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

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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/](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](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?

- BRDF
- Vegetation Indices
- Albedo
- Burned Area
- NPP
- Elevation
- Land Cover
- Radiance
- Cropland
- Emissivity
- LAI
- ET
- Thermal Anomalies and Fire
- FPAR
- AOD
- GPP
- LST
- VCF
- Reflectance
- Unprocessed
Where Do the Data Come From?

- ECOSTRESS
- S-NPP VIIRS
- Terra and Aqua MODIS
- Terra ASTER
- NASA MEaSUREs
- Community
Data coming soon!

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

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.

https://lpdaacsvc.cr.usgs.gov/appeeeears/
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