

# PDS Google Update

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4/08

# Overview

- PDS-Google

- The goal is to use PDS data to prototype indexing and user experience technologies to enable access through Google to classes of information that are currently available only to a select class of users who understand how to use NASA's information systems

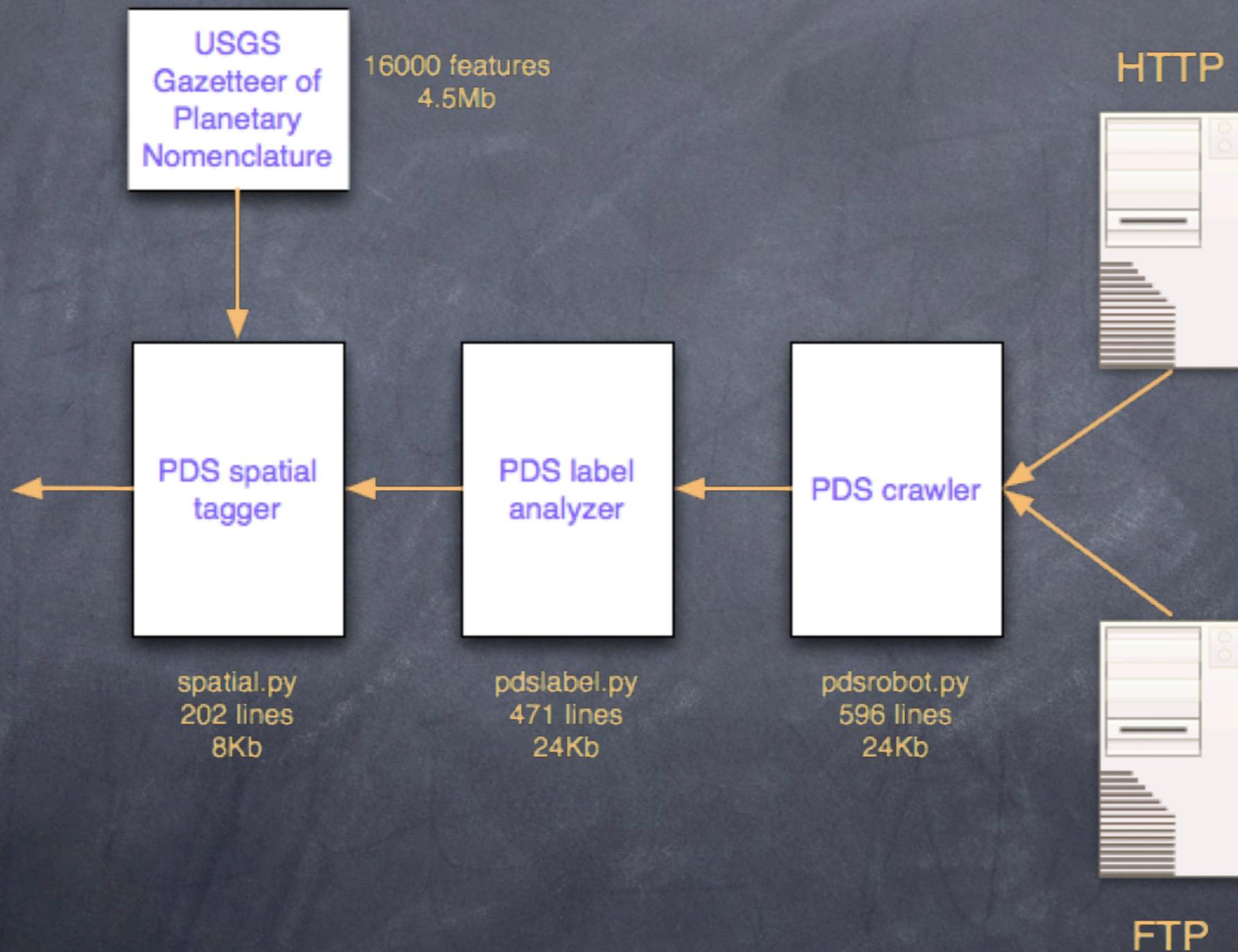
# Product Vision

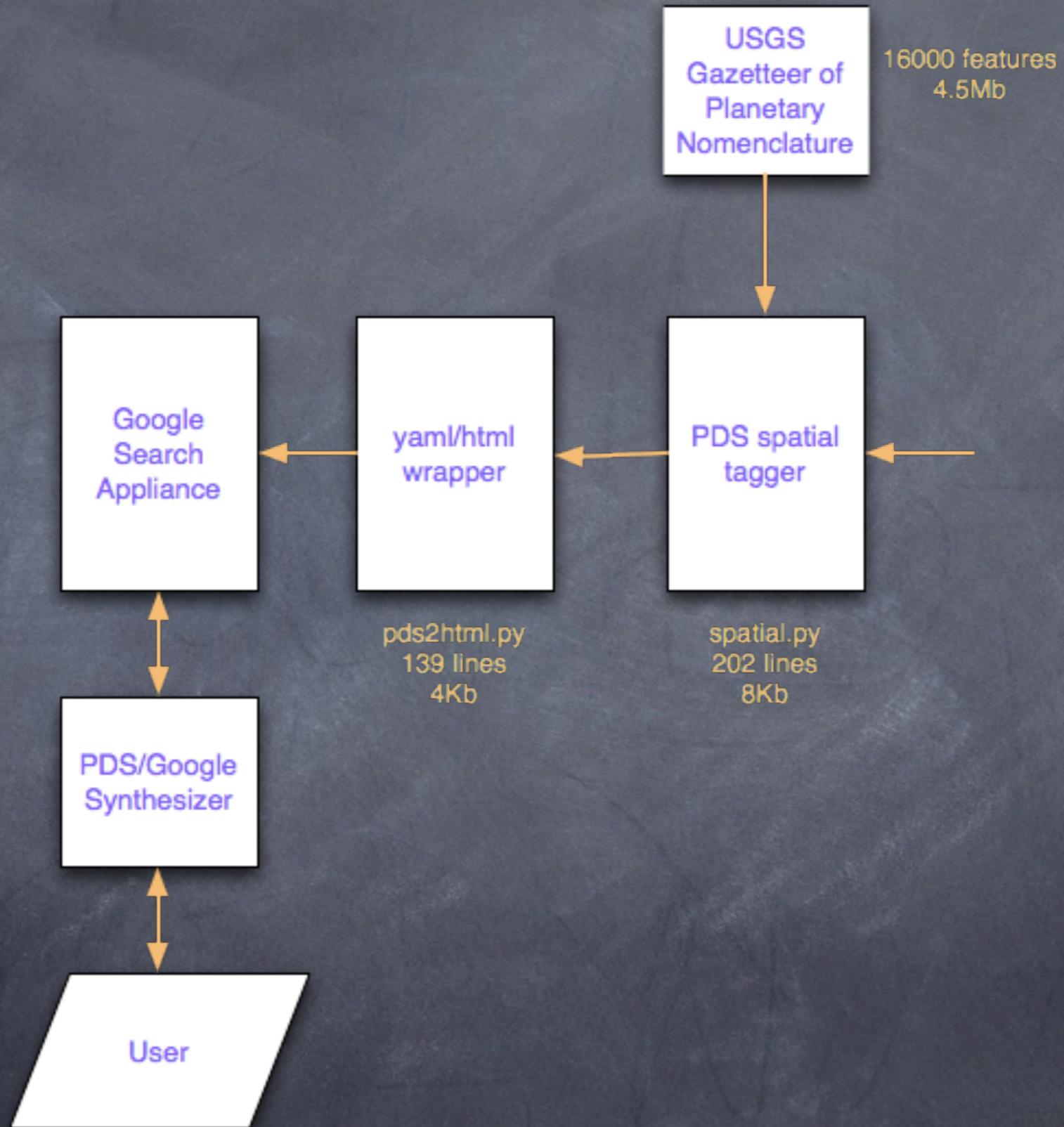
- Audience
  - Scientists
  - Amateur astronomers, general public
- Product Candidates
  - Integration with applicable Google products
  - A PDS hosted product

