



National Aeronautics and  
Space Administration

# How NASA Missions and Research Inform Climate Decisions

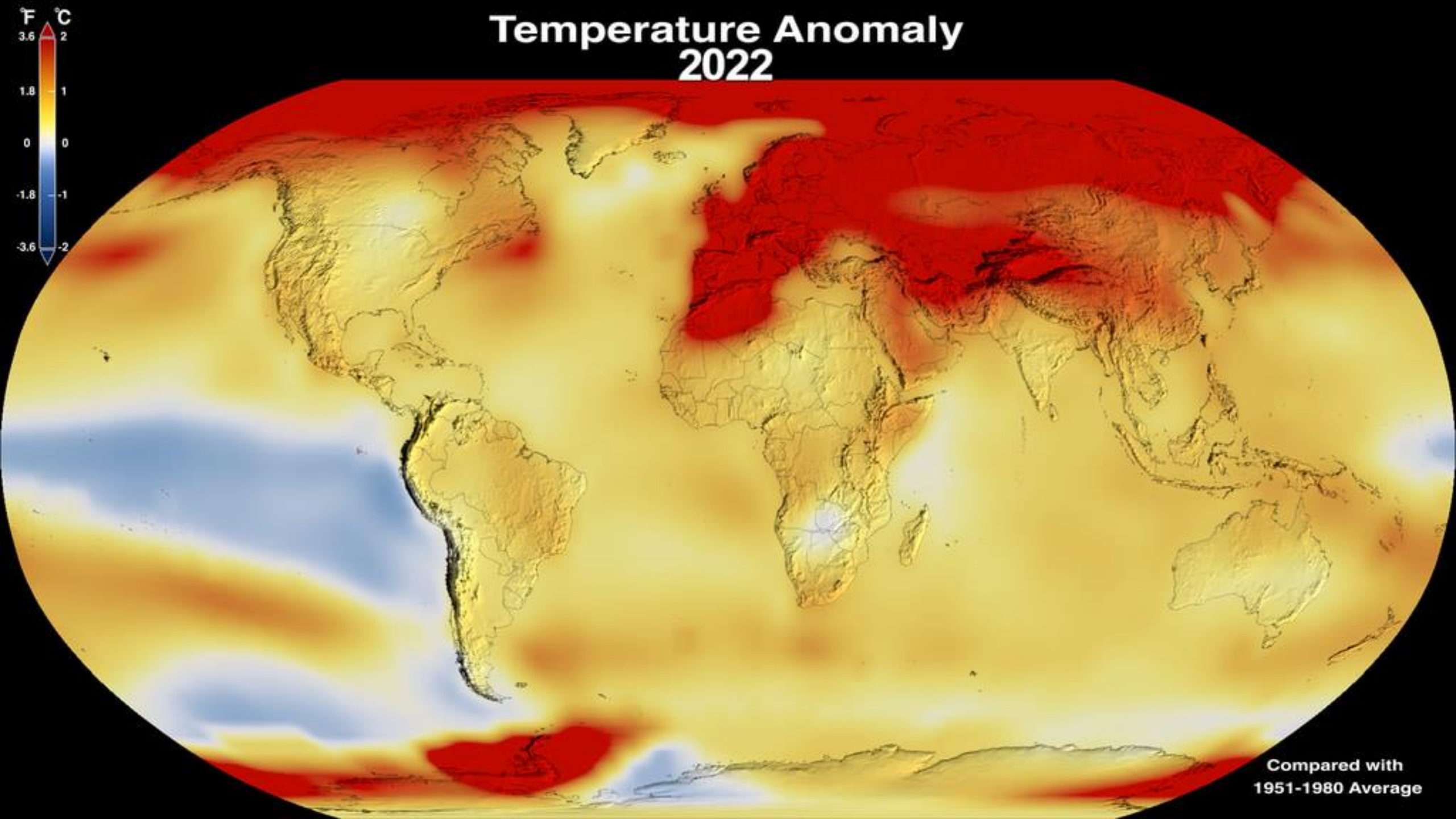
