Objective

The advent of wide-angle imaging of the inner heliosphere has revolutionised the study of the solar wind and, in particular, transient solar wind structures such as Coronal Mass Ejections (CMEs) and Co-rotating Interaction Regions (CIRs). CMEs comprise enormous plasma and magnetic field structures that are ejected from the Sun and propagate at what can be immense speeds through interplanetary space, while CIRs are characterised by extensive swathes of compressed plasma/magnetic field that form along flow discontinuities of solar origin that permeate the inner heliosphere. With Heliospheric Imaging came the unique ability to track the evolution of these features as they propagate through the inner heliosphere. Prior to the development of wide-angle imaging of the inner heliosphere, signatures of such solar wind transients could only be observed within a few solar radii of the Sun, and in the vicinity of a few near-Earth and interplanetary probes making in-situ measurements of the solar wind. Heliospheric Imaging has, for the first time, filled that vast and crucial observational gap.
HELCATS provides an unprecedented focus for world-leading European expertise in the novel and revolutionary, European-led field of Heliospheric Imaging, in terms of instrumentation, data analysis, modelling and science. HELCATS is a strategic programme that aims to empower the wider scientific community, in Europe and beyond, by providing access to advanced catalogues - validated and augmented through the use of techniques and models - for the analysis of solar wind transients, based on observations from European-led space instrumentation. All participant groups are at the forefront of heliospheric research and bring distinct, yet highly complementary, skills to the project. HELCATS will add significant value to the exploitation of existing European space instrumentation, providing a strong foundation for enhanced exploitation and advancement of the heliospheric research in Europe.

Field of science
/natural sciences/computer and information sciences/data science/data analysis

Programme(s)

Topic(s)

Call for proposal

FP7-SPACE-2013-1

Funding Scheme

CP-FP - Small or medium-scale focused research project

Coordinator

SCIENCE AND TECHNOLOGY FACILITIES COUNCIL

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<th>Activity type</th>
<th>EU contribution</th>
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Website [link]

Contact the organisation [link]

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Richard Harrison (Prof)
## Participants (7)

### UNIVERSITAET GRAZ

- **Country**: Austria
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THE PROVOST, FELLOWS, FOUNDATION SCHOLARS & THE OTHER MEMBERS OF BOARD OF THE COLLEGE OF THE HOLY & UNDIVIDED TRINITY OF QUEEN ELIZABETH NEAR DUBLIN
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