



NOAA: Current and Future Satellite Systems

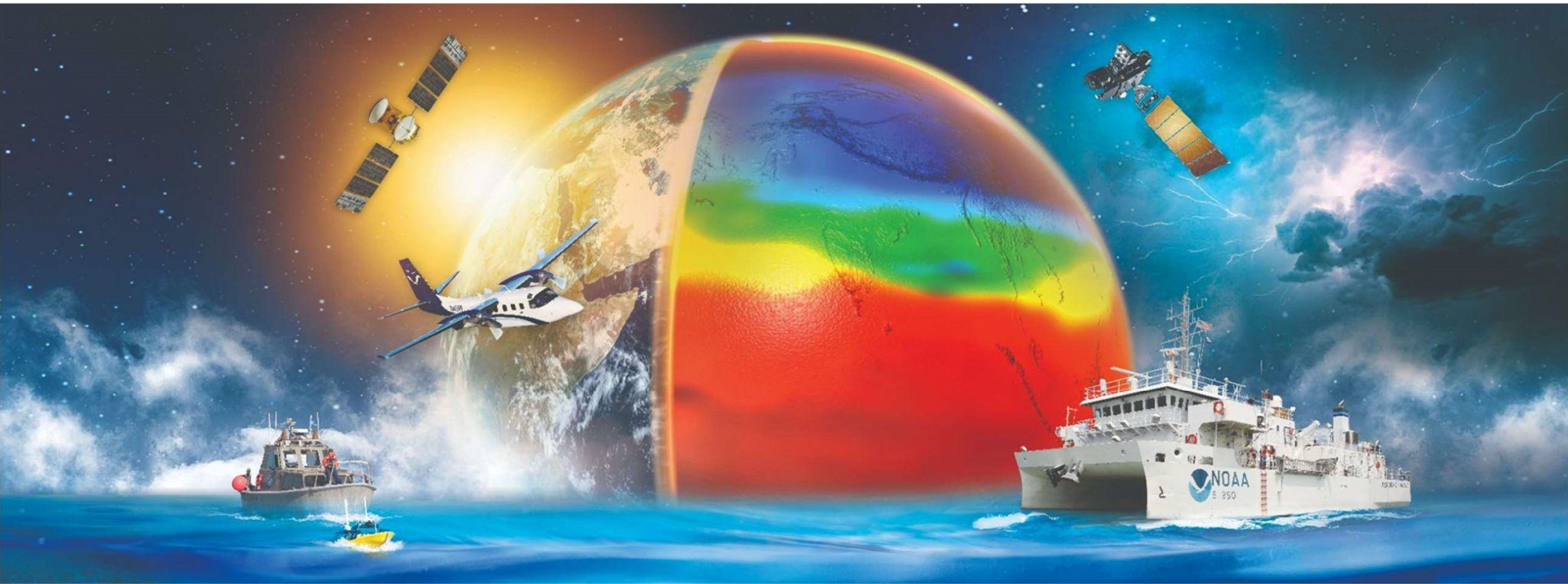


National Environmental Satellite,
Data, and Information Service

November 6, 2023

Dr. Douglas A. Howard
Acting Chief Scientist
Director, Center for Satellite Applications and Research (STAR)
U.S. National Oceanic and Atmospheric Administration (NOAA)
National Environmental Satellite, Data, & Information Service (NESDIS)

