



EuroPlaNet VO use case: Auroral Processes



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About this poster

This poster (as well as several accompanying posters in this conference) presents a use case of the Virtual Observatory for Planetary Science being defined in JRA4/IDIS. The goal is to illustrate possible applications of a Planetary Science VO system in the context of this session.

The EuroPlaNet-RI project is funded by the European Commission under the 7th Framework Program, grant 228319 "Capacities Specific Programme".

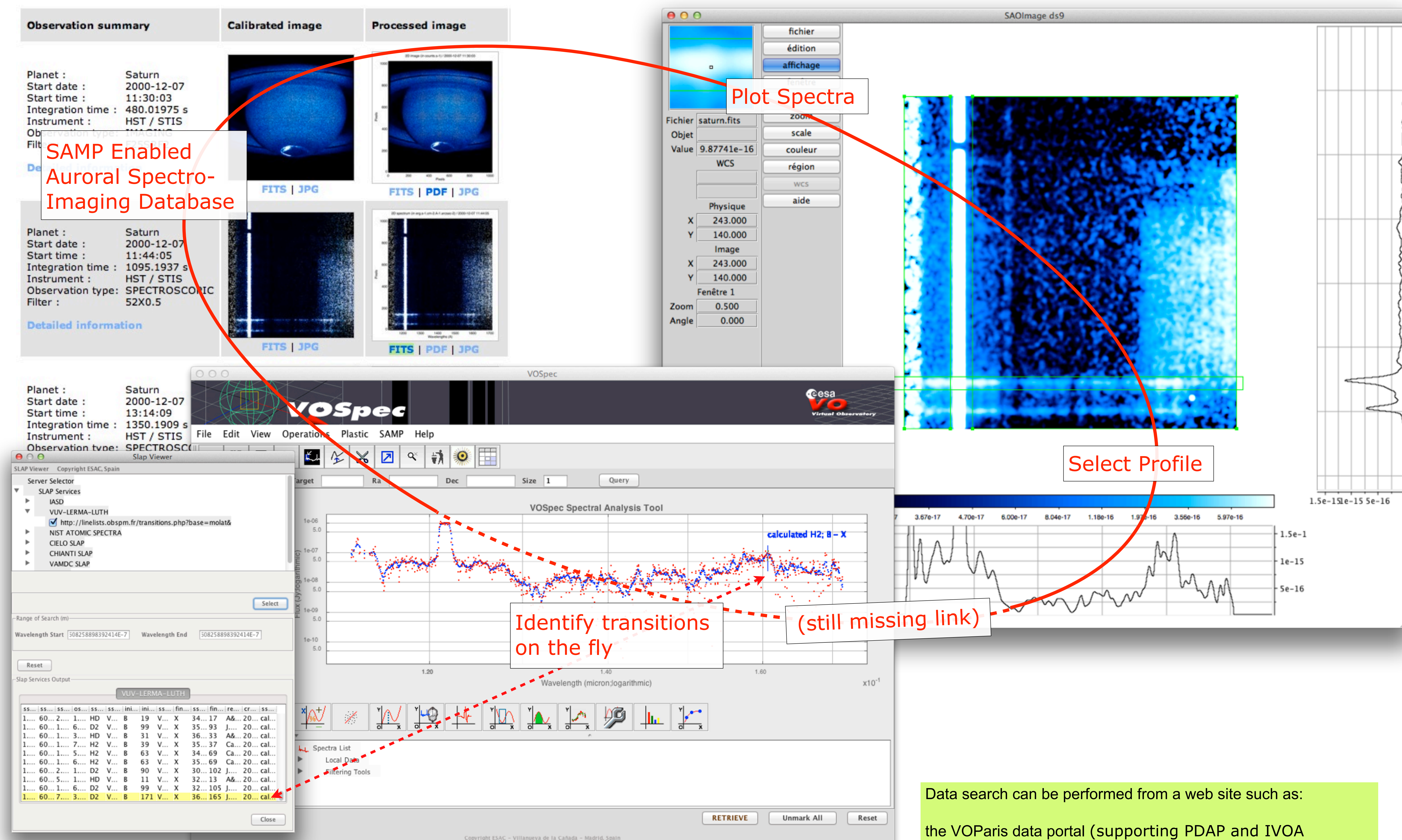
Tools

- The VOParis Data Center portal is querying data services using EPN-TAP (Europlanet Table Access Protocol), which has been developed from the initial IVOA TAP (Table Access Protocol).

- SAOImage-DS9 is an astronomical imaging and data visualization application. It is a VO-aware tool, that is commonly used in astronomical studies. It allows to displays images with vertical and horizontal cuts, that we will use in this use case.

- The spectral analysis is done with VOSpec, developed by ESAC. It can display 1D spectra from FITS or VOTable files. It is also capable of connecting to distant spectral line databases for spectral line identification (using SLAP, Spectral Line Access Protocol, an IVOA protocol dedicated to spectral lines data services).

- The communication between the various tools has been made possible with SAMP (Simple Application Messages Protocol) through WebSAMPConnector (developed at VOParis) or SAMP Profile (developed at CDS)



Science case

- This poster is a follow up of Nicolas André et al. (EuroPlaNet VO use case: Giant planet HST auroral emissions, this session).

- During an interplanetary shock passing by Saturn, the Cassini spacecraft is flying in the solar wind upstream from the planet. The Cassini magnetometer instrument detects local magnetic field disturbance, and the radio instrument detects enhanced radio emissions from Saturn (kilometric auroral radio emissions).

- In Nicolas André's poster, the user finds auroral images. He can then query the VOParis Data Center Query page to look for spectral images from the same observation campaign. He finds HST (Hubble Space Telescope) spectra of Saturn aurorae for this event. He wants to display them and analyze them easily.

Data search can be performed from a web site such as:

the VOParis data portal (supporting PDAP and IVOA protocols): <http://voparis-srv.obspm.fr/portal/>

or from a specific application such as the VOParis client currently in development (supporting the planetary science protocol EPN-TAP)

Extra information:

VOParis IDIS node: <http://voparis-europlanet.obspm.fr>

Plasma IDIS node: <http://europlanet-plasmanode.oaew.ac.at>

CDPP: <http://cdpp.cesr.fr>

SAOImage-DS9: <http://hea-www.harvard.edu/RD/ds9/>

VOSpec: <http://www.sciops.esa.int/index.php?project=SAT&page=vospec>

WebSAMPConnector: <http://vo.imcce.fr/webservices/samp/>

SAMP Web Profile: <http://www.star.bristol.ac.uk/~mbt/websamp/>