

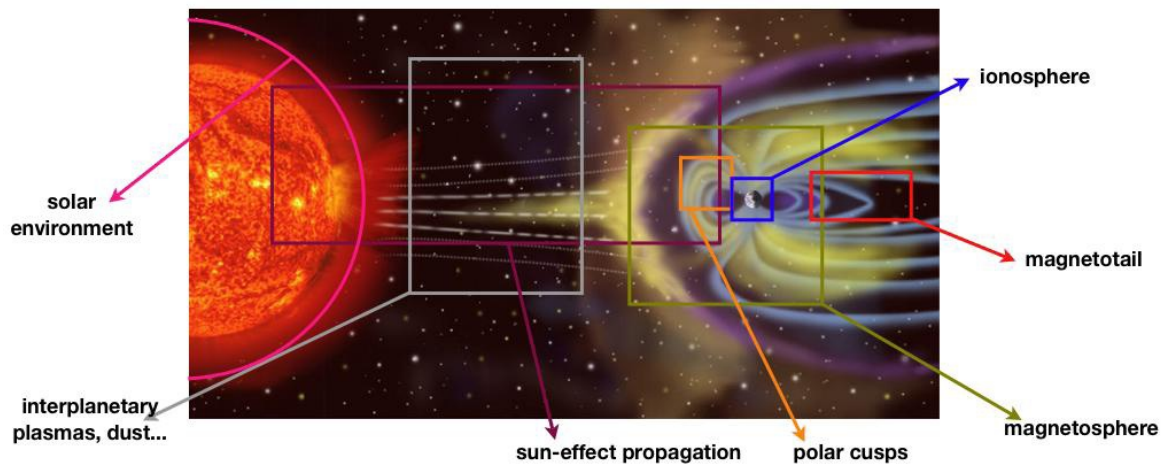
# Overview of CASSIS

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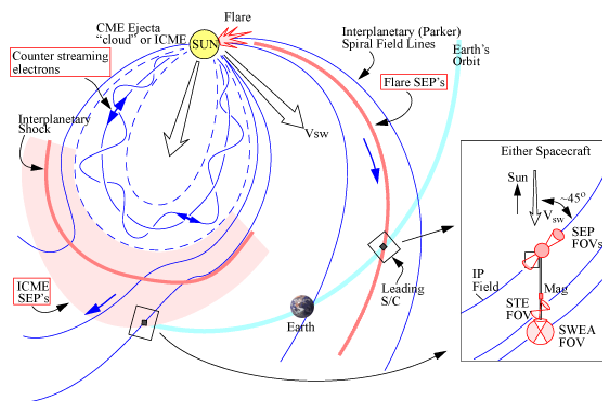
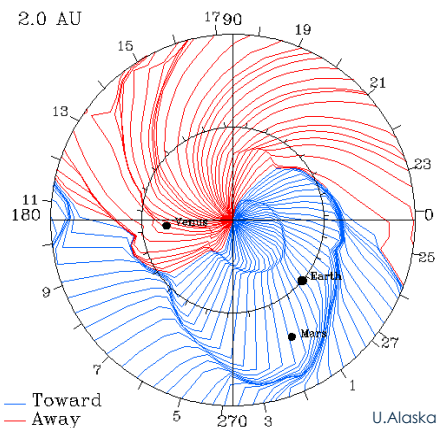
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# Solar-Terrestrial Relations



- **SOTERIA deals with the Sun-Earth Connection**
  - Space Weather (SWx)
- **HELIO examines the larger problem of the effect of the Sun on the Solar System**



- **HELIO needs understand the causes of phenomena and how they propagate and interact with planetary environments**
- **Requires access to data all the data it can find, from many communities and countries**

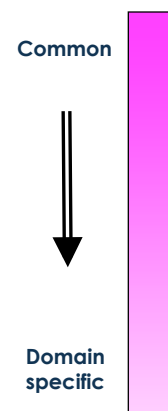
- **Issues with completeness and quality of the data**
- **Too much assumed knowledge**
  - Necessary information not always included
- **Many communities involved, each has different ways of describing, storing, and using data**
- **Evolved independently and interoperability has not featured in this evolution**
  - There have been no standards to work to
- **Virtual observatories can try to address some issues related to interoperability**
  - Use of semantics, ontologies, etc.
- **Missing data and data that are badly or wrongly described can create problems that cannot be resolved**

