3D subsurface mapping and combining these with iMars 3D products

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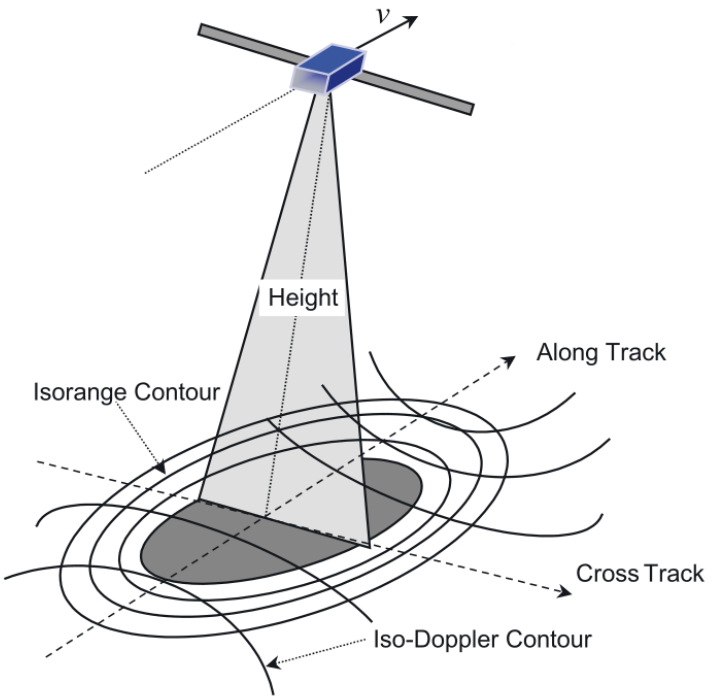
Planetary radars