NOAA is an Authoritative Source for Operational U.S. Environmental Information



National Environmental Satellite, Data, and Information Service

NOAA Priorities

Science, Service, and Stewardship



CLIMATE



BALANCE

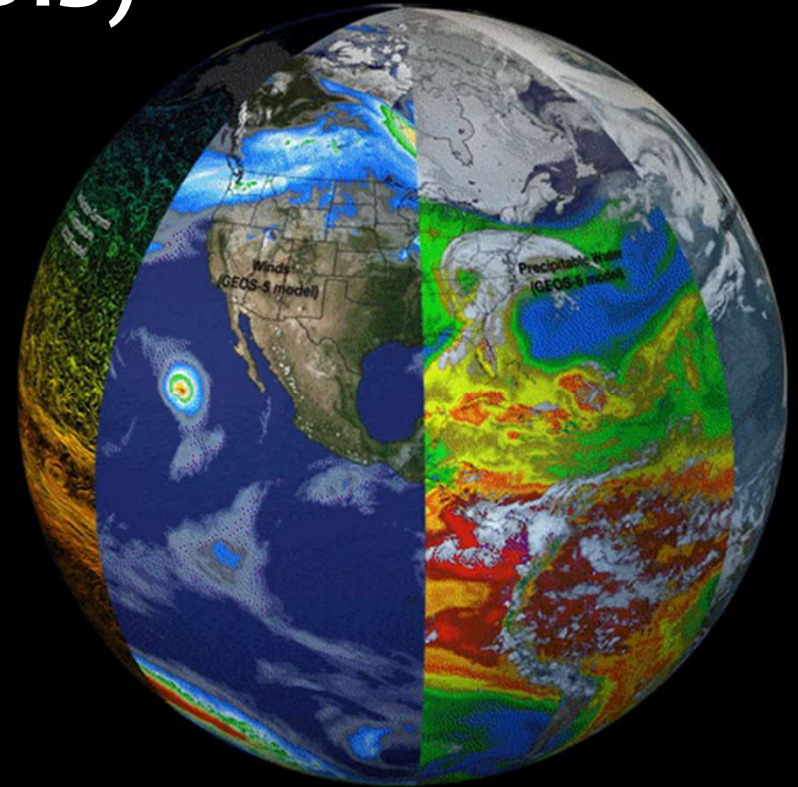


EQUITY



NOAA's National Environmental Satellite Data and Information Service (NESDIS)

Systems provide a global perspective and 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



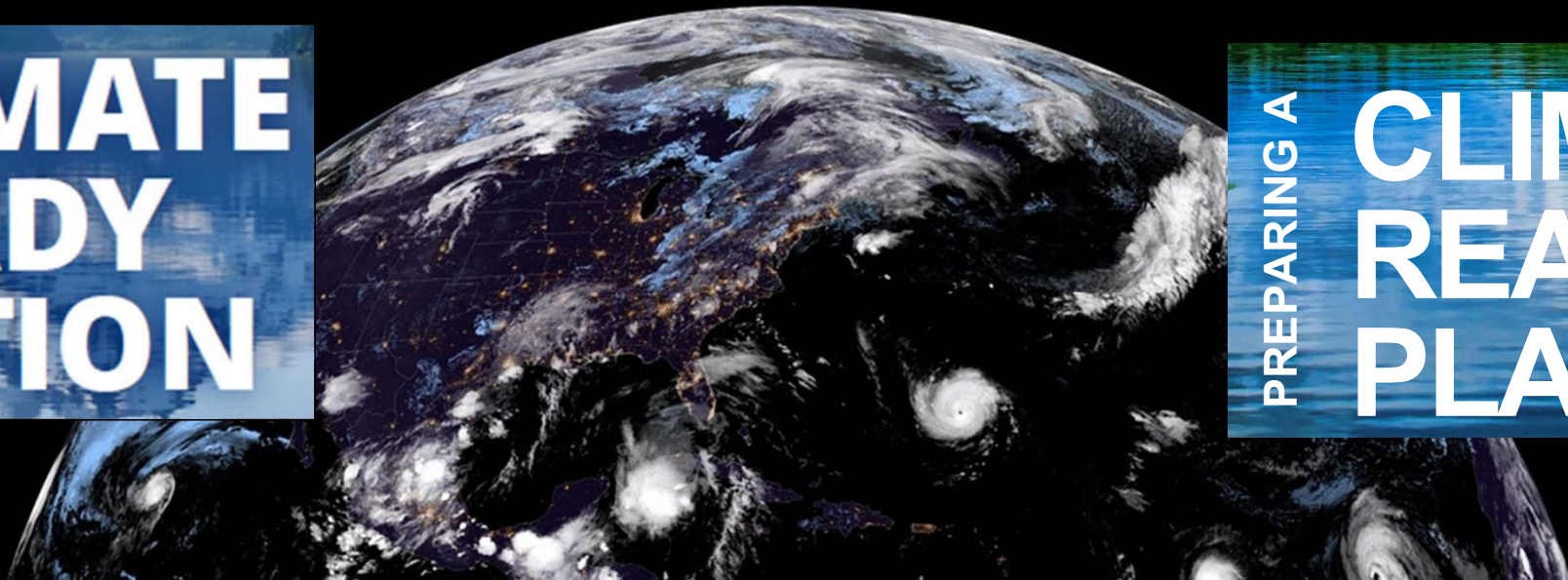


Climate-Ready Nation

2030 Vision Statement

A thriving Nation whose prosperity, health, security, and continued growth benefit from and depend upon a shared understanding of, and collective action to reduce, the impacts of climate change

