

PROTOTYPE TO GIVE ACCESS TO PDS DATA USING VESPA INTERFACE P. Le Sidaner¹ and C. Chauvin¹, S. Erard² and B. Cecconi², ¹DIO-VO, Observatoire de Paris/CNRS/PSL Research University, 61 Av de l'Observatoire, 75014 Paris, France, ²AfLESIA, Observatoire de Paris/PSL Research University/CNRS.

Introduction:

The goal of VESPA (Virtual European Solar and Planetary Access) is to build a Virtual Observatory (VO) for Solar System Sciences, based on the infrastructure developed in a previous program Europlanet-RI, and reusing mechanisms which have been developed for the Astronomy VO [1,2]. PDS 4 uses a different system description. We propose to present a first test result of PDS data query using the VESPA client.

The VESPA client is made for the user to hide the virtual observatory infrastructure. The VESPA web client hides all the complexity of query distributed archive using interoperability. The different steps are :

- To call the IVOA registry for available EPN-TAP services.
- Then to send the query to each services spread all over the world and to display the results.

For instance (Fig 1), a user can search for an image of Mars in a specific illumination angle (phase angle between 40 to 65°), in a range of time (from 20/01/2017 to 1/04/2019). The result, after querying the 48 current services, shows that two of them have relevant data. <http://vespa.obspm.fr>

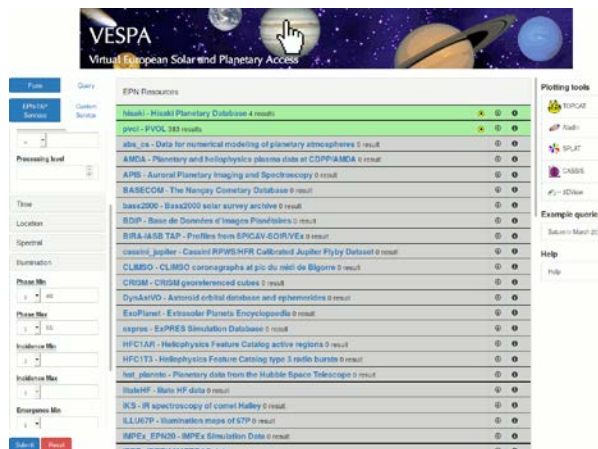


Fig 1 vespa client

Vespa client takes advantage of all the astronomical virtual observatory environment. Evolved visualization clients for almost any format are available on the plotting tools menu. A specific protocol (SAMP [3]) allows to transfer data directly to the dedicated client.

Interaction with PDS:

We try to test how to match Vespa classical queries to PDS research system associated to the PDS dictionary. To take advantage of the PDS result system based on NoSQL, we display directly PDS result web pages. If we try to mix PDS and VESPA results in the VESPA client, we will lose all the informations coming from PDS facet results (Number of result per body, mission etc...). Moreover, many of the Vespa parameters are not defined in the PDS simple query interface.

We propose in the VESPA client, a specific button called "What's in PDS" that uses commune query term to make same type of query.

We have based our test on the query interface of <https://pds.jpl.nasa.gov/datasearch/keyword-search>.

We will present results from different other interfaces of PDS nodes.

Query parameters :

Coming from the PDS JPL interface, the list of PDS parameters are : identifier, instrument, instrument-host, instrument-host-type, instrument-type, investigation, observing-system, product-class, target, target-type, title, start-time, stop-time. They seem close to Vespa parameters. We will present the similitudes and differences in representation and format, and the way we construct VESPA queries.

References:

[1] Erard S., P. Le Sidaner, B. Cecconi, J. Berthier, F. Henry, M. Molinaro, M. Giardino, N. Bourrel, N. André, M. Gangloff, C. Jacquy, F. Topf (2014) The EPN-TAP protocol for the Planetary Science Virtual Observatory. *Astronomy & Computing*, 7-8, 52-61. <http://arxiv.org/abs/1407.5738>

[2] Erard S., et al (2018) VESPA: A community-driven Virtual Observatory in Planetary Science. *Planet. Space Sci.* 150, 65-85. <https://arxiv.org/abs/1705.09727>

[3] Cecconi et al, this conference, poster in ESSI 2.1

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