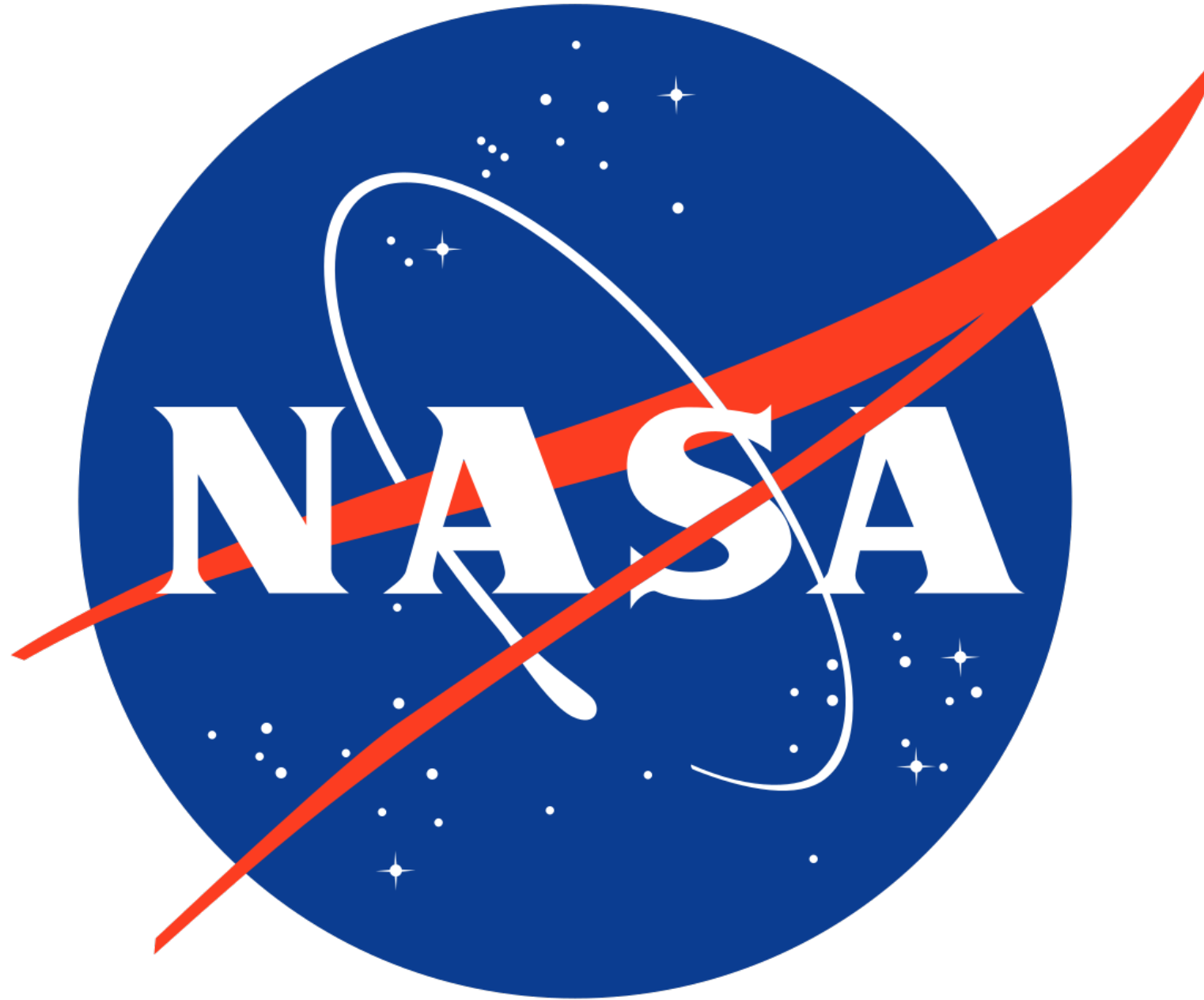
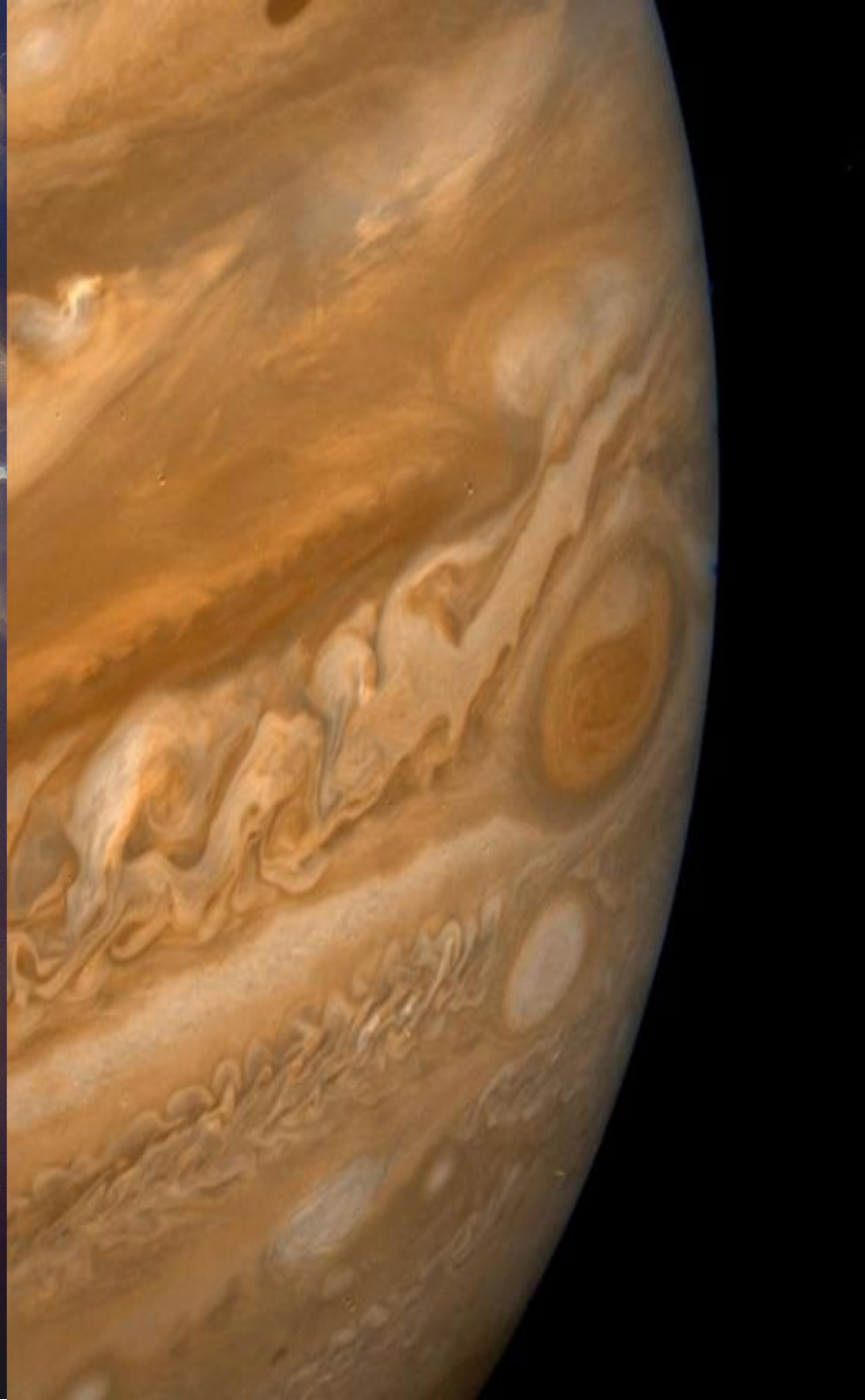


