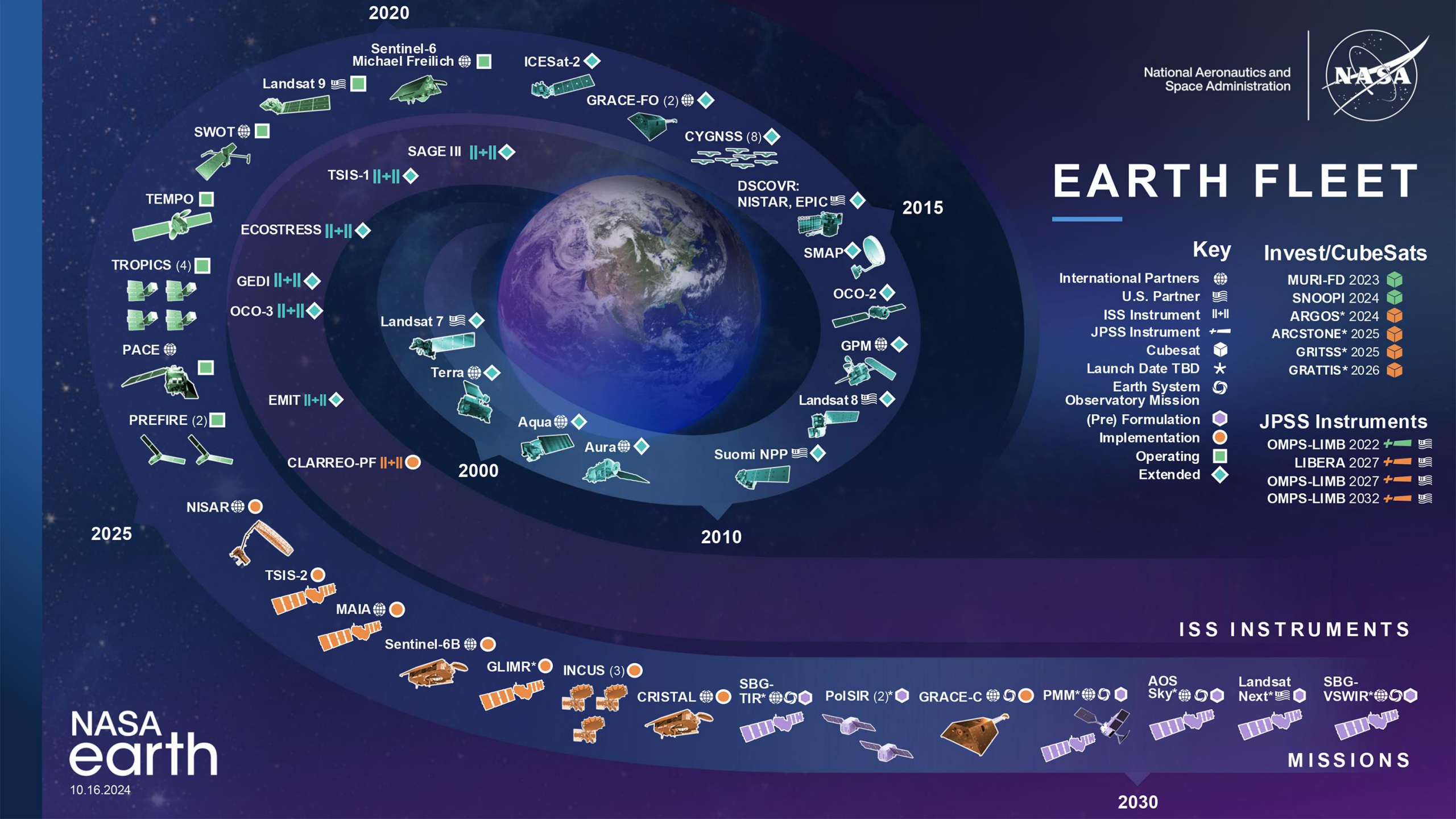
National Aeronautics and
Space Administration

