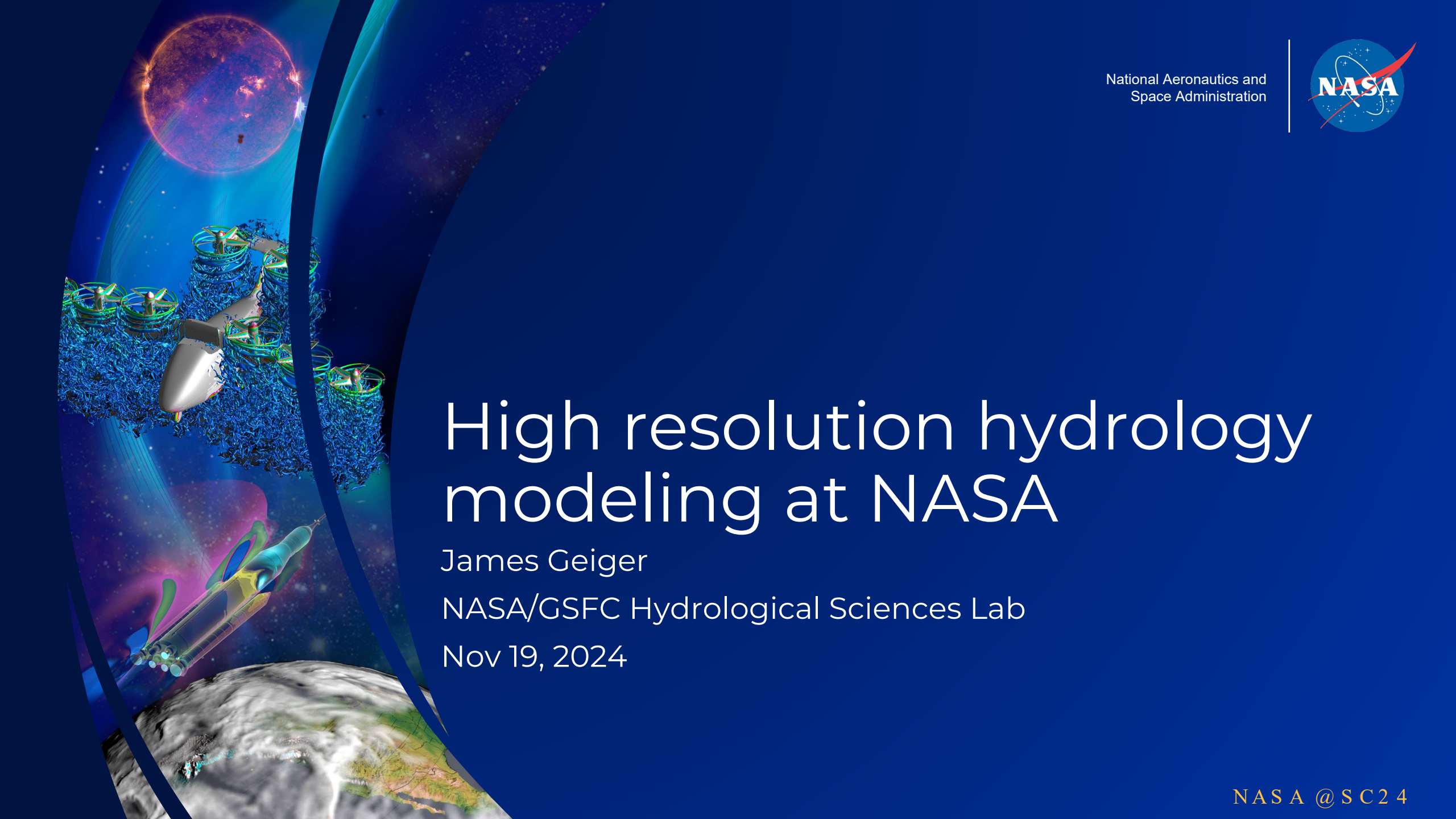
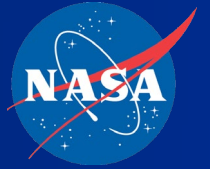




