Coordination Action for the integration of Solar System Infrastructures and Science

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What is CASSIS

- **CASSIS** is a *Coordination Action* funded under Research Infrastructures within the Capacities programme of EC's Seventh Framework Programme (FP7). It started 1 June 2010 with a duration 36 months.
- **CASSIS** intended to facilitate science within the Solar System by improving the interoperability between data and services in all domains
- **CASSIS** brings together three FP7 projects that are directly relevant to this issue – **HELIO**, **EuroPlanet RI** and **SOTERIA**. *Our desire is to engage as many other groups as possible in the discussions, from Europe and the rest of the world*

CASSIS is all about interoperability!

Solar System Science has traditionally been undertaken within a number of separate disciplines
- Many aspects of the system are inter-related
- Difficult to address them because of the lack of the integrating tools and techniques
- Advances in technology means that this area should not cause a problem

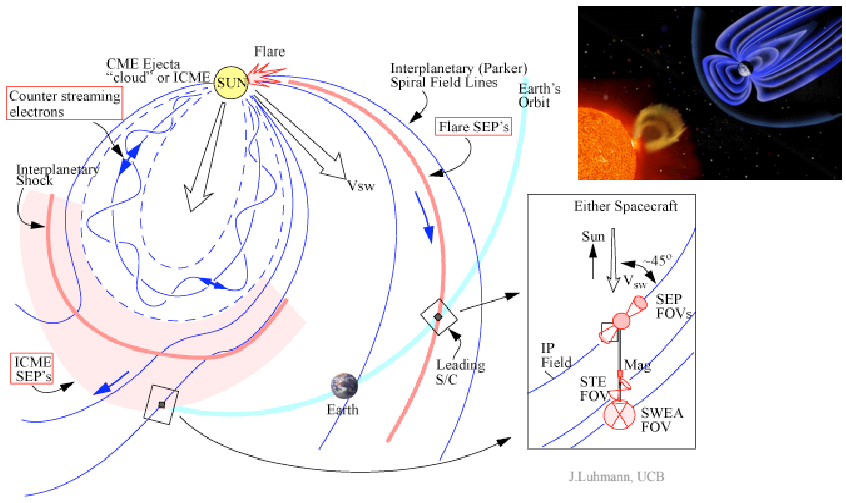
The three projects involved have already made progress
- Each is making significant improvements to the infrastructure that supports their communities, increasing ability to do science
- Necessary to coordinate the efforts of these and other projects in order to help break down the inter-disciplinary boundaries barriers

CASSIS intended to take things to the next level by cooperating in a number of areas, enabling new combinations of interdisciplinary studies

Cooperation & Discussion

Areas of cooperation include:
- Investigating ways to improve the interoperability between data and metadata from the domains, and the possibility of sharing services, including metadata resources.
- Coordinating the use of standard within the projects and reflect any changes that are required to organizations like the IVOA and IPDA.
- Coordination of the dissemination activities of the projects in order to create a more coherent and comprehensive approach

Two principle means of discussion:
- **Community Consultation Meeting** will gather input from the wider community
- **Vision for Solar System Science Workshops** are planned to bring key players together in order to lobby the case for solar system science with the decision makers and funding agencies



Heliophysics creating the need

Heliophysics is an event-driven science - something is observed and desire is to trace its origins or subsequent effects. The nature of the effect depends on causal phenomenon, type of emission, and the location of the observer. Most effects have their origins in emissions from solar activity, although a few are caused by energetic particles produced at the shock-fronts of phenomena (such as CMEs) moving through the heliosphere.

The timing of the effect depends on the type of emission: immediate effects relate to photons; delayed effects are cause by particles. As a result, several different effects may be caused by the same solar event, but be experienced at very different time; the delays associated with the onset of each effect becomes greater as you move outwards through the Solar System.

The location of observer in relation to the source, and with respect to a planet, determines what is observed. Because charged particles follow the curved interplanetary magnetic field (IMF) – the Parker Spiral – whether a particle effect is observed will depend on the velocity of the material and the location of the observer. The presence of magnetic field and/or atmosphere influences the effect on a planetary environment.

A complication is that different aspects of effects have traditionally been studied in separate domains; the Communities have evolved independently with significant differences in the content of data, and the way they are stored and handled.

Want more Information?
Visit the HELIO Web site at ***www.cassis-vo.eu***