NASA earth

2024 CEOS Plenary | Oct. 24

Montréal, Canada

Karen St. Germain, PhD
Director
Earth Science Division



National Aeronautics and Space Administration

EARTH FLEET

Key

- International Partners
- U.S. Partner
- ISS Instrument
- JPSS Instrument
- Cubesat
- Launch Date TBD
- Earth System Observatory Mission
- (Pre) Formulation
- Implementation
- Operating
- Extended

Invest/CubeSats

- MURI-FD 2023
- SNOOPI 2024
- ARGOS* 2024
- ARCSTONE* 2025
- GRITSS* 2025
- GRATTIS* 2026

JPSS Instruments

- OMPS-LIMB 2022
- LIBERA 2027
- OMPS-LIMB 2027
- OMPS-LIMB 2032

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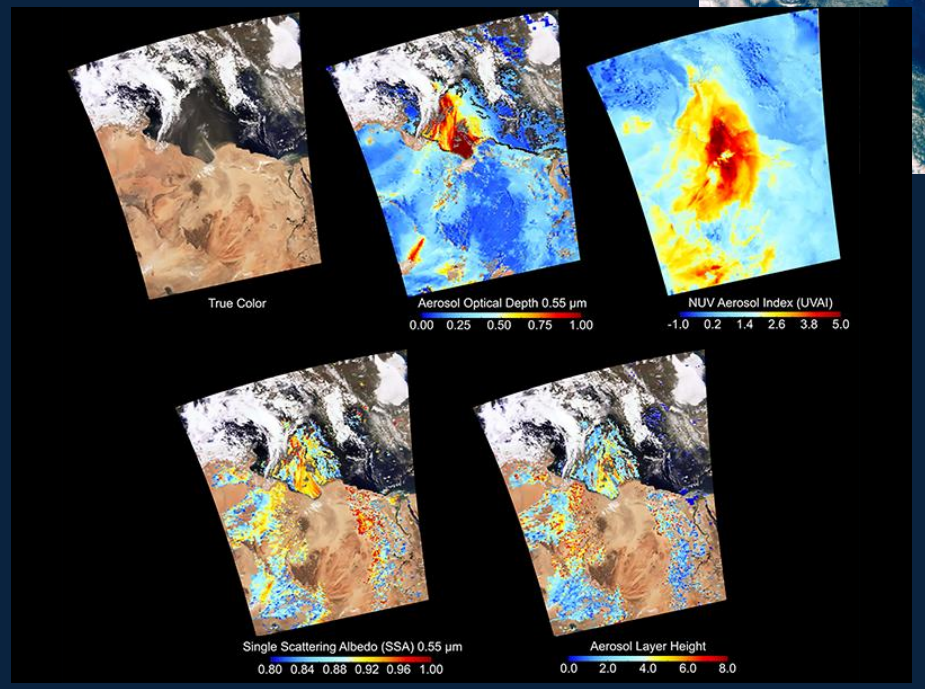
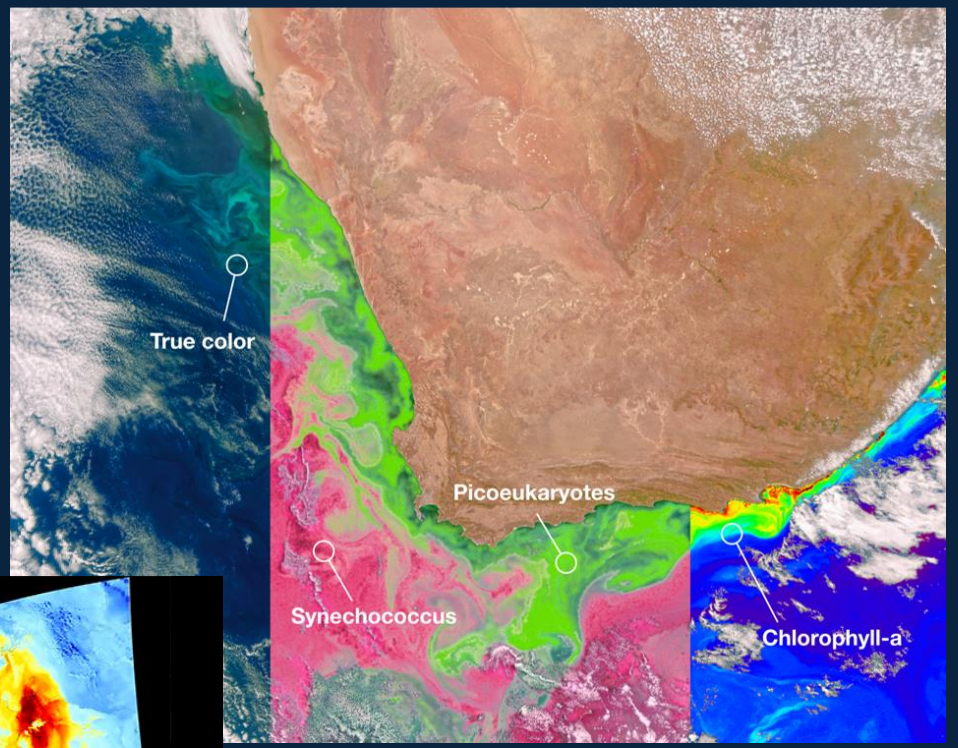
10.16.2024