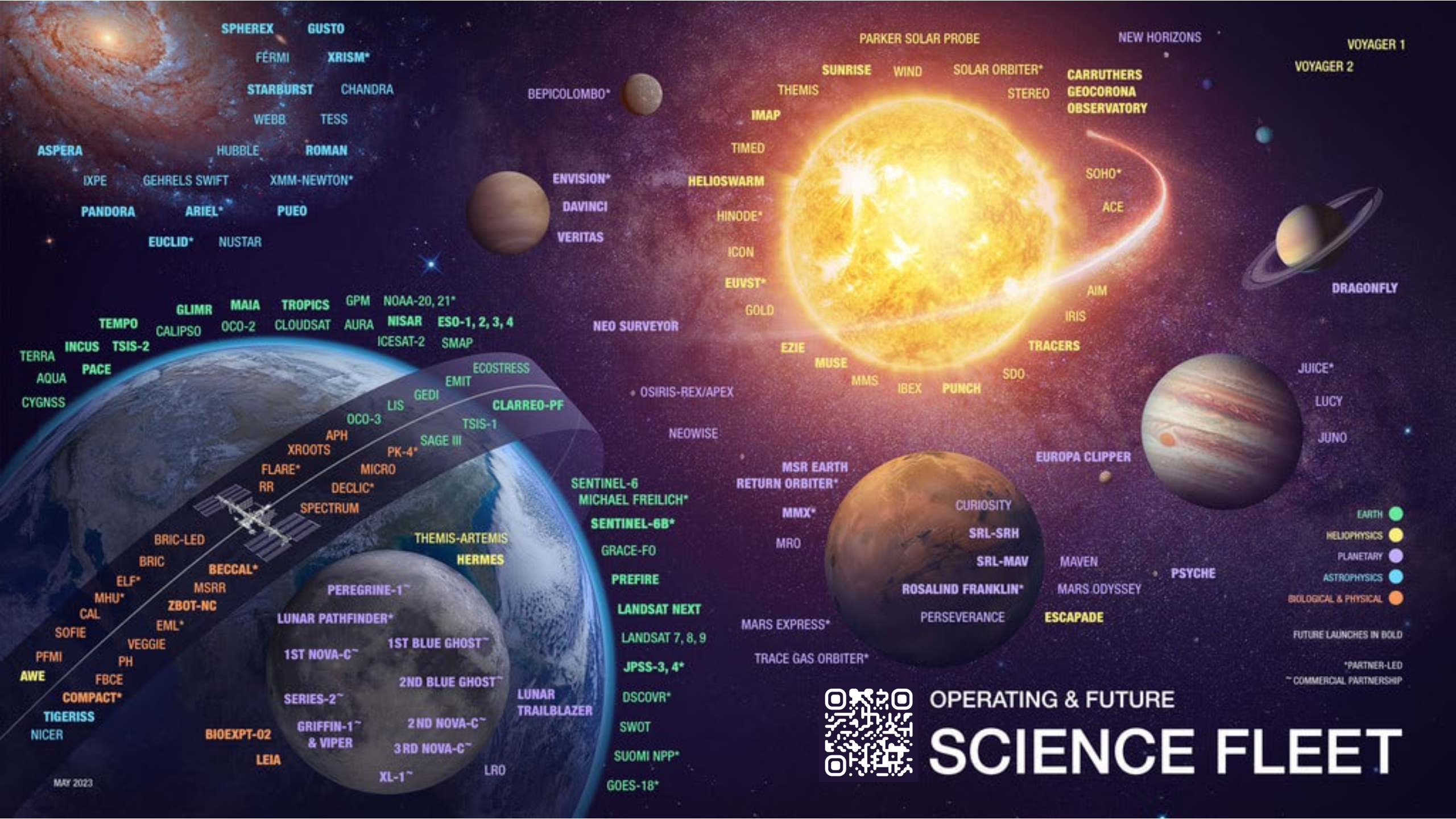
# Mentimeter Question :

What do you think  
about when you think  
about NASA?









**SPHEREX** **GUSTO**  
**FÉRMÍ** **XRISM\***  
**STARBURST** **CHANDRA**  
**WEBB** **TESS**  
**HUBBLE** **ROMAN**  
**ASPERSA**  
**IXPE** **GEHRELS SWIFT** **XMM-NEWTON\***  
**PANDORA** **ARIEL\*** **PUEO**  
**EUCLID\*** **NUSTAR**  
**GLIMR** **MAIA** **TROPICS** **GPM** **NOAA-20, 21\***  
**TEMPO** **CALIPSO** **OCO-2** **CLOUDSAT** **AURA** **NISAR** **ESO-1, 2, 3, 4**  
**TERRA** **INCUS** **TSIS-2** **ICESAT-2** **SMAP**  
**AQUA** **PACE**  
**CYGNSS**  
**ECOSTRESS**  
**EMIT**  
**LIS** **GEDI** **CLARREO-PF**  
**OCO-3** **TSIS-1**  
**APH** **SAGE III**  
**XROOTS** **PK-4\***  
**FLARE\*** **MICRO**  
**RR** **DECLIC\***  
**SPECTRUM**  
**BRIC-LED** **THEMIS-ARTEMIS**  
**BRIC** **HERMES**  
**ELF\*** **BECCAL\***  
**MHU\*** **MSRR**  
**CAL** **ZBOT-NC**  
**SOFIE** **EML\***  
**PFMI** **VEGGIE**  
**AWE** **PH**  
**FBCE**  
**COMPACT\***  
**TIGERISS**  
**NICER**  
**BIOEXPT-02**  
**LEIA**  
**PEREGRINE-1~**  
**LUNAR PATHFINDER\***  
**1ST NOVA-C~** **1ST BLUE GHOST~**  
**2ND BLUE GHOST~**  
**SERIES-2~** **2ND NOVA-C~**  
**3RD NOVA-C~**  
**GRIFFIN-1~ & VIPER**  
**XL-1~** **LRO**  
**LUNAR TRAILBLAZER**

**PARKER SOLAR PROBE**  
**SUNRISE** **WIND** **SOLAR ORBITER\***  
**THEMIS** **STEREO** **CARRUTHERS**  
**IMAP** **GEOCORONA**  
**TIMED** **OBSERVATORY**  
**HELIOSWARM** **SOHO\***  
**Hinode\*** **ACE**  
**ICON** **AIM**  
**EUVST\*** **GOLD** **IRIS**  
**NEO SURVEYOR** **TRACERS**  
**OSIRIS-REX/APEX** **EZIE** **MUSE** **SDO**  
**MMS** **IBEX** **PUNCH**  
**NEOWISE**  
**MSR EARTH RETURN ORBITER\***  
**MMX\*** **CURIOSITY**  
**MRO** **SRL-SRH**  
**SRL-MAV**  
**MAVEN**  
**ROSA LIND FRANKLIN\*** **MARS ODYSSEY**  
**PERSEVERANCE** **PSYCHE**  
**EUROPA CLIPPER**  
**ESCAPADE**  
**MARS EXPRESS\***  
**TRACE GAS ORBITER\***  
**VOYAGER 1**  
**VOYAGER 2**  
**DRAGONFLY**  
**JUICE\***  
**LUCY**  
**JUNO**

- EARTH ●
- HELIO/PHYSICS ●
- PLANETARY ●
- ASTROPHYSICS ●
- BIOLOGICAL & PHYSICAL ●
- FUTURE LAUNCHES IN BOLD
- \*PARTNER-LED
- ~ COMMERCIAL PARTNERSHIP

