EARTH SCIENCE
APPLIED SCIENCES

NASA Earth Science Climate-Related Applications Programs

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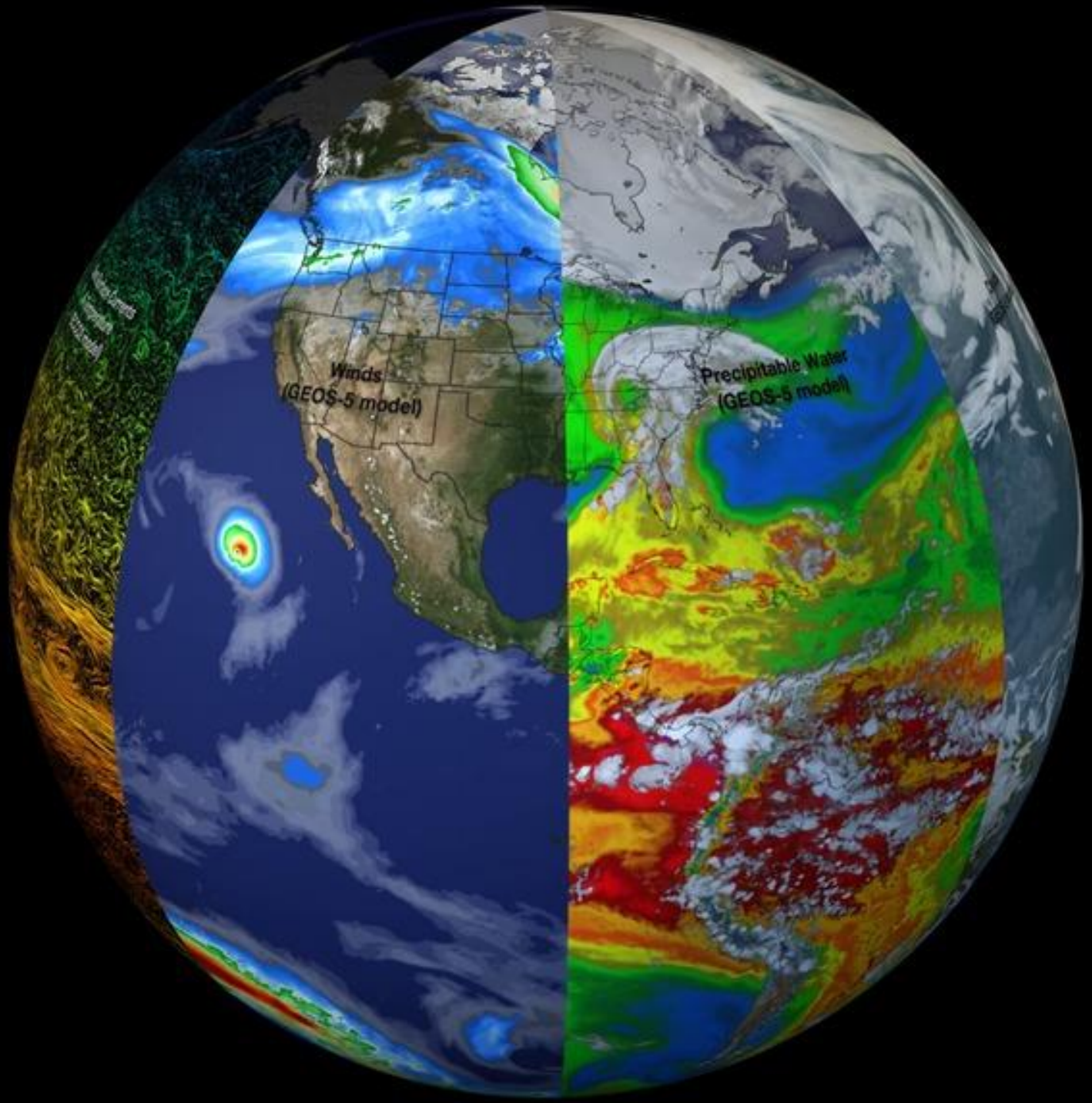
