GeoSTAC

Planetary CartoCosmo for STAC for Planetary Mapping

Team Members:

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Project Background

CLIENTS:

United States Geological Survey (USGS)
Astrogeology Science Center

- **Trent Hare, Cartographer**
  - *Project Role***:** Principle Investigator for the Planetary Data System Cartography and Imaging Sciences Discipline Node
- **Dr. Jay Laura, Geospatial Research Scientist / Software Lead**

IMPORTANCE:

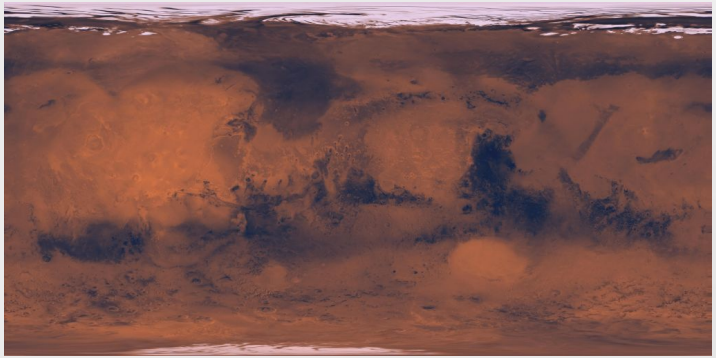
- **Providing the Planetary Science Community the resources to study our Solar System.**

The Problem:
Accessibility to Scientific Planetary Data

The need to provide Cloud Sourced individual Analysis Ready Images to the Planetary Science Community.

Why?

- **Allow Scientists to choose images that best represent particular areas of a planet.**
- **Providing access to planetary images that are already processed to allow Scientists to focus on their research.**



USGS Astrogeology
Mars Viking Mosaic

Solutions

Providing individual Analysis Ready Images to the Planetary Science Community via STAC images using Leaflet.

STAC

- **Provides a standardized way to expose collections of spatial temporal data**
- **Allows for seamless web integration taking away the need for individual users to compile and view terabytes of data**

Leaflet

- **Placing a set of “coordinates” or footprints to represent an image’s location on any given planet’s map**
- **The ability to visualize a particular image by selecting a footprint on the map.**

Plan for Development

Technologies:

- **JavaScript**
  - **The engine of the open source interactive map viewer tool known as Leaflet**
- **Leaflet**
  - **Lightweight fast mobile friendly interactive map visualization tool**
- **STAC**
  - **STAC catalog - Simple flexible JSON file to link structure and organization for ease of browsing various STAC items**
  - **STAC item - Core atomic unit representing a single spatiotemporal object in GeoJSON format**
  - **GeoJSON - A standardized format for representing geometry types such as: points, polygons, line strings, object features, and more**

Closing

Any Questions?