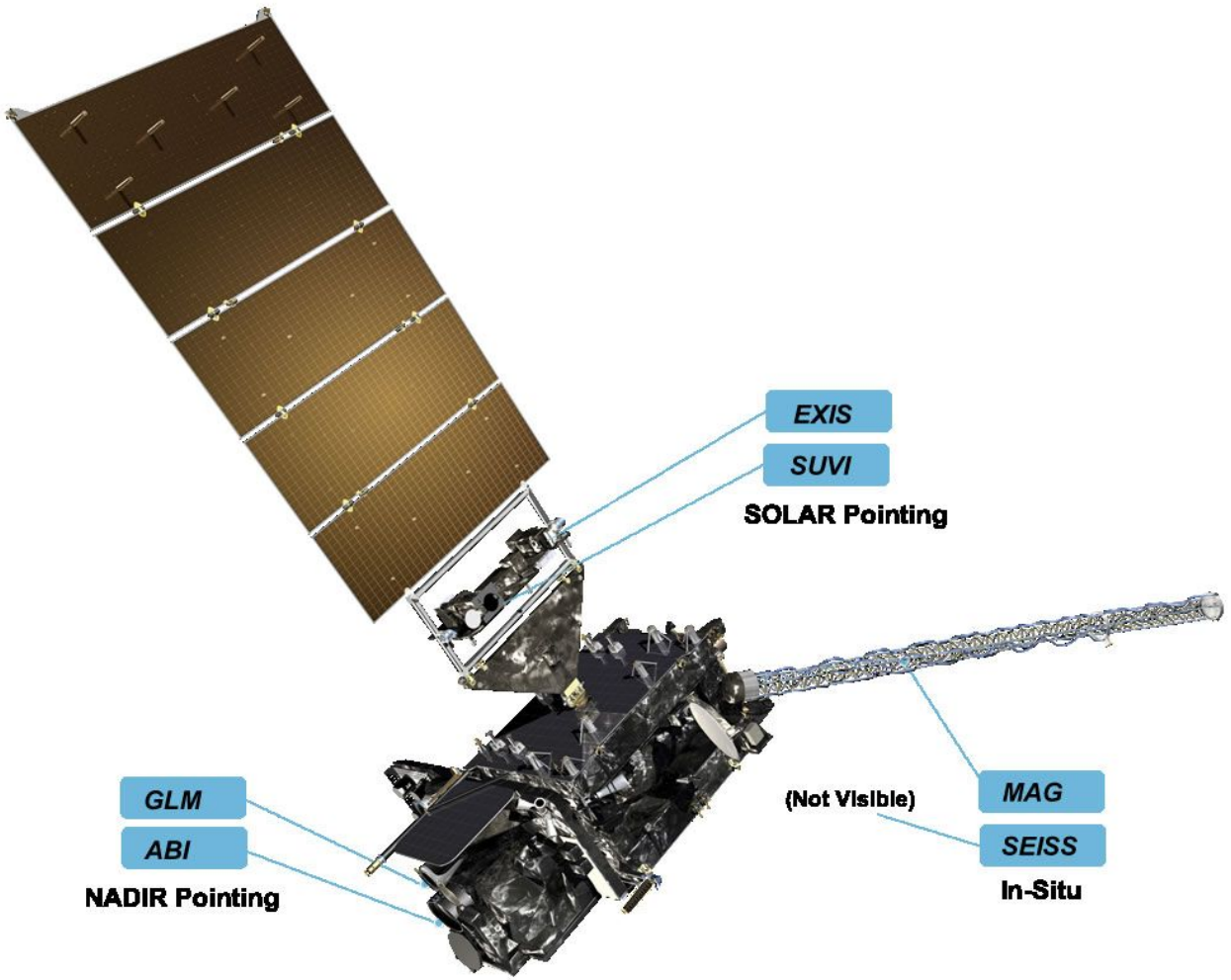
GOES 8-12

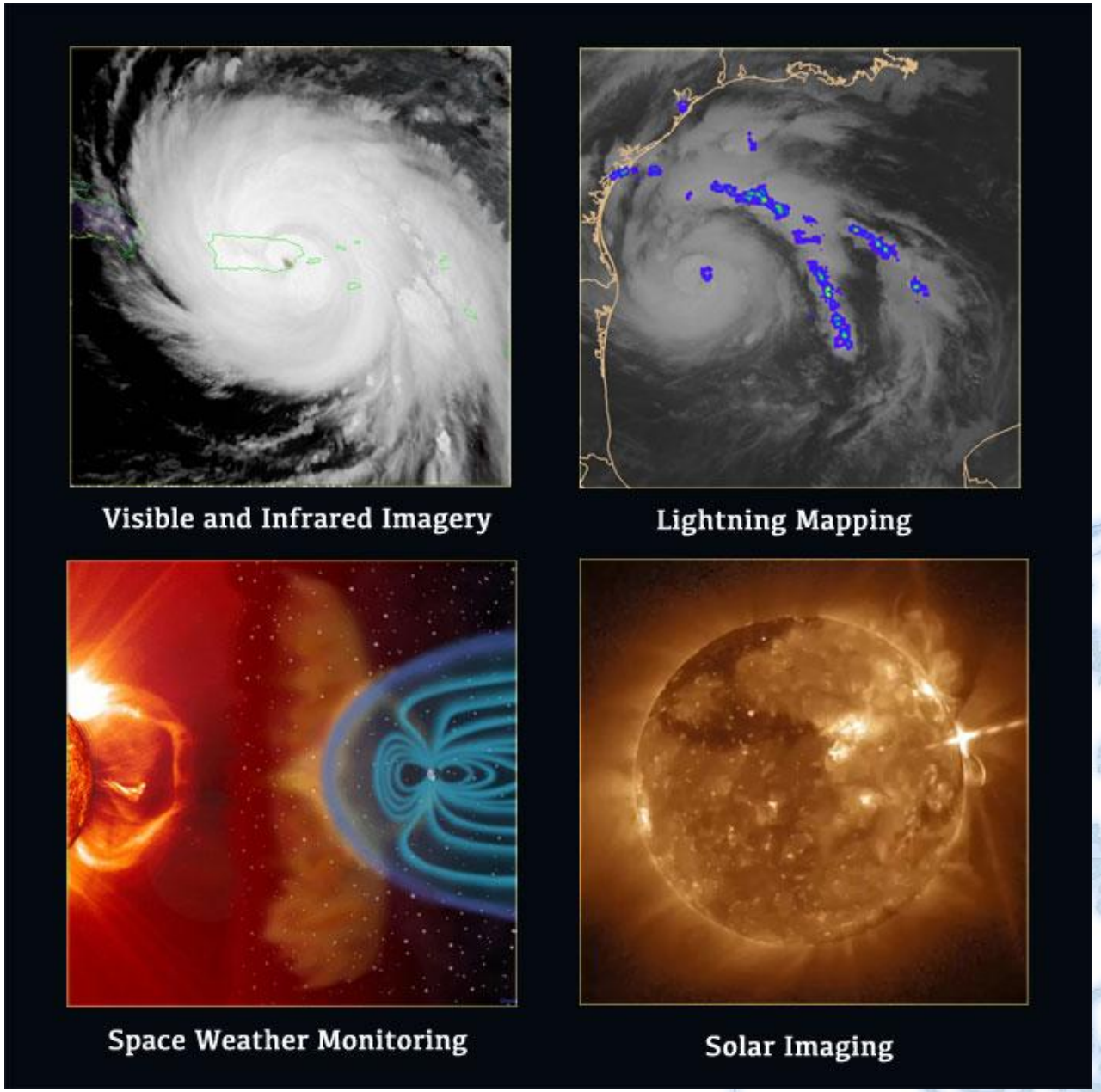
- 3-axis stabilized
- Simultaneous imaging, sounding 100% of time