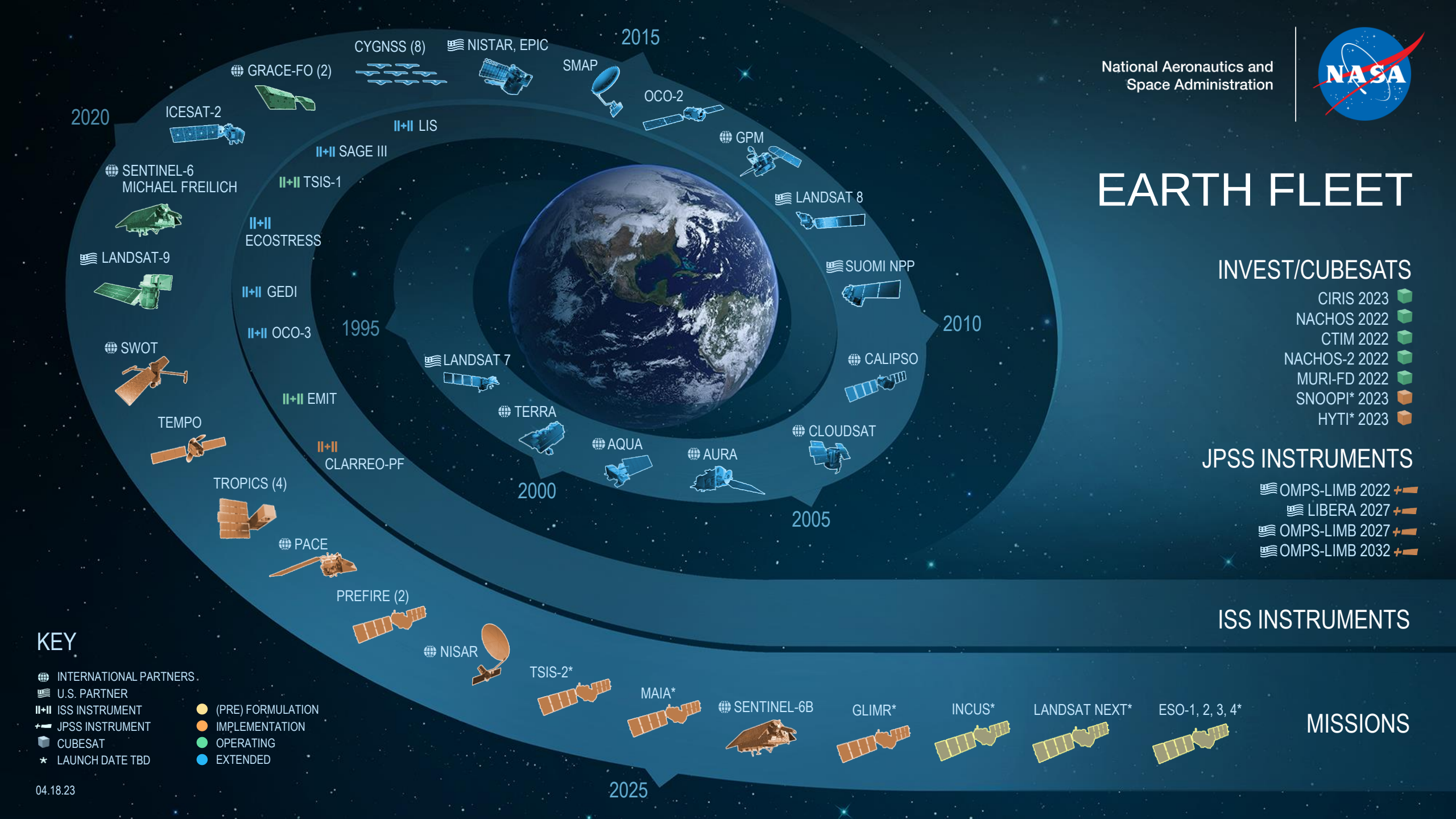
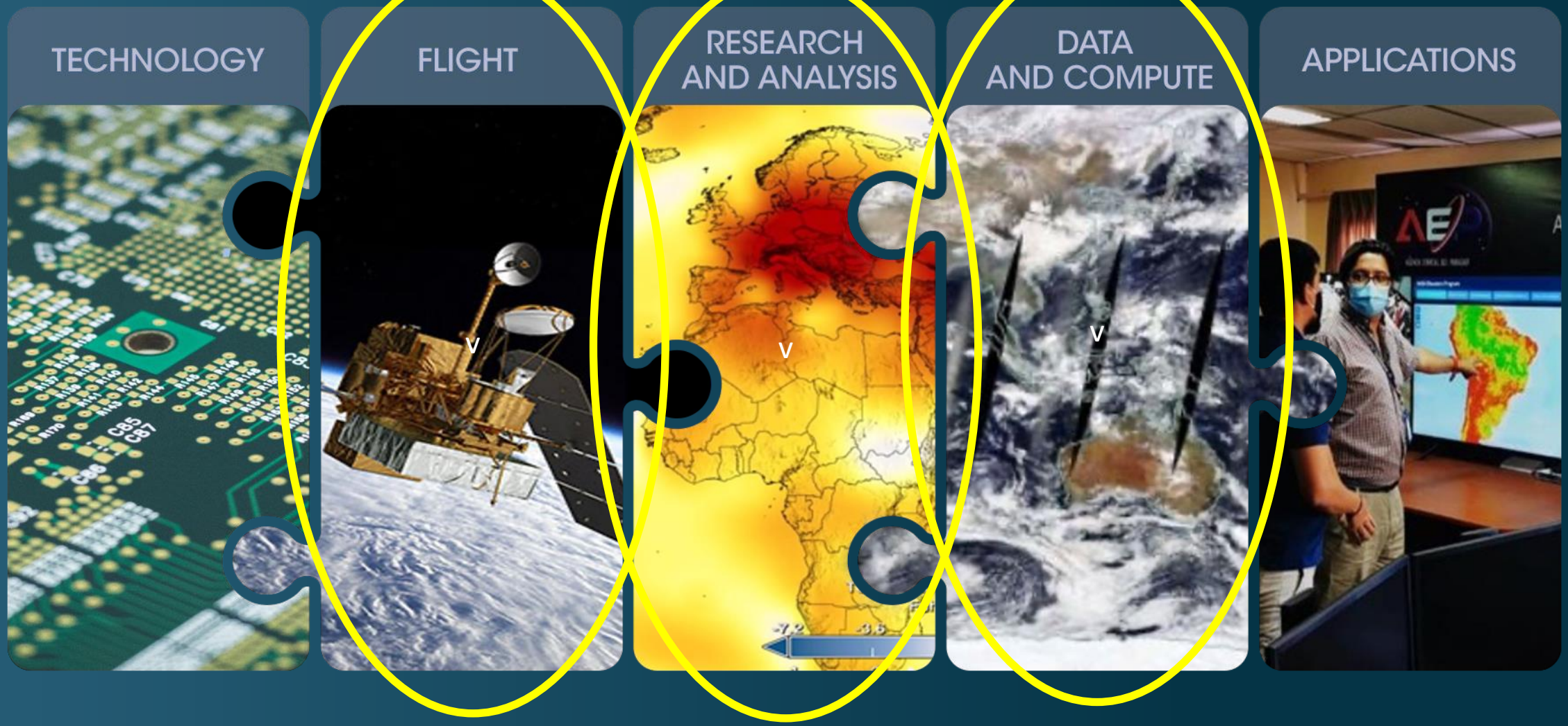
CLIMATE & RESILIENCE