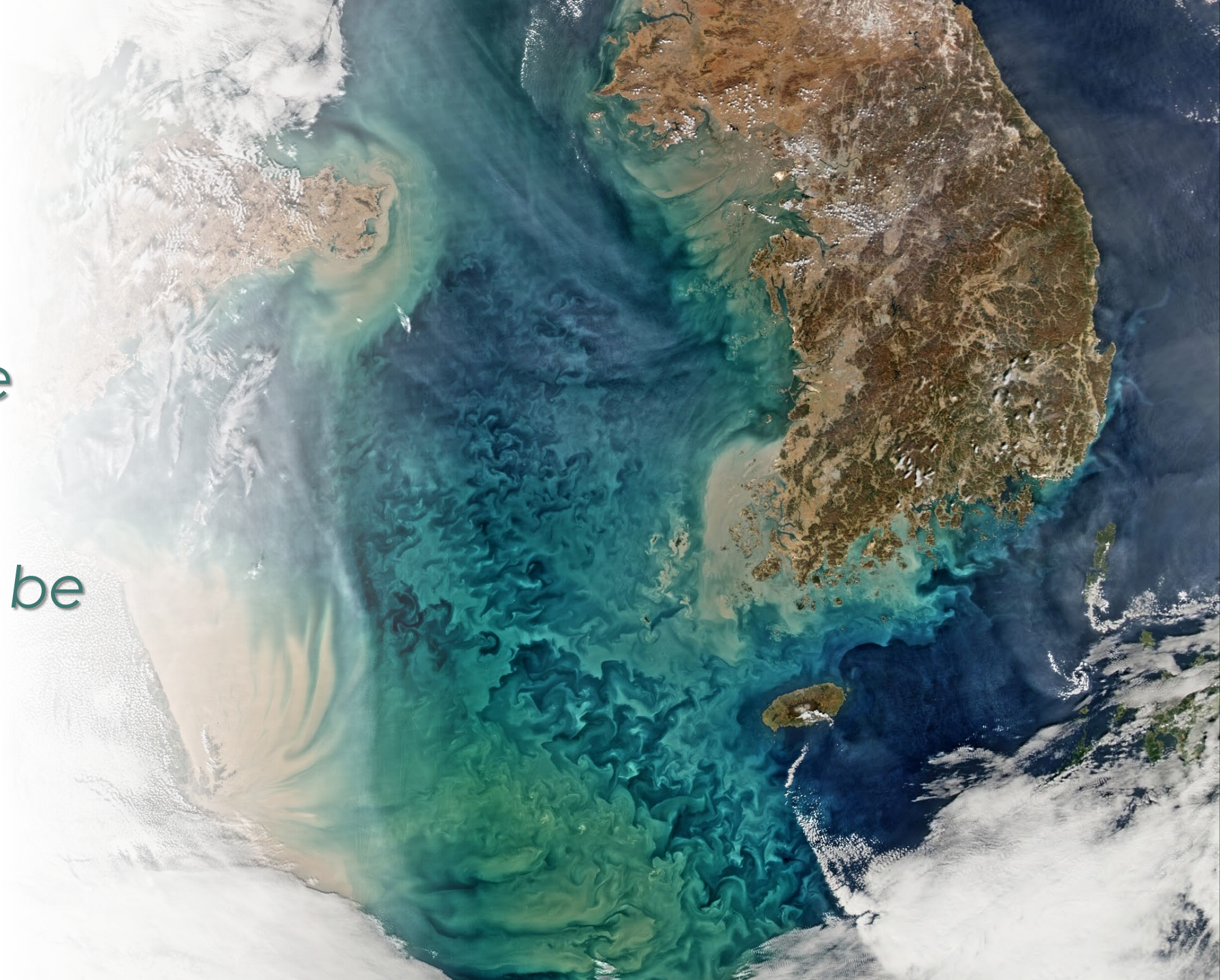
OPERATING & FUTURE  
**SCIENCE FLEET**



# **BIG QUESTIONS...**

*How is our climate  
changing?*

*How can science be  
used to benefit  
society?*





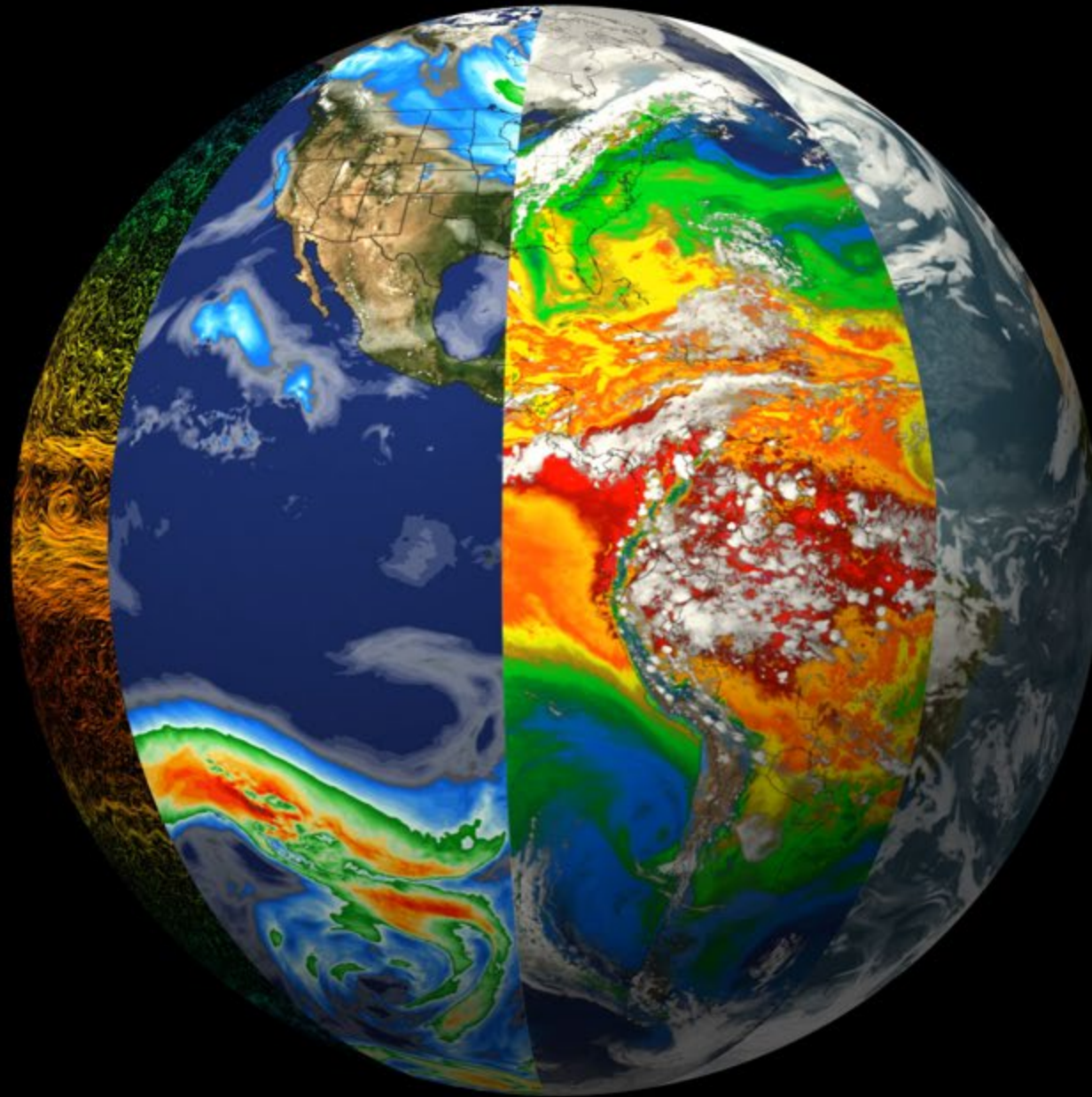
# Mentimeter Question

What do you think  
Earth Science  
focuses on? Click all  
that apply:

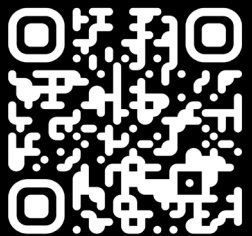
- Oceans
- Land
- Atmosphere
- Ice



Earth is a  
System of  
Systems.....