**DR. KATE CALVIN**

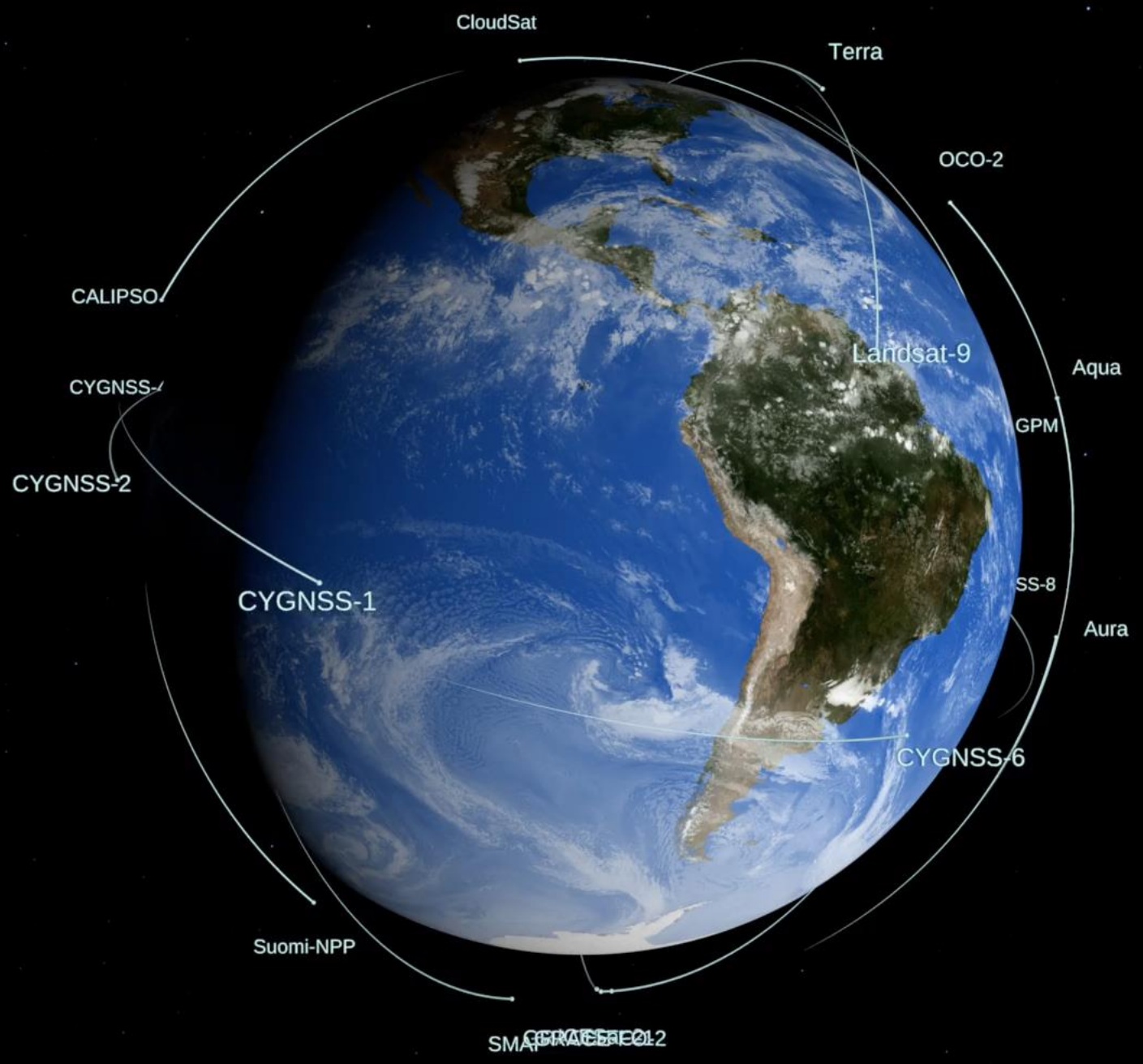
NASA Chief Scientist  
and Senior Climate  
Advisor





