

Using DataLabs for user tutorials in the Planetary Science Archive

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ESA's Planetary Science Archive stores and distributes data from ESA's planetary missions, from orbiters and landers to descent probes and, eventually, rovers. As such it has an enormous diversity of instrumentation and data formats. The archive itself (<https://psa.esa.int>) allows users to search for data by a variety of methods (table, gallery and map views, several APIs etc.) but user feedback has shown that many users get stuck at the next step – how to take the collection of files retrieves and do science with them. DataLabs, and in particular the ability to run Jupyter notebooks directly accessing the archival data, provides an excellent means to solve this problem by offering the user a set of curated tutorials, focussing on how to search for, open, manipulate and plot data.

The first steps towards this goal have already been taken by mounting the data from legacy missions into DataLabs, and a recently an intern wrote Jupyter notebooks for several instruments on the Rosetta orbiter. Combined with the upcoming addition of the “DataLabs path” to each product in the archive, this set of tutorials will be expanded over time to cover more instruments.

Several examples will be shown here of basic tutorials, and more advanced use cases taking full advantage of the fact that data do not need to be downloaded.