Animation by NASA Science Visualization Studio (SVS)

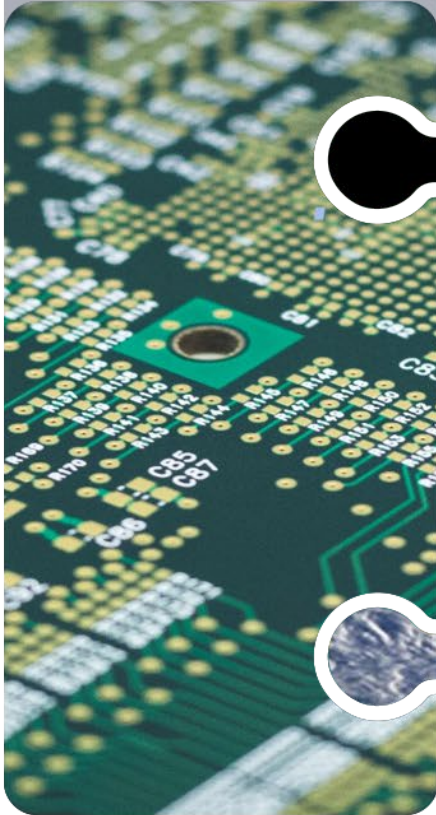


Earth: A System  
of Systems



# Advancing Earth System Science End to End

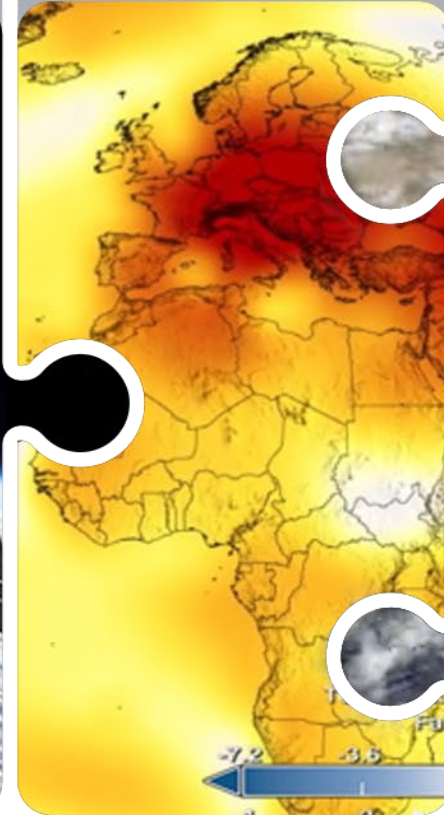
TECHNOLOGY



FLIGHT



RESEARCH  
AND ANALYSIS



DATA  
AND COMPUTE

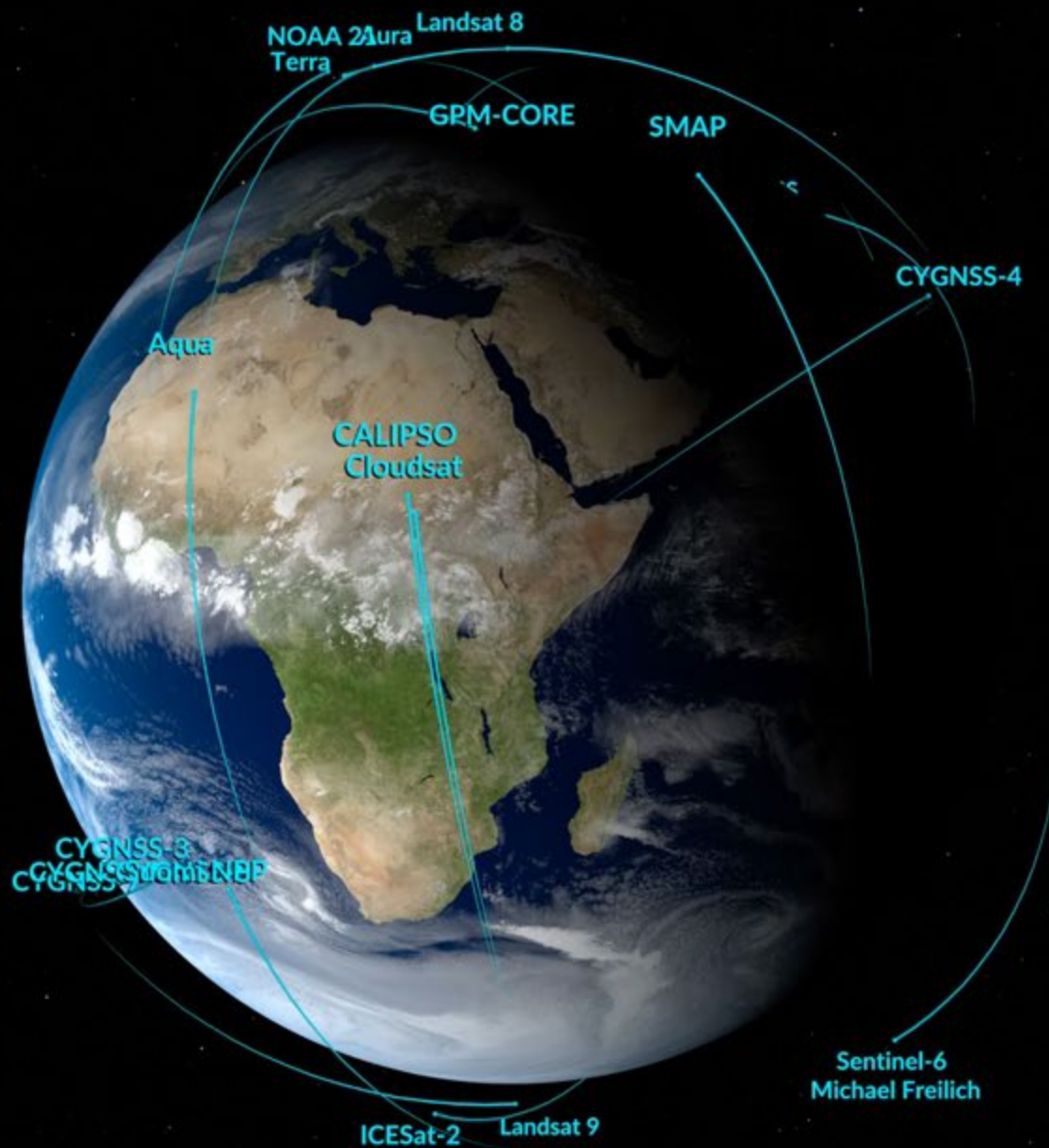


EARTH ACTION

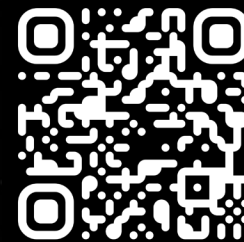


# Earth Observing Fleet

NASA SVS

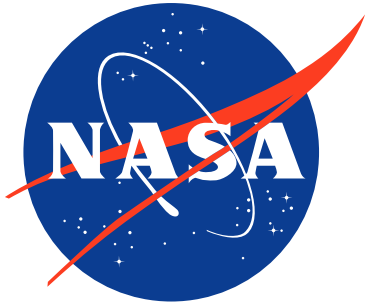


Jan 10 2023 13:12



Earth Observing  
Fleet





# EARTH SCIENCE APPLIED SCIENCES

## Data Delivery → Decisions

Unique programs solve our planet's most pressing issues and build capacity to use Earth science information in decision-making