Winds
(GEOS-5 model)
Precipitable Water
(GEOS-5 model)


National Aeronautics and Space Administration
NASA
EARTH FLEET
2015
2020
1995
2010
2000
2005
2025
CYGNSS (8)
NISTAR, EPIC
SMAP
GRACE-FO (2)
OCO-2
ICESAT-2
LIS
GPM
SAGE III
SENTINEL-6 MICHAEL FREILICH
TSIS-1
LANDSAT 8
ECOSTRESS
LANDSAT-9
SUOMI NPP
GEDI
OCO-3
SWOT
LANDSAT 7
CALIPSO
EMIT
TERRA
TEMPO
CLOUDSAT
AQUA
AURA
CLARREO-PF
TROPICS (4)
PACE
PREFIRE (2)
NISAR
TSIS-2*
MAIA*
SENTINEL-6B
GLIMR*
INCUS*
LANDSAT NEXT*
ESO-1, 2, 3, 4*
INVEST/CUBESATS
CIRIS 2023
NACHOS 2022
CTIM 2022
NACHOS-2 2022
MURI-FD 2022
SNOOPI* 2023
HYTI* 2023
JPSS INSTRUMENTS
OMPS-LIMB 2022
LIBERA 2027
OMPS-LIMB 2027
OMPS-LIMB 2032
ISS INSTRUMENTS
MISSIONS
KEY
INTERNATIONAL PARTNERS
U.S. PARTNER
ISS INSTRUMENT
JPSS INSTRUMENT
CUBESAT
LAUNCH DATE TBD
(PRE) FORMULATION
IMPLEMENTATION
OPERATING
EXTENDED
04.18.23

Advancing Earth System Science End-to-end



Earth Science Division – Applied Sciences Program

Mission

Enable people & organizations to apply insights from Earth science to benefit the economy, health, quality of life, and environment.

What We Do

Financial and programmatic investments to:

- **Generate creative solutions** with organizations to improve their decisions and actions
- **Lower the technical and institutional barriers** to using Earth science information
- **Use connections** across sectors for multiplier effects and bring insights back to ESD

Partnerships are core to our work

Applied Sciences Program – Lines of Business

Mission Planning

Support applications throughout mission lifecycles

Capacity Building

Build capabilities in US and developing countries

Innovative & Practical Applications

Develop, test, prove-out, transition, and extol uses

Earth Science Division – Applications

- Applications refer to uses of Earth science data, models, and information products to inform organizations' decisions and actions on management, policy, and business activities.
- Satellite data and information provide evidence for different types of decisions and actions:
  - Planning, management, and response
  - Monitoring and tracking impact
  - Alert systems

Climate & Resilience Applications

NASA's Equity & Environmental Justice Program

Program commitment: ensuring that the investment the nation has made in NASA satellites and science ***benefits people*** *across the U.S. and helps them* ***make informed decisions*** *about the challenges they face in their communities.*

Solicitation objective: Advance progress on EEJ domestically through better understanding of community needs and increased use of Earth science, geospatial, and socioeconomic information.

➔ **Landscape Analyses**
Increase NASA's understanding of the EEJ "landscape."

➔ **Community-Based Feasibility Studies**
Test ways to address environmental issues facing communities with the help of Earth science information.

➔ **Data Integration Projects**
Develop sustained use of integrated Earth science, geospatial, and socioeconomic data, tools, and applications.

