

A FIRST STEP FOR THE FRENCH GEODETIC AND FUNDAMENTAL ASTRONOMY VIRTUAL OBSERVATORY

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Abstract. Activities linked to VO within the french geodetic and fundamental astronomy community started in 2005, through two pilot projects, led at OCA-GRGS and OP-GRGS. They are based on visualisation and analysis software of geodetic products -Earth Orientation Parameters, polar motion, station positions, in particular- to make a new science be possible. We present the tools, which will help, we hope, the whole french geodetic community to organize its databases in VO-format. Because of the wide spectrum of its activities, among various common fields between Astronomy and Geophysics (terrestrial and celestial reference frames, gravity field, hydrosphere, ...), geodetic studies can strongly benefit from the VO-concept.

1 Introduction

We are convinced that the concept of "Virtual Observatory" (<http://www.ivoa.net>) could help our wide scientific community (fundamental astronomy, geophysics, geodynamics) to solve some problems which absolutely require contributions from each component of this community. The scientific goals are, among others:

- carrying out solutions of geodetic products be comparable in an homogeneous way,
- developing webservice to directly interact within scientific analysis software,
- developing an efficient interface between different scientific communities linked to geodesy.

2 Pilot-project led at OCA-GEMINI

We have developed a geodetic database containing time series of geodetic products. These time series come from various solutions of Earth Orientation Parameters, station positions and velocities, polar motion, ... and start at the beginning of the 1990's. Solutions deduced from various techniques are available (SLR, VLBI, GPS, DORIS).

This tool enables one to directly compare, in an easy, homogeneous and coherent way, results coming, for example, from various groups. One of the scientific goals consists in making different results be comparable one from another, and to check, for example, if there are or not systematic differences, or if the used reference frames are fully compatible or not.

3 Pilot-project led at OP-SYRTE

The pilot-project led at OP-SYRTE concerns the celestial reference frame and its maintenance (physical characteristics of extragalactic radio sources, availability of time series coordinates, ...), thanks to three main parts: ICRS-PC (International Celestial Reference System), EOP-PC (Earth Orientation Parameters), VLBI (Very Long Baseline Interferometry).

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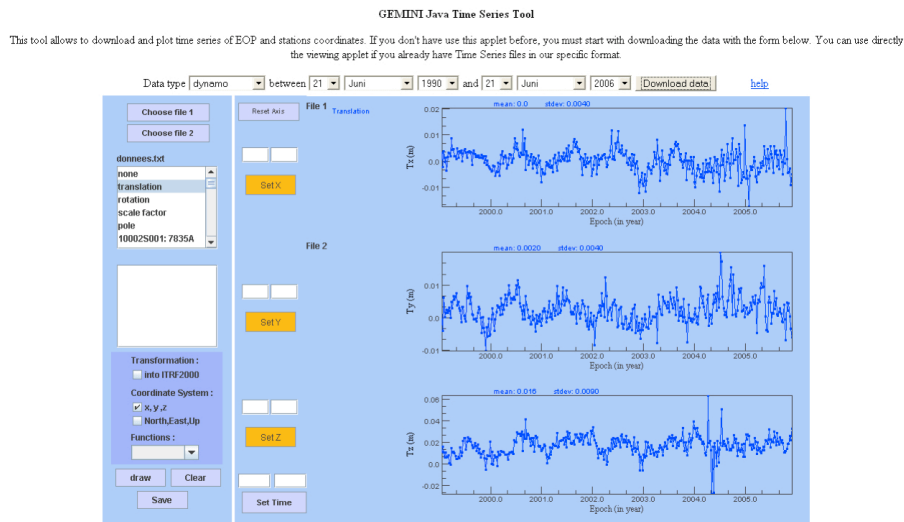


Fig. 1. Example of a result coming from the Gemini Web tool (reference [1])

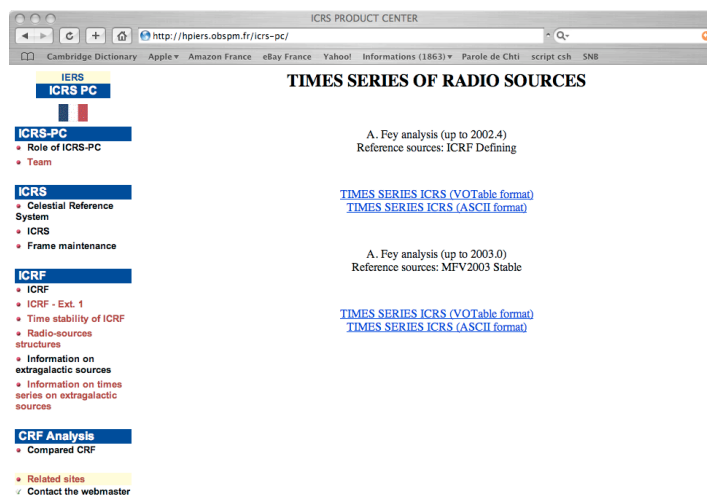


Fig. 2. Homepage of the SYRTE Web tool (reference [2])

4 Conclusion

Our community is now organized within a dedicated Working Group (called "OV-GAFF"), even if only the very first step has been concluded. We have defined several scientific goals which could benefit from the VO-concept. We encourage the reader to visit the website: <http://www.obs-azur.fr/heberges/pnaf/> where a link to the webpage of that group will be available.

References

- Observatoire de la Côte d'Azur, UMR Gemini, [en ligne] Philippe Berio, 2006. Disponible sur Internet: <http://www.obs-azur.fr/gemini/donnees/index.html>
- Observatoire de Paris, UMR SYRTE, [en ligne] Christophe Barache, 2006. Disponible sur Internet: <http://hpiers.obspm.fr/icrs-pc>