# Temperature Anomaly 2022







# Earth Observing Dashboard



Global environmental changes observed by NASA, ESA, and JAXA

ATMOSPHERE

AGRICULTURE

BIOMASS

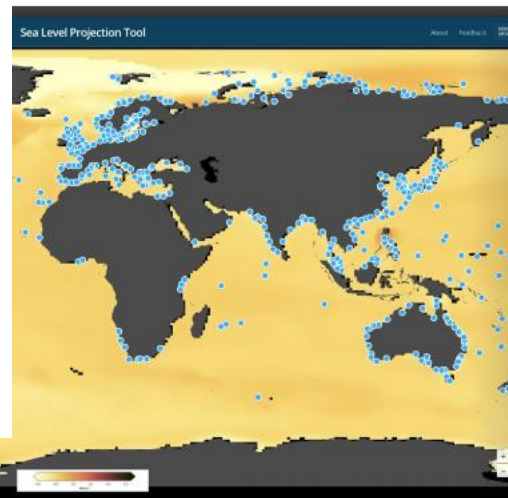
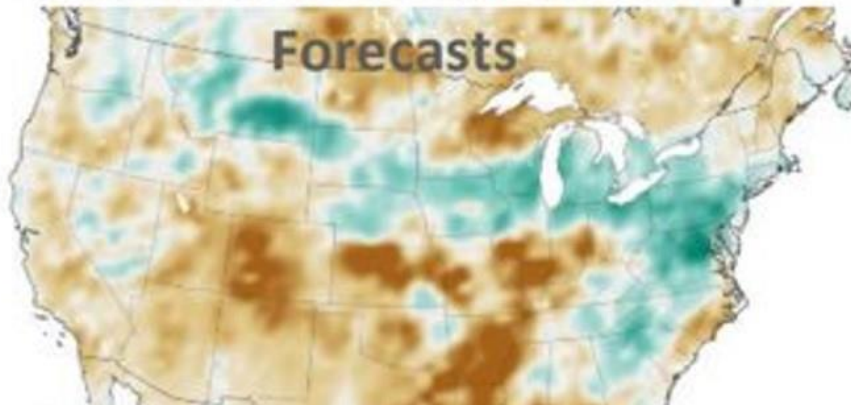
OCEANS