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Space Administration

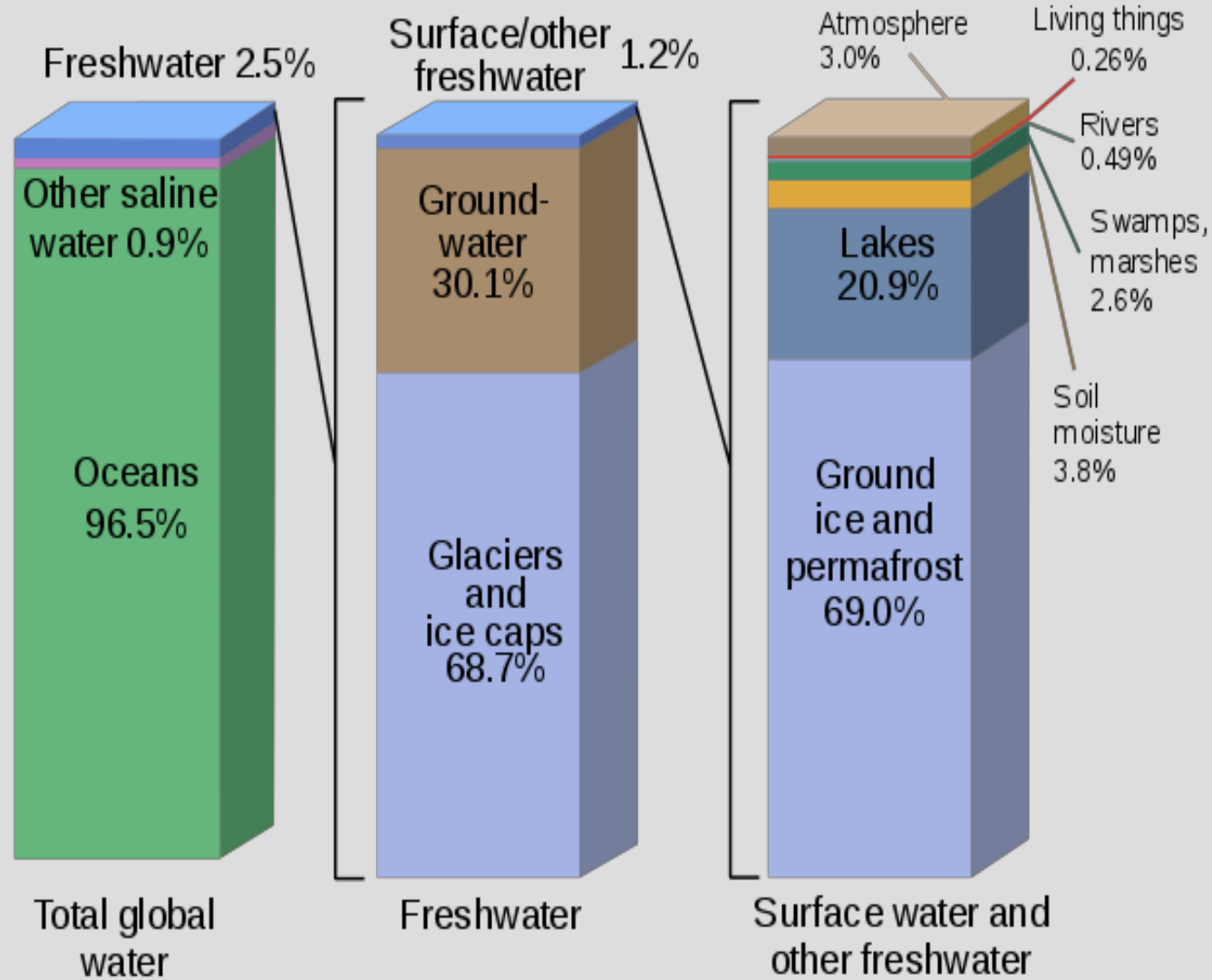


# High resolution hydrology modeling at NASA

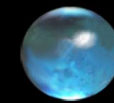
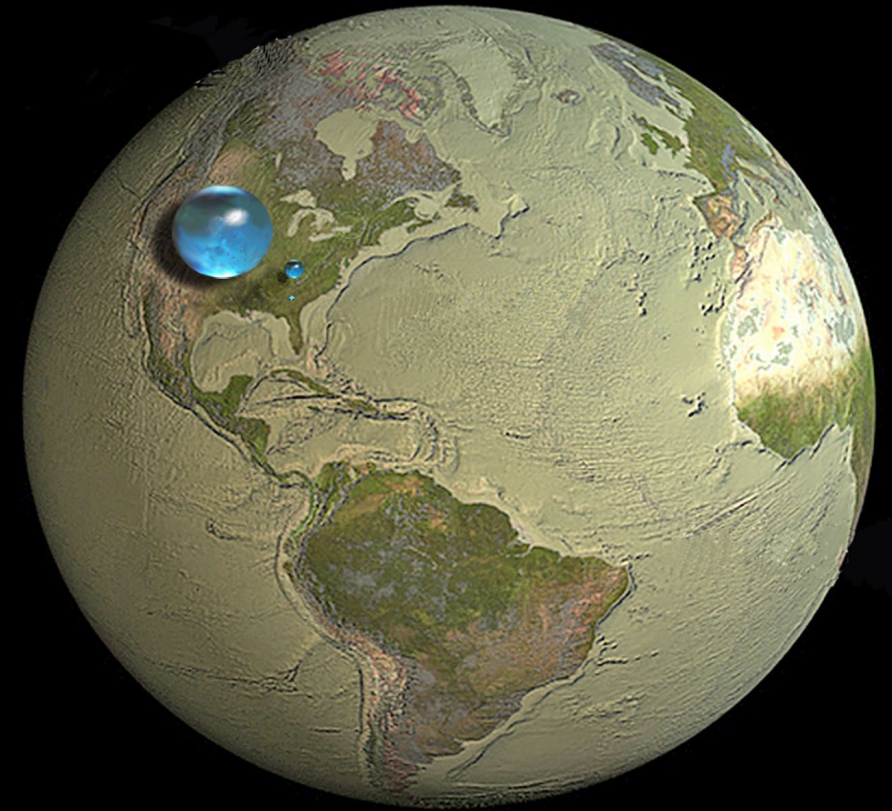
James Geiger

NASA/GSFC Hydrological Sciences Lab

Nov 19, 2024



## The World's Water



All water on, in, and above the Earth

• Liquid fresh water

• Fresh-water lakes and rivers

Howard Perlman, USGS,  
Jack Cook, Woods Hole Oceanographic Institution,  
Adam Nieman  
Data source: Igor Shiklomanov  
<http://ga.water.usgs.gov/edu/earthhowmuch.html>



