



**NOAA**

Satellite and  
Information  
Service

Sept. 29, 2020

# The Coming Decade of Development: Creating the Next-Gen Systems for 2025, 2030 and Beyond

## Community Meeting on NOAA Satellites

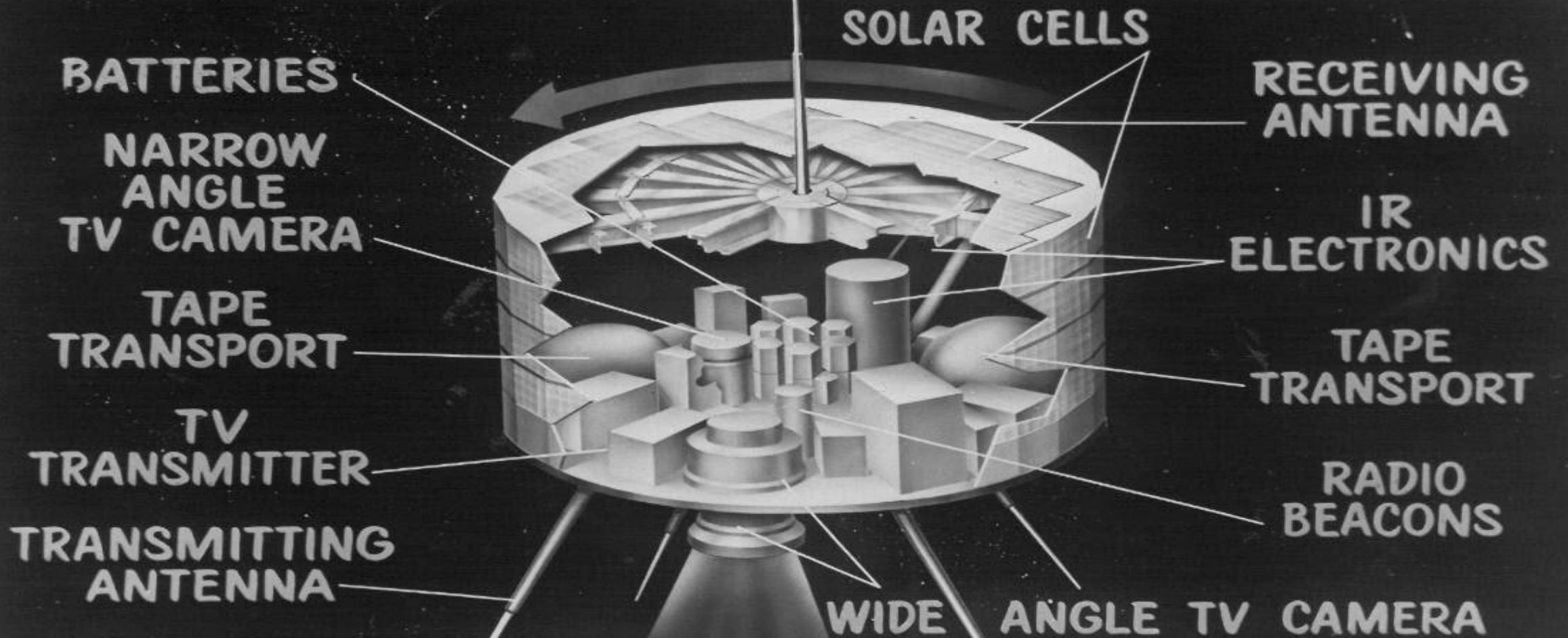
Dr. Stephen Volz, Assistant Administrator  
NOAA Satellite and Information Service





SCIENCE. SERVICE. STEWARDSHIP.

# TIROS



60<sup>th</sup> Anniversary of the first flight of TIROS, the World's 1st Weather Satellite

2018

2019

Lost Year?