**BUILDING A
CLIMATE
READY
NATION**



**PREPARING A
CLIMATE
READY
PLANET**



SWFO
SWFO-L1 - Launches fiscal year 2025

DSCOVR
Operational July 27, 2016

COSMIC-2
Operational Feb. 25, 2020

SW Next

Jason-3
Operational July 1, 2016

GOES-R Series
GOES-16 - Operational Dec. 18, 2017
GOES-17 - Operational Feb. 12, 2019
GOES-18 - Operational Jan. 4, 2023
GOES-U - Launches fiscal year 2024

GeoXO

Sentinel-6 Michael Freilich
Operational Nov. 22, 2021

JPSS Series
Suomi-NPP - Operational May 1, 2014
NOAA-20 - Operational May 30, 2018
NOAA-21 - Launched Nov. 10, 2022
JPSS-3 - Launches fiscal year 2033
JPSS-4 - Launches fiscal year 2028

NEON

NOAA Satellite Missions

QuickSounder
Launches fiscal year 2026

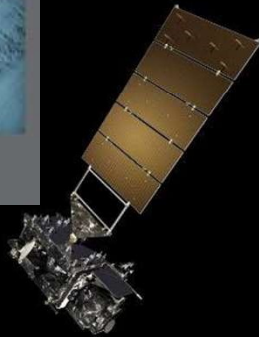
GeoXO Constellation



Nighttime Visible Imagery



Lightning Mapping



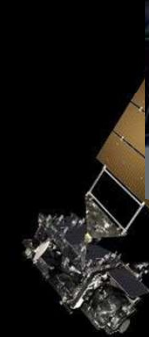
GEO-West

Visible/Infrared Imager
Lightning Mapper
Ocean Color



GEO-Central

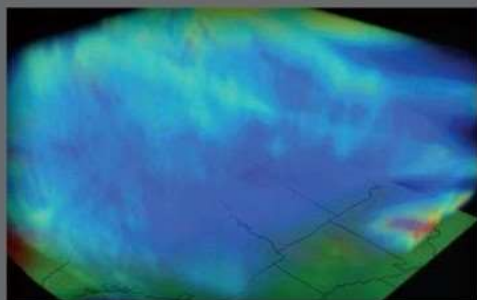
Hyperspectral Infrared Sounder
Atmospheric Composition
Partner Payload



