EPSC
European Planetary Science Congress

EuroPlaNet VO use case: Auroral Processes

B. Cecconi (1), N. André (2), C. Jacquey (2), L. Lamy (1), R. Prangé (1)
(1) LESIA, CNRS-Observatoire de Paris, Meudon, France, (2) IRAP, CNRS-Université Paul Sabatier, Toulouse, France.
(Baptiste.Cecconi@obspm.fr / Fax: +33-145072806)

Abstract

This abstract (as well as several accompanying abstracts 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 VO system in the context of this session.

1 Introduction

The JRA4/IDIS working group of EuroPlaNet-RI is setting the basis for a Virtual Observatory (VO) in Planetary Science. At the end of the project, a protocol will be available to access complex databases described using a specific Data Model. Any data provider will be allowed to describe their data services using this Data Model and declare them in a system of mirrored registries. The perimeter of the data accessible through this mechanism is therefore expected to increase greatly in the coming years. The preferred approach is to preserve the compatibility with tools developed in the framework of the astronomical VO (IVOA), and to save the development of specific tools in particular for visualization.

The present abstract, as well as several accompanying abstracts in this conference, illustrates a possible use of such a system in the context of this session.

2 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.

3 Tools

The VOParis Data Center portal[1] 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[2] 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[3], 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 IVAO 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[4] (developed at VOParis).

Acknowledgments

---

[1] http://voparis-srv.obspm.fr/portal/
[2] http://hea-www.harvard.edu/RD/ds9/
[3] http://www.sciops.esa.int/index.php?project=SAT&page=vospec
[4] http://vo.imcce.fr/webservices/samp/
[5] http://www.europlanet-ri.eu/