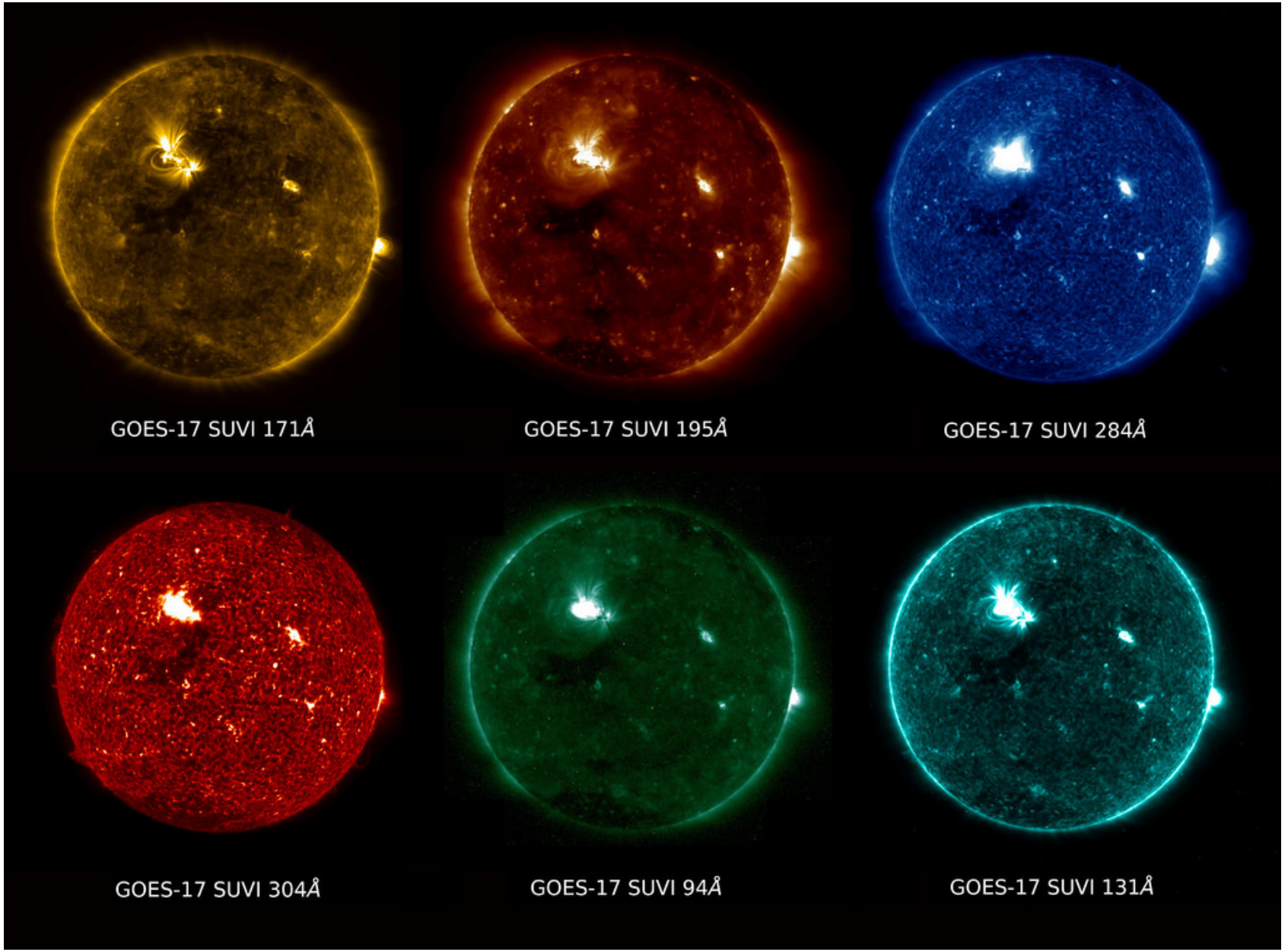


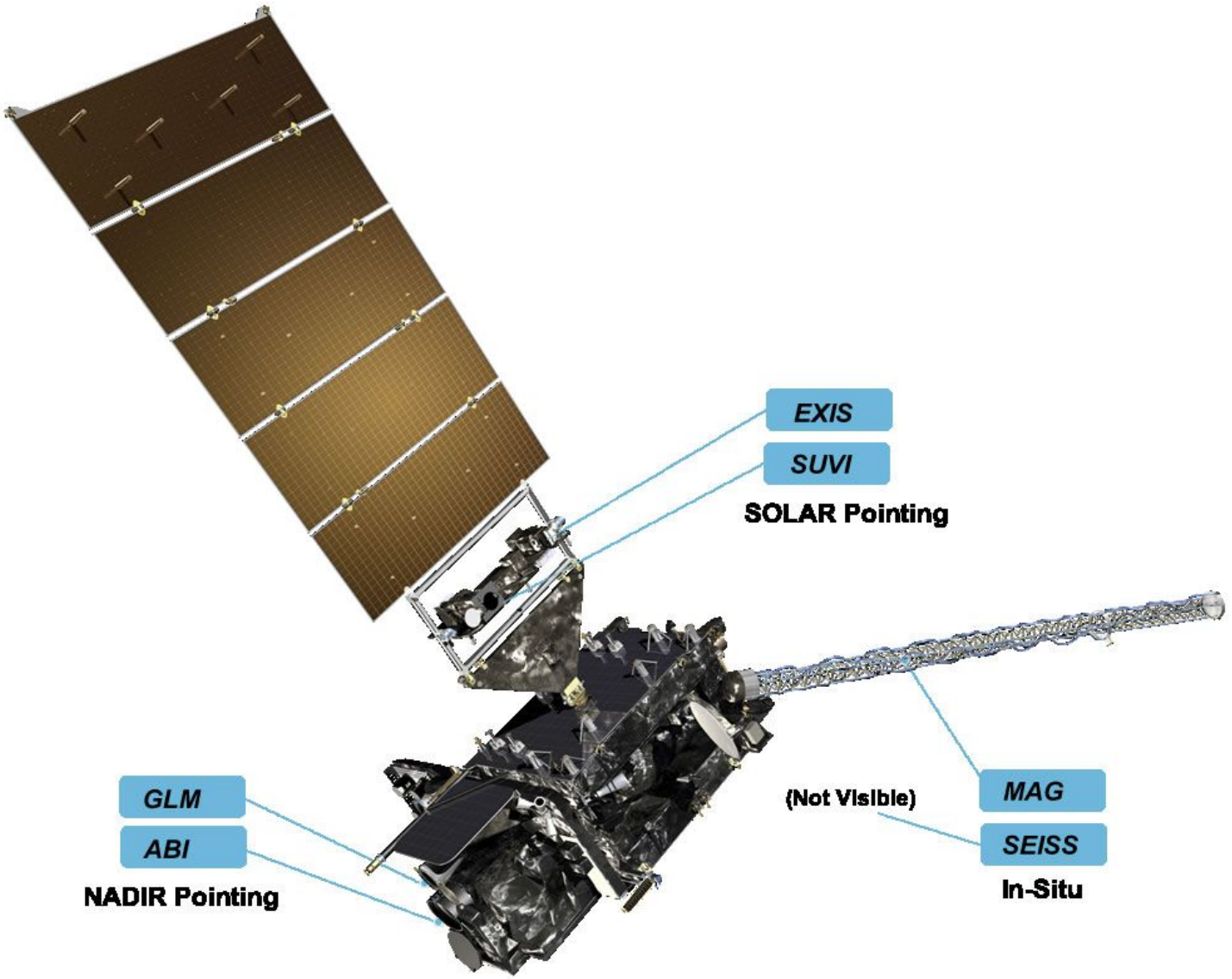
GOES-R Series

- Improved spectral, spatial and temporal resolution in imaging
- Lightning mapping
- Improved space weather monitoring


