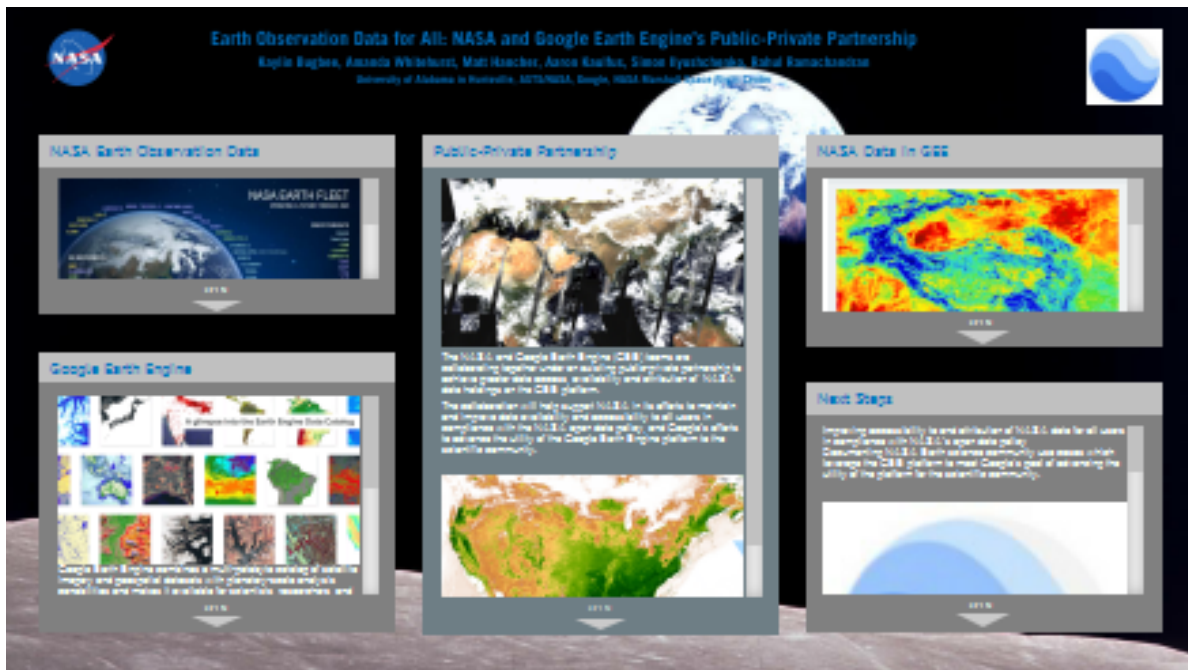


Earth Observation Data for All: NASA and Google Earth Engine's Public-Private Partnership



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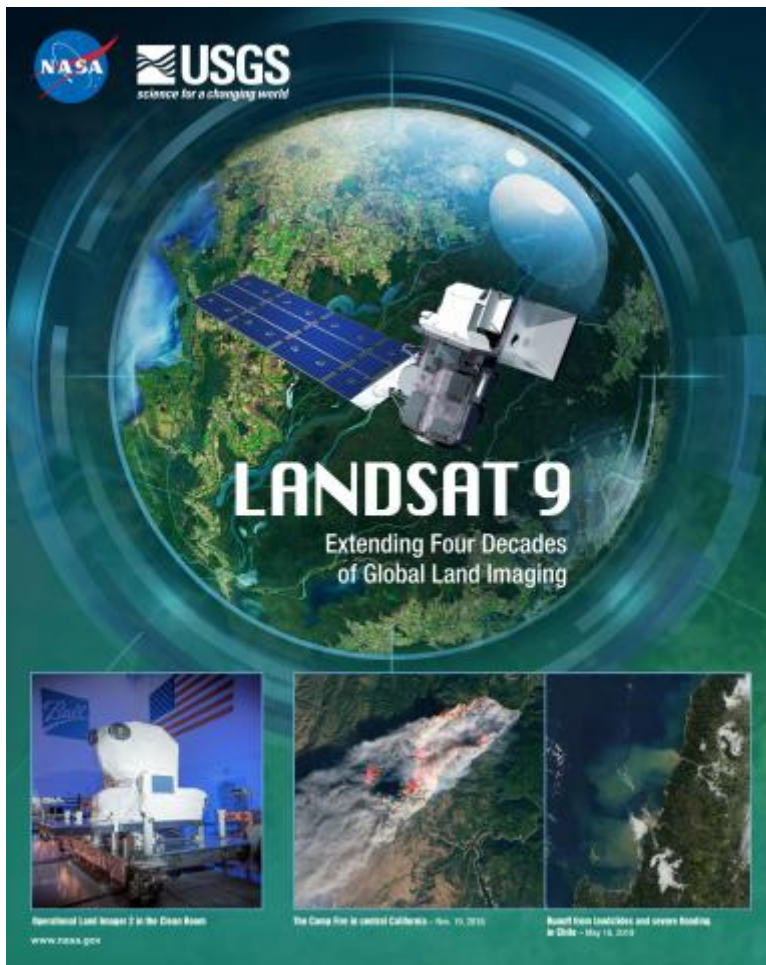