CRYOSPHERE

COVID-19

ECONOMY

## NASA Soil Moisture Data Advances USDA Global Crop Forecasts

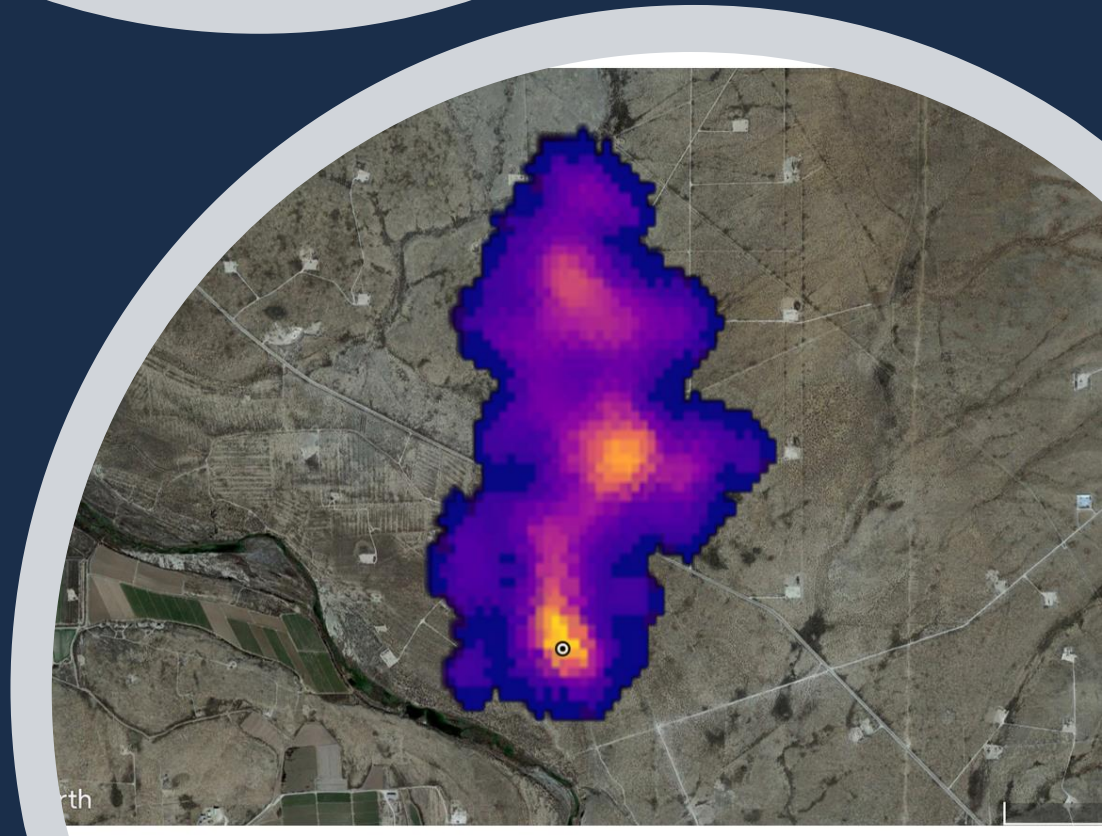


## [Sea Level Projection Tool](#)

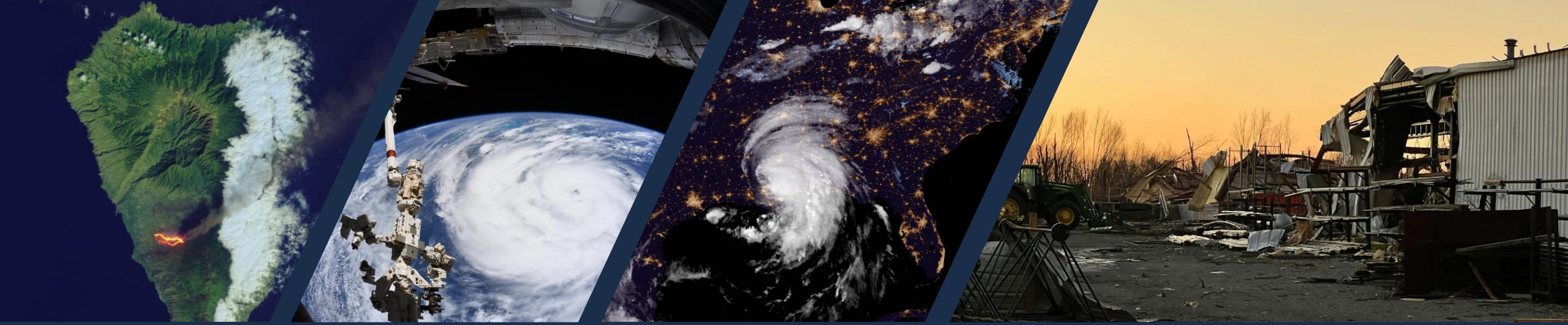
This online dashboard builds off data from the UN's Intergovernmental Panel on Climate Change (IPCC) recent report. The tool allows user to visualize and project sea level on global and regional scales from 2020-2150.

# Greenhouse Gas Observations

- NASA's Earth Surface Mineral Dust Source Investigation (EMIT) launched to the International Space Station in 2022. The mission will map Earth's mineral dust, but also has the ability to detect methane. The image on the bottom right shows a methane plume two miles southeast of Carlsbad, New Mexico.