EXIS
SUVI
SOLAR Pointing
GLM
ABI
NADIR Pointing
(Not Visible)
MAG
SEISS
In-Situ


Visible and Infrared Imagery
Lightning Mapping
Space Weather Monitoring
Solar Imaging


GOES-17 SUVI 171Å
GOES-17 SUVI 195Å
GOES-17 SUVI 284Å
GOES-17 SUVI 304Å
GOES-17 SUVI 94Å
GOES-17 SUVI 131Å


EXIS
SUVI
SOLAR Pointing
GLM
ABI
NADIR Pointing
(Not Visible)
MAG
SEISS
In-Situ

ABI MODES OF OPERATION

- **Full Disk:** Hemispheric Coverage of 83° local zenith angle, temporal resolution of 5-15 minutes, and spatial resolution of 0.5 to 2km

- **Mesoscale:** Provides coverage over a 1000x1000km box with a temporal resolution of 30 seconds, and spatial resolution of 0.5 to 2km.

- **Continental US:** The CONUS scan is performed every 5 minutes, providing coverage of the 5000km (E/W) and 3000km (N/S) rectangle over the United States. The spatial resolution is 0.5 to 2km.

- **Flex Mode:** The flex mode provides a full disk scan every 15 minutes, a CONUS every 5 minutes, and two mesoscale every 60 seconds (or one sub-region every 30 seconds).

GOES-R THE FUTURE OF FORECASTING

3X MORE CHANNELS

Improves every product from current GOES Imager and will offer new products for severe weather forecasting, fire and smoke monitoring, volcanic ash advisories, and more.

4X BETTER RESOLUTION

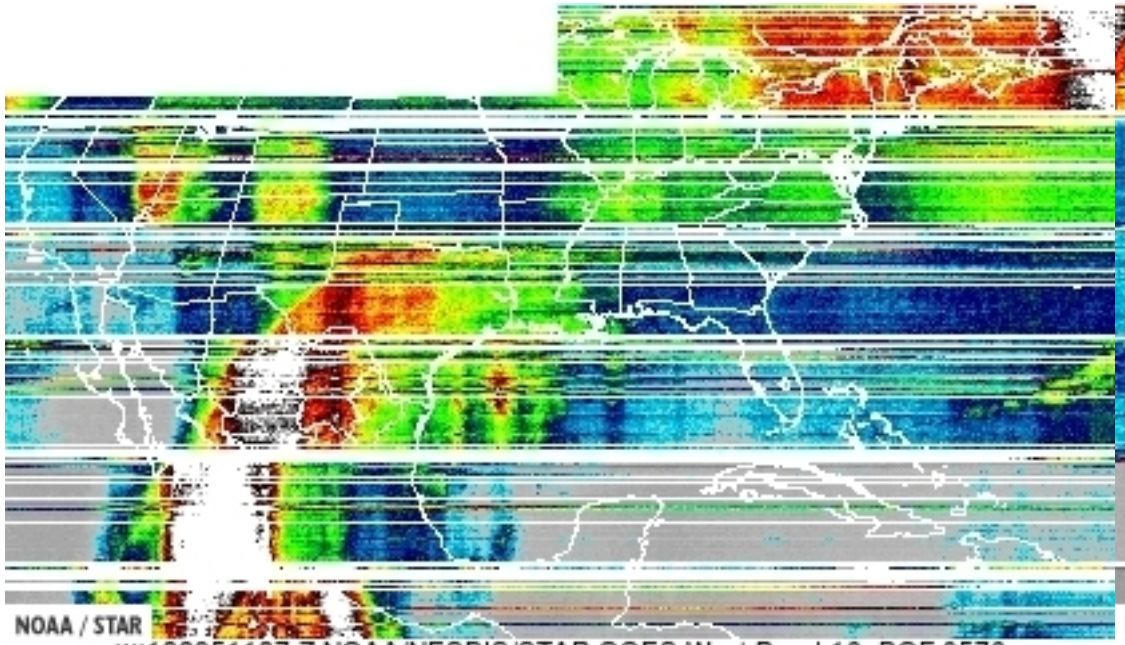
The GOES-R series of satellites will offer images with greater clarity and 4x better resolution than earlier GOES satellites.