# Water Cycle Fleet

## INVEST/CUBESATS

- NACHOS 2022
- CTIM 2022
- NACHOS-2 2022
- MURI-FD 2023
- SNOOPI\* 2024
- HYTI\* 2024
- ARGOS\* 2024

## ISS INSTRUMENTS

## MISSIONS

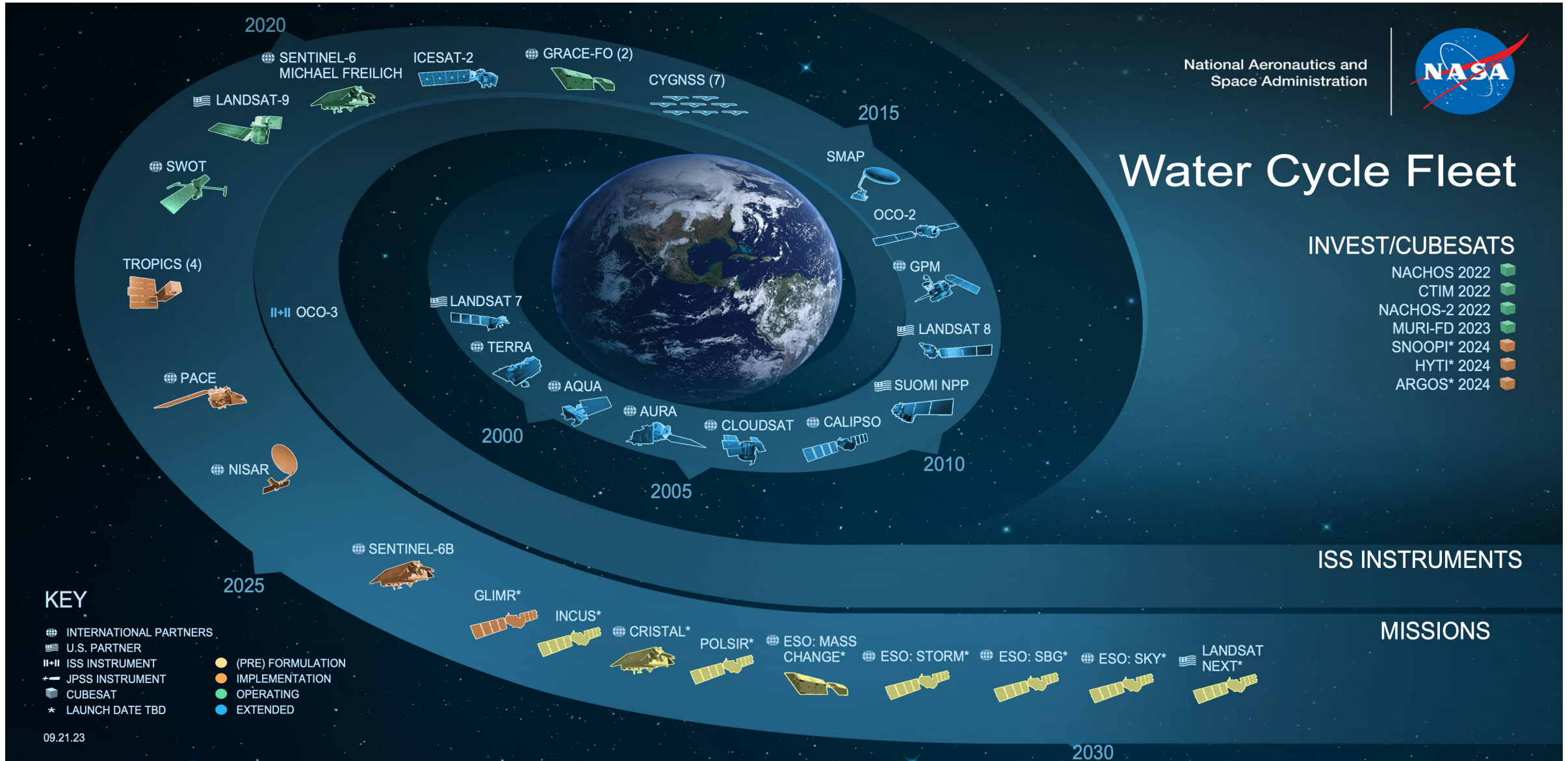
## KEY

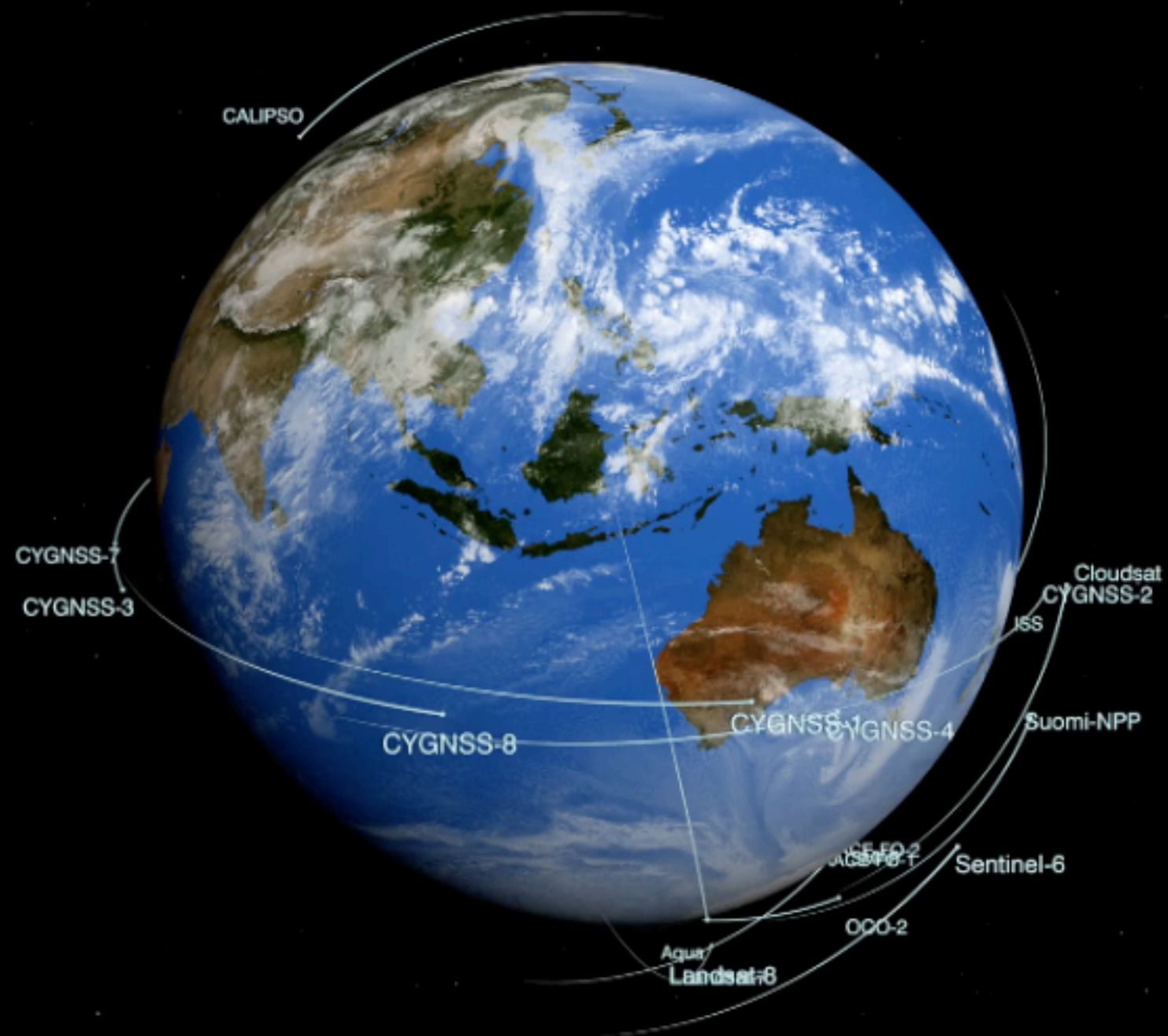
- INTERNATIONAL PARTNERS
- U.S. PARTNER
- ISS INSTRUMENT
- JPSS INSTRUMENT
- CUBESAT
- LAUNCH DATE TBD