# Disaster Response





WASHINGTON

OREGON

ACTIVE FIRE DATA

FIRE ALERTS

ARCHIVE DOWNLOAD

WEB SERV

Fire Information for Resource Management System

Active Fire Data for Near-Real Time Monitoring  
ations



Oakridge

Waldo  
Lake







# EARTH SYSTEM OBSERVATORY

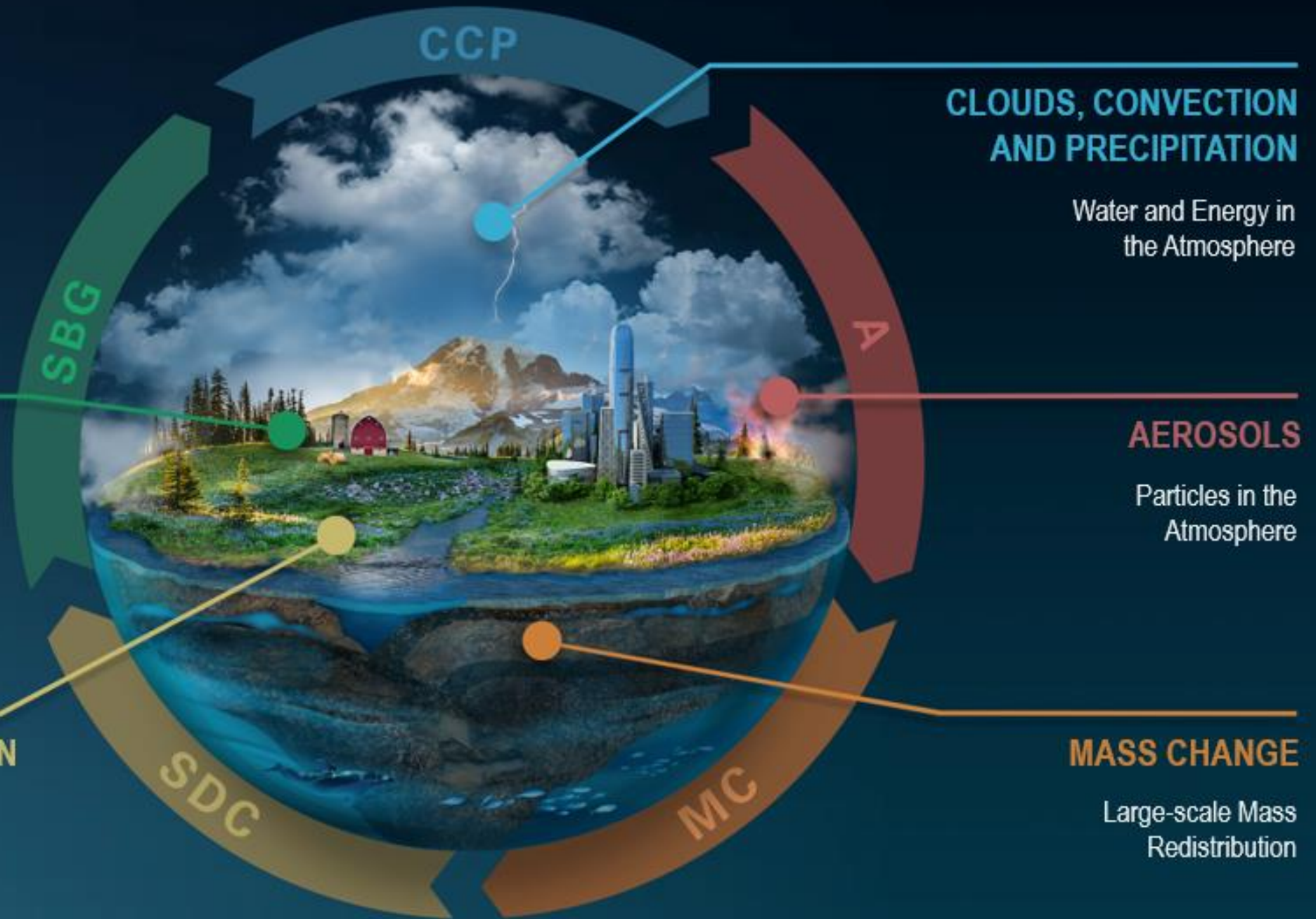
INTERCONNECTED CORE MISSIONS

## SURFACE BIOLOGY AND GEOLOGY

Earth Surface & Ecosystems

## SURFACE DEFORMATION AND CHANGE

Earth Surface Dynamics



## CLOUDS, CONVECTION AND PRECIPITATION

Water and Energy in the Atmosphere