MARSIS
Mars Advaced Radar for Ionosphere and Subsurface Sounding

ESA's Mars Express

SHARAD
SHAllow RADar

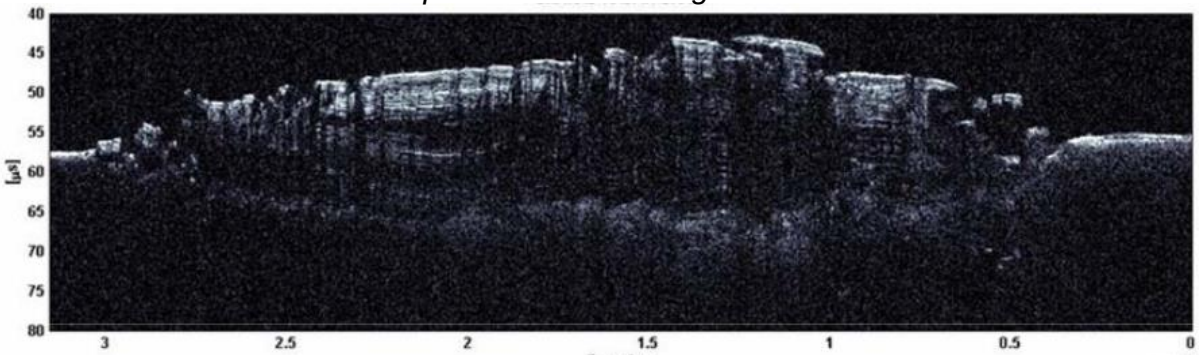
NASA's Mars Reconnaissance Orbiter



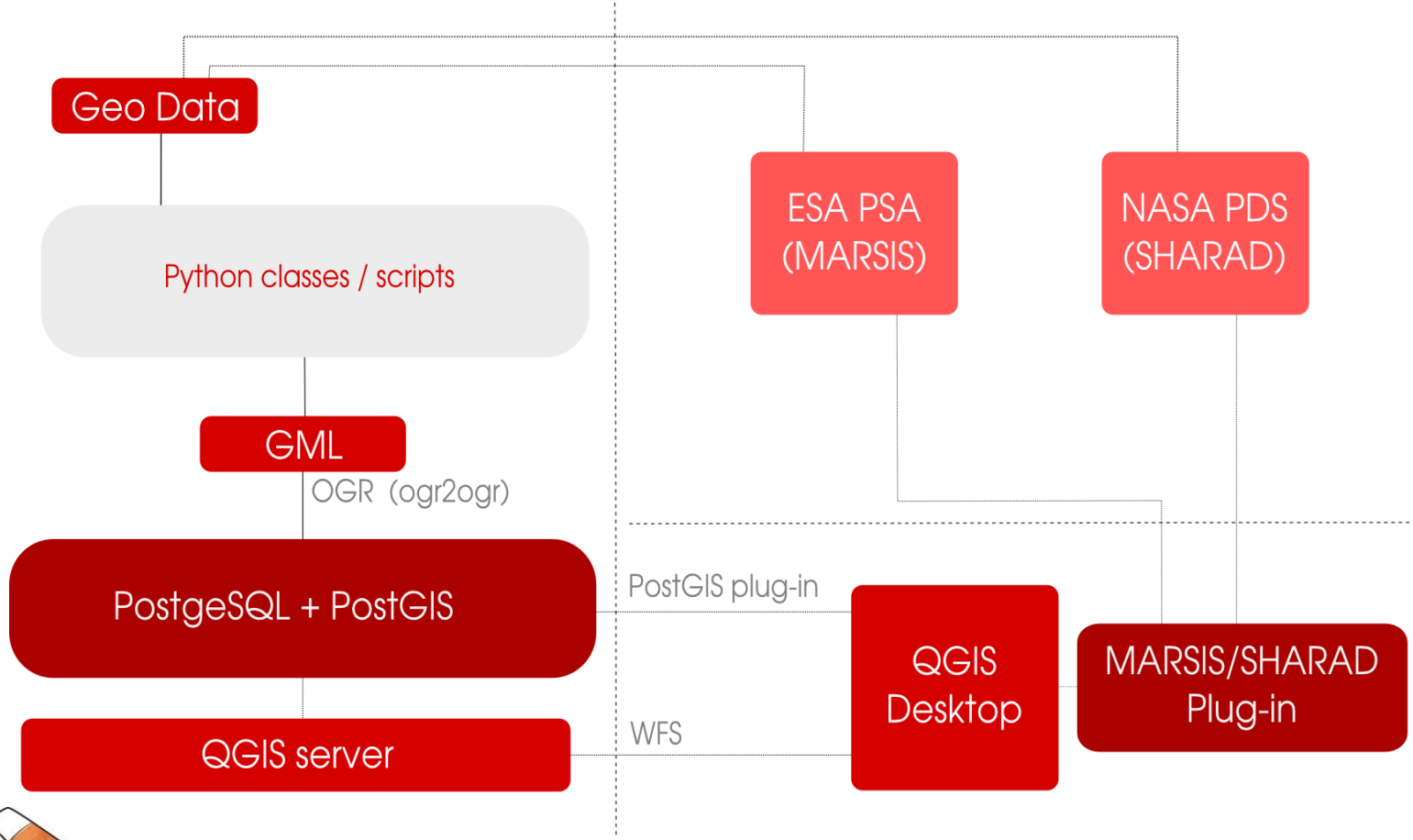
Background

- Planetary radar data for Mars (MARSIS and SHARAD) have been available in PDS and PSA archives
- No open source tools existed to analyze data jointly and interface with popular GIS systems
- The iMars project has invested in
  - Create a database of MARSIS and SHARAD data to allow access from any GIS system via standard protocols
  - Develop a tool for QGIS database to allow analysis of radar and imagery data together