GEO-East

Visible/Infrared Imager
Lightning Mapper
Ocean Color

*Pending Appropriations
Approval*



Infrared Sounding



Atmospheric Composition

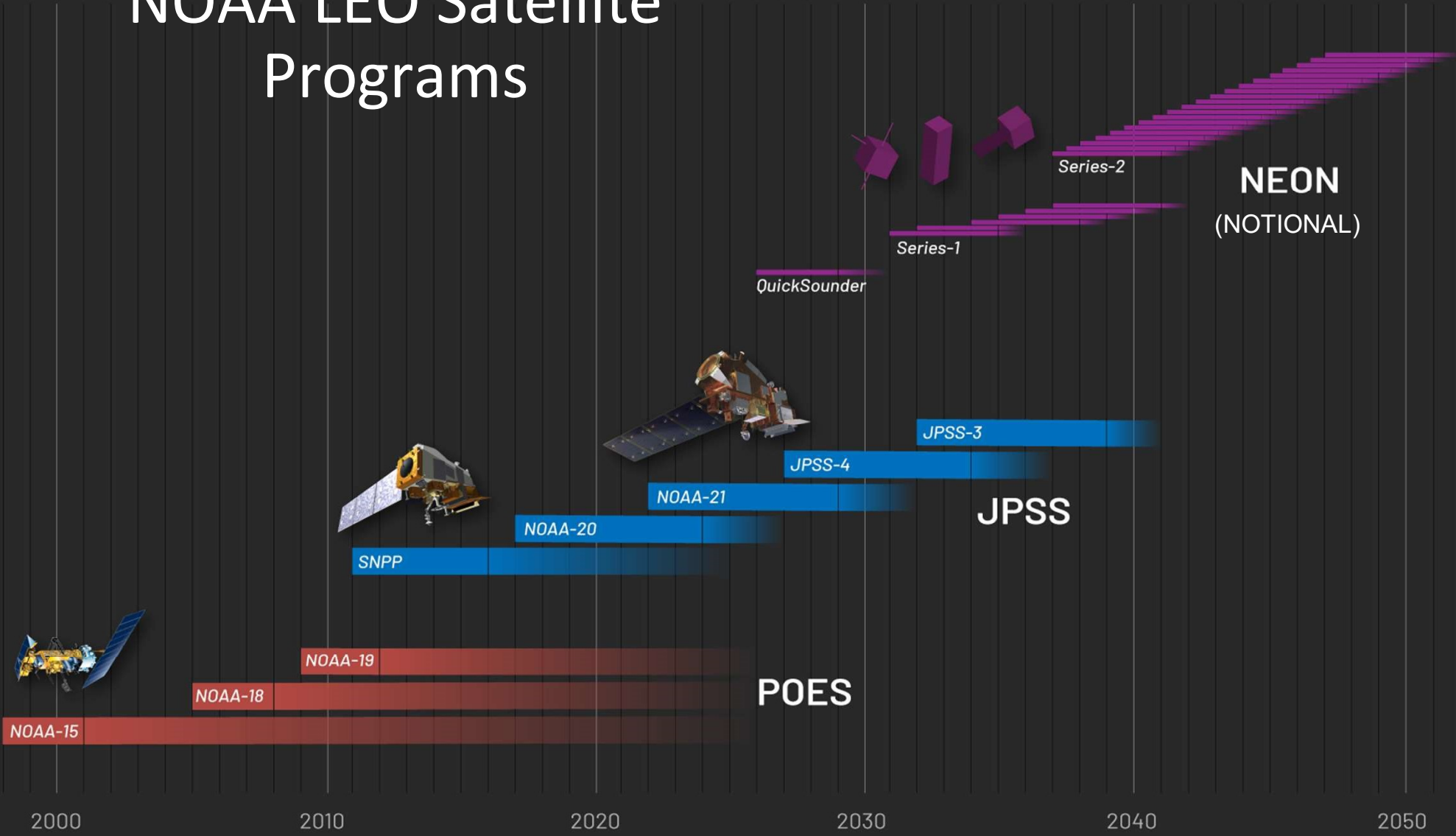


Ocean Color



Visible/Infrared Imagery

NOAA LEO Satellite Programs

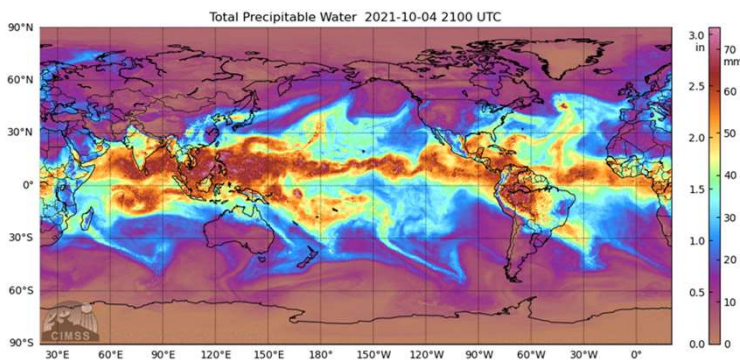




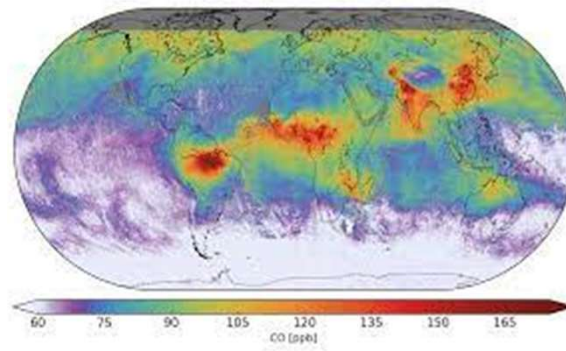
Growing User Needs in Low Earth Orbit

Users expect NOAA to provide improved global observations and forecasts, to meet new requirements with new observations, and to provide novel climate products and services to meet developing challenges and needs.