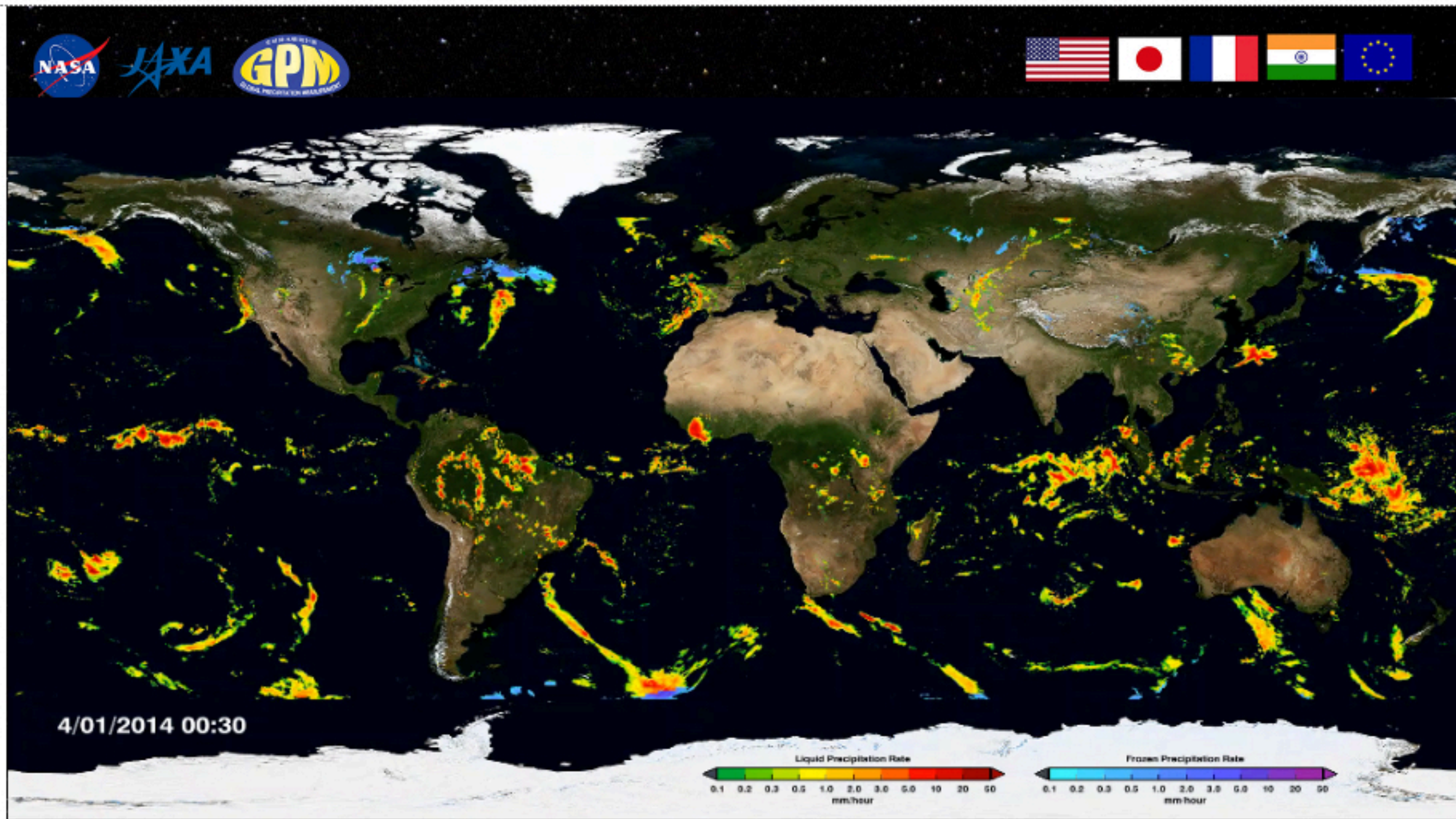
- (PRE) FORMULATION
- IMPLEMENTATION
- OPERATING
- EXTENDED