# Work to date

- In consultation with Google, decided to use Google Search Appliance
  - Requires appropriate meta-data
- Initial validation of the approach
  - Used data from Clementine and MGS to demonstrate that we can generate and format data, use the GSA, get results
  - Initial UE design and testing

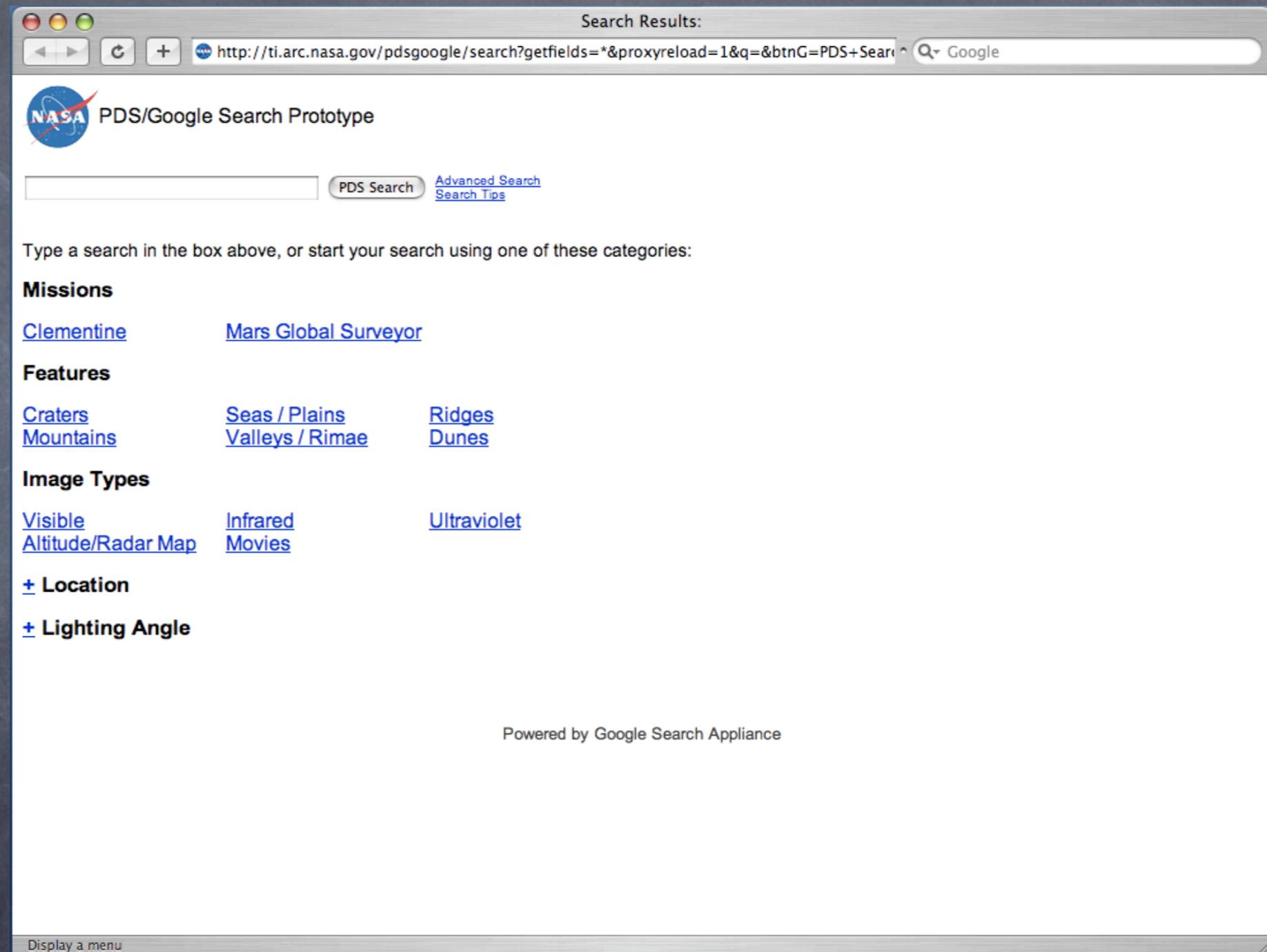
# PDS/Google (PDSG) pipeline





# User Experience Approach

- A simple search approach that allows for layered refinement
- Testing Browse interface



# User Experience Approach

- Integration – No silos, walls or barriers
- No need to search by mission, instrument...
- Many questions at this point
  - Advantages/disadvantages of integrated approach
  - Search vs. browse interface
  - Layered approach to searching to provide expert users with advanced search capabilities