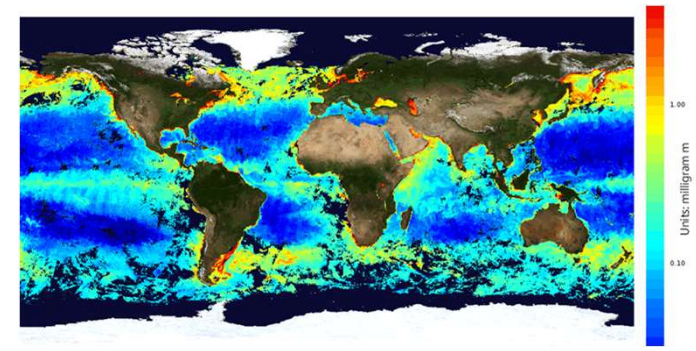
Improved MW and IR Soundings



Enhanced Atmospheric Chemistry Sensor

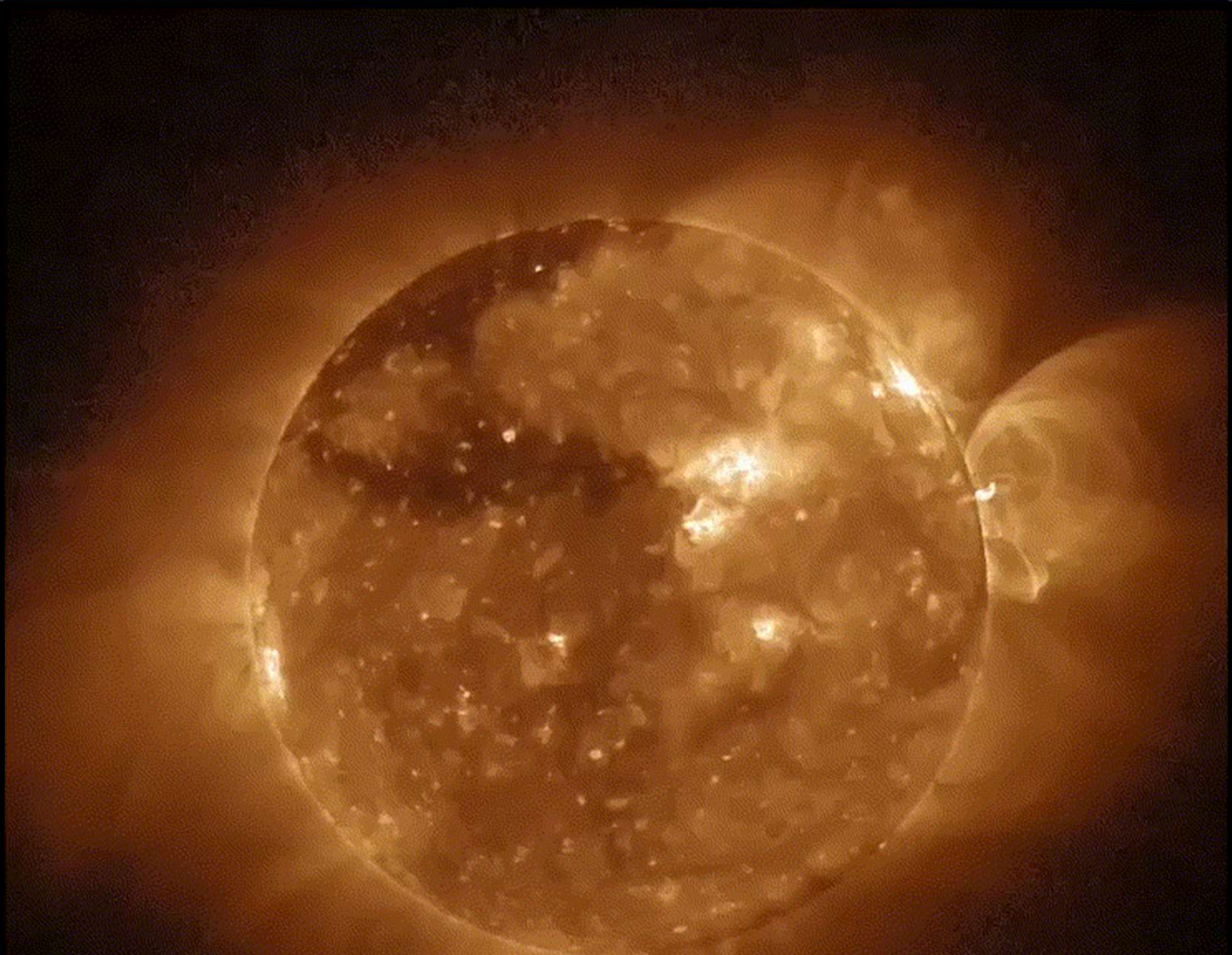


Hyperspectral Ocean Color



LEO Will Support:

- Higher resolution forecasts for short term and long term weather prediction.
- The Blue Economy and coastal communities through improved data on phytoplankton and harmful algal blooms.
- Timely and accurate forecasts of air quality hazards require enhanced atmospheric chemistry sensors.