AGRICULTURE



CLIMATE & RESILIENCE



DISASTERS



ECOLOGICAL CONSERVATION



HEALTH & AIR QUALITY



WATER RESOURCES



WILDLAND FIRES



EARTH MISSION ENGAGEMENT



CAPACITY BUILDING







# Applied Remote Sensing Training (ARSET)

<https://appliedsciences.nasa.gov/arset>

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

ARSET empowers the global community through remote sensing training

## ARSET Training Themes

---



**Disasters**



**Agriculture**



**Ecological Conservation**



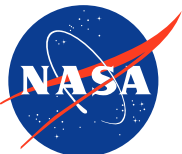
**Water Resources**



**Climate & Resilience**



**Health & Air Quality**



EARTH SCIENCE  
APPLIED SCIENCES



CAPACITY BUILDING



# NASA Applied Remote Sensing Training (ARSET) Program



**Cost Free** and open to anyone



Trainings are offered **live or self-paced**



Materials and recordings available **online**



**Range of levels** from introductory to advanced





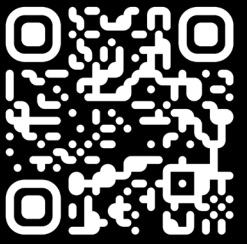
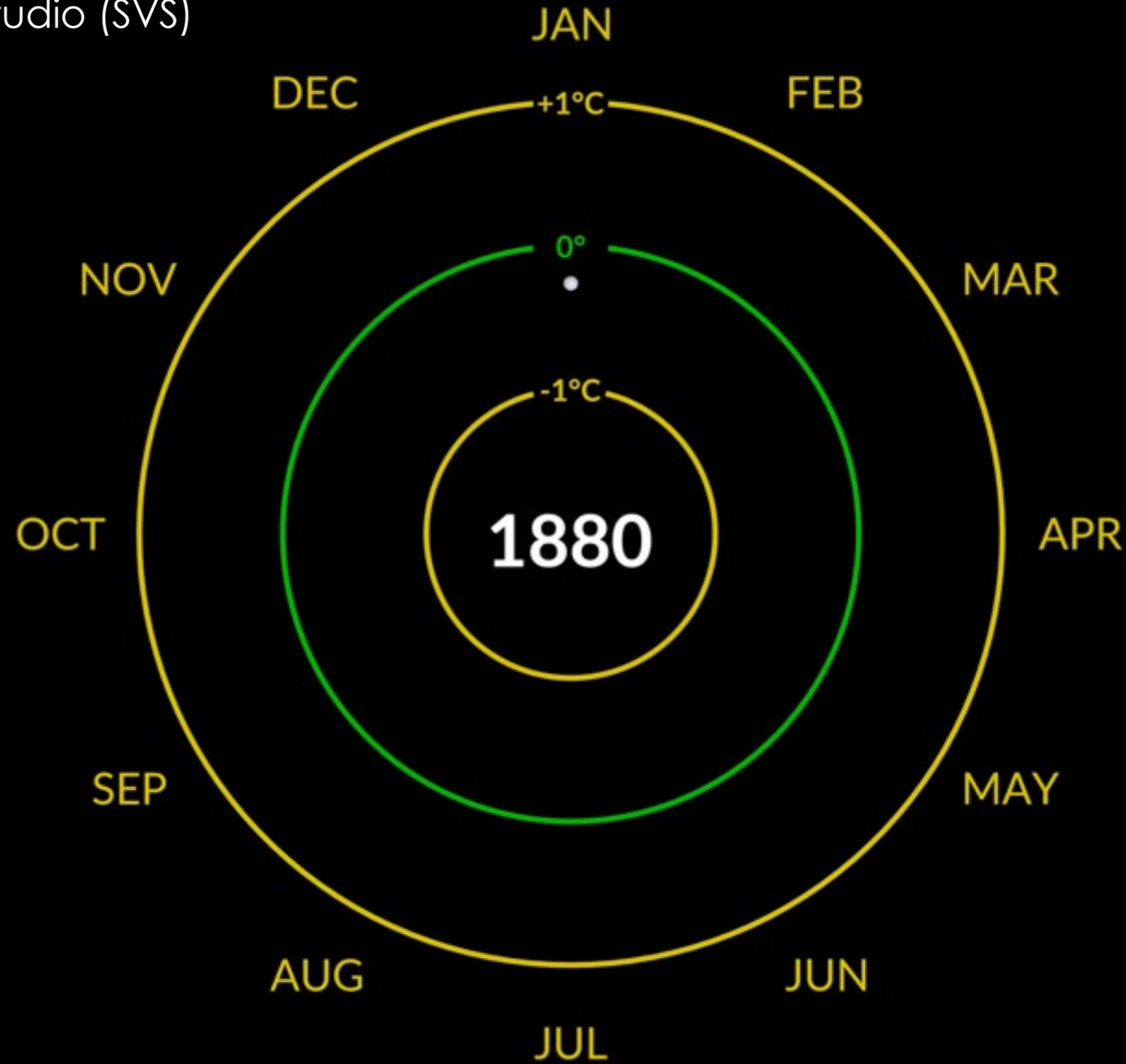
# Mentimeter Question:



**Do you think you have used information from a  
NASA satellite?**

# Surface Temperature Anomalies

NASA Science Visualization Studio (SVS)

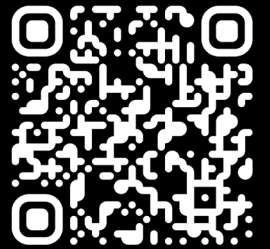


NASA Climate  
Spiral

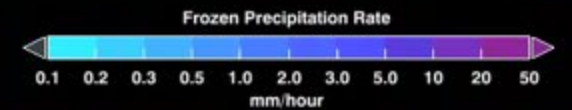
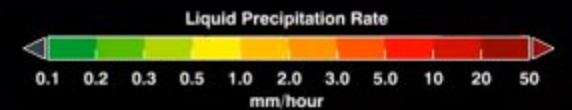