# Issue Resolution

- We will use user testing data, rather than infinite debate, to resolve the issues of what interface(s) best serve the users
- Two user tests conducted using the early prototype
- Paper mockups of browse interface
- Google support for UI design from analytics

# Search Example - Lunar

Search  
on  
feature

Search Results: dawes

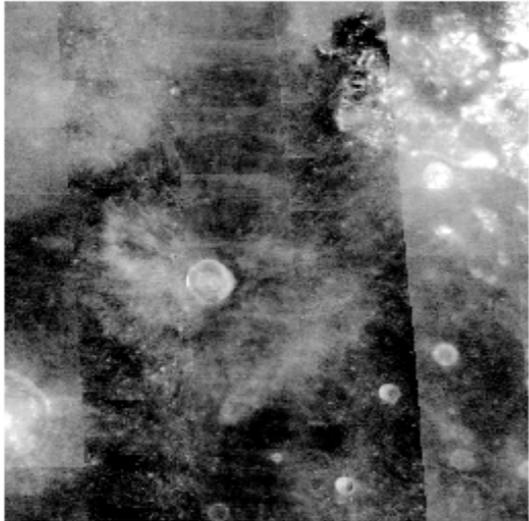
http://ti.arc.nasa.gov/pdsgoogle/search?getfields=\*&proxyreload=1&q=dawes&btnG=F Google

NASA PDS/Google Search Prototype

dawes PDS Search [Advanced Search](#) [Search Tips](#)

**Search** Results 1 - 4 of about 4 for dawes. Search took 0.02 seconds.

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 **Image map NI17N027 - SINUSOIDAL  
NIR 6-BAND MOSAIC**

*Spacecraft / Instrument:* CLEMENTINE 1 / NEAR INFRARED CAMERA  
*Image Time:* 2007-04-05T19:17:13  
*Size:* 1870 x 2127 pixels, 6 bands

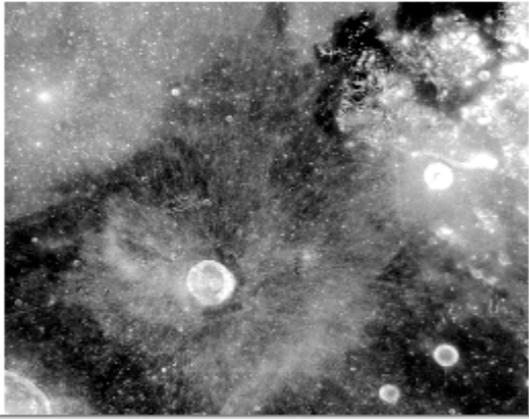
[more detail](#)

