Prototype de distribution de données radio amateur RadioJOVE

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RadioJOVE

RadioJOVE is an educational and public outreach project developed in the USA that introduces low frequency radioastronomy concepts to students and teachers, but also the **amateur radio community** as well as the general public. The participants are building their own radio telescope, using a kit sold by the Radio JOVE team. This instrument can observe the sky at frequencies around 20 and 30 MHz. The users can share their observations on an archive web site, and on a mailing list. About 1000 kits have been shipped to date.

Radio-JOVE web site: http://radiojove.gsfc.nasa.gov
Radio-JOVE data Archive : http://radiojove.org/cgi-bin/calendar/calendar.cgi

Two types of receivers are used in the RadioJOVE project: the classical single frequency radio kit (tuned around 20 Mhz), and wide band analyzers covering a typical range of 15 to 40 MHz. There are many narrow-band analyzers and a few wide-band ones. The interest of the wide band data is scientifically obvious, as it directly compares with professional radio instruments such as the Nançay Decameter Array (France), the Iitate Radio Observatory (Japan), the LWA (USA) or LOFAR (Europe). The narrow-band data can also be used, but an assessment of the data usability should be done.

Europlanet / VESPA

VESPA (Virtual European Solar and Planetary Access) is an planetary science virtual observatory infrastructure based on IVOA (International Virtual Observatory Alliance) and IPDA (International Planetary Data Alliance) standards.
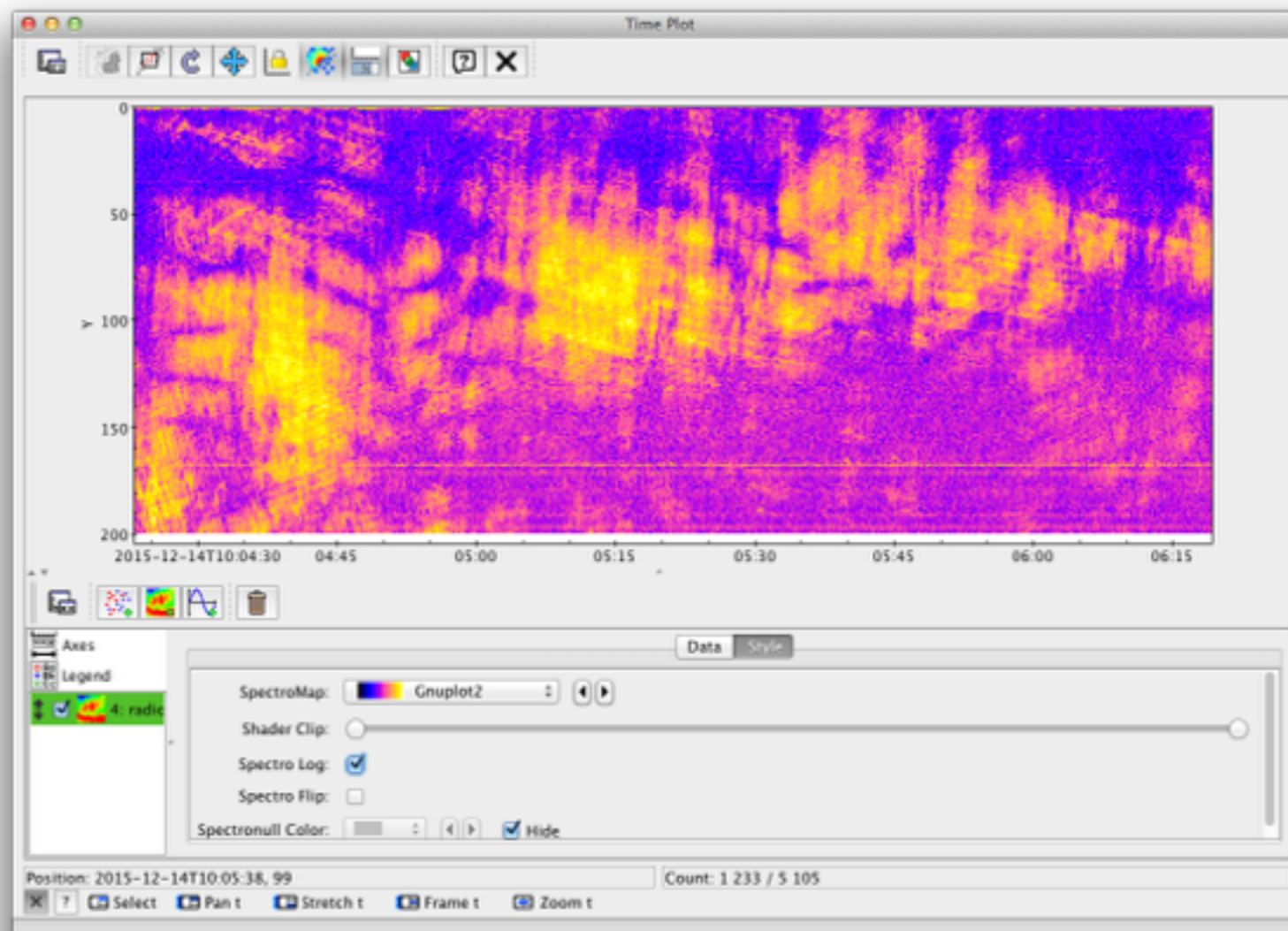