## AEROSOLS

Particles in the Atmosphere

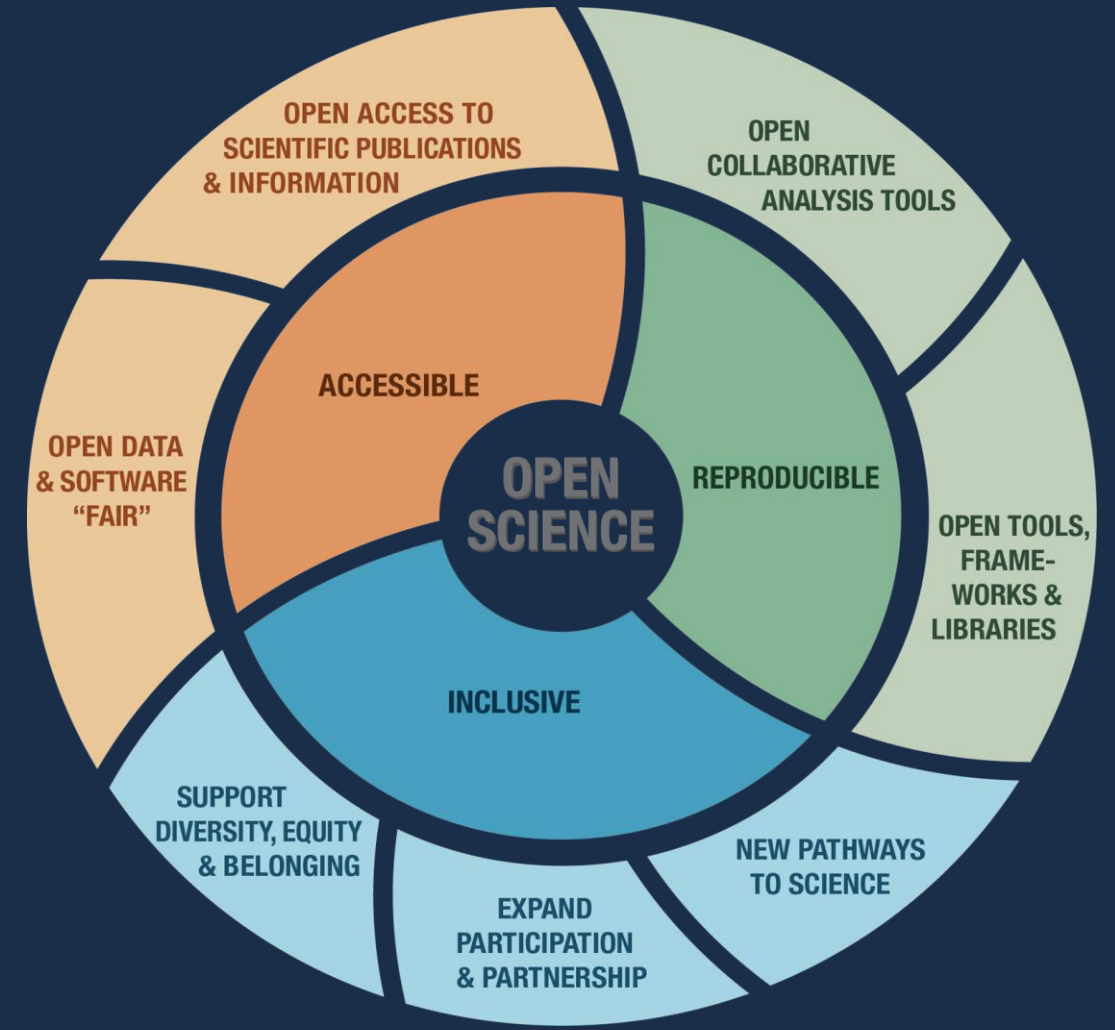
## MASS CHANGE

Large-scale Mass Redistribution



# NASA's Open-Source Science Initiative

*The global challenges we face require us to face them together, in the open.*





# NASA and DEIA

## Diversity and Inclusion

We define diversity broadly as “the entire universe of differences and similarities” and inclusion as “the full participation, belonging, and contribution of organizations and individuals.”