**Features**

*Craters:* Isis, Fabbroni, Mary, Plinius, Jerik, Abetti, Ching-Te, Osiris, Robert, Bernini, Stella, Dawes, Beketov  
*Seas (Maria):* Mare Serenitatis, Mare Tranquillitatis  
*Fissures (Rimae):* Rima Jansen, Rima Marcello, Rima Rudolf, Rima Reiko, Rimae Littrow, Rimae Plinius, Rima Carmen, Rima Dawes

**View as:** [enhanced 8bit PNG](#) [16bit PNG](#) [Original \(IMG\)](#) 45.5 MB

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 **Image map BI17N027 - SINUSOIDAL  
LUNAR BASEMAP MOSAIC**

*Spacecraft / Instrument:* CLEMENTINE 1 / ULTRAVIOLET/VISIBLE CAMERA  
*Image Time:* 1997-07-23T17:29:12  
*Size:* 1870 x 2127 pixels, 1 band

[more detail](#)

**Features**

*Craters:* Isis, Fabbroni, Mary, Plinius, Jerik, Abetti, Ching-Te, Osiris, Robert, Bernini, Stella, Dawes, Beketov  
*Seas (Maria):* Mare Serenitatis, Mare Tranquillitatis

Display a menu



Search Results: dawes



## PDS/Google Search Prototype

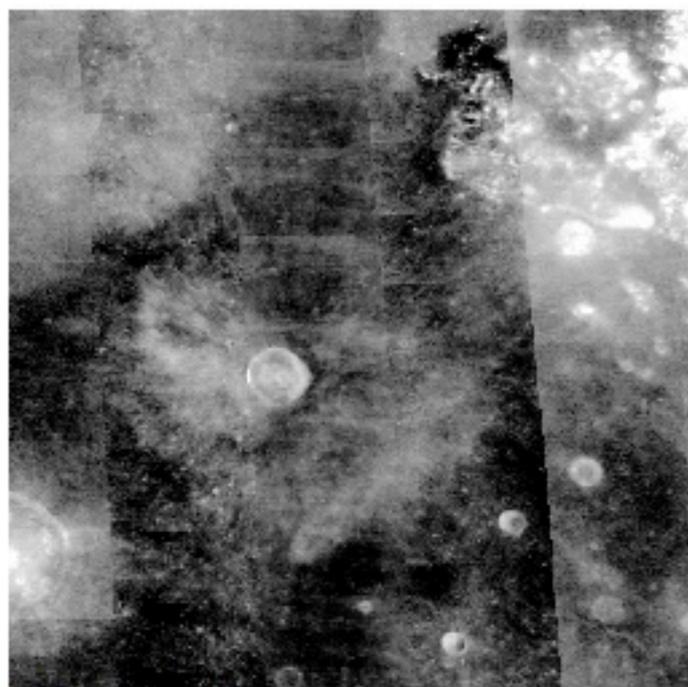
dawes

PDS Search

[Advanced Search](#)  
[Search Tips](#)

## Search

Results 1 - 4 of about 4 for dawes. Search took 0.03 seconds.



**Image map NI17N027 - SINUSOIDAL  
NIR 6-BAND MOSAIC**

*Spacecraft / Instrument:* CLEMENTINE 1 / NEAR INFRARED CAMERA  
*Image Time:* 2007-04-05T19:17:13  
*Size:* 1870 x 2127 pixels, 6 bands

[less detail](#)

*Instrument:* NIR  
*Target:* MOON  
*Producer:* UNITED STATES GEOLOGICAL SURVEY  
*Spacecraft:* CLEMENTINE 1  
*Product creation:* 2007-04-05T19:17:13  
*Product ID:* NI17N027  
*Instrument:* NEAR INFRARED CAMERA  
*Data set ID:* CLEM1-L-N-5-DIM-NIR-V1.0

*Mission:* DEEP SPACE PROGRAM SCIENCE EXPERIMENT

*Label file:* [\(YAML\)](#)