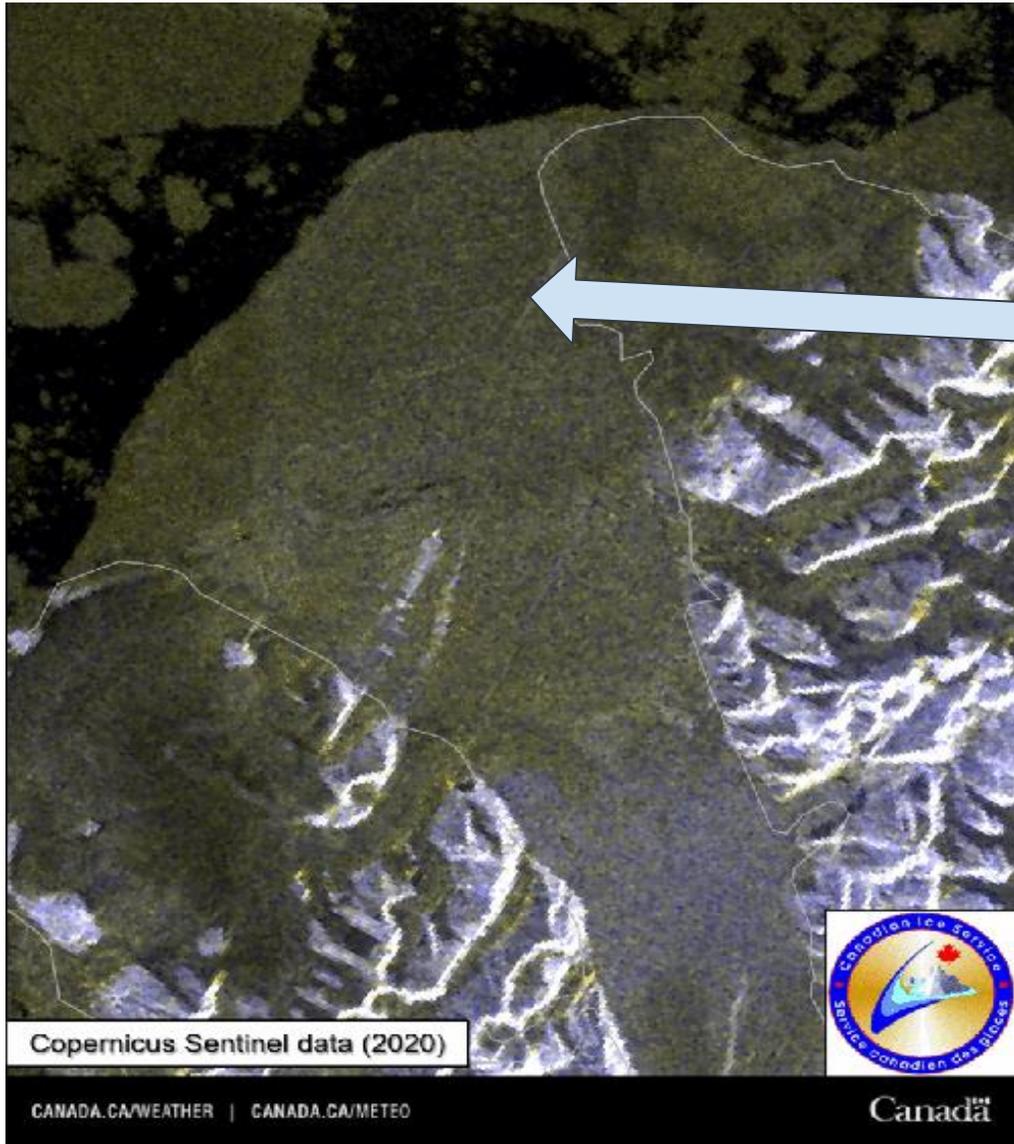
2021

2022



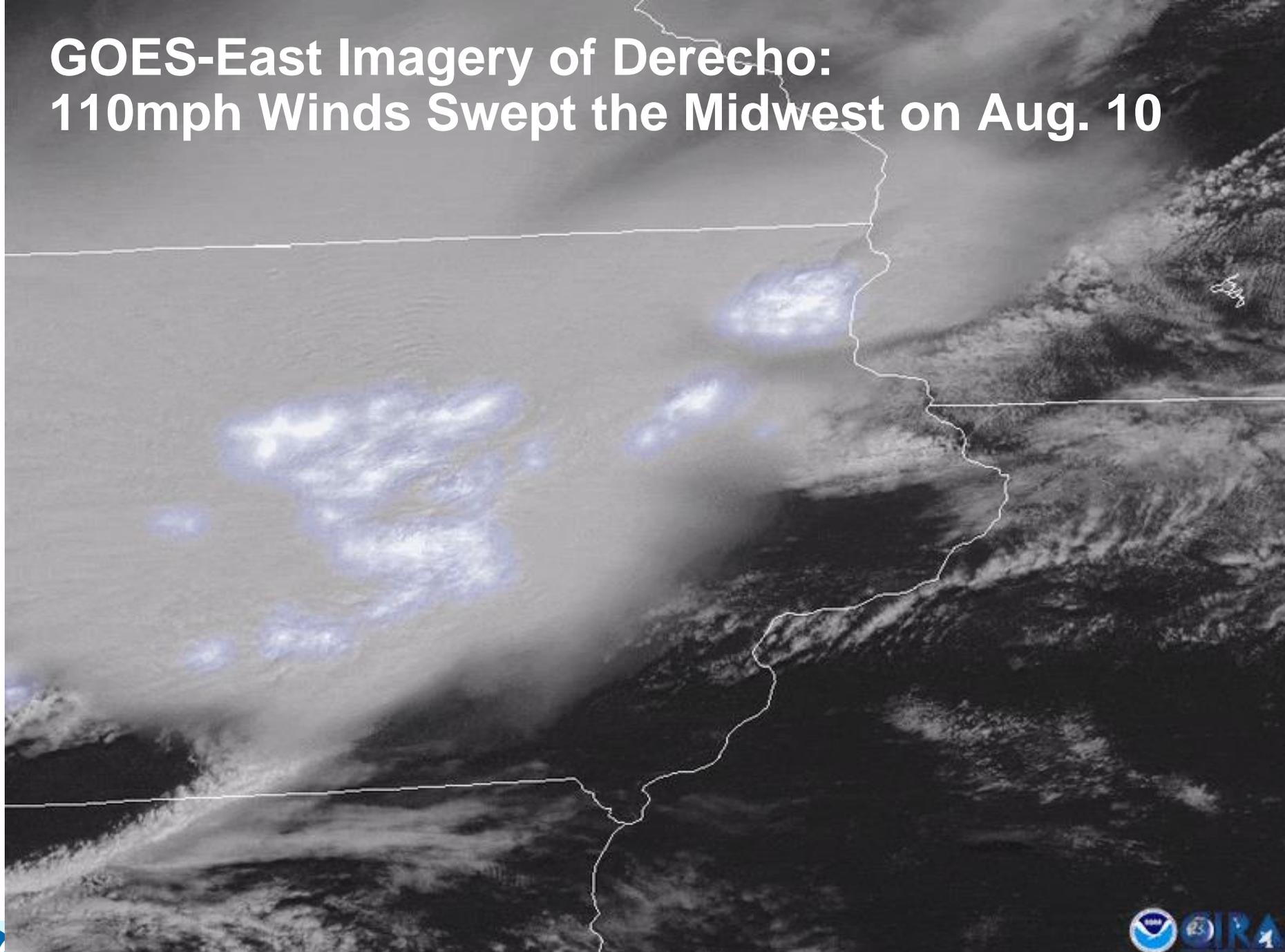
# Melting Ice Caps: Milne Ice Shelf Collapse Aug. 4

Canada's largest intact ice shelf lost more than 30 square miles -- an area larger than the island of Manhattan.