Protecting the Earth from Space Weather Events

Making Information Accessible & Usable

Earth Observing Systems



Scientific Data Stewardship

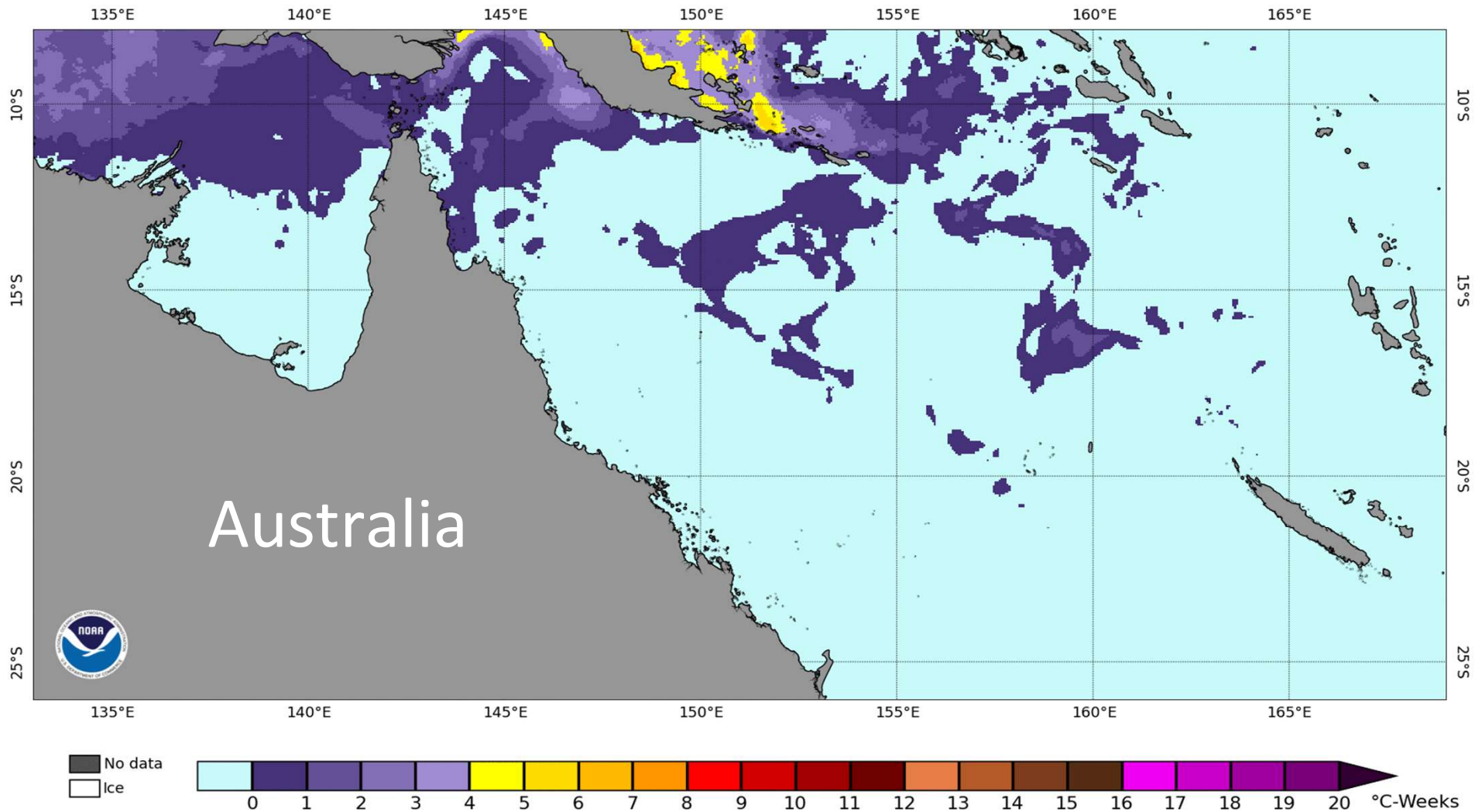
Authoritative Products for Decision-Making

- | | | |
|---|---|--|
| Snowfall Impact Index
Water Mgrs
Emergency | Tsunami Warning
Emergency Managers | Heating & Cooling Degree Days
Energy Sector |
| Hurricane Tracks
Emergency Planners | Coastal Digital Elevation Models
Hazard Mitigation | Solar Activity/Sun Spots
Power Distribution |
| Annual State of the Climate Reports
Decision Makers | Global & U.S. Climate Summaries
Numerous Sectors | Temperature & Precipitation Outlooks
Agriculture |
| IPCC & National Climate Assessments
Gov't Policymakers | Billion \$ Disasters, Climate Extremes Index
Insurance | Climate Normals
Construction, Infrastructure, Agriculture |