## Features

*Craters:* Isis, Fabbroni, Mary, Plinius, Jerik, Abetti, Ching-Te, Osiris, Robert, Bernini, Stella, Dawes, Beketov

*Seas (Maria):* Mare Serenitatis, Mare Tranquillitatis

*Fissures (Rimae):* Rima Jansen, Rima Marcello, Rima Rudolf, Rima Reiko, Rimae Littrow, Rimae Plinius, Rima Carmen, Rima Dawes

# Mars Example

Search Results: hellas

http://armstrong.arc.nasa.gov/pdsgoogle/search?getfields=\* & proxyreload=1 & q=hellas Google

Search Results: hellas

 PDS/Google Search Prototype

hellas  [Advanced Search](#) [Search Tips](#)

**Search** Results 1 - 10 of about 41 for hellas. Search took 0.04 seconds.

[Next>](#)

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 **Image M02/01447**

*Spacecraft / Instrument:* mars\_global\_surveyor /  
*Image Time:* 2000-05-08T19:28:12  
*Size:* 672 x 7424 pixels, 1 band

**Features**

**View as:** [enhanced 8bit PNG](#) [16bit PNG](#) [Original \(IMG\)](#) 2.4 MB

*Filter:* 750 nm

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 **Image M02/00735**

*Spacecraft / Instrument:* mars\_global\_surveyor /  
*Image Time:* 2000-05-08T19:16:42  
*Size:* 768 x 7552 pixels, 1 band

# Advanced Search Mockups

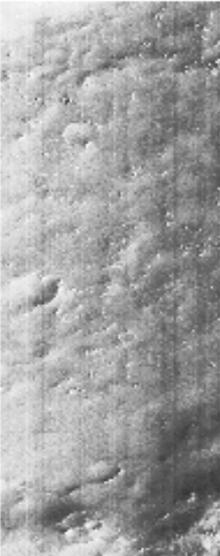
Search Results: dawes

http://ti.arc.nasa.gov/pdsgoogle/search?getfields=\*&proxyreload=1&q=dawes&btnG=F Google

Fresnel, Rima Sulpicius Gallus, Rima Hadley, Rima Boscovich, Rima Jansen, Rima Conon, Rima Yangel', Rima Dawes, Rima Carmen, RimRima Ariadaeus

View as: [enhanced 8bit PNG](#) [16bit PNG](#) [Original \(IMG\)](#) 5.9 MB

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 **Image M00/01812**

*Spacecraft / Instrument:* mars\_global\_surveyor /  
*Image Time:* 2000-05-02T21:55:53  
*Size:* 1024 x 3200 pixels, 1 band

[more detail](#)

**Features**

View as: [enhanced 8bit PNG](#) [16bit PNG](#) [Original \(IMG\)](#) 1.5 MB

  
Filter: 750 nm

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**Refine Your Search**

**Missions**  
[Clementine](#)  
[Mars Reconnaissance Orbiter](#)  
[Mars Global Surveyor](#)  
[Mars Express](#)  
[2001 Mars Odyssey](#)