NASA EARTH OBSERVATION DATA



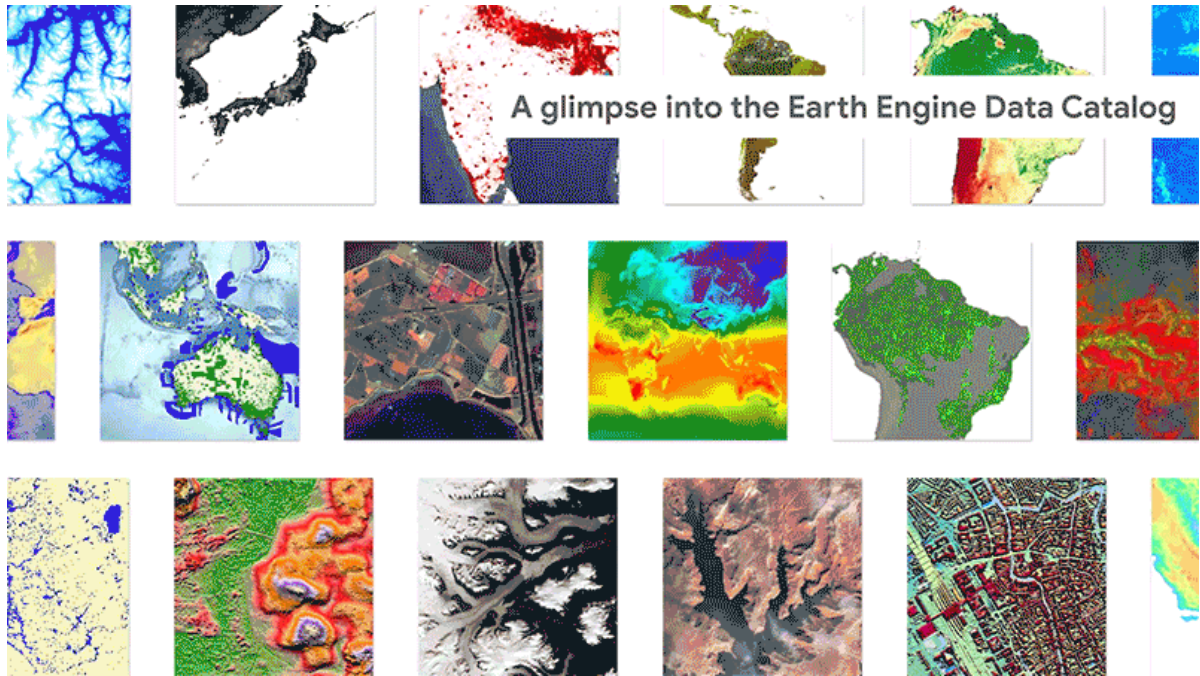
NASA collects Earth

observation data (<https://science.nasa.gov/earth-science>) from satellites, instruments on the International Space Station, airplanes, balloons, ships and on land ESD researchers collect data about the science of our planet's atmospheric motion and composition; land cover, land use and vegetation; ocean currents, temperatures and upper-ocean life; and ice on land and sea.



