

AFFECTS

Advanced Forecast For Ensuring Communications Through Space

24 HOUR WARNING FOR SPACE WEATHER EVENTS

The next solar maximum will occur around 2012, raising the risks that extreme space weather events could damage communication networks and power grids on Earth. AFFECTS develops an advanced space weather forecasting system to prepare for this challenge.

Solar activity affects the entire Earth environment from the magnetosphere down to the ionosphere, and even to the lower atmosphere climate system. The natural hazards of space weather do not only modify the atmosphere. They also have the potential to catastrophically disrupt the operations of many technological systems, such as communication systems and power grids on Earth. Hence the impact of space weather for people's lives and jobs is very real, and as we approach the next solar maximum around 2012 such risks increase.

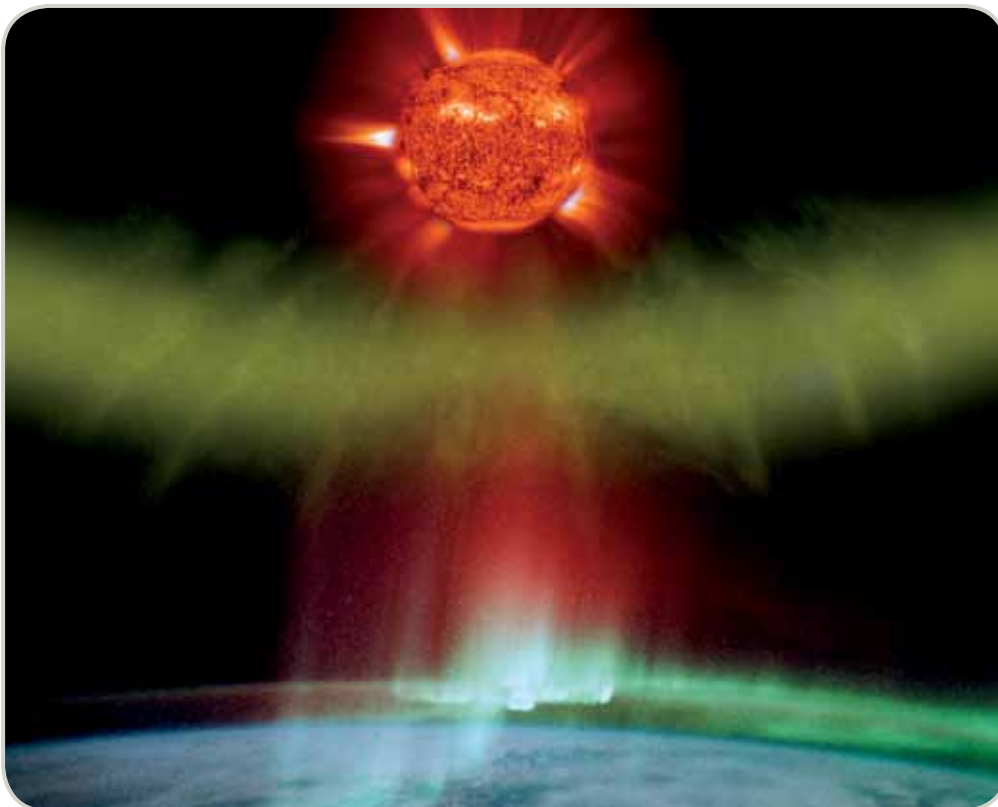
Hence an advanced early warning and space weather forecasting system is needed.

The AFFECTS project addresses these risks, and sets out to develop such a system, thereby mitigating the impact of space weather both in space where spacecraft are also vulnerable, and on Earth. The project undertakes state-of-the-art modelling of the Sun-Earth Chain of Effects on the Earth's ionosphere and their subsequent impacts on communication systems by means of measurements from satellites in different orbits and ground-based monitoring of auroral electrojet and ionospheric activity. AFFECTS brings together some of the world's leading space weather experts from Europe and the US.

Together, ready in time for the next solar maximum around 2012, these AFFECTS scientists are determined to establish a functioning space weather forecasting system. AFFECTS' "Forecast System Ionosphere" is expected to provide forecasts of total electron content (TEC) 24 hours in advance of space weather events.



VOLKER BOTHMER
IS PROJECT COORDINATOR



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AFFECTS will provide advanced early space weather warning to protect communication systems.

QUESTIONS & ANSWERS

What do you want to achieve with this project?

AFFECTS will establish the first dedicated space weather forecast system for ionospheric applications in an operational manner.

Why is this project important for Europe?

The AFFECTS space weather forecast system is an entirely new capability in Europe and elsewhere, providing advanced prediction, assessment and early warning capabilities of disruptive space weather events.

How does your work benefit European citizens?

The AFFECTS early warning and space weather forecast system will help protect critical infrastructures of European citizen's communication systems.

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LIST OF PARTNERS

- University of Göttingen, Germany
- Royal Observatory of Belgium, Belgium
- Space Research Institute of National Academy of Sciences and National Space Agency of Ukraine, Ukraine
- Fraunhofer Institute for Physical Measurement Techniques IPM, Germany
- University of Tromsø, Norway
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PROJECT INFORMATION

Advanced Forecast For Ensuring Communications Through Space (AFFECTS)

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