# Global Precipitation every 30 minutes

NASA SVS



Painting the  
World with Water



7/25/2014 00:55

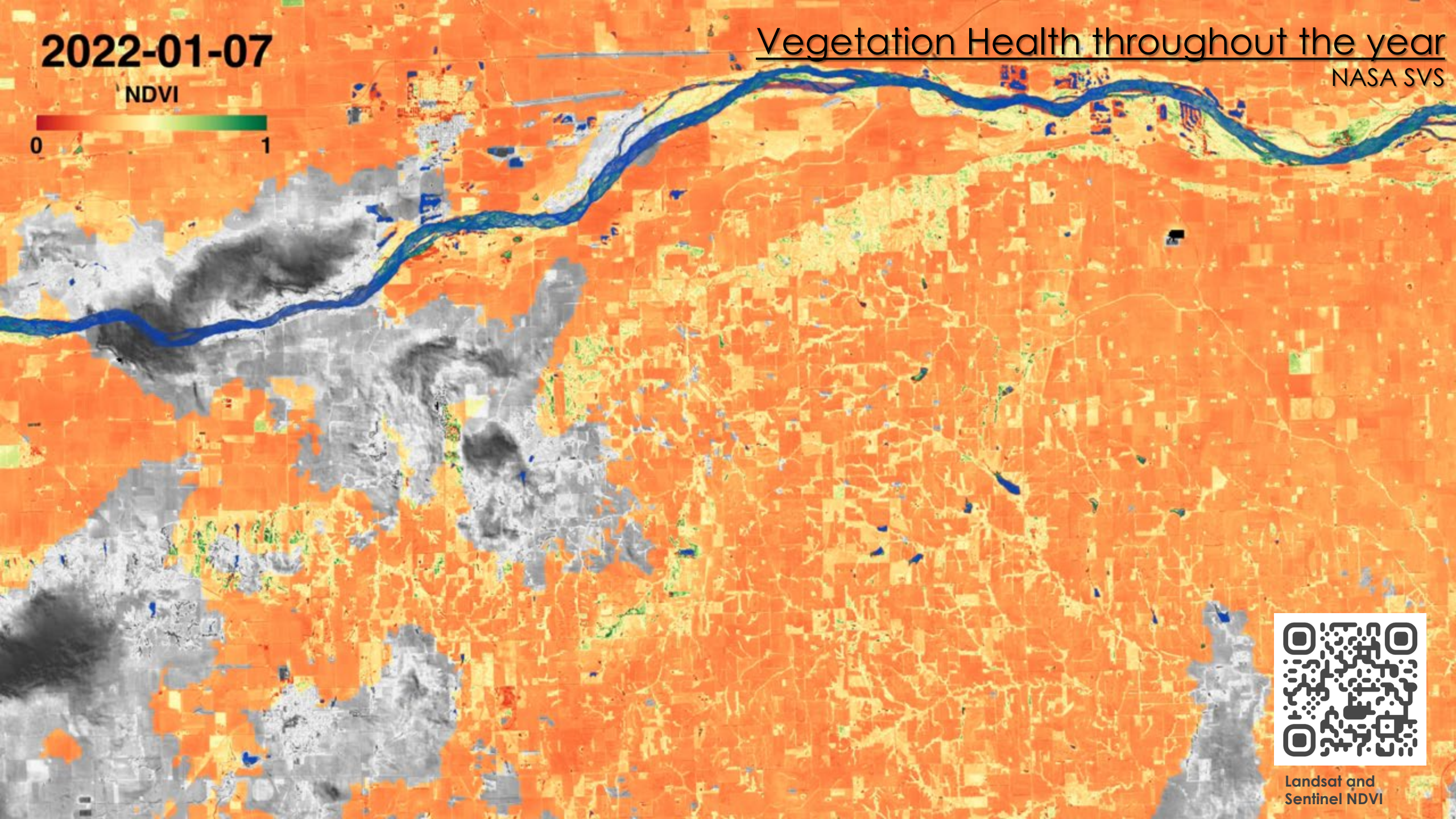


2022-01-07

Vegetation Health throughout the year

NASA SVS

NDVI

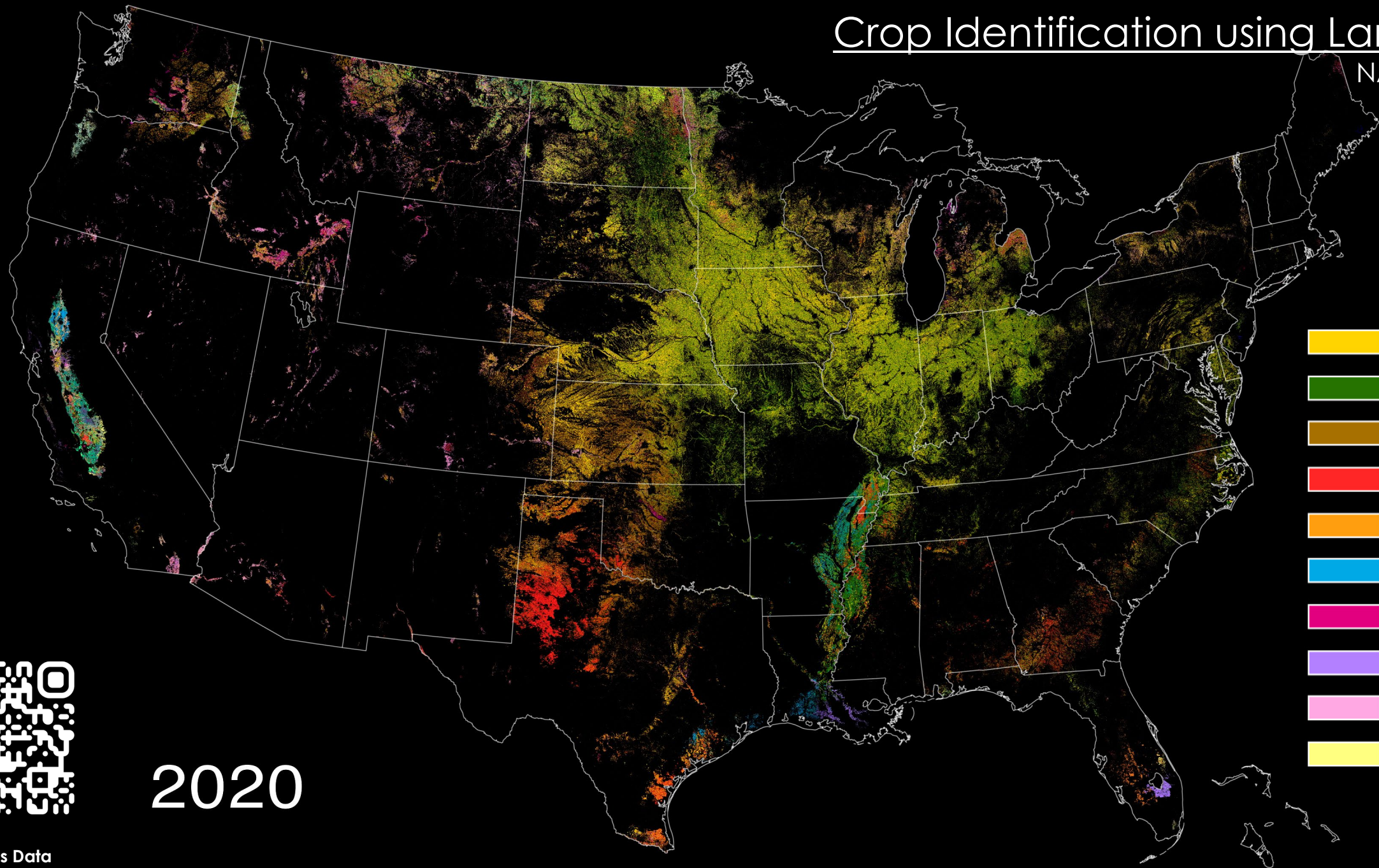


Landsat and  
Sentinel NDVI



# Crop Identification using Landsat

NASA SVS



-  Corn
-  Soybeans
-  Wheat
-  Cotton
-  Sorghum
-  Rice
-  Barley
-  Sugarcane
-  Alfalfa
-  Citrus