5X FASTER SCANS

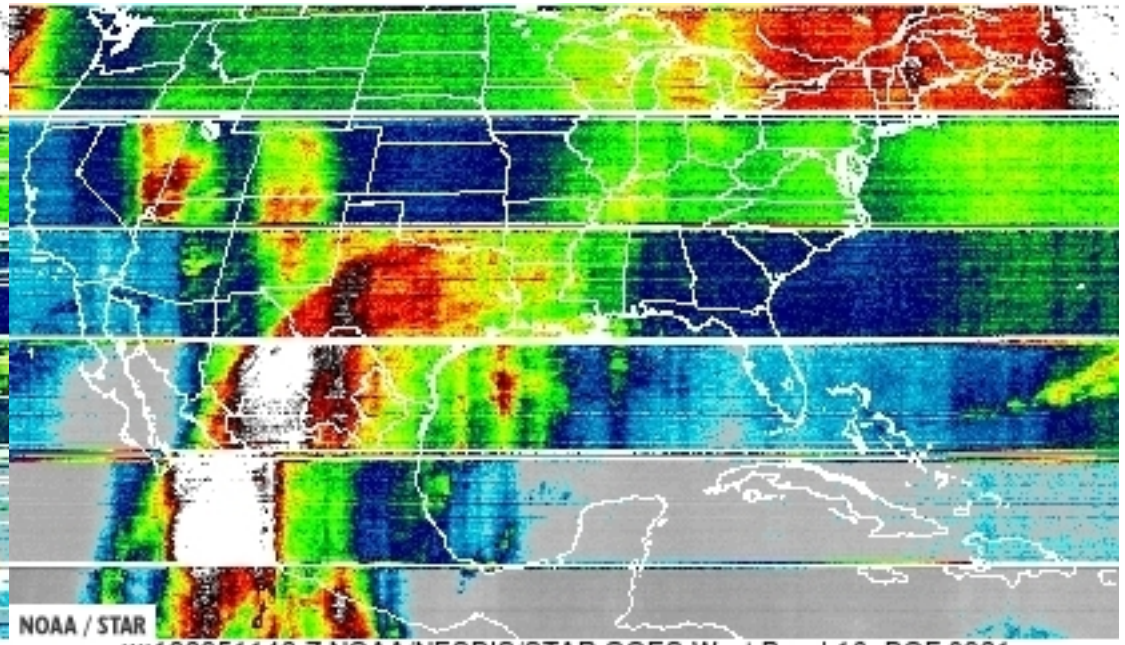
Faster scans every 30 seconds of severe weather events and can scan the entire full disk of the Earth 5x faster than before.