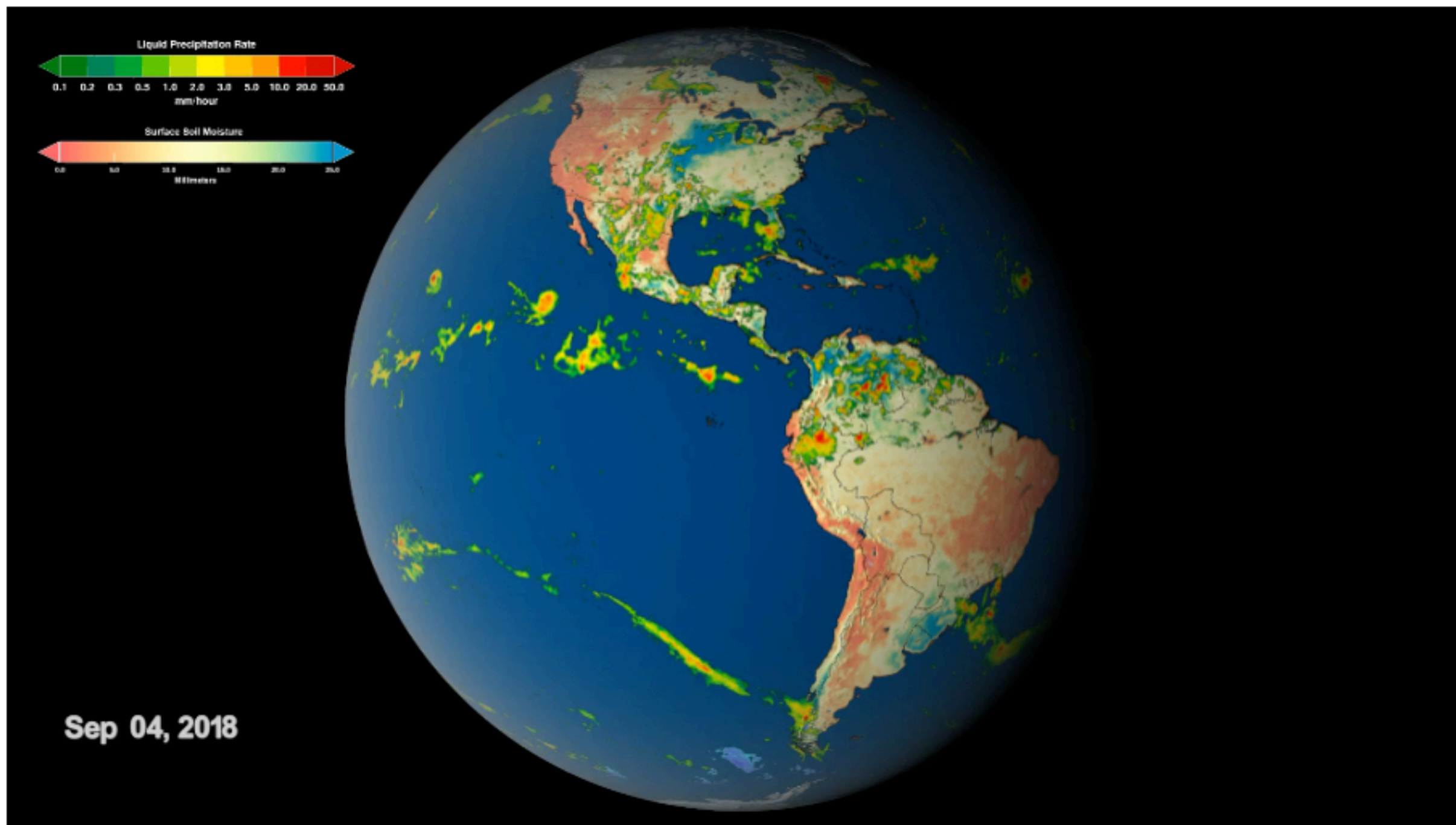
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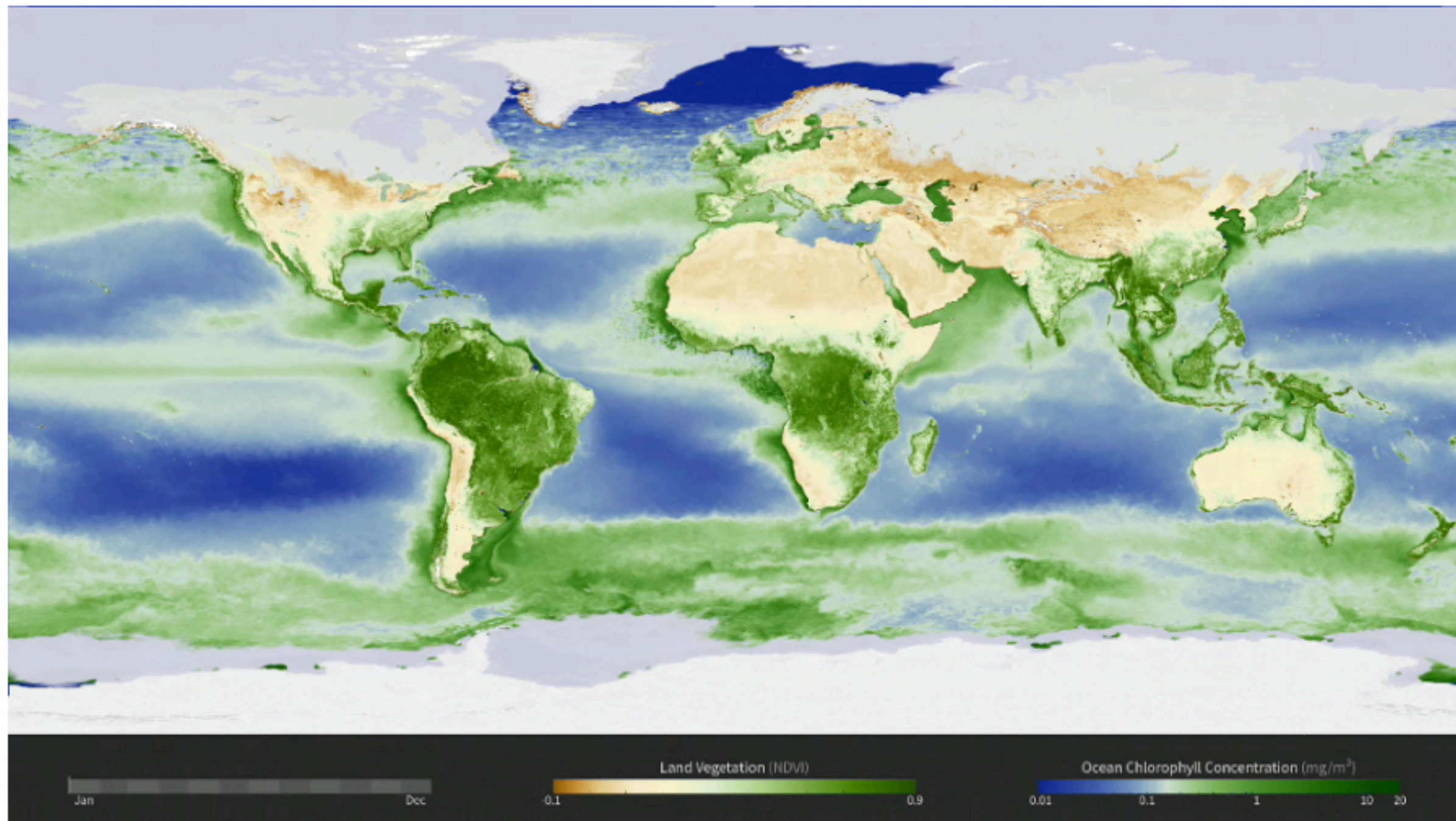
2030