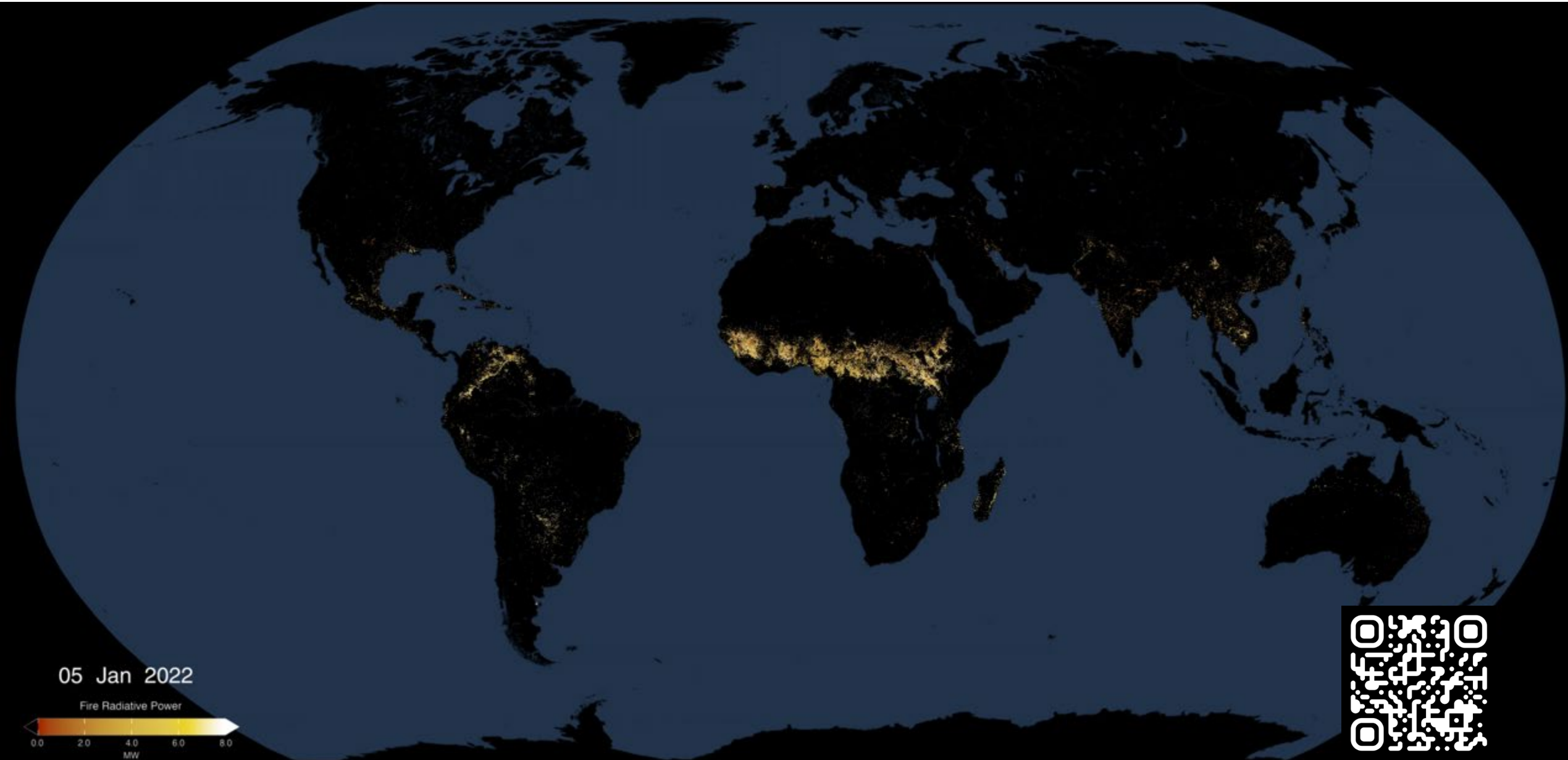
2020



Landsat  
Croplands Data  
Overview

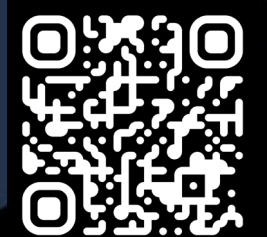
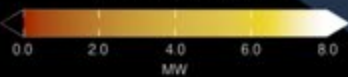
# Fire Detections and Intensity

NASA SVS



05 Jan 2022

Fire Radiative Power

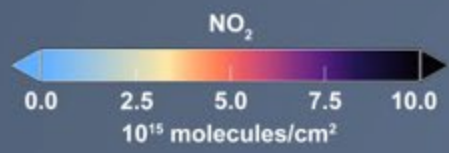


Active Fires

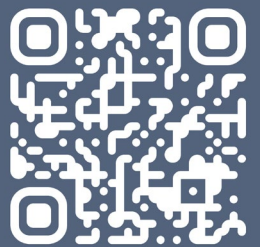
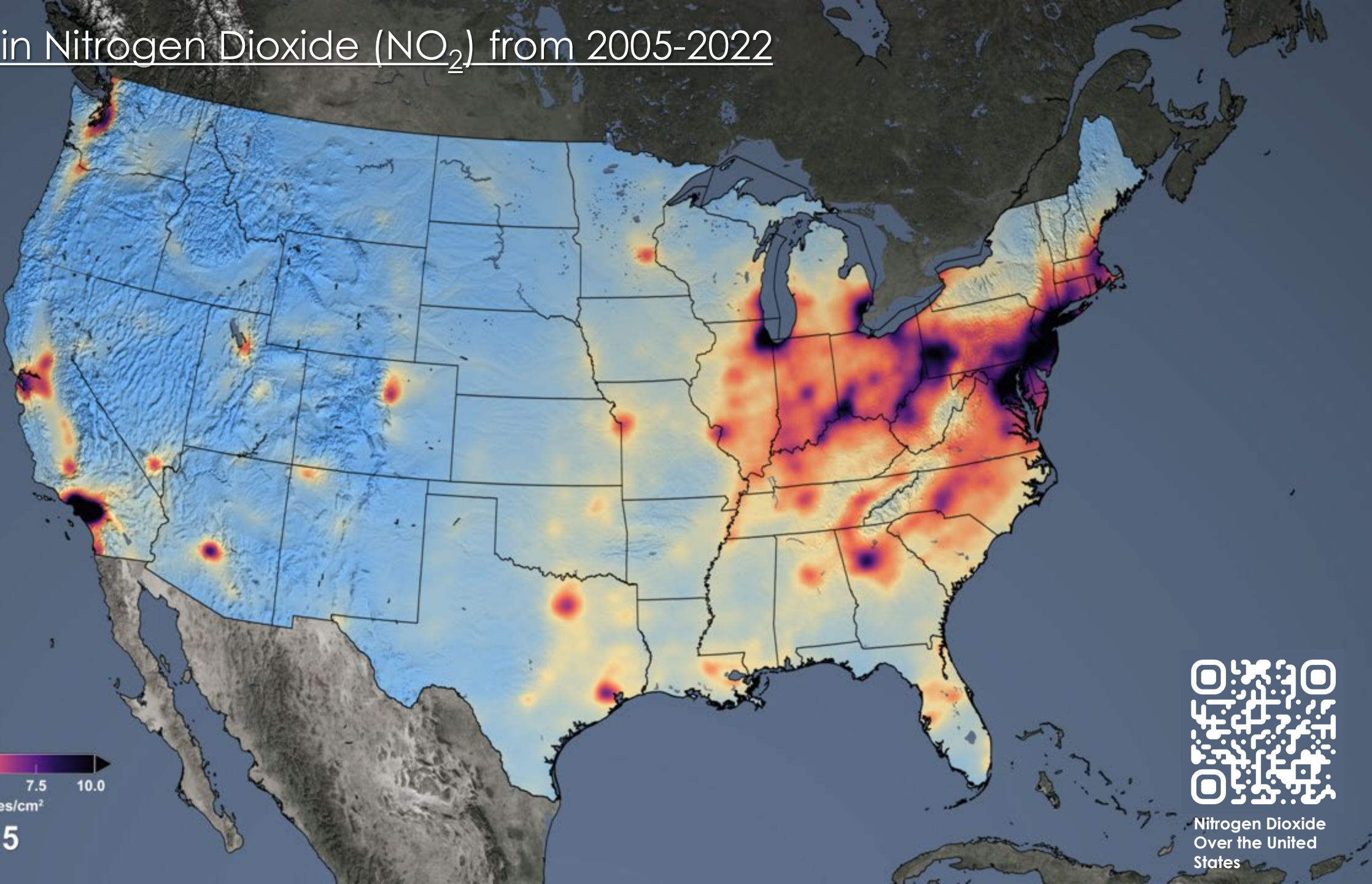