Example SHARAD radargram over North Pole



Data flow



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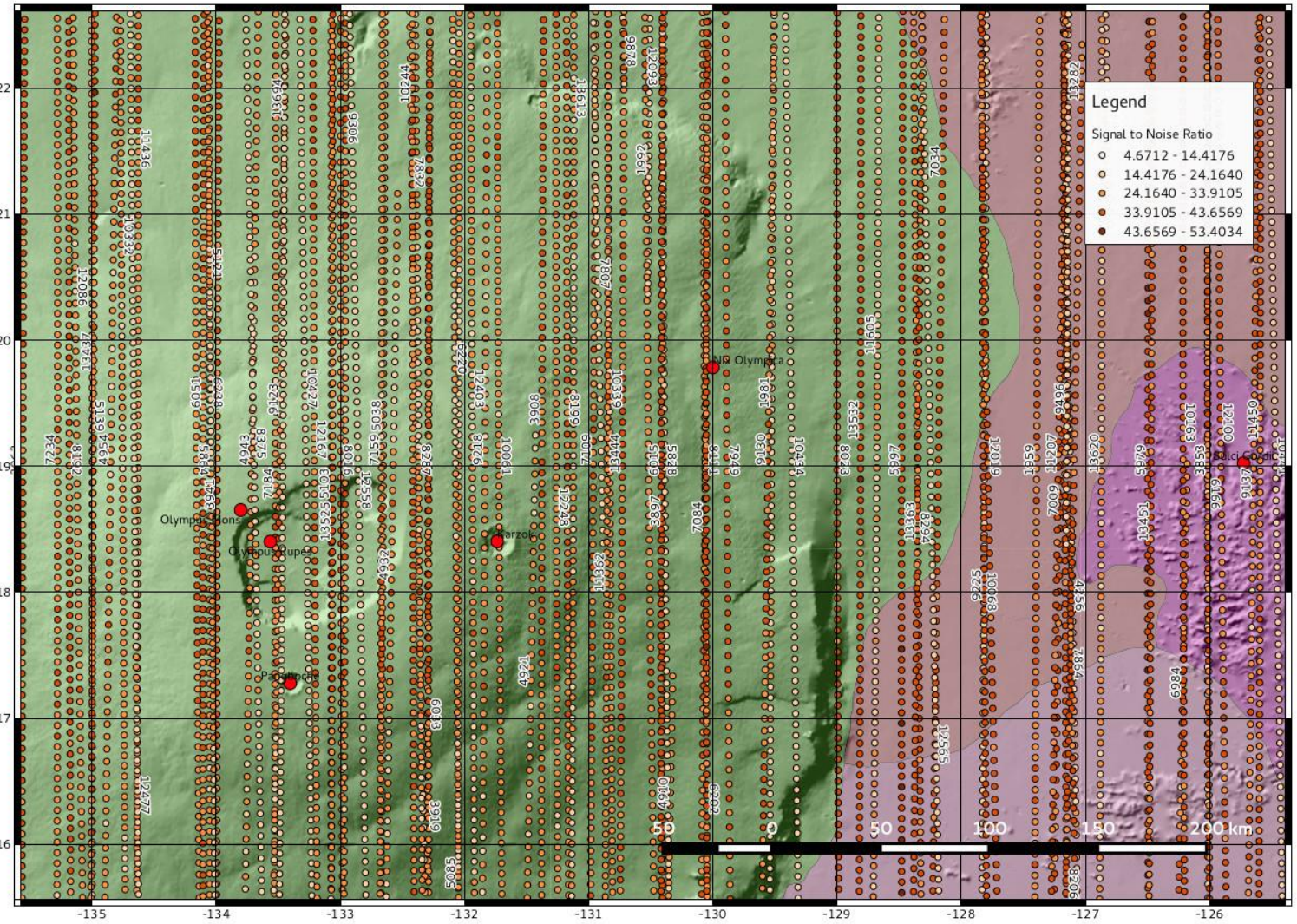
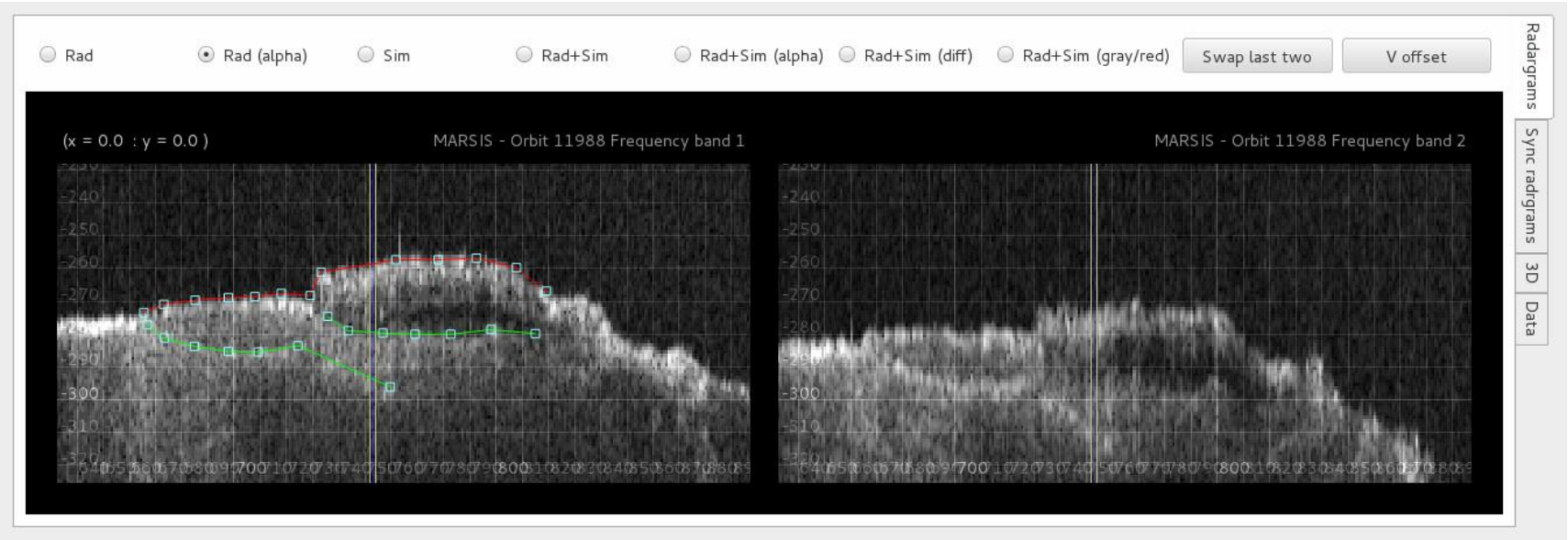
Orbit Tracks