**Image Type**  
[Visible](#)  
[Infrared](#)  
[Ultraviolet](#)  
[Radar/Altimeter Map](#)  
[Movie](#)

**+Location**

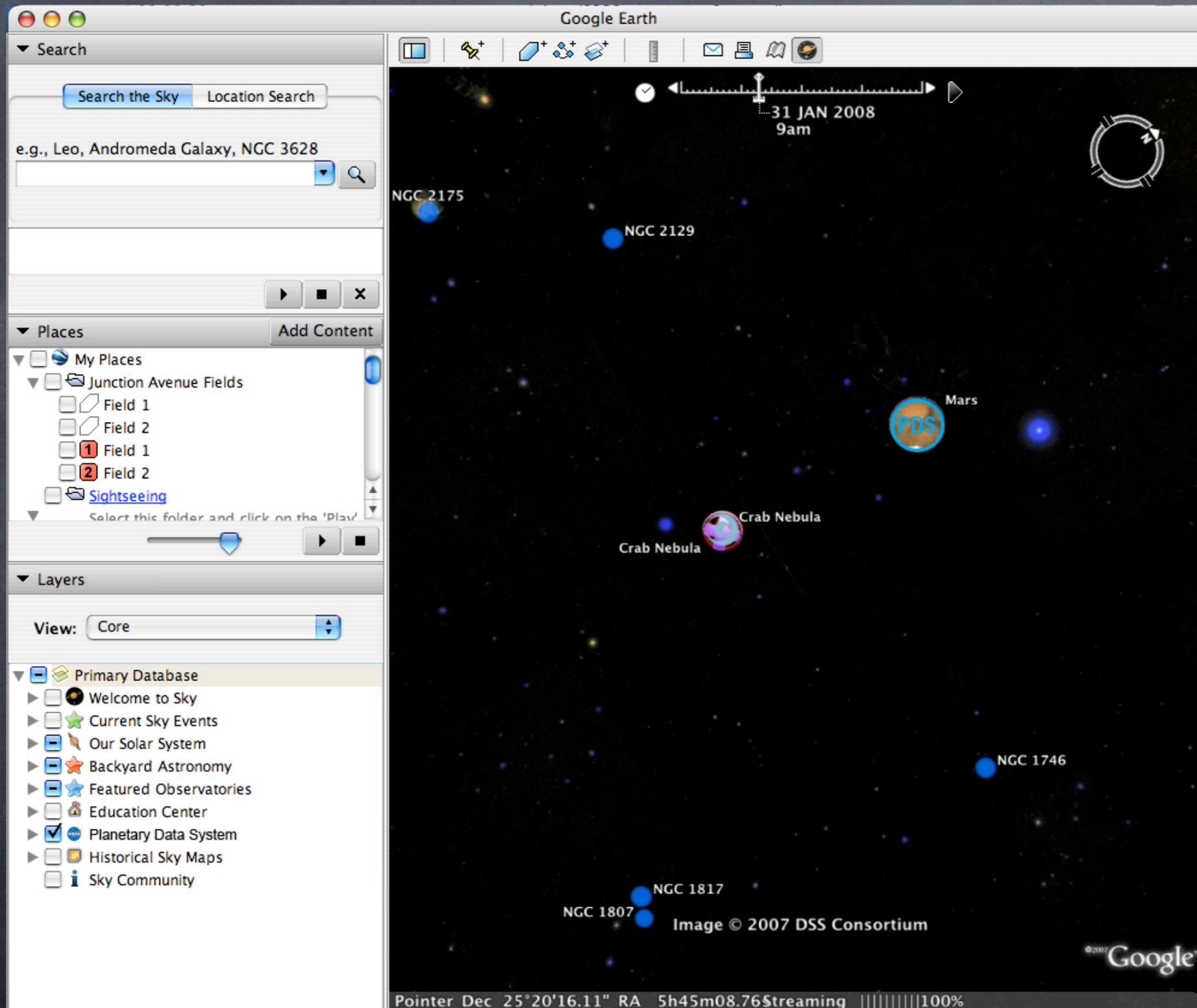
# Feature Based Search

- User testing shows desire for feature based search, in addition to existing lat/long capabilities
- PDS images correlated with planetary nomenclature database
- Meta-data augmented with feature names, enables feature based search from text input