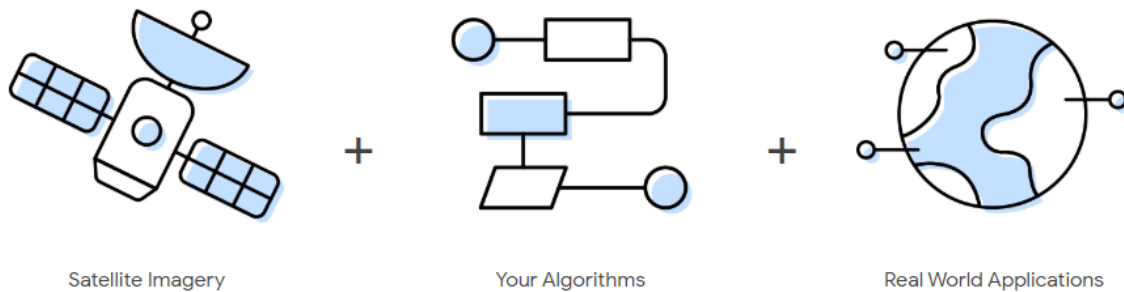
NASA's Earth observations are freely accessible to all, including NASA's many partners in the U.S. and international organizations and governments, disaster relief agencies worldwide, scientists from academia and the private sector, business, the military, and the general public.

GOOGLE EARTH ENGINE



Google Earth Engine combines a multi-petabyte catalog of satellite imagery and geospatial datasets with planetary-scale analysis capabilities and makes it available for scientists, researchers, and developers to detect changes, map trends, and quantify differences on the Earth's surface.

Earth Engine is a platform for scientific analysis and visualization of geospatial datasets, for academic, non-profit, business and government users.

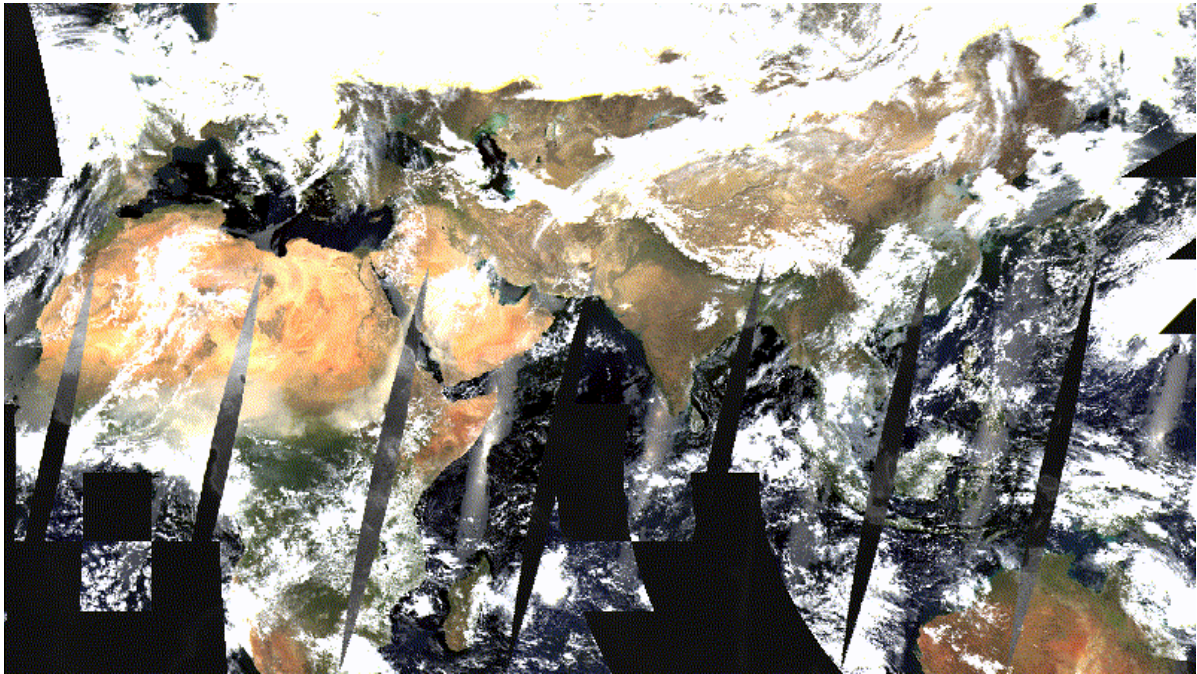


Earth Engine hosts satellite imagery and stores it in a public data archive that includes historical earth images going back more than forty years. The images, ingested on a daily basis, are then made available for global-scale data mining.

Earth Engine also provides APIs and other tools to enable the analysis of large datasets.