These data are available without the plugin

Radargrams viewer



Capabilities of the radargram analysis

- Selection of MARSIS and SHARAD data in a given area
- Assessment of data quality for MARSIS data
- Radar- and clutter-gram display for easy data analysis
- Access to radargrams hosted at PDS archives (MARSIS online access pending on latest release from MARSIS team)
- Time delay (depth) measurements on ragargrams
- Feedback mapping of radargram selection back to QGIS layer (selecting of interesting features)

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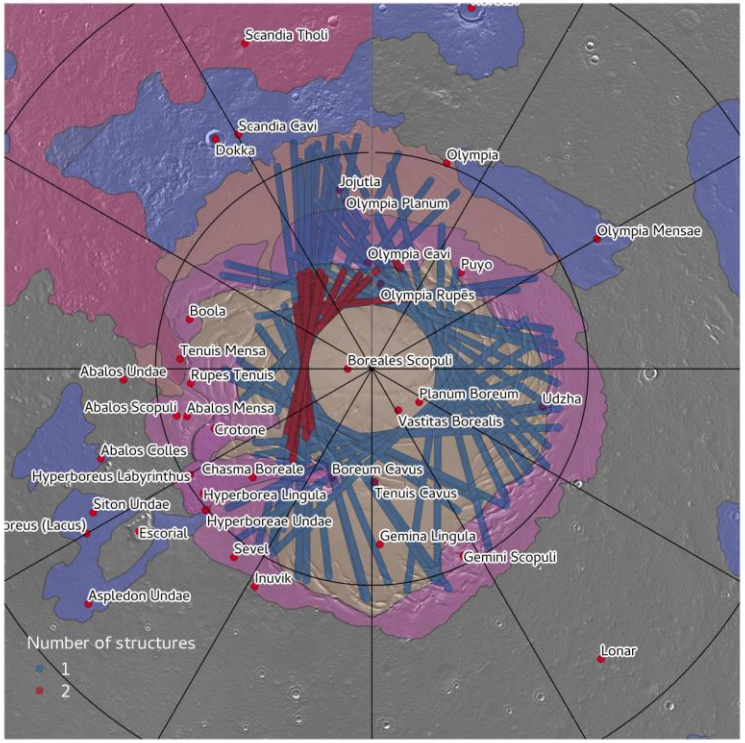
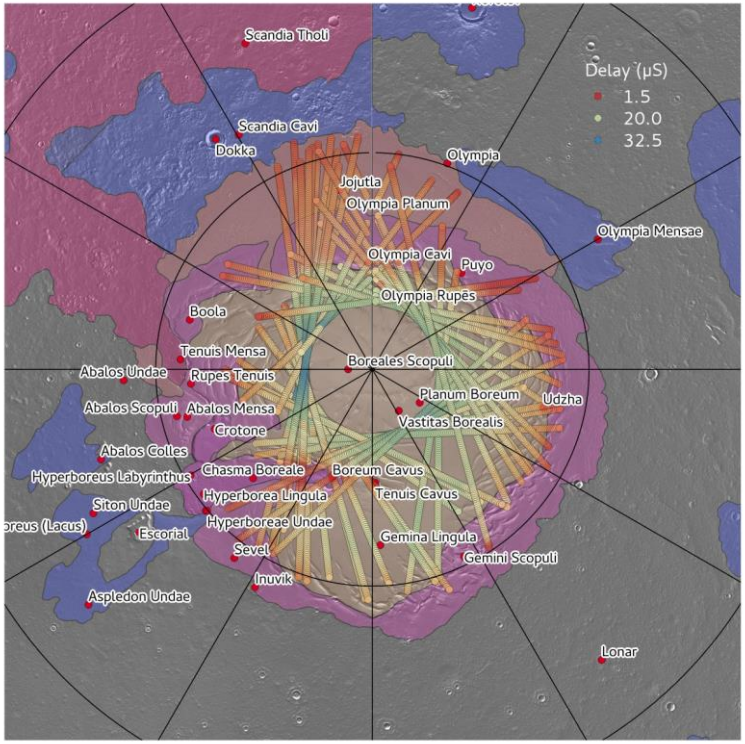
Mapping examples





Get the plugin from :
https://github.com/eSpaceEPFL/marsissharadviewer

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