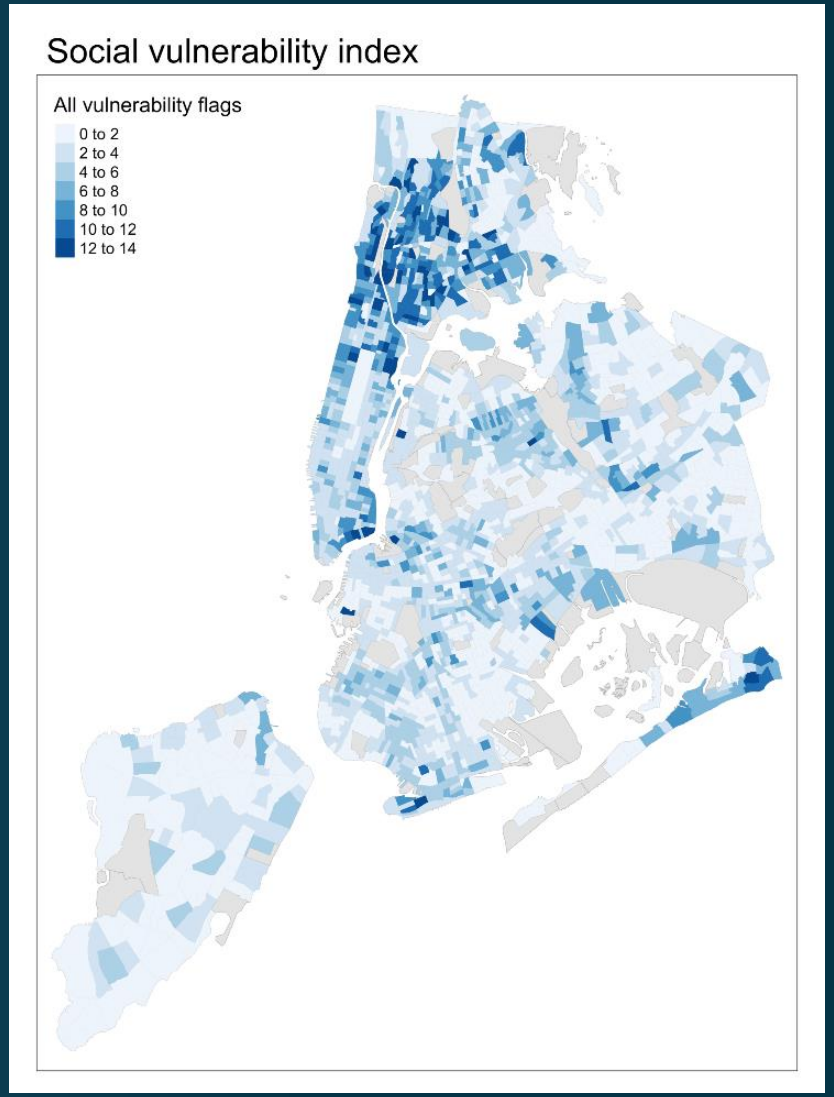
Integrating Scientific Study with Community Perspectives in NYC
PI Peter Marcotullio, Hunter College

Project Questions:

1) Does LST differ within and across Home Owners' Loan Corporation (HOLC) - defined neighborhood categories?
2) Has biophysical greening in any parts of the HOLC neighborhoods changed over the time?
3) What is the relationship between LST, NDVI, city climate- and greening-related policies and socio-economic and resident health characteristics in EEJ neighborhoods?

Partners

- NYC Mayor's Office of Climate and Environmental Justice
- NYC Department of Health and Mental Hygiene
- Climate Adaptation Partners



ARSET

Cost-free training on the use of Earth Observations for decision making

Trainings are:

- Online and in-person
- Live, instructor-led, or self-guided
- Provided at no cost, with materials and recordings available from our website
- Often multi-lingual
- All levels, from **introductory** to **advanced**

Recent Trainings:

ARSET - Fundamentals of Machine Learning for Earth Science

April 20, 2023 - May 04, 2023

ARSET Trainings 2009 - 2021

162 trainings

86,000+ participants

179 countries

14,000+ organizations

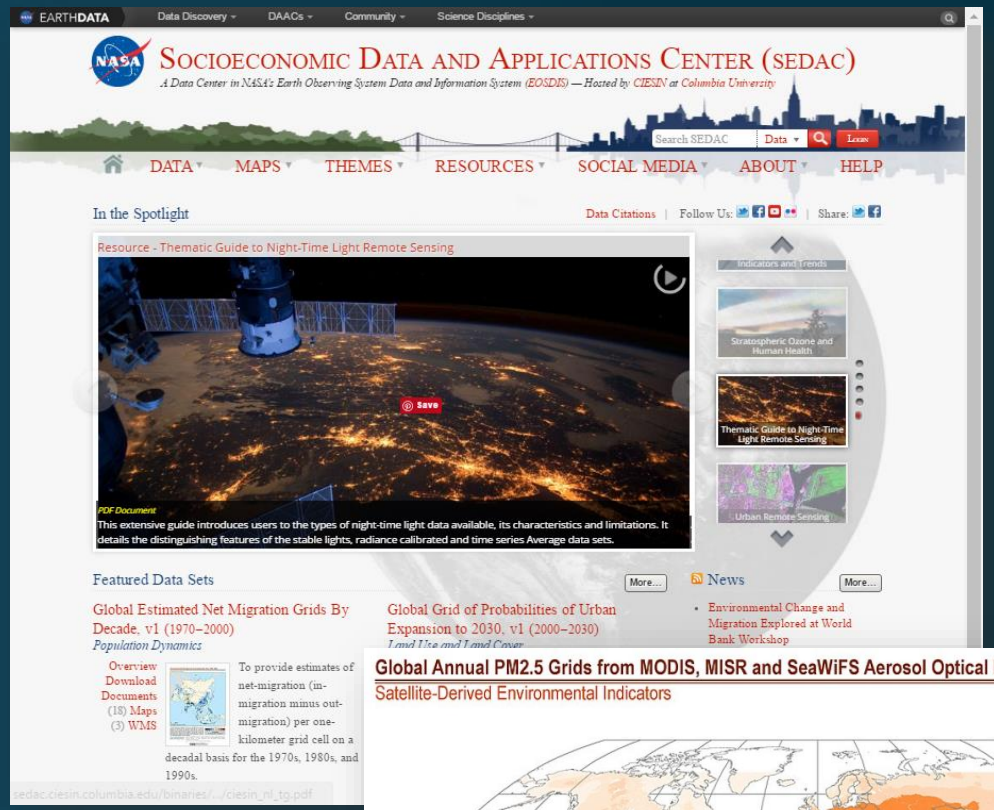
SERVIR

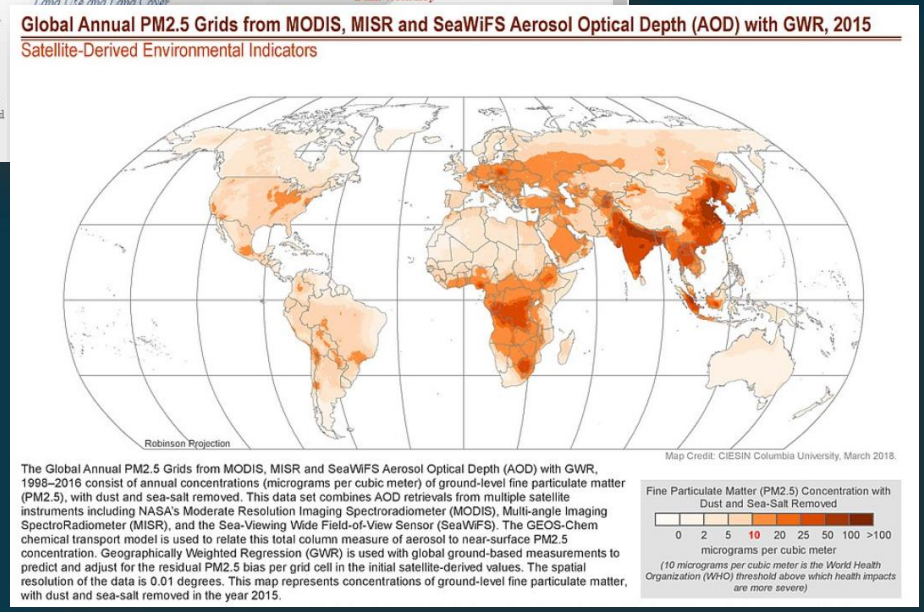
- A joint initiative of NASA, USAID, and leading geospatial organizations in Asia, Africa, and Latin America.
- Partners with countries and organizations to address critical challenges in climate change, food and water security, water-related disasters, land use, and air quality.
- Co-develops innovative solutions through a network of regional hubs to improve resilience and sustainable resource management at local, national and regional scales.

SEDAC - Socioeconomic Data and Applications Center

- Mission: To develop and operate applications that support the integration of socioeconomic and earth science data and to serve as an "Information Gateway" between earth sciences and social sciences.

- SEDAC data provide the ground level context for NASA’s remote sensing data with a focus on human dimensions of environmental change





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