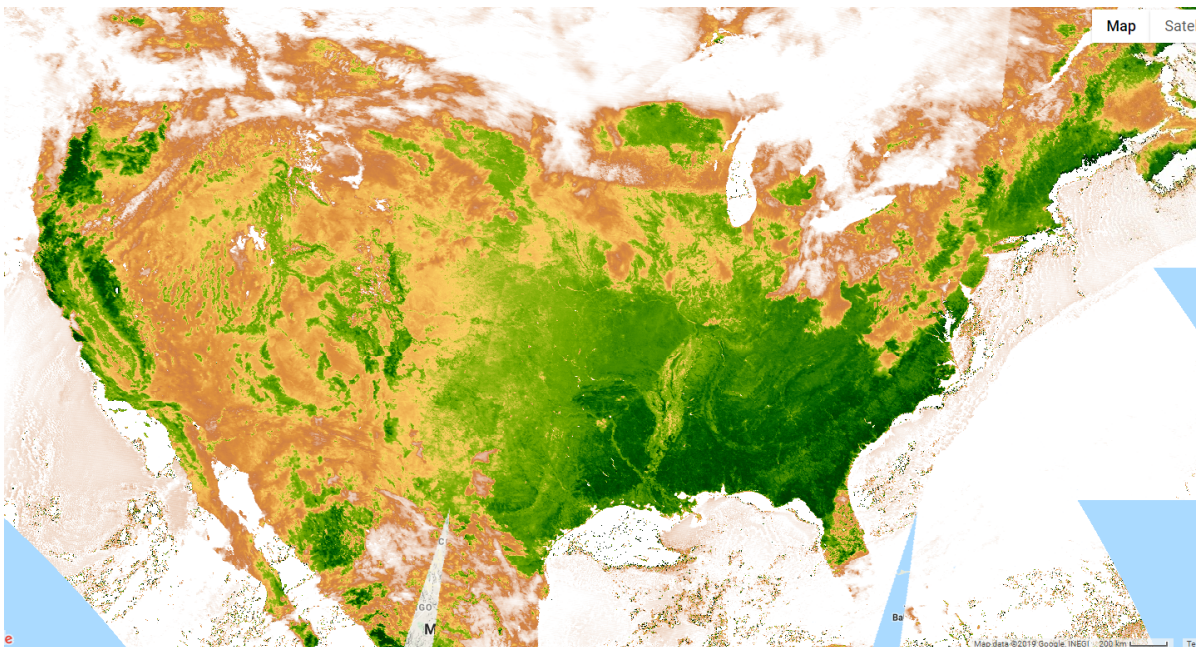
Access Google Earth Engine's data catalog. (<https://developers.google.com/earth-engine/datasets/>)

PUBLIC-PRIVATE PARTNERSHIP

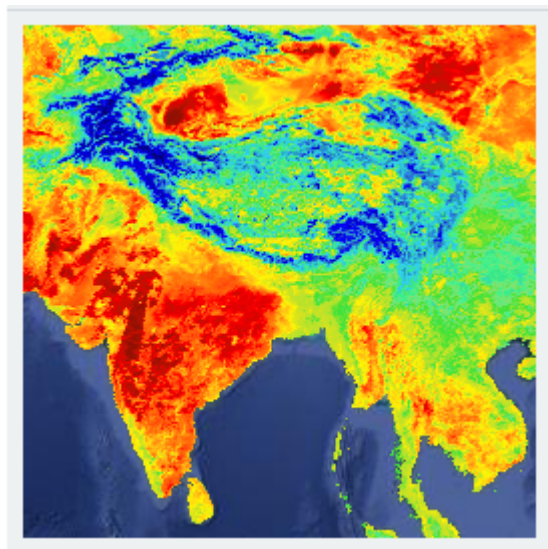


The NASA and Google Earth Engine (GEE) teams are collaborating together under an existing public-private partnership to achieve greater data access, availability and attribution of NASA data holdings on the GEE platform.