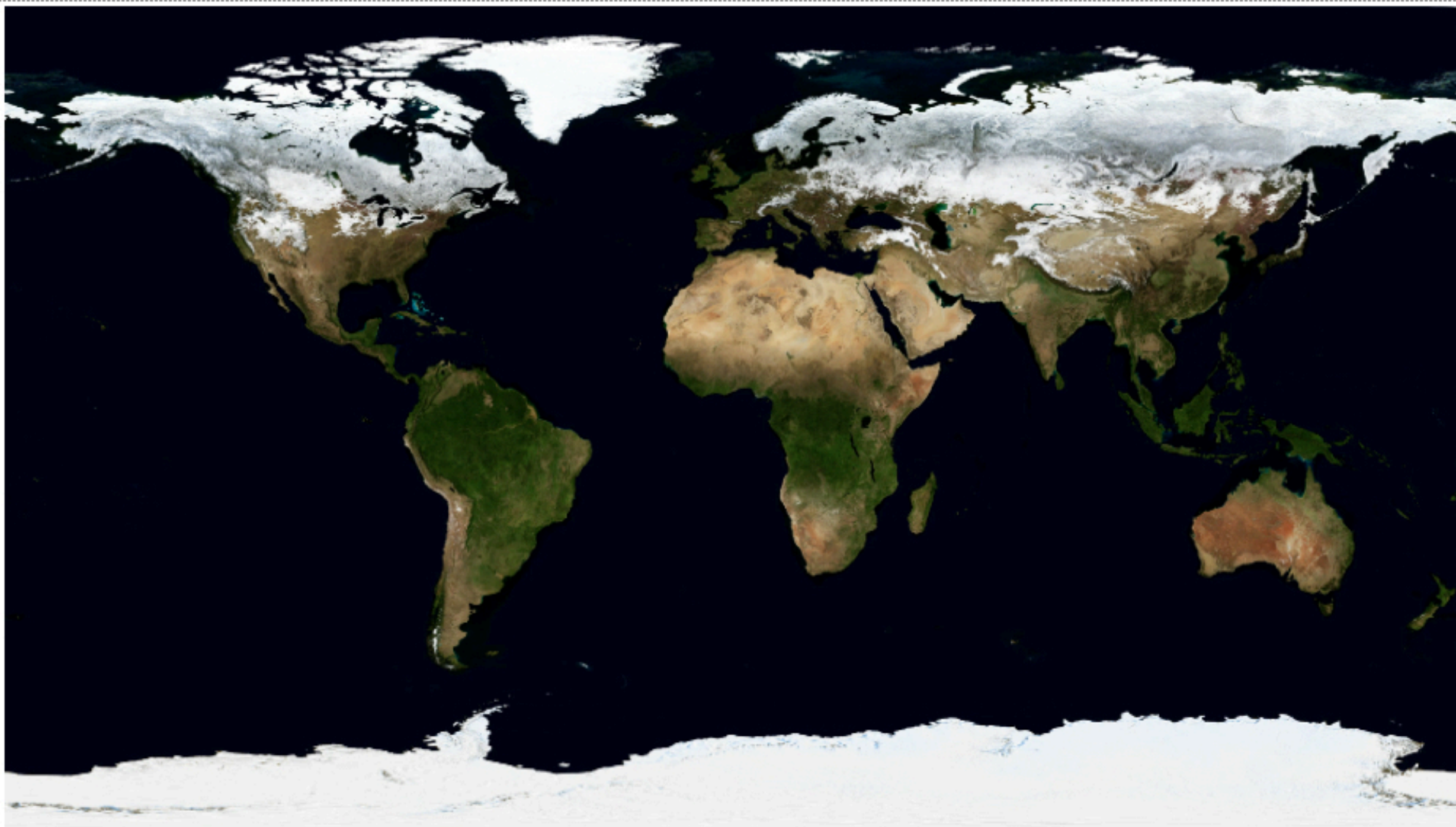






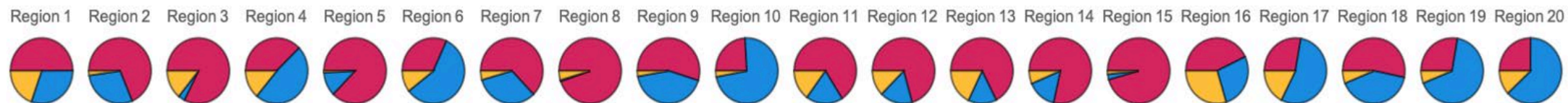
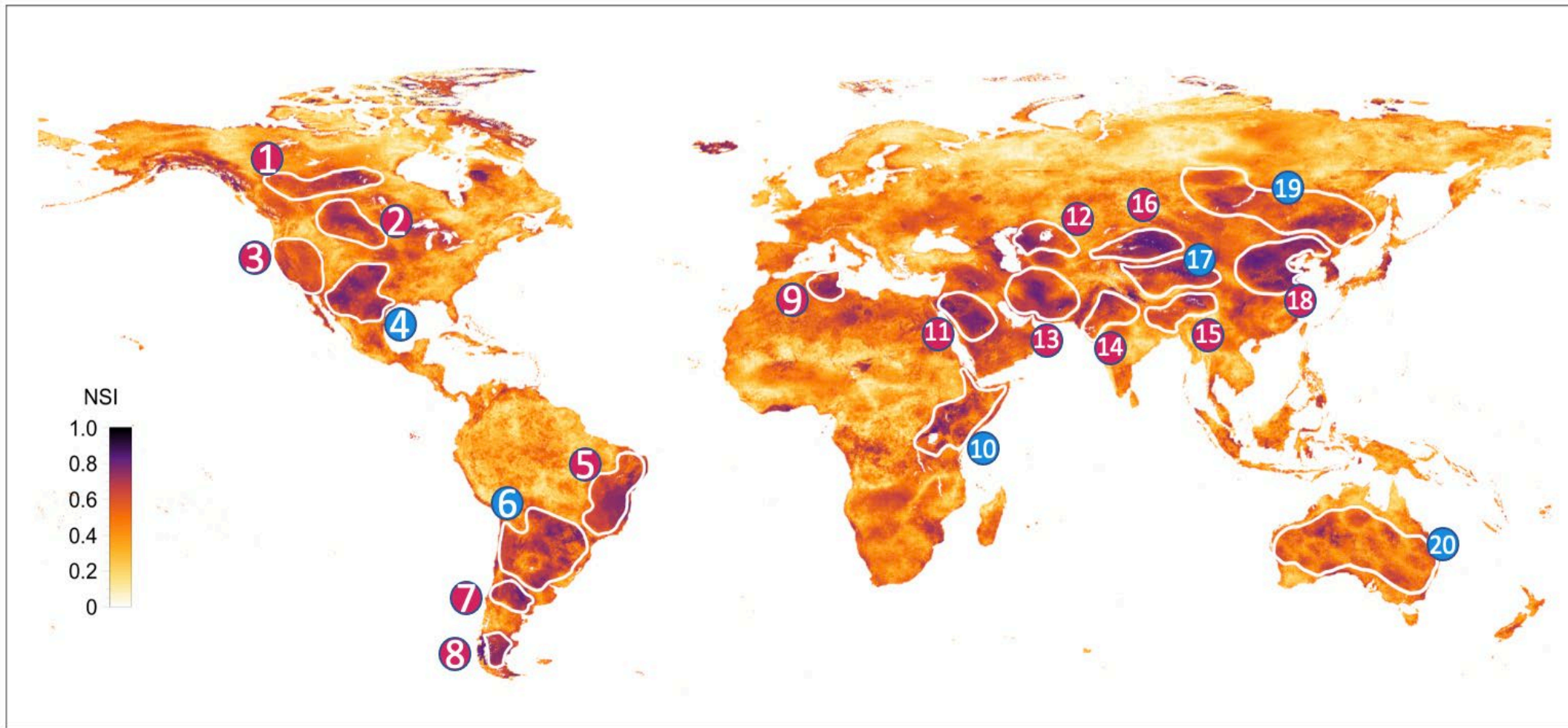




