Geophysical Research Abstracts
Vol. 15, EGU2013-13226, 2013
EGU General Assembly 2013

Using HELIO to investigate Space Weather in the inner Heliosphere

Robert Bentley (1), Peter Gallagher (2), Jean Aboudarham (3), Shaun Bloomfield (2), and David Pérez-Suárez (2)
(1) University College London, Mullard Space Science Laboratory, Dorking, United Kingdom (rdb@mssl.ucl.ac.uk), (2) Trinity College Dublin, College Green, Dublin 2, Ireland, (3) Observatoire de Paris, 5 Place Janssen, Meudon 92190, France

The Heliophysics Integrated Observatory (HELIO) is a research infrastructure designed to facilitate access to heliospheric data. It is showing great potential in helping in the understanding phenomena that result in space weather effects.

HELIO provides integrated access to more than 200 instruments from nearly 60 space- and ground-based observatories scattered through the Solar System. It has also developed a comprehensive set of tools that make it possible to easily identify phenomena that cause space weather effects, track them as they propagate through the heliosphere and identify which datasets could provide information that allow events to be studied in detail. Using these capabilities it is possible to identify and study multiple instances on each phenomenon and determine which facets could be of greatest significance.

The capabilities of HELIO are implemented as services that can be used independently or combined together. Key components include an Event Catalogue containing more that sixty event lists from all domains of heliophyiscs and a Feature Catalogue describing just under ten types of solar and heliospheric features. Other capabilities include propagation modelling and the ability to identify instruments that may be suitably located to provide the required types of information.

We will describe how the capabilities of HELIO have been used to investigate events that occurred in March 2012 and show how the different tools can be used to assist the user. In particular we will show how HELIO facilitates the use of data from multiple observatories viewing the phenomena from several vantage points for large events such as the CME of 6 March 2012. We will also show how it can be used to draw on external resources to augment the information available to the user.

For more information about the capabilities of HELIO and to gain access to them visit the project Web site on helio-vo.eu