- Access Protocol = EPN-TAP with standard keyword/values/units
- e.g.: target_name = IAU standard name, spectral range in Hz, temporal range in julian days, temporal resolution in seconds…
- Query interface: http://vespa.obspm.fr
- Documentation: http://voparis-europlanet.obspm.fr/EPN2020.html
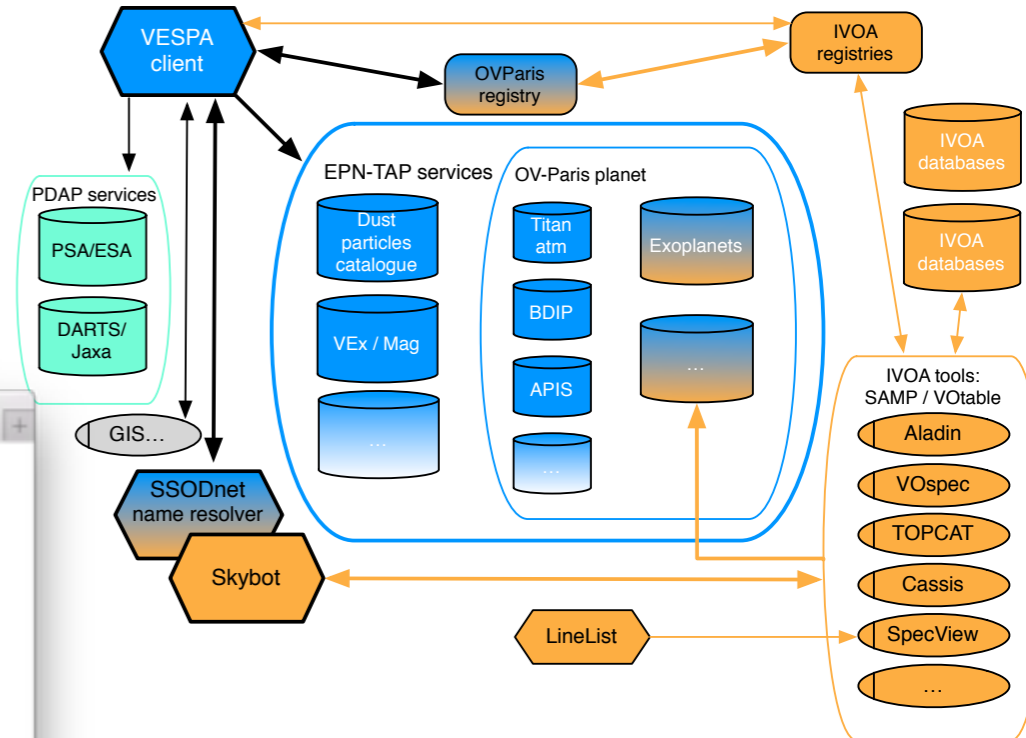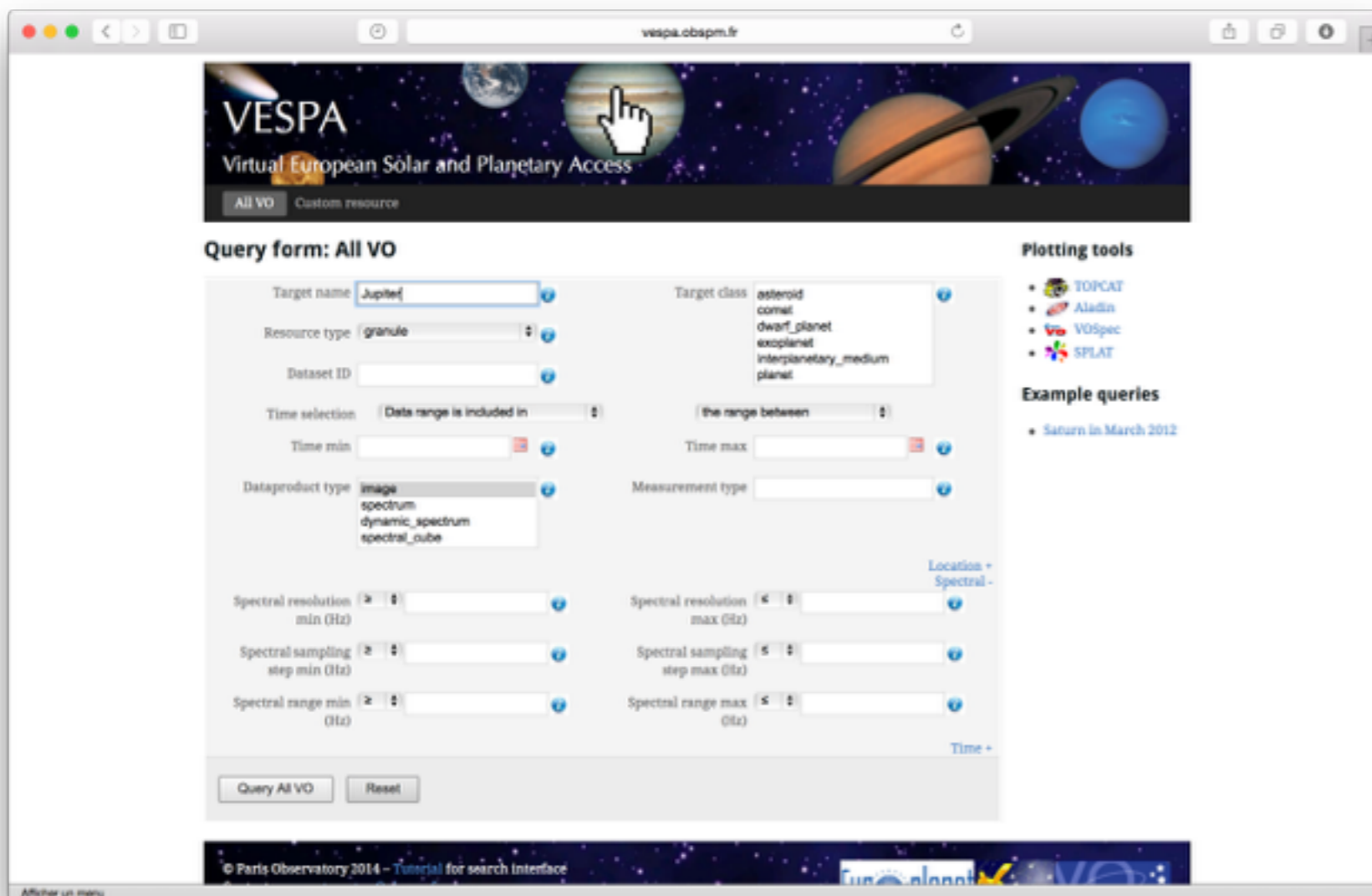
RadioJOVE in VESPA
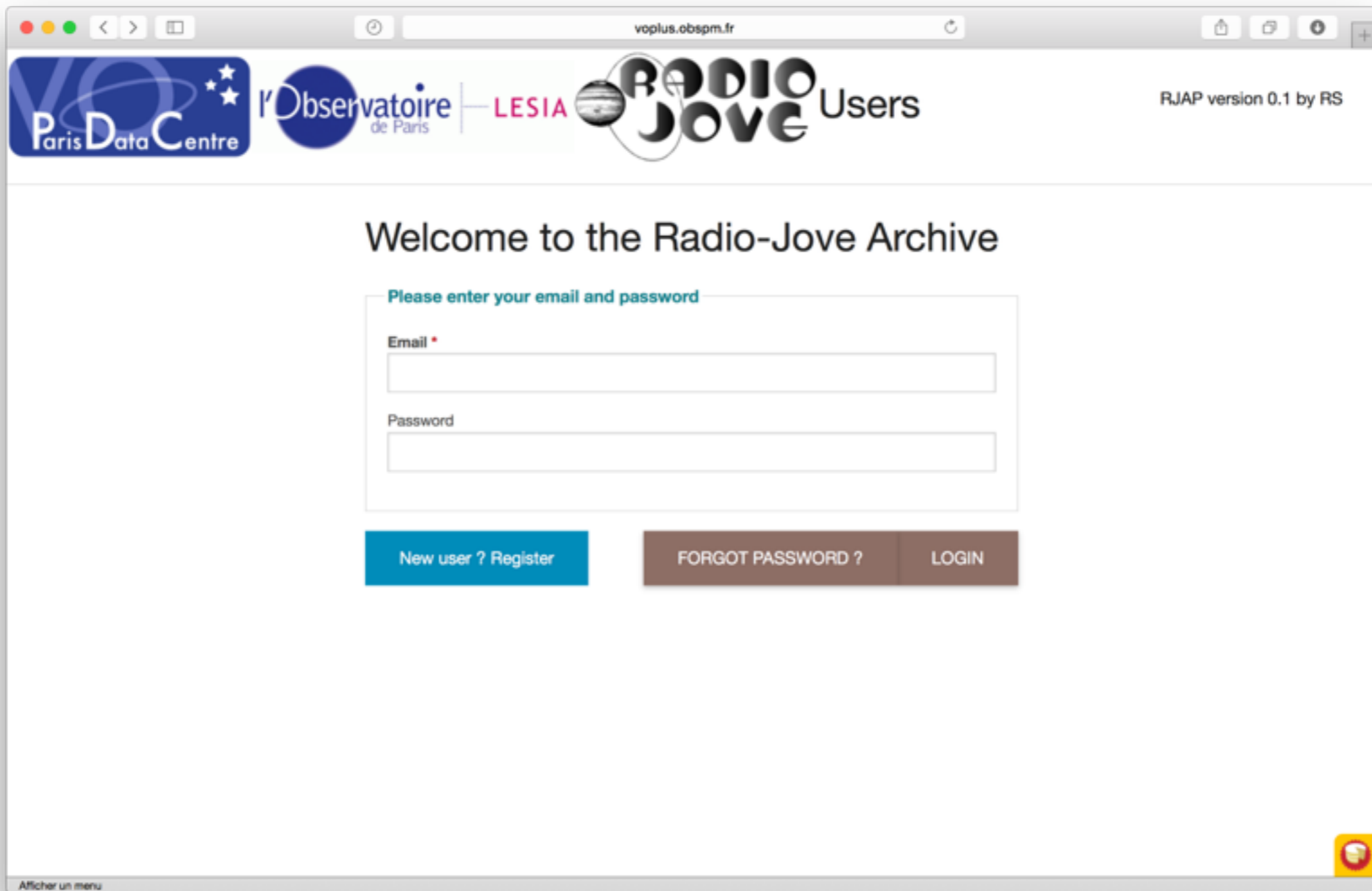
The RadioJOVE data is currently provided in various formats that are not directly usable by the scientific community. Most of the shared data is distributed as screen shots. The narrow-band data providers are usually sharing data files in WAV or MP3 formats. These data format don't include any metadata, which makes it very difficult to define the provenance and relevance of the data. The wide-band data providers are using the direct output binary format from the RadioSkyPipe software.

The VOParis team has built a data format translator that produces **CDF files**, including additional metadata. Those CDF files are ISTP compliant (required for HPDE and SPDF interoperability), PDS4 compliant (required for PDS archiving) and VESPA compliant. These CDF files can be loaded into plotting software for rapid data display. Here an example of data loaded in TOPCAT (an IVOA tool):

RadioJOVE in VESPA

RadioJOVE Archive Login Page

RadioJOVE in VESPA

Logged-in as a data provider

RadioJOVE in VESPA

Logged-in as a data validator

RadioJOVE in VESPA

Logged-in as a data validator

RadioJOVE in VESPA

Search RadioJOVE in VESPA

RadioJOVE in VESPA

RadioJOVE data archive in VESPA: detailed view