<https://twitter.com/i/status/1293617433614442497>

# GOES-East Imagery of Derecho: 110mph Winds Swept the Midwest on Aug. 10





# Speed and Ferocity: Hurricane Laura Grows from Cat 1 to Cat 4 in less than 18 hours!

1800 UTC AUG 27

1200 UTC AUG 27

0600 UTC AUG 27

0000 UTC AUG 27

1800 UTC AUG 26

1200 UTC AUG 26

0600 UTC AUG 26

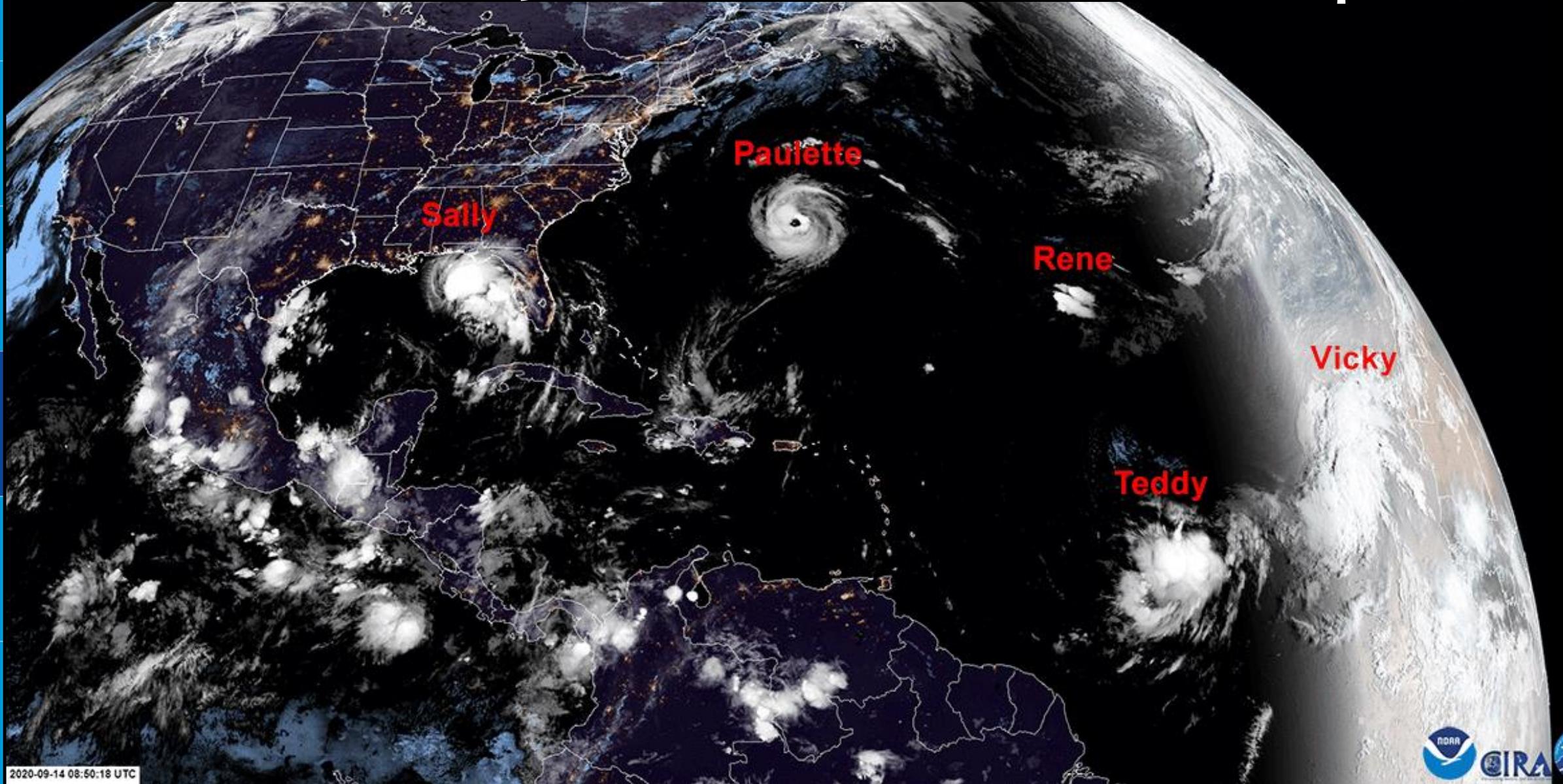
0000 UTC AUG 26

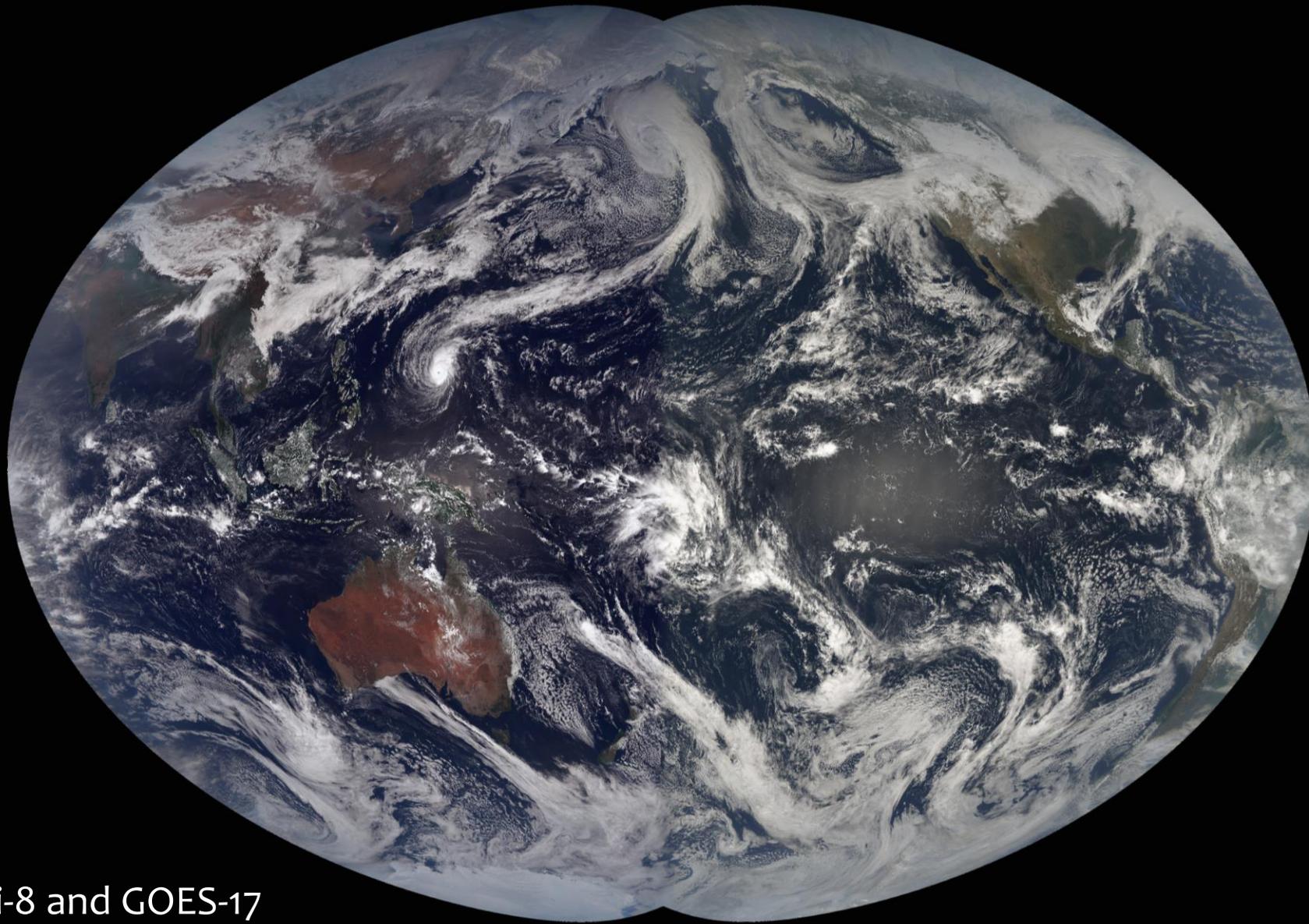
1800 UTC AUG 25

1200 UTC AUG 25



# GOES-East Shows 5 Named Atlantic storms on Sept. 14

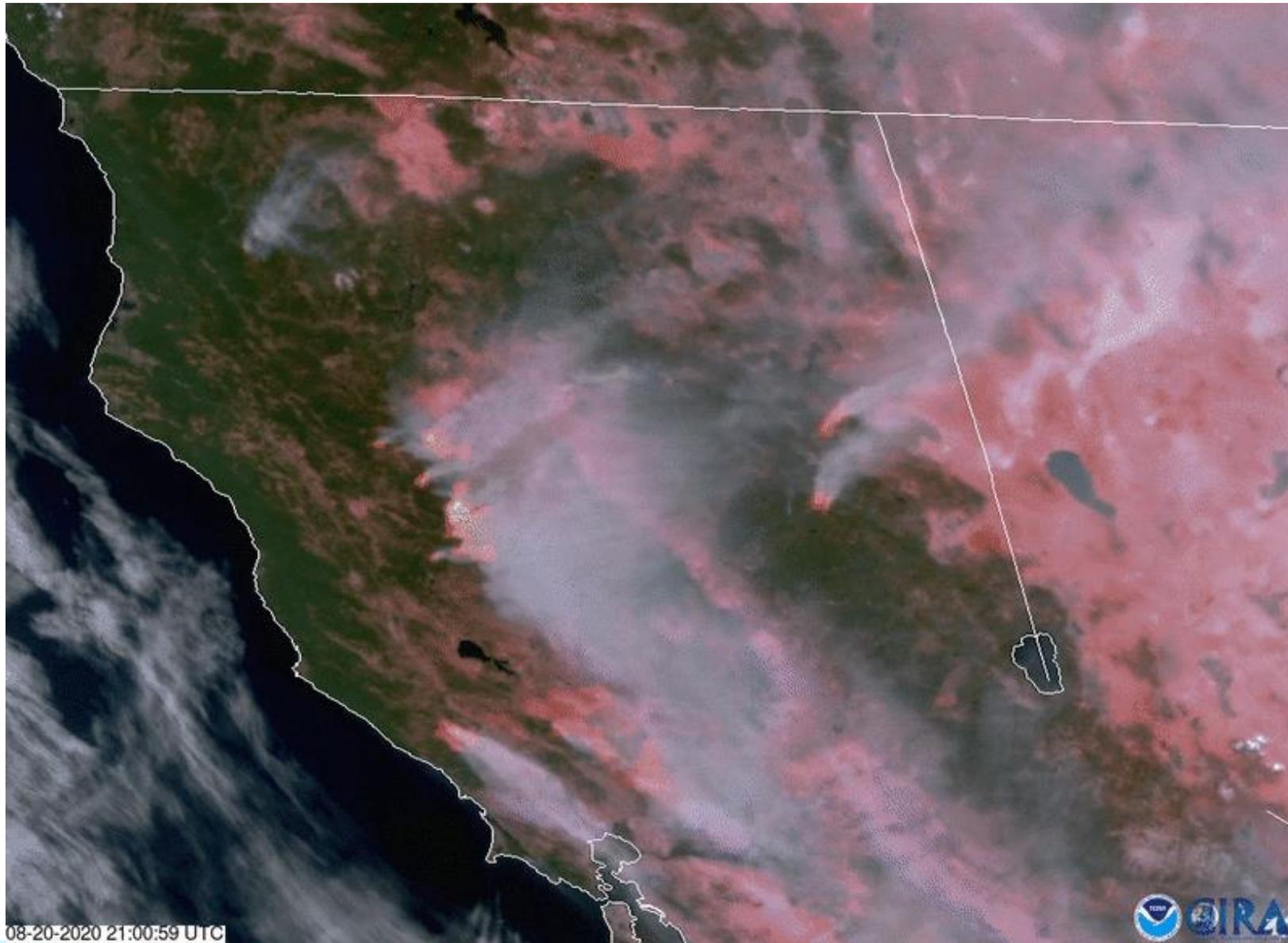




Himawari-8 and GOES-17  
24-25 February 2019 in Mollweide Projection

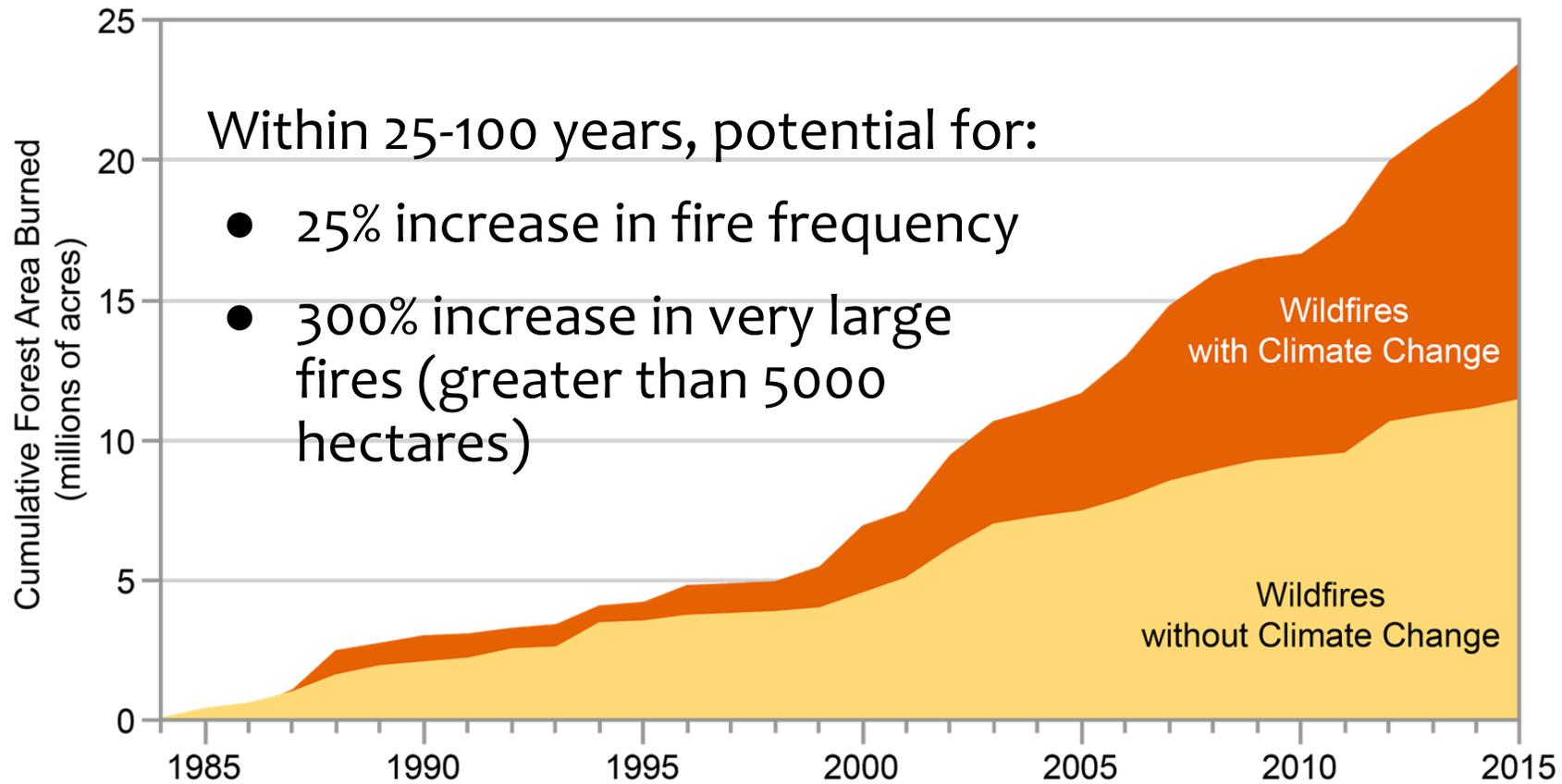