- **CASSIS is the *Coordination Action for the integration of Solar System Infrastructures and Science***
  - CASSIS is funded under Research Infrastructures within the Capacities programme of FP7
  - Started 1 June 2010, duration 36 months
- **CASSIS intended to facilitate science within the Solar System by improving the interoperability between data and services in all relevant domains**
- **CASSIS brings together groups that are relevant to the issue**
  - HELIO & EuroPlanet RI – funded in FP7 Capacities (research infrastructures)
  - SOTERIA – funded under FP7 Space
  - A number of key groups involved – ESA, NASA and NOAA
- **Desire is to engage as many other groups as possible in the discussions, from Europe and the rest of the world**

- **Solar System Science has traditionally been undertaken within a number of separate communities and disciplines**
- **Increasing desire to do interdisciplinary science – science that spans the boundaries of the communities**
- **Advances in technology means that some intrinsic differences between disciplines are being addressed**
  - Storage of and access to data should be simple plumbing
- **Difficulties in access remain – manifest by differing data formats and other dependencies**
- **CASSIS encouraging interoperability by persuading the communities to adopt simple rules when create and storing data and metadata**

- **One size does not fit all**
- **NOT trying to force a single data model on everyone**
  - Not practical to describe everything in this way
  - Not reasonable to expect everyone to change
- **Focusing attention on common areas**
  - Metadata, interfaces, services...
- **Desire is to improve Interoperability through the move towards integrated set of standards and interfaces**
  - Use family of standards for expressing common terms
    - Time, location, pointing...
  - Share services by adopting generalized view on interfaces?
  - Provide access via a more coherent set of protocols

- **In Solar System science many data sets are related even if it is hard to realize it**
  - *Using science of the Solar System in it loosest sense...*
- **All data needs to be described – metadata**
  - There are common areas as well as domain specific elements
- **Need to agree on standards for the common areas**
- **Try to push the boundaries between common and domain specific areas**
- **A few simple rules can make data sources more usable**
  - Data – good quality, properly described
  - Filenames – simple, informative and unique
  - Storage – well structured, easily accessible
- **Deployment of intelligent providers also helps...**



- **Projects need to embrace the concepts of interoperability and use of standards**
  - Good for the projects, not just good for interdisciplinary studies
  - Should not always be starting data systems from scratch
    - **Potential cost saving if building on existing standards !!!**
- **Funding bodies need to strongly encourage projects to adopt these these ideas**
  - Such bodies need to take the long-view of what is required
    - Needs to be done at both national and international levels
  - Consider including a requirement to address issues related to standards and interoperability in proposals
- **If we can improve interoperability this could open up new areas of inter-disciplinary science !**
  - Reason for continued use of the data in a wider context

Short Name	Organization	
UCL	University College London (MSSL and Physics & Astronomy)	UK
KULeuven	Katholieke Universiteit Leuven	BE
FHNW	Fachhochschule Nordwestschweiz	CH
ROB	Koninklijke Sterrenwacht van België	BE
INAF	Istituto Nazionale di Astrofisica (IFSI and Obs. Trieste)	IT
UPST	Universite Paul Sabatier Toulouse III (CESR)	FR
OBSPARIS	Observatoire de Paris (LESIA)	FR
UCLA-IGPP	University of California, Los Angeles (IGPP)	US
RPI	Rensselaer Polytechnic Institute	US
ESA	European Space Astronomy Centre	ES
NOAA	Space Weather Prediction Center	US
NASA	GSCF Heliophysics Science Division	US

Participants include groups from the three project – HELIO, Europlanet RI and SOTERIA. Groups from the US were added during the negotiation phase. CASSIS interested in broadening the international aspects of the project by extending invitations to key organisations elsewhere. Whether other disciplines should be included is being considered – e.g. terrestrial climate studies.

- **WP1 – Project Management**
  - General management of the project
- **WP2 – Interoperability of Data and Services**
  - Looking at ways of improving the quality and contents of metadata and data in order to improve interoperability
  - Examining ways of sharing services
- **WP3 – Networking**
  - Talking to the community to determine user requirements, etc.
    - Community should be varied and as international as possible
- **WP4 – Dissemination**
  - Producing various outreach activities at the international level
    - Web Portal, European Solar System Media Centre
    - Vision for Solar System Science Workshops
      - Invite key players and the national, European and international level

- Undertaking a series of community consultation meetings
- Three Solar System Vision workshops planned
- Combined Education and Public Outreach activities
- We need input from as wide an audience as possible
  - *Want to encourage anyone that is interested to become involved*
- **If we can improve interoperability, our data will be more widely used and are more likely to be required in the future...**

***cassis-vo.eu***