## Equity

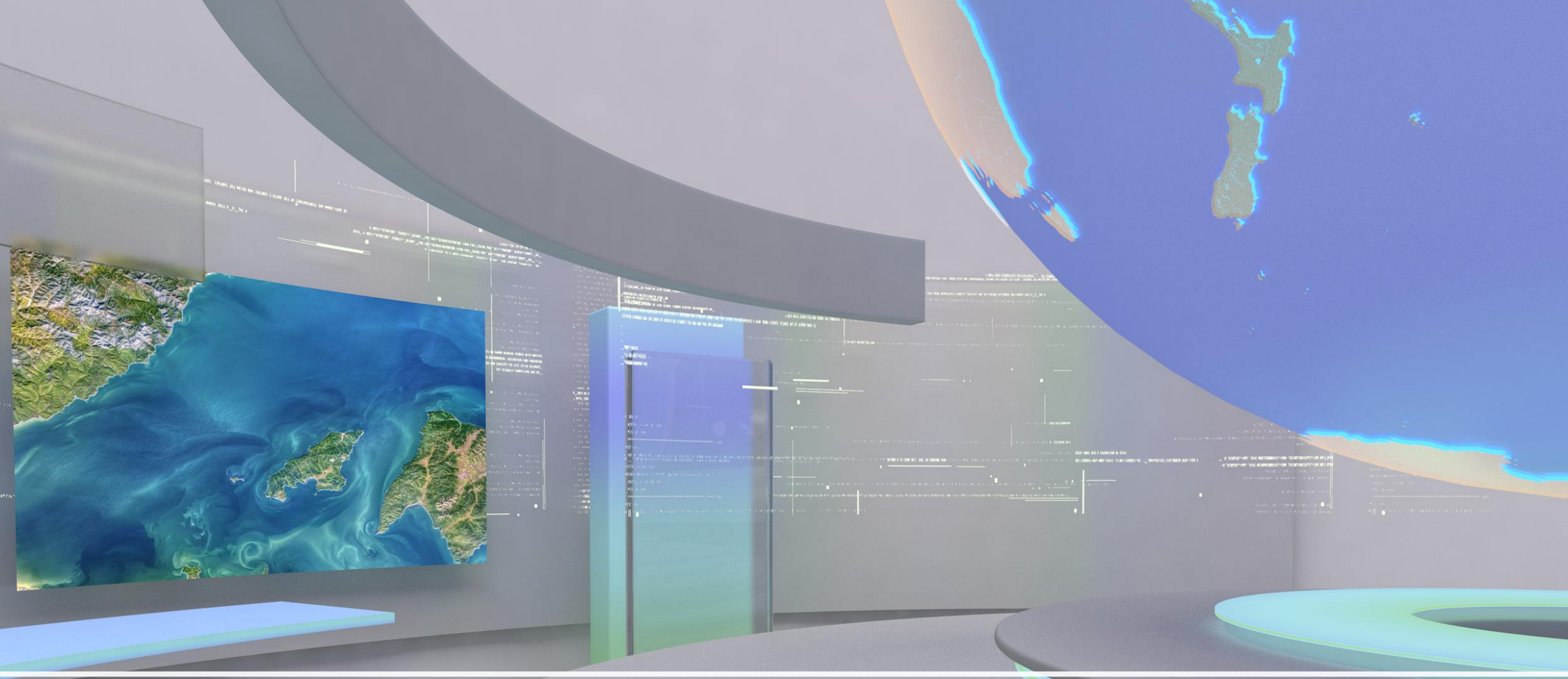
We define equity as “the consistent and systematic provision of fair, just, and impartial treatment to all individuals, including individuals who belong to underserved communities that have been denied such treatment.”

## Accessibility

We define accessibility as “the capability for full and independent use by all people, including people with disabilities, of technology, programs, and services through inclusive design, construction, development, and maintenance of facilities.”







# NASA's Earth Information Center



A surreal landscape featuring a large tree on the left, a wooden bench on the right, and a satellite in the sky. The background is a vibrant, multi-colored sky with a large moon, a smaller planet, and a jet flying over a sea of clouds. The scene is illuminated by a bright sun or star on the right.

Thank you!