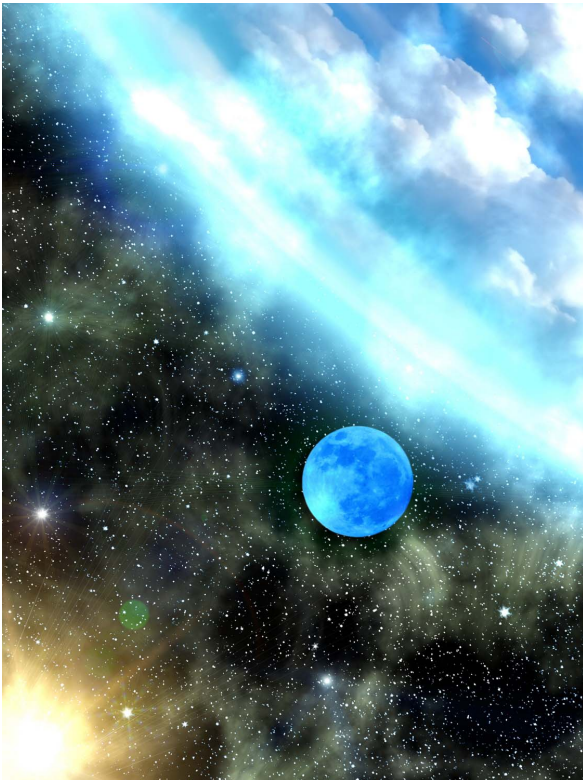


## Towards a better space weather forecast (SOTERIA Project)

*In space, like on Earth, we need to adapt to changing weather conditions. Yet our knowledge about space weather is still limited. In order to better protect human beings and human assets in space and on Earth, the EU-funded project SOTERIA aims