www.nesdis.noaa.gov

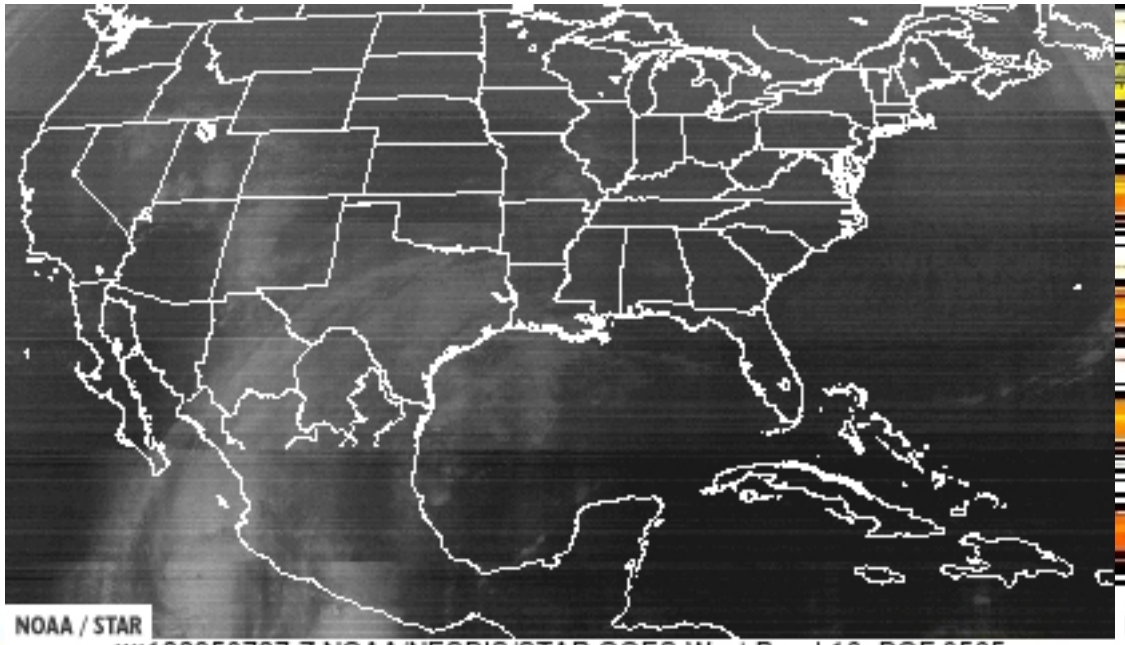
NOAA Satellite and Information Service



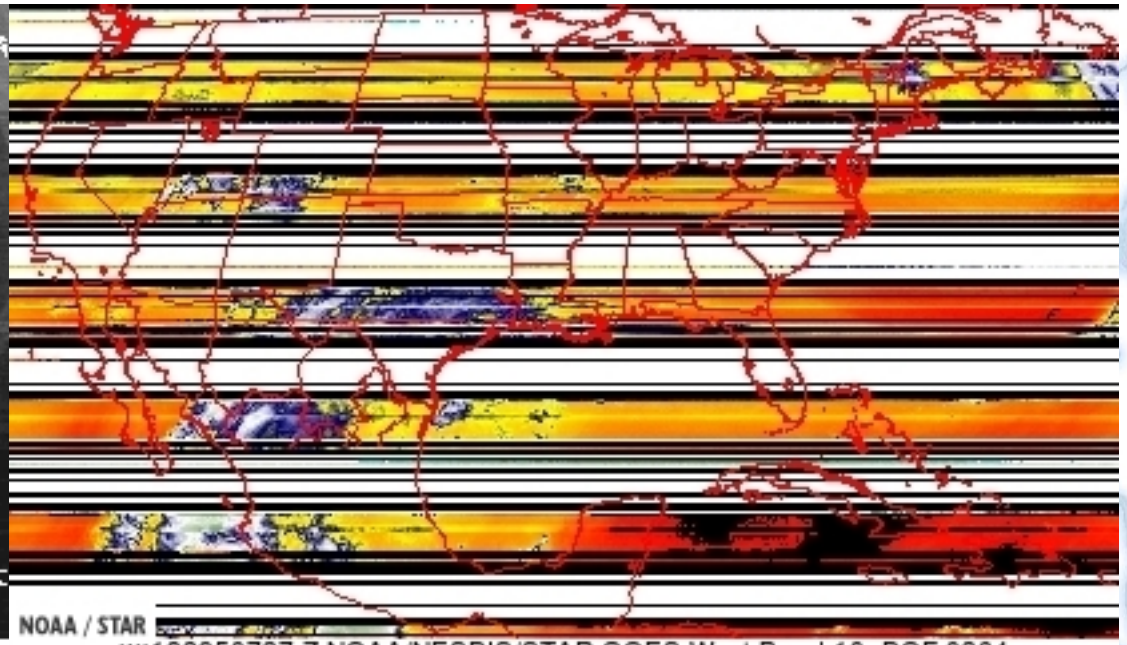
20182951137 Z NOAA/NESDIS/STAR GOES-West Band 16 DQF:0576