PACE

Plankton, Aerosol, Cloud and ocean Ecosystem

PACE launch Feb. 8, 2024 from Cape Canaveral





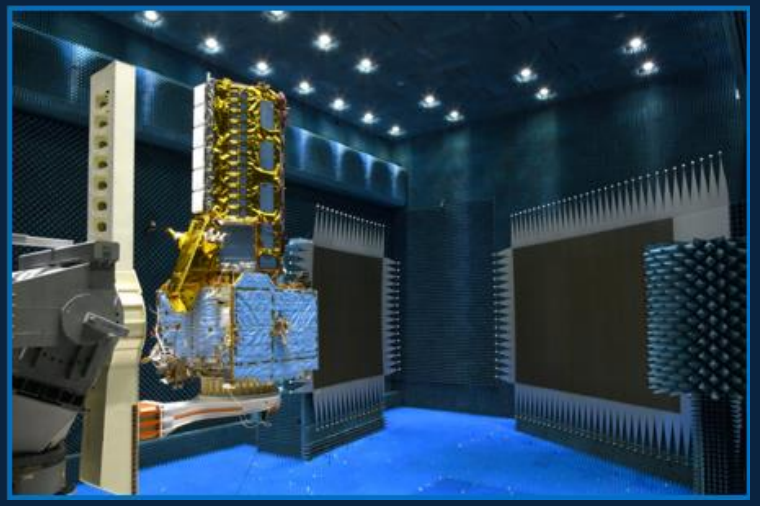
First Light from Ocean Color Instrument: New information on phytoplankton and data to study atmospheric conditions

NISAR

NASA-ISRO Synthetic Aperture Radar

Launch Window Opens February 2025

- Special coating added to reflector to limit temperature from solar radiation
- Reflector returning to India for reintegration with the satellite's radar system
- LRD to be determined by ISRO in coordination with NASA