# Changes in Nitrogen Dioxide (NO<sub>2</sub>) from 2005-2022

NASA SVS



2005

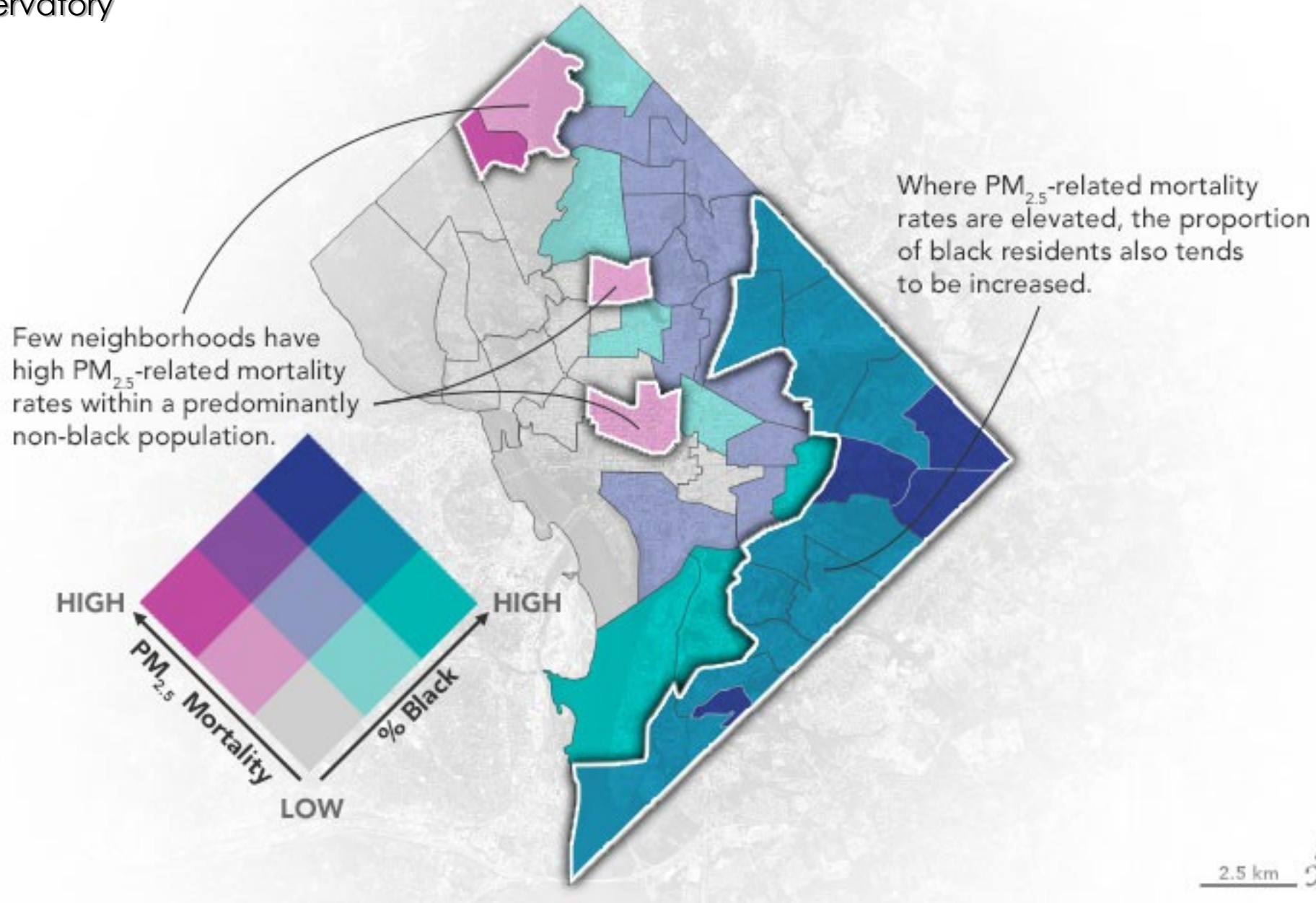


Nitrogen Dioxide  
Over the United  
States



# Satellite-based data used to identify environmental injustice

NASA Earth Observatory



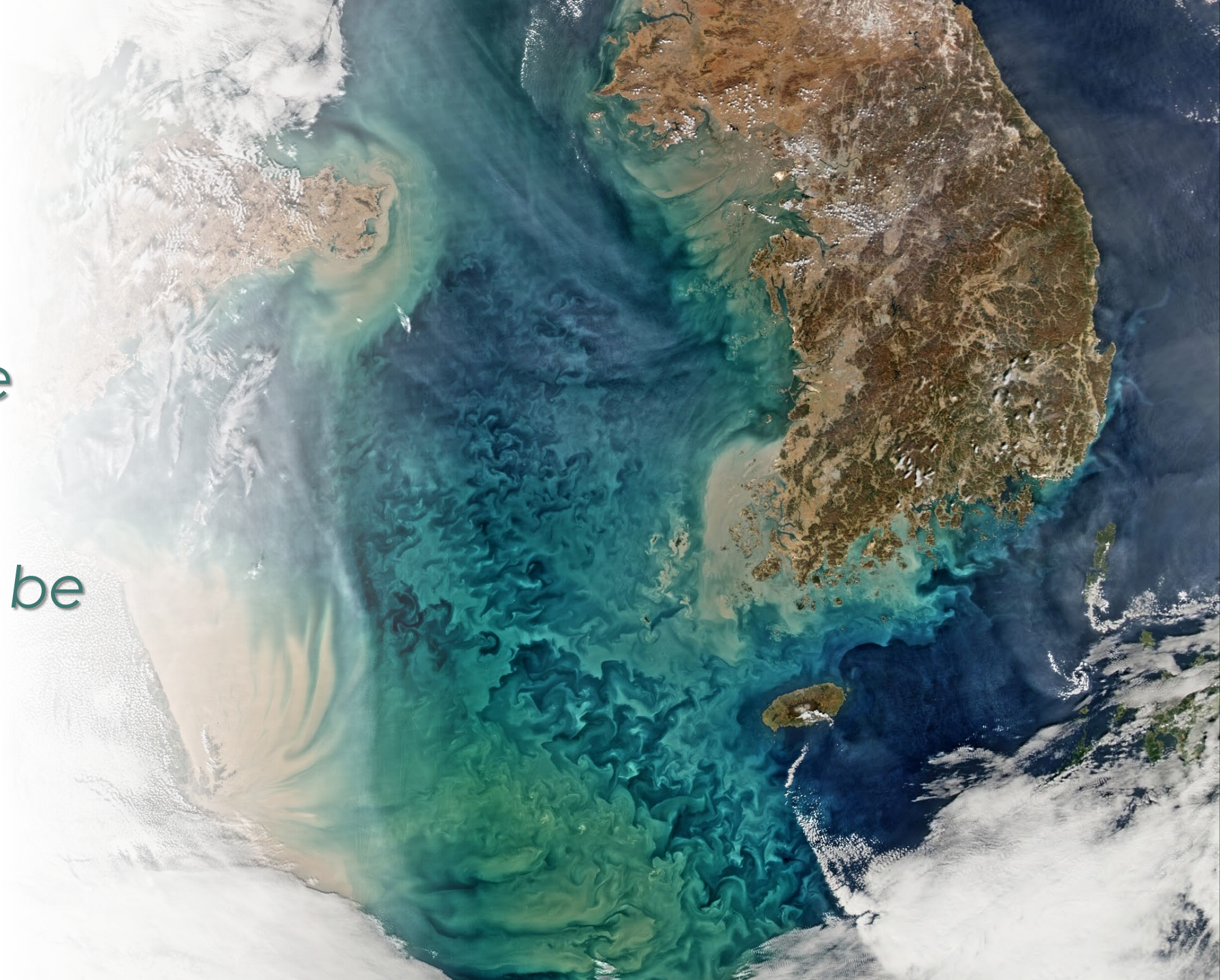
An Extra Air  
Pollution Burden



# **BIG QUESTIONS...**

*How is our climate  
changing?*

*How can science be  
used to benefit  
society?*





# From data to decisions....