20182951142 Z NOAA/NESDIS/STAR GOES-West Band 16 DQF:0921



20182950737 Z NOAA/NESDIS/STAR GOES-West Band 16 DQF:0565

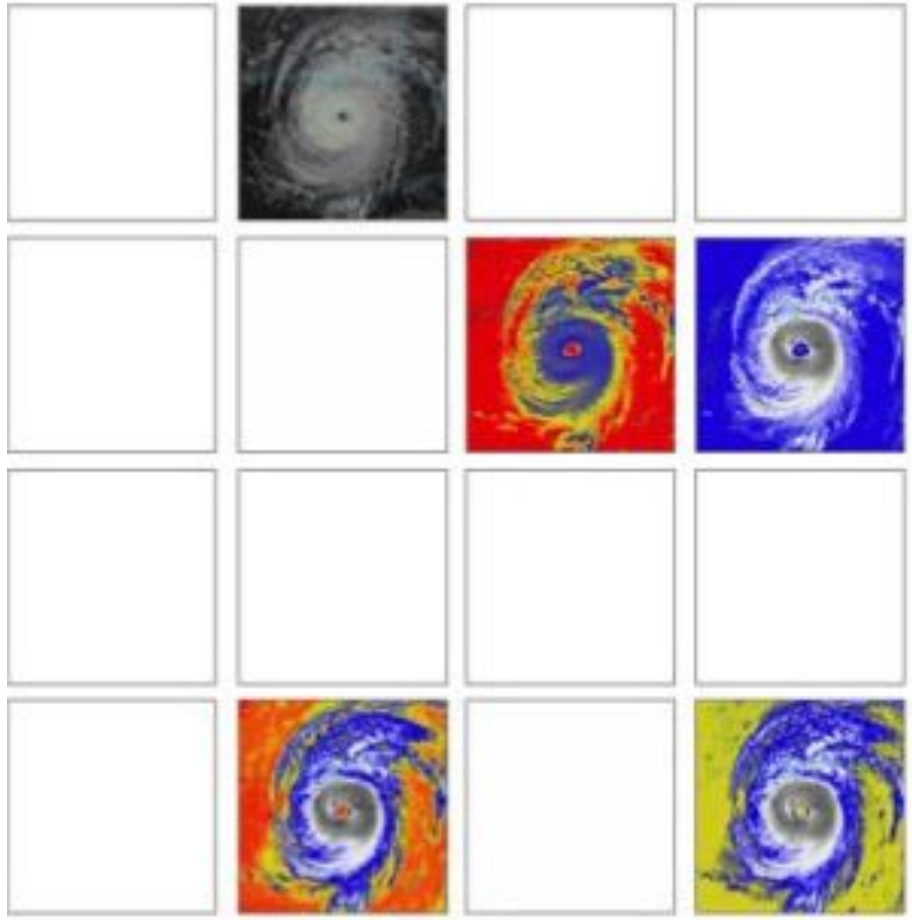


20182950737 Z NOAA/NESDIS/STAR GOES-West Band 10 DQF:0364

COMPARISON GOES-R SERIES ABI VS CURRENT GOES

ATTRIBUTE :	ABI	CURRENT GOES IMAGER
Spectral Coverage	16 bands	5 bands
Spatial Resolution		
0.64 µm Visible	0.5 km	~ 1 km
Other visible/near-IR	1.0 km	n/a
Bands (>2 µm)	2 km	~ 4 km
Spatial Coverage		
Full Disk	4 per hour	Scheduled (3 hrly)
CONUS	12 per hour	~4 per hour
Mesoscale	30 or 60 sec	n/a
Visible (reflective bands)		
On-orbit calibration	Yes	No

GOES-13/14/15 Spectral Bands



GOES-R Spectral Bands