EARTH SYSTEM OBSERVATORY

INTERCONNECTED CORE MISSIONS

Atmospheric Science Missions

CLOUDS, CONVECTION AND PRECIPITATION

Water and Energy in the Atmosphere

PMM
AOS-Sky
AOS-Storm
AOS-Cloud

AEROSOLS

Particles in the Atmosphere

SURFACE BIOLOGY AND GEOLOGY

Earth Surface & Ecosystems

SBG-TIR
SBG-VSWIR

SURFACE DEFORMATION AND CHANGE

Earth Surface Dynamics

Met by **NISAR** launch in 2025

MASS CHANGE

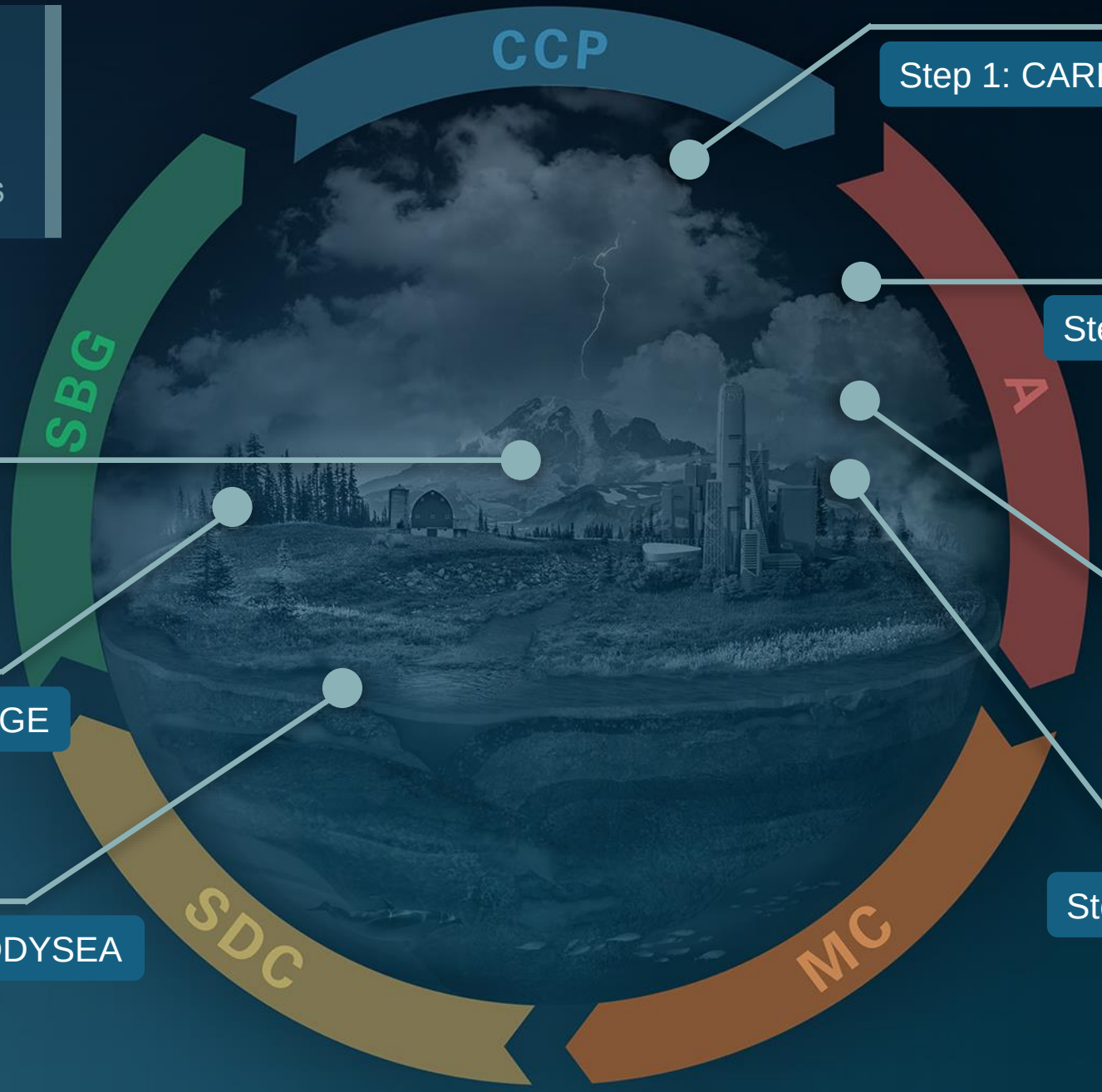
Large-scale Mass Redistribution

GRACE-C

Observables now in Mission Formulation

INNOVATION & COMPETITION

Earth System Explorer Missions



Step 1: CARBON-I Greenhouse Gases

Step 1: STRIVE Ozone and Trace Gases

Atmospheric Winds

Step 1: EDGE Ice Elevation

Snow Depth and Water Content

3D Ecosystem Structure Step 1: EDGE

Ocean Surface Winds and Currents Step 1: ODYSEA

https://science.nasa.gov/earth-science/earth-science-to-action/

Earth Science to Action Strategy

Virtuous Cycle
- User needs inform next iteration of programs, missions and initiatives