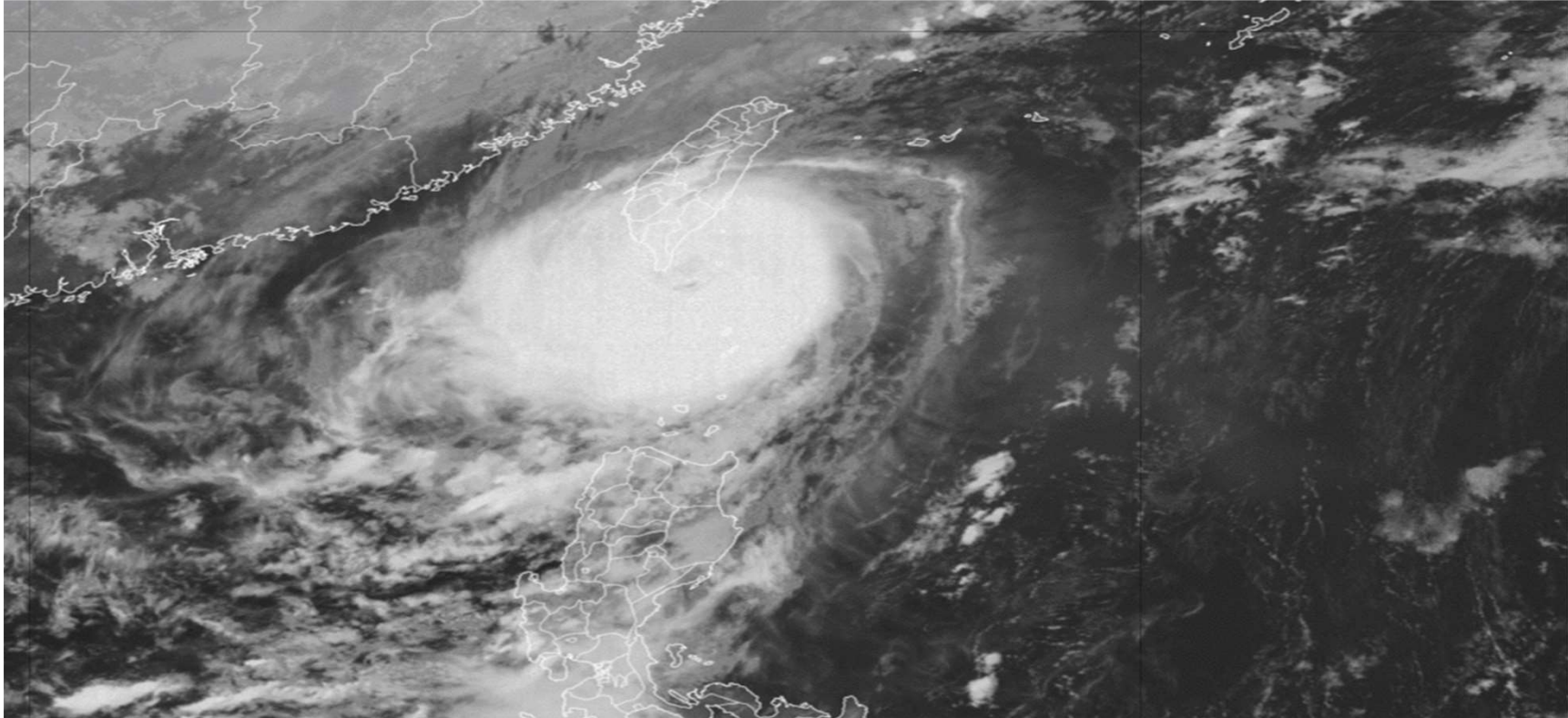
Better Outcomes for
Communities &
Customers

Protecting Coastal & Marine Natural Resources

NOAA Coral Reef Watch Daily 5km Degree Heating Weeks (v3.1) 1 Dec 2021



Forecasting Extreme Events





NOAA Satellites

- USA
- JAPAN
- SOUTH KOREA
- INDIA
- CHINA
- FRANCE
- RUSSIA
- SPAIN

- NOAA
- EUMETSAT
- EUROPEAN COMMISSION
- TAIWAN SPACE AGENCY (TASA)
- EUROPEAN SPACE AGENCY
- NASA
- DEPARTMENT OF DEFENSE



STEREO

DISCOVER

FY-4

SOHO

ACE

HIMAWARI-8/9

GK-2A

GK-2B

NOAA-15/18/19

KOMPSAT-5

PAZ

GPM

MEGHA-TROPIQUES

INSAT-3D

ELECTRO-L

INSAT-3DR

KALPANA

JASON-3

GCOM

SCATSAT-1

METEOSAT-8

EOS-G1

SENTINEL-2

SENTINEL-5P

SENTINEL-3

METEOR

DMSP-F14-18

COSMIC 1/2

A-TRAIN CONSTELLATION

SUOMI NPP

NOAA-20

METOP A/B

FY-3

METEOSAT-9

METEOSAT-10

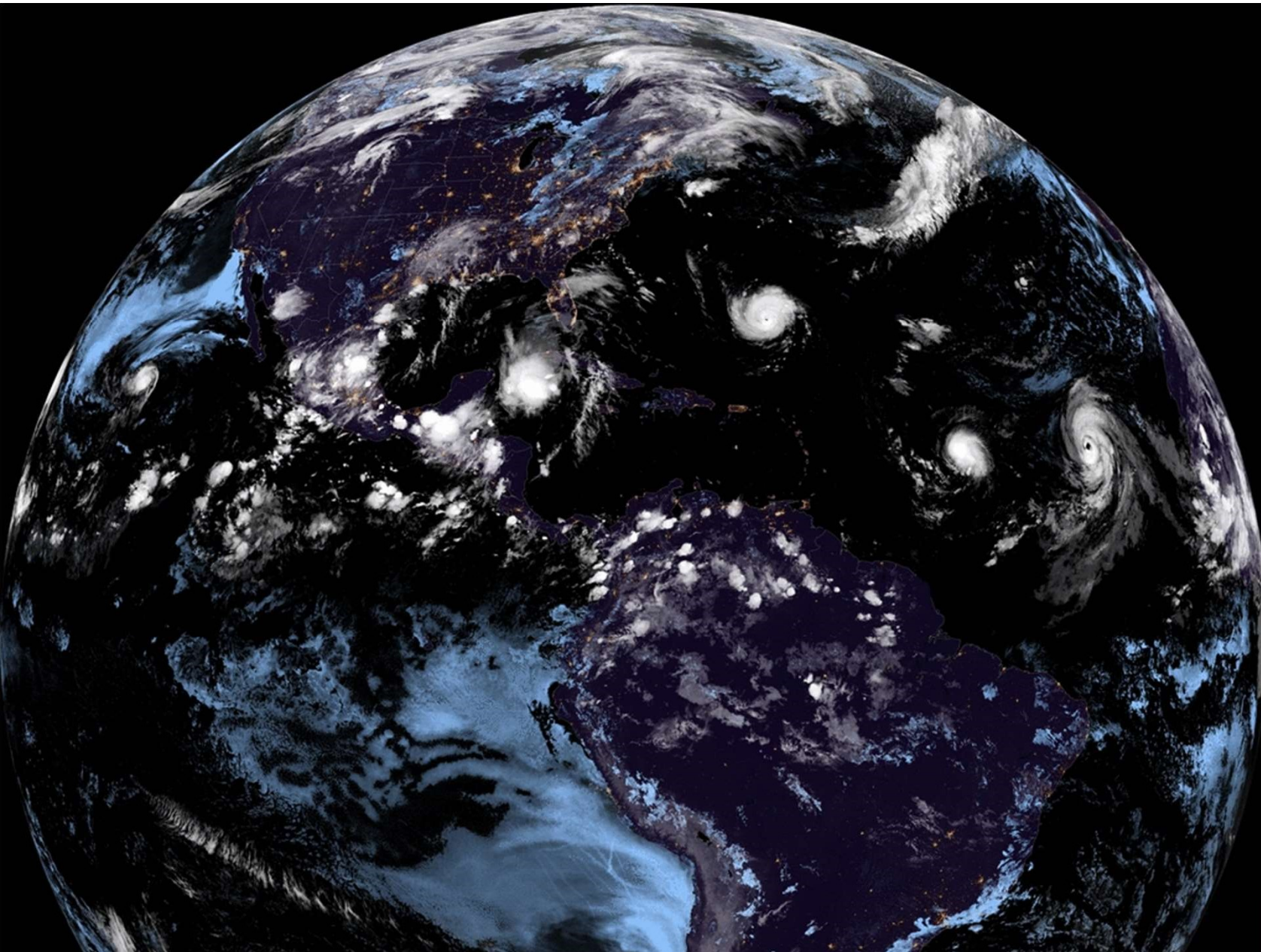
METEOSAT-11

GOES - WEST

GOES - 15

GOES - 14

GOES - EAST



***Thank
You***