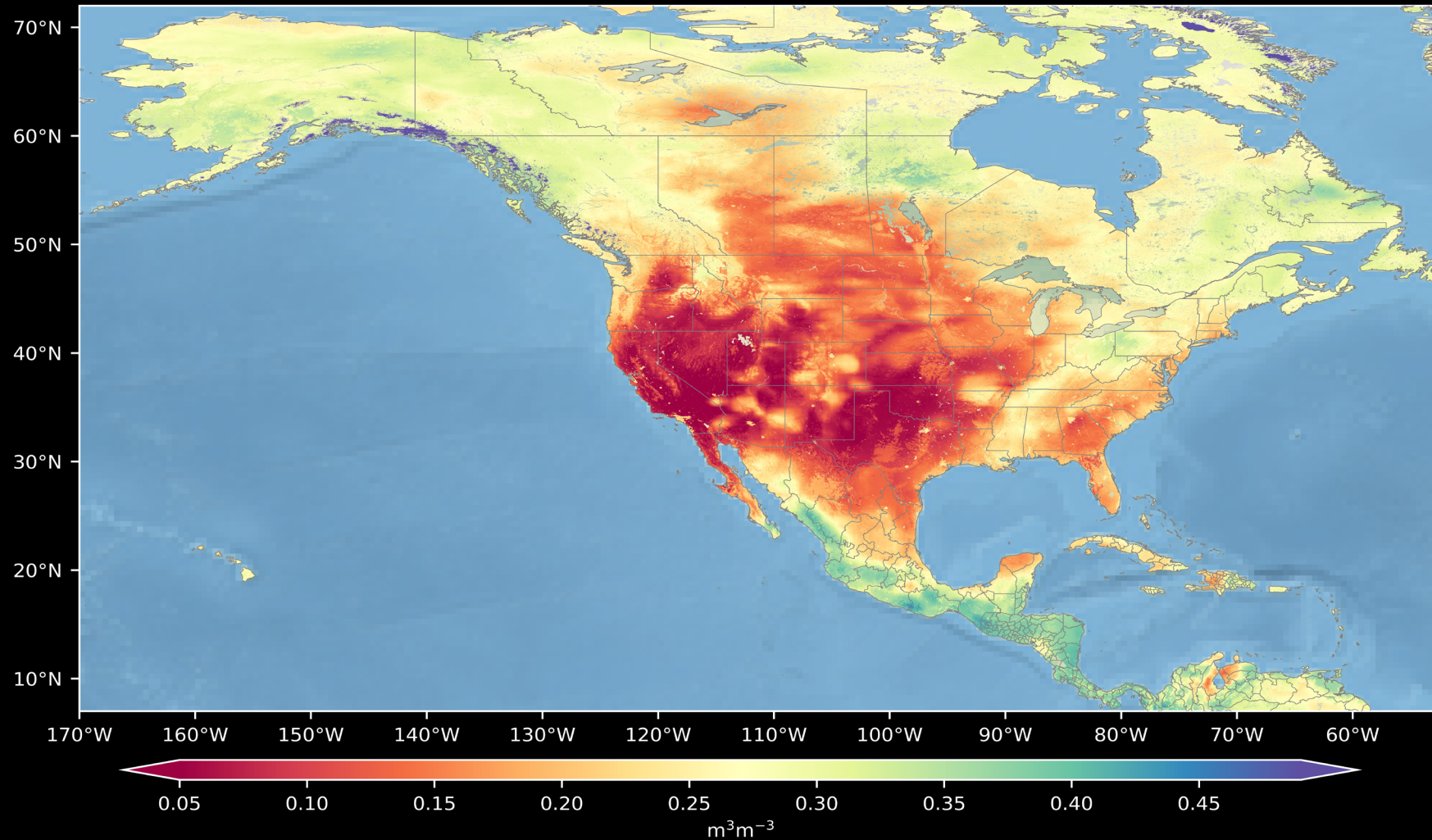








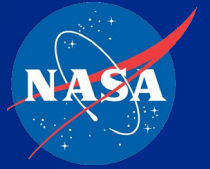
NLDAS-3 Top Layer Soil Moisture



Enabled on NASA's NCCS supercomputer!



National Aeronautics and  
Space Administration



[james.v.geiger@nasa.gov](mailto:james.v.geiger@nasa.gov)