



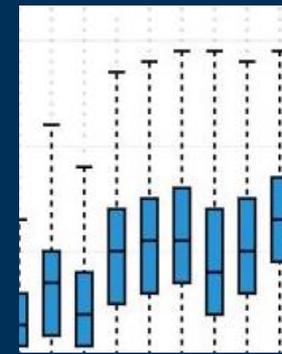
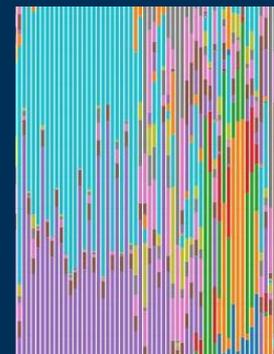
It *AppEEARS* we have a solution to many of your data issues!



Welcome to *AppEEARS*!

Application for Extracting and Exploring Analysis Ready Samples (*AppEEARS*)

The Application for Extracting and Exploring Analysis Ready Samples (*AppEEARS*) offers a simple and efficient way to access and transform geospatial data from a variety of federal data archives. *AppEEARS* enables users to subset **geospatial datasets** using spatial, temporal, and band/layer parameters. Two types of sample requests are available: **point samples** for geographic coordinates and **area samples** for spatial areas via vector polygons. Sample requests submitted to *AppEEARS* provide users not only with data values, but also associated quality data values. Interactive visualizations with summary statistics are provided for each sample within the application, which allow users to preview and interact with their samples before downloading their data. Get started with a sample request using the Extract option above, or visit the [Help page](#) to learn more.



Danielle Golon

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Sioux Falls, South Dakota**

***Work performed under USGS contract [G15PC00012]**

U.S. Department of the Interior
U.S. Geological Survey

Agenda

- Background on the LP DAAC, the data we'll be using, and the Application for Extracting and Exploring Analysis Ready Samples (**AppEEARS**)
- Complete a walkthrough of AppEEARS Area request as a group
- Complete a self guided walkthrough of AppEEARS Point request
- Questions

But first!

- If you don't have an Earthdata Login Account please create one:
 - <https://urs.earthdata.nasa.gov/>
- Info:
 - Earthdata Accounts are available at no cost
 - Your Earthdata Account provides you access to thousands of no cost datasets and is a single mechanism for user registration and profile management for all Earth Observing System Data and Information System (EOSDIS) system components (DAACs, Tools, Services)
 - Your Earthdata login also helps the EOSDIS program better understand the usage of EOSDIS services to improve user experience through customization of tools and improvement of services

What is NASA's LP DAAC?

- Land Processes (LP) Distributed Active Archive Center (DAAC)
 - <https://lpdaac.usgs.gov>
- Located at the USGS Earth Resources Observation and Science (EROS) Center in Sioux Falls, SD
- Established in 1990



LP DAAC Data Fast Facts!

- Access to **3.5** Petabytes of land data
- Data available from **1981** to **present**
- Data provides information about the Earth from **1 millimeter** to **5,600 meters** per pixel
- All data and resources available at **no cost**



ASTER: AST_L1T

Kurnool Ultra Mega Solar Park, India

DOI 10.5067/ASTER/AST_L1T.003I:

15 meter



VIIRS: VNP09CMG

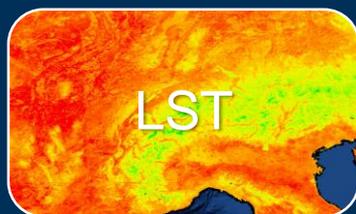
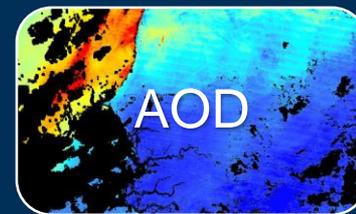
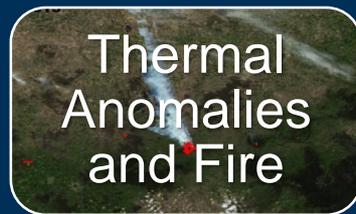
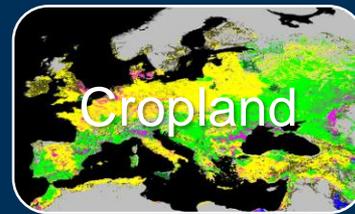
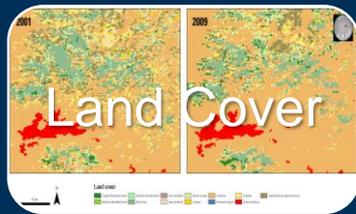
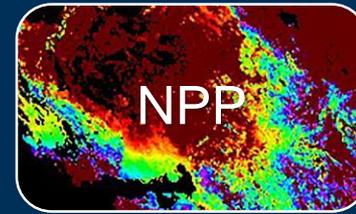
Globe