# Western Wildfires: Multiple West Coast Fires, Aug. 20





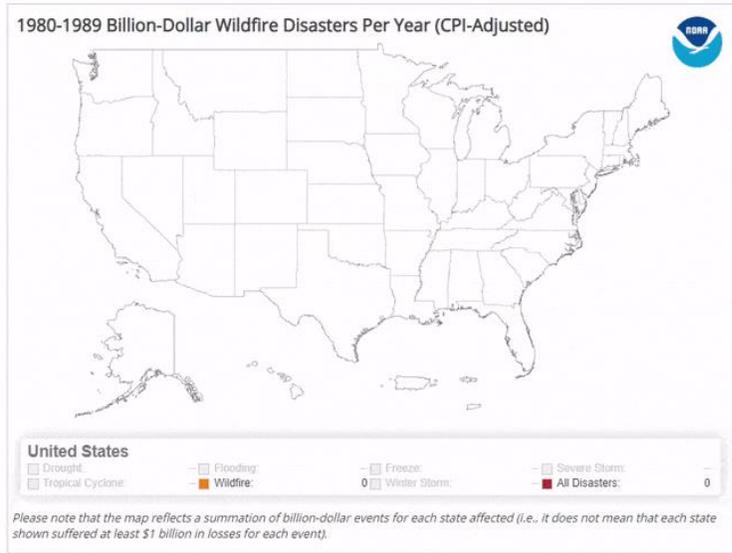
# Impact of Climate Change: Fires in in the Southwest



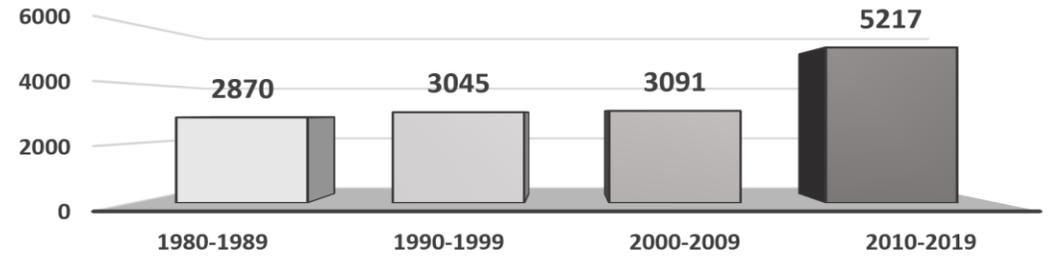
Graph and statistics cited from 4th National Climate Assessment:  
<https://nca2018.globalchange.gov/chapter/25/>