# Product Integration

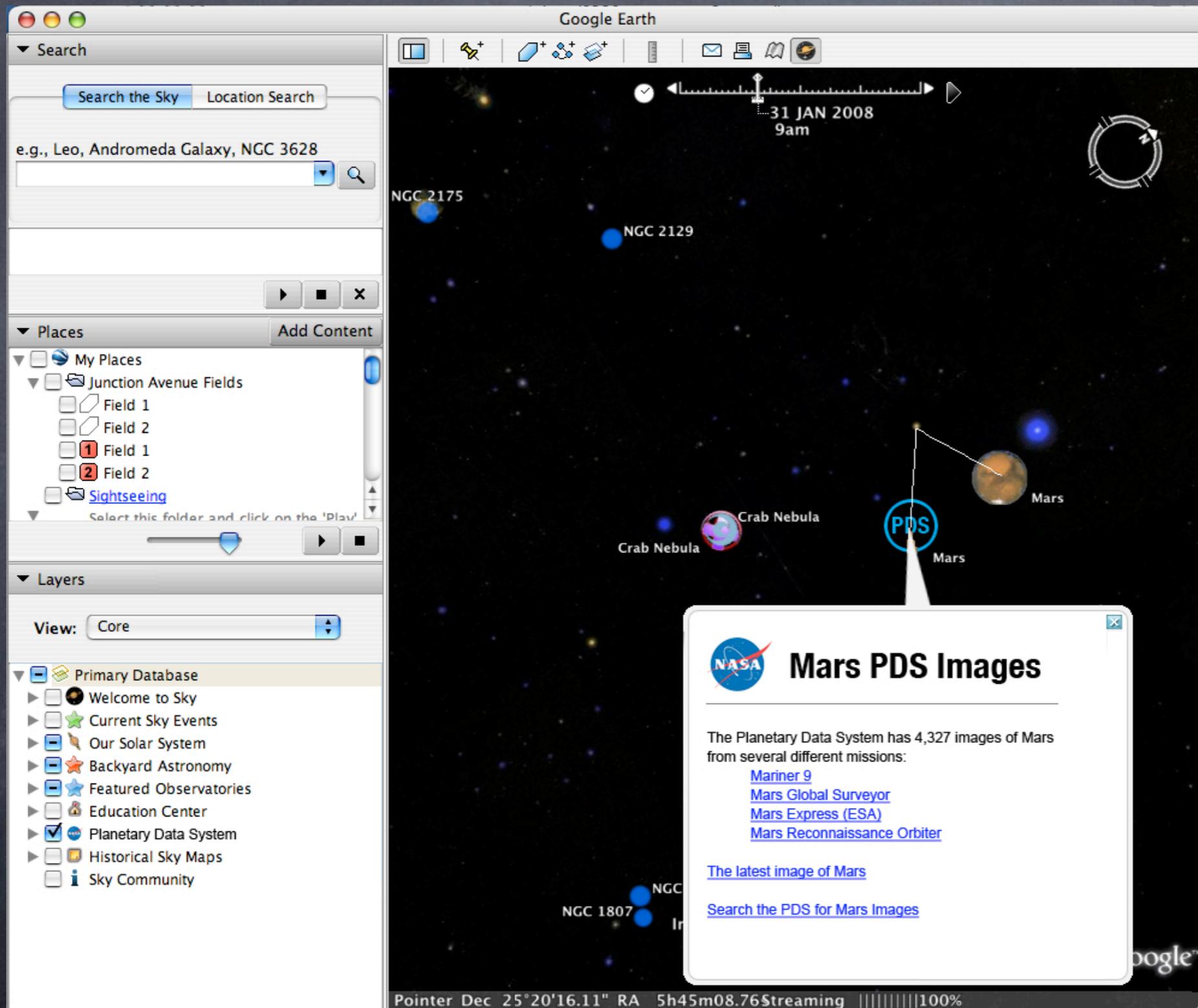
- In discussions with Google on product integration strategy
- Defining applicable products
- Initial scope, data set(s)
- Initial target audience

# UI Mockup



This is a mockup of what a PDS layer could look like in Google Sky - note that NASA made this, it's not approved by Google yet

# UI Mockup 2



NASA -  
made  
mockup of  
possible PDS  
UI in Google  
Sky. Not  
approved by  
Google

# Issues

- Where is data hosted?
- How do we meet the needs of a broad and diverse user base from experts to novice
- Is useful data returned with larger data sets