DOI 10.5067/VIIRS/VNP09CMG.001:

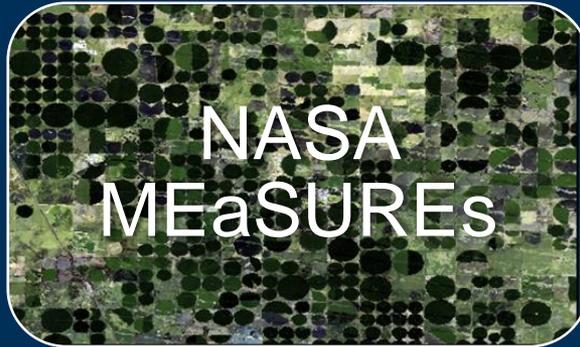
5,600 meter



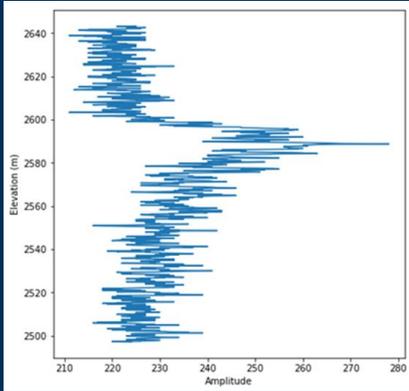
What Types of Data Are Available?



Where Do the Data Come From?

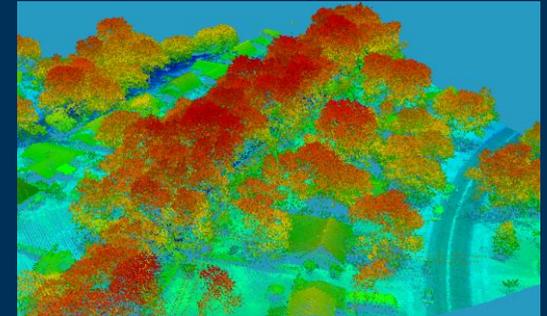


Data coming soon!



GEDI

- Global Ecosystem Dynamics Investigation (GEDI)
 - ~ Winter 2019
- *Goddard's LiDAR, Hyperspectral & Thermal Imager (G-LiHT)*
 - ~ Winter 2019
- Earth Surface Mineral Dust Source Investigation (EMIT)
 - Launch to ISS: Fall 2021



G-LiHT

How can you access this data? The Answer is AppEEARS!



The screenshot shows the top navigation bar of the AppEEARS application. On the left is the USGS logo with the tagline "science for a changing world". Next to it is the "AppEEARS" title. To the right are three menu items: "Extract" with a dropdown arrow, "Explore", and "Help" with a dropdown arrow. On the far right of the navigation bar are icons for a chat bubble and a user profile. The main content area has a dark blue background. At the top of this area is the heading "Welcome to AppEEARS!" in large white font. Below the heading is a sub-heading in orange: "Application for Extracting and Exploring Analysis Ready Samples (AppEEARS)". The main body of text is in white and describes the application's purpose and features, including terms like "geospatial datasets", "point samples", and "area samples". It concludes with a link to the "Help page" in orange.

<https://lpdaacsvc.cr.usgs.gov/appeears/>



Benefits of AppEEARS?

- Access to 114 data products from several federal archives, including:
 - Population
 - Weather
 - Landsat ARD
 - Soil Moisture
 - Elevation
 - Water
 - Snow
 - Temperature
 - Vegetation
- Ability to subset data (**spatial, temporal, band/layer**)
- Request data via:
 - Point (**coordinates**) – pixel based timeseries
 - Area (**Shapefiles**) – mosaicking and clipping done for you!
- Interact with **data values** and decoded **quality info** prior to download
- Download via GeoTIFF or NetCDF-4
- Ability to modify and repeat a request

Let's dive in!

Area

(group walkthrough)

- **Topic:** Observing Fire and Vegetation in Yosemite NP
- **Data**
 - Fires (**VNP14A1**)
 - Vegetation (**MOD13Q1**)
- **Temporal**
 - 2013 – Present

Point

(on your own)

- **Topic:** Observe bus stops in the Phoenix metro area.
- **Data**
 - Day and Night Temperature (**MOD11A2**)
 - Precipitation (**DAYMET**)
 - Vegetation (**eMODIS NDVI**)
- **Temporal**
 - 2016 - 2018