

SPACECAST

Protecting space assets from high energy particles by developing European dynamic modelling and forecasting capabilities

IN 2012, FORECASTING SOLAR STORMS

2013-2014 will see a climax in solar activity, potentially causing damage to satellites, and terrestrial communication systems. The SPACECAST project will deliver European space weather forecasts to help protect a growing space industry.

Between 2013-2014, the solar cycle is expected to reach its climax, bringing solar activity to its highest level. Solar activity is a security threat for space assets, such as satellites and the International Space Station (ISS). Moreover, solar storms may also impact terrestrial communication systems, satellite TV, satellite navigation and electricity grids, potentially interfering with the smooth running of major events such as the 2012 London Olympic Games.

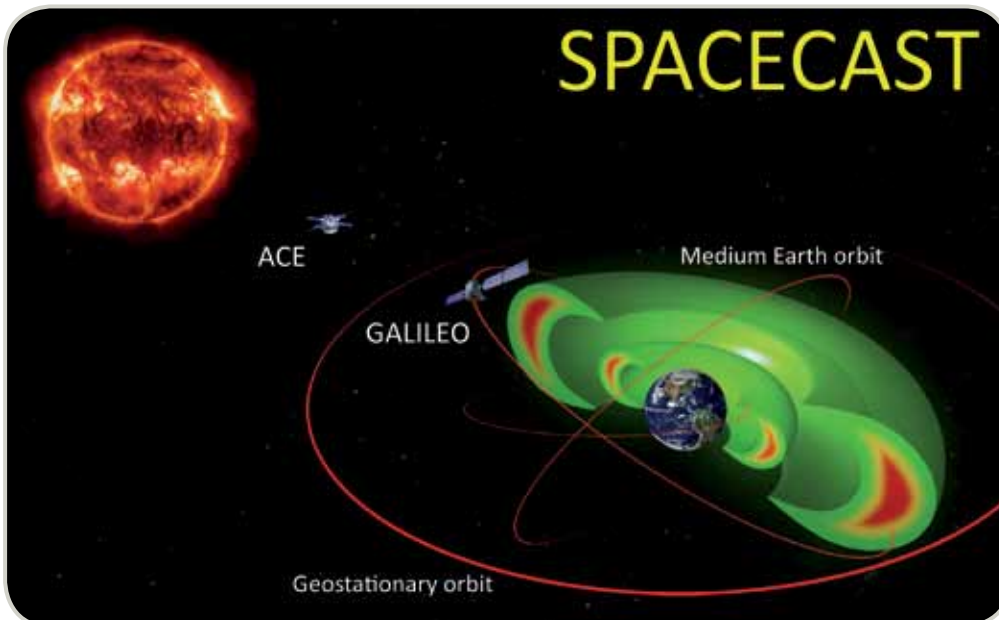
In the past Europe has relied heavily on the USA for space weather which is notoriously difficult to predict. But by bringing together satellite data with new computer models Europe could develop forecasts of the high en-

ergy particles that damage spacecraft. These forecasts would enable satellite operators to be alert for problems, limit the damage by switching off non-essential systems or re-schedule operations such as orbit manoeuvres.

The SPACECAST project will deliver such a space weather forecasting capability that will continue beyond the lifetime of the project, and which will lay the foundation for an operational European space weather forecasting system. In doing so, the project will undertake targeted studies of particle source, transport, acceleration and loss processes in Earth's radiation belts, with a view to improving our understanding of how the particles respond to solar activity. Securing such physical insights, this research constitutes a necessary step that will allow the project to implement the first near real time forecasting model for space weather in the radiation belts.



RICHARD HORNE
IS PROJECT COORDINATOR



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SPACECAST will deliver a European space weather forecasting capability.

QUESTIONS & ANSWERS

What do you want to achieve with this project?

SPACECAST will help protect spacecraft from high energy particles from the Sun and the Earth's radiation belts by developing European models and forecasting periods of high risk. The project addresses two of the most important hazards for space vehicles and manned spacecraft.

Why is this project important for Europe?

Europe has invested heavily in space and is developing new space programmes such as Galileo and GMES for strategic, economic and security reasons. It is important that Europe develops the means to protect these space assets from all forms of space weather hazards.

How does your work benefit European citizens?

European citizens will benefit from an improved delivery of satellite services, a more competitive space industry from the knowledge gained, and new research which will lay the foundation for future applications.

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- Helsingin Yliopisto, Finland
- Ilmatieteen Laitos, Finland
- Office National d'Etudes et de Recherches Aérospatiales, France
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PROJECT INFORMATION

Protecting space assets from high energy particles by developing European dynamic modelling and forecasting capabilities (SPACECAST)

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