Public Understanding & Exchange
- Put more scientific understanding into public sphere
- Deliver applied science to users
- Participate in multi-way info exchange
- Use input to inform subsequent work

Solutions & Societal Value
- Offer models, scientific findings and info through Open-Source Science principles
- Support climate services
- Provide science applications and tools to inform decisions

Earth System Science & Applied Research
- Grow scientific understanding of Earth's systems
- Develop predictive modeling for science applications and tools to mitigate, adapt and respond to climate change

Foundational Knowledge, Technology, Missions & Data
- Technology innovation
- Earth observations missions
- Data collected from space, air and ground

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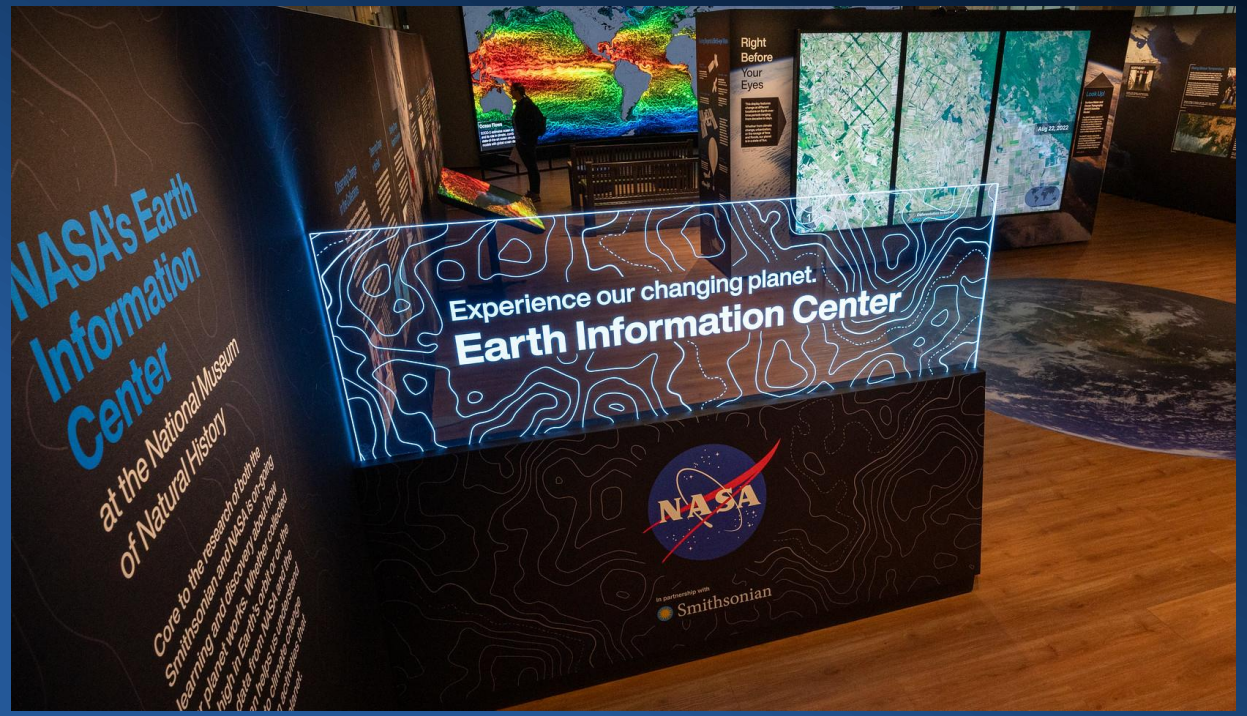
05.01.2024

Earth Information Center Opens at Smithsonian National Museum of Natural History



NASA/Bill Ingalls

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