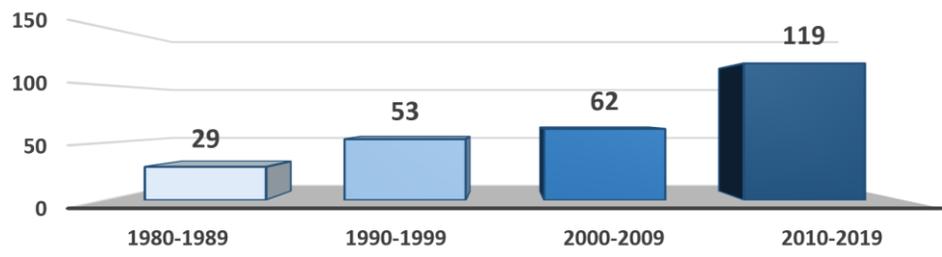
# Billion Dollar Disaster Record



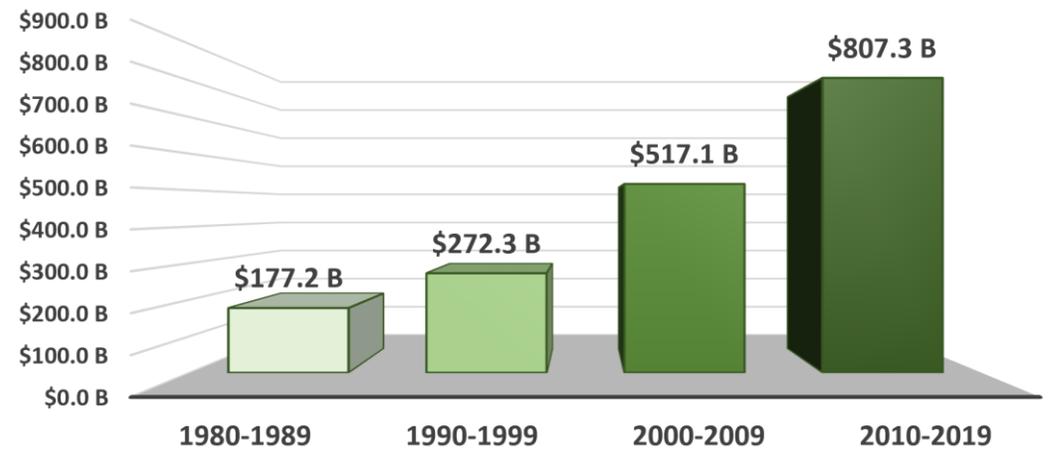
## Deaths



## Number of U.S. Billion-Dollar Events



## Cost (Billions)

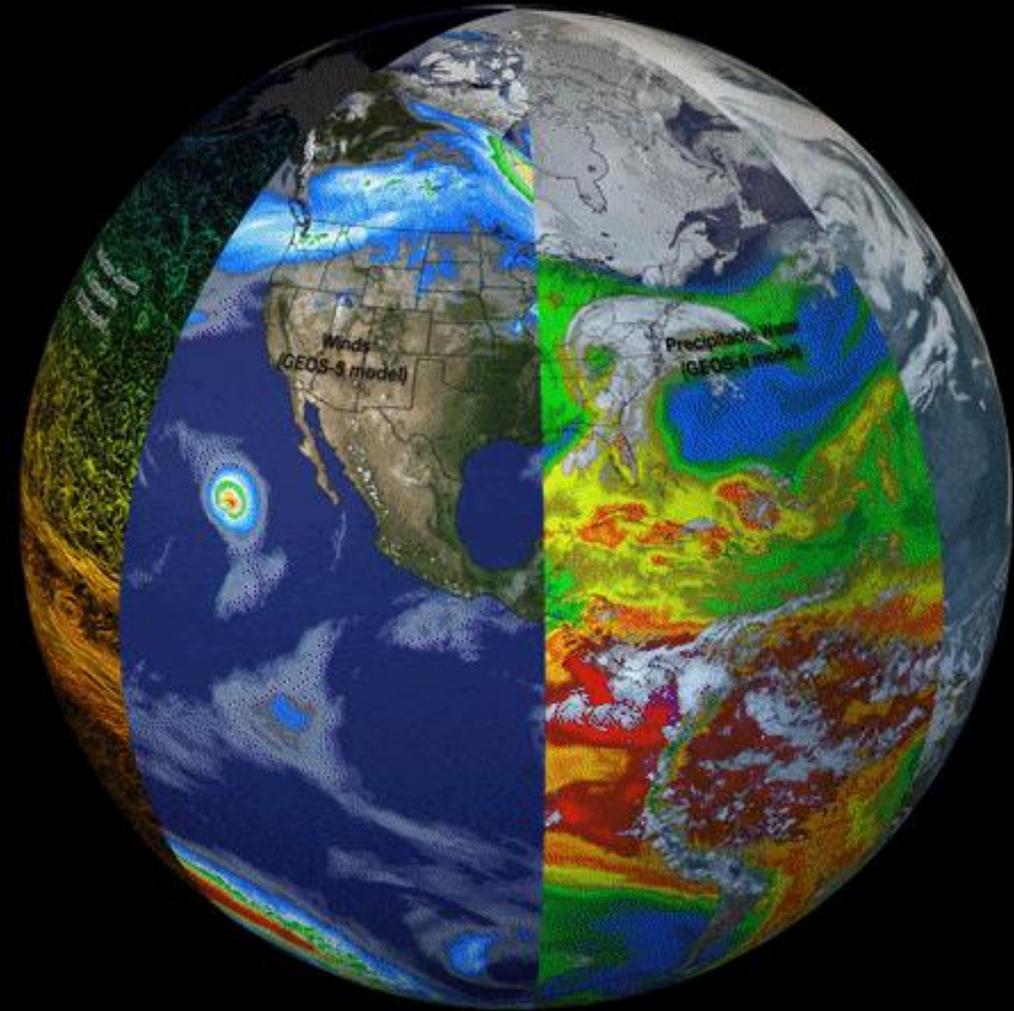


c.f. NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2020). <https://www.ncdc.noaa.gov/billions/>

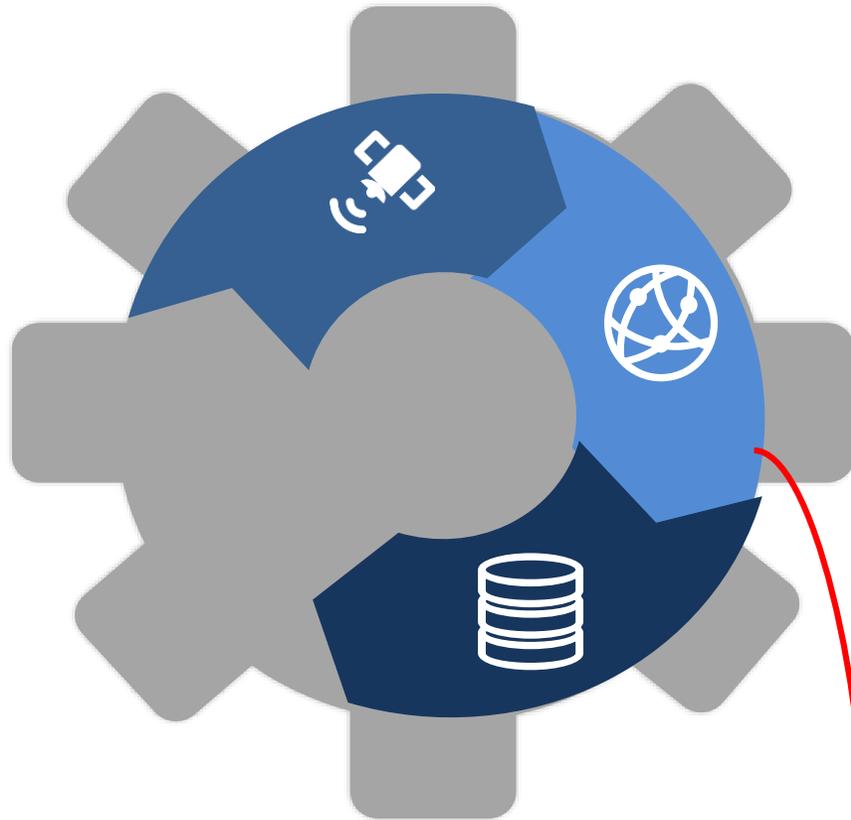


# NESDIS Aspiration

Provide a truly integrated digital understanding of our earth environment that can evolve quickly to meet changing user expectations by leveraging our own capabilities and partnerships



# NESDIS Leads in Innovative Systems, Product, and Service Delivery; Leverages Partner Satellite Tech and Commercial Distribution



<i>Products and Services that are Useful, Usable, and Used</i>	
<b>Sat Tech Innovation</b>	Instrument & Mission innovation; smallsat constellations; Commodity spacecraft and data services; basic science process research
<b>Product and Service Innovation</b>	Observing system integration; Global data archives; Operational constellation management; Cloud operations; Artificial Intelligence; Rigorous User Needs Assessment
<b>Commercial Applications</b>	Apps; Emerging Digital Interface and Distribution; Enhanced & Tailored Products and Services; Cloud platforms

**NESDIS Sweet Spot**

# NESDIS Strategic Objectives



**Advance terrestrial observational leadership in geostationary and extended orbits**

***GEO Initiative  
FY2020/21***



**Advance Space Weather observational leadership in LEO, GEO, and extended orbits.**

***SWFO Program  
FY2020***



**Evolve LEO architecture to enterprise system of systems that exploits and deploys new observational capabilities**

***Next Gen Sounder Initiative  
FY2020/21/22***



**Develop agile, scalable ground capability to improve efficiency of service deliverables and ingest of data from all sources**

***DACS Initiative  
FY2021 & beyond***



**5 Provide consistent ongoing enterprise-wide user engagement to ensure timely response to user needs**



**6 Deliver integrated program development to provide a suite of products and services**

# NESDIS Strategic Objectives



**1**  
Advance terrestrial observational leadership in geostationary and extended orbits



**2**  
Advance Space Weather observational leadership in LEO, GEO, and extended orbits.



**3**  
Evolve LEO architecture to enterprise system of systems that exploits and deploys new observational capabilities



**4**  
Develop agile, scalable ground capability to improve efficiency of service deliverables and ingest of data from all sources

*A Renewed Focus on Continuous User Engagement*

**5**



Provide consistent ongoing enterprise-wide user engagement to ensure timely response to user needs

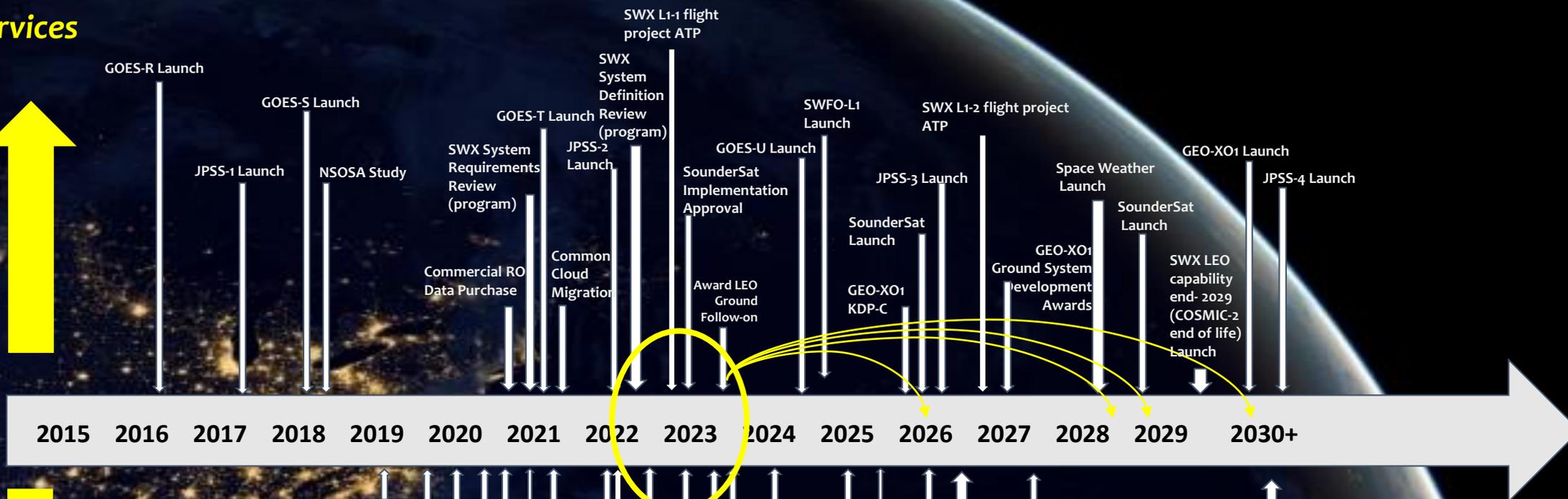
**6**



Deliver integrated program development to provide a suite of products and services

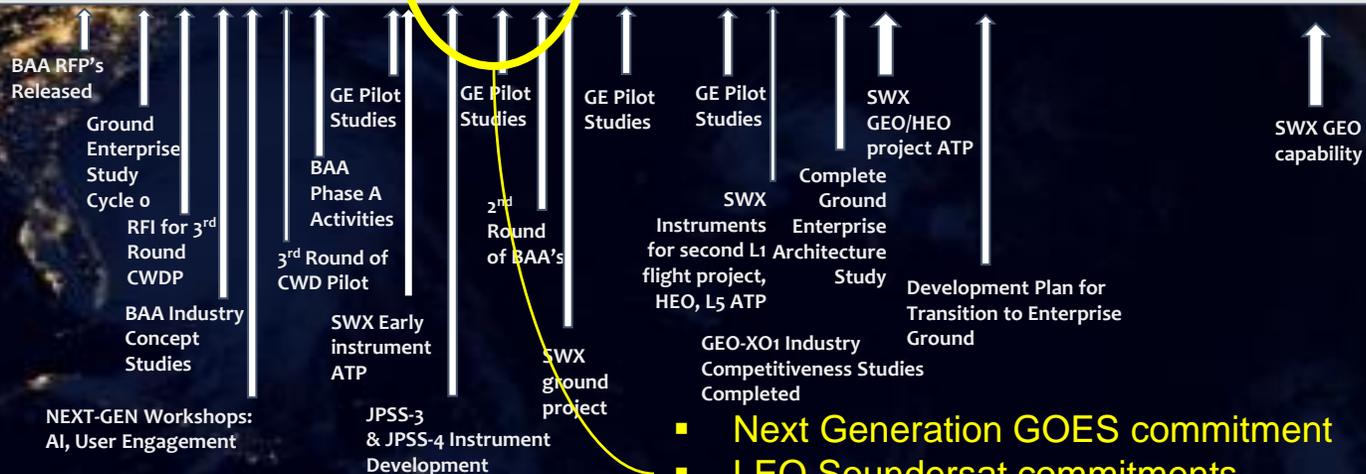
# TIMELINE TO TOMORROW: HOW WE'RE DEVELOPING NOAA'S NEXT-GEN SYSTEMS\*

**Deliveries  
Services**



2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030+

**Engagements  
Program Milestones**



\*Later launch dates notional; dependent on out year funding

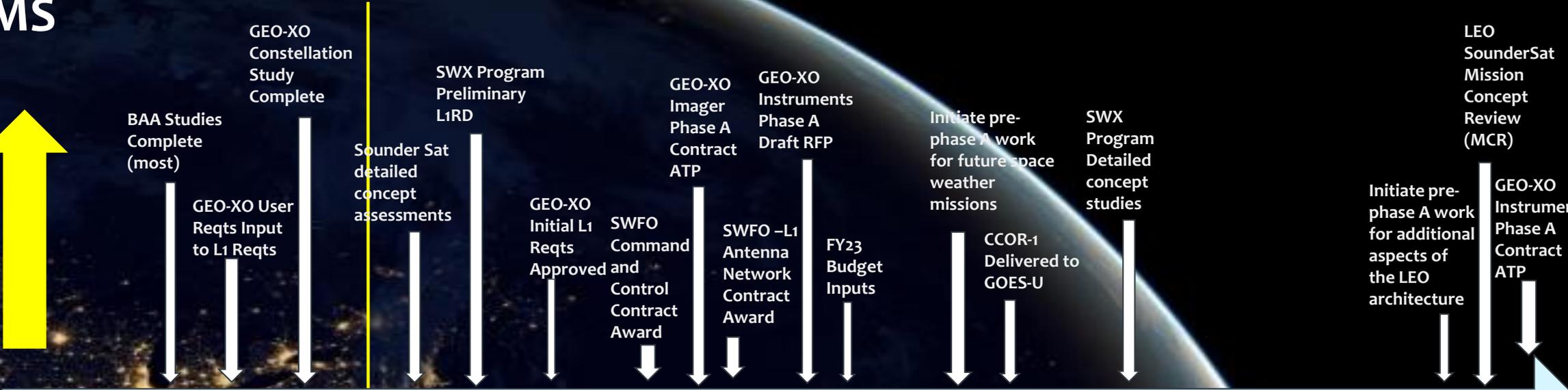
- Next Generation GOES commitment
- LEO Soundersat commitments
- Space Weather next gen definition

# TIMELINE FOR NEXT YEAR: HOW WE'RE DEVELOPING NOAA'S NEXT-GEN SYSTEMS

**Deliveries Services**



**Engagements Program Milestones**

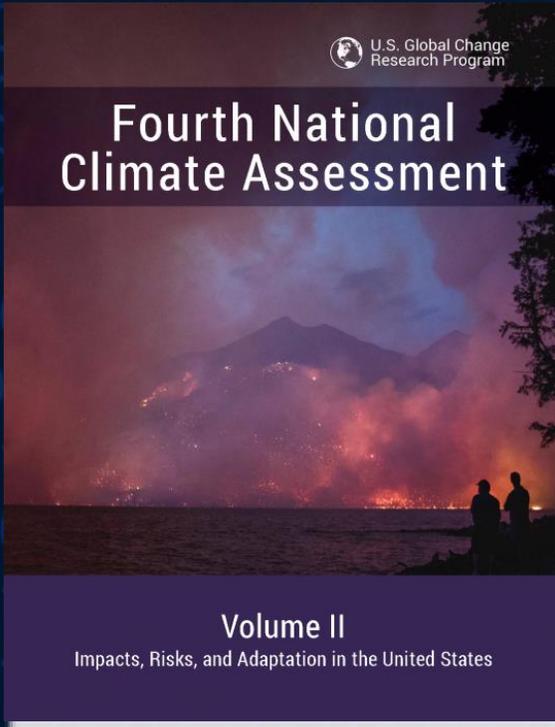
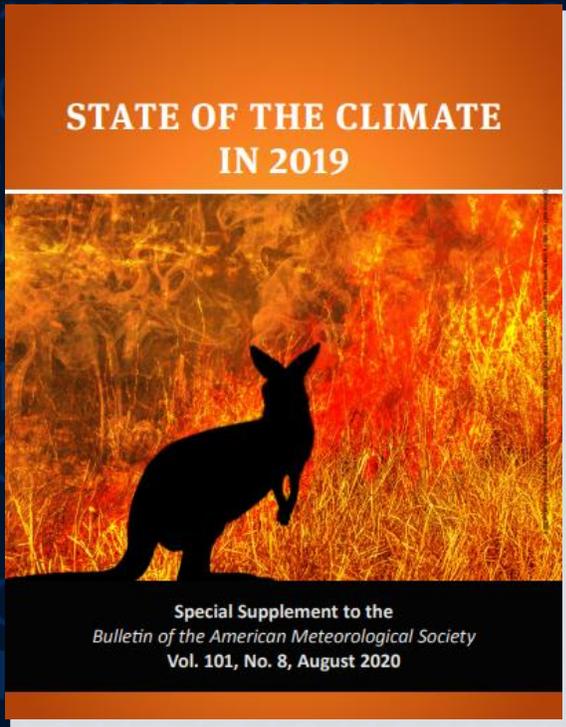


OCT    NOV    DEC    JAN    FEB    MAR    APR    MAY    JUN    JUL    AUG    SEP

**2020**

**2021**

We are beginning to understand the Earth as an integrated system for the first time, at just the right time, and maybe just in time.





# Questions?