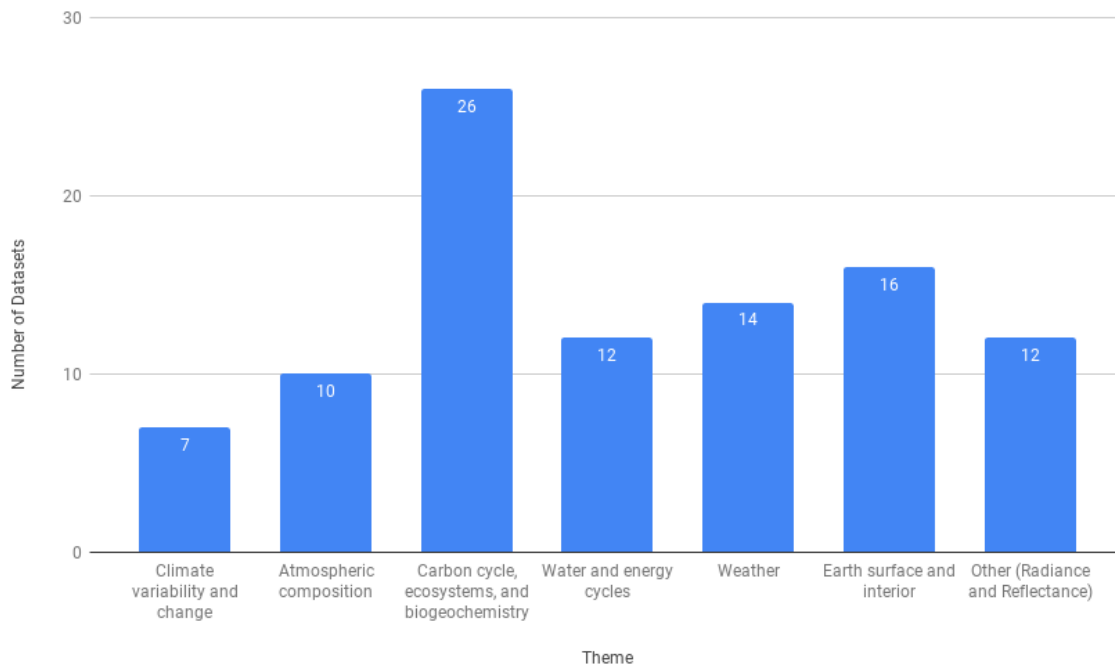
The collaboration will help support NASA in its efforts to maintain and improve data availability and accessibility to all users in compliance with the NASA open data policy, and Google's efforts to advance the utility of the Google Earth Engine platform to the scientific community.



NASA DATA IN GEE

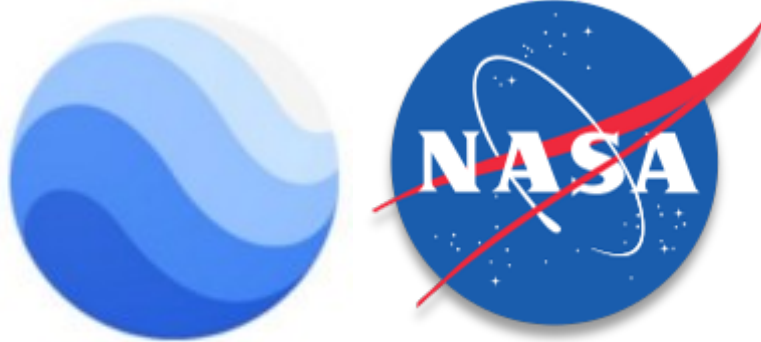


There are over 80 NASA Earth science datasets (<https://developers.google.com/earth-engine/datasets/tags/nasa>) currently available in Google Earth Engine. These include a number of MODIS datasets (such as the Terra Land Surface Temperature and Emissivity Daily Global 1km dataset shown above), ocean color data and gravitational anomaly data. A breakdown of NASA's datasets in GEE by scientific theme is shown below.



NEXT STEPS

Improving accessibility to and attribution of NASA data for all users in compliance with NASA's open data policy
Documenting NASA Earth science community use cases which leverage the GEE platform to meet Google's goal of advancing the utility of the platform for the scientific community.



ABSTRACT

NASA's Earth Science Division (ESD) seeks to advance knowledge of Earth as a system in order to meet the challenges of environmental change and to improve life on our planet. ESD achieves this goal by collecting Earth observations from satellites, airplanes, balloons and the ground for almost all areas of the Earth. The datasets created from these heterogeneous observations are freely and openly available to all, including NASA's partners such as U.S. and international organizations and governments, disaster-relief agencies worldwide, scientists from academia and the private sector, business, the military, and the general public. NASA has been collaborating with Google Earth Engine (GEE) under the existing umbrella of the NASA and Google public-private partnership to promote each organization's shared goal of making Earth observation data accessible and useful. The NASA and Google Earth Engine teams are working together to develop a set of best practices that will support NASA's goal of improving data availability and accessibility to all users and will aid in Google's efforts to advance the utility of the Google Earth Engine platform to the scientific community. This talk will highlight the NASA and Google Earth Engine collaboration to date and will share lessons learned that may be useful to others considering similar partnerships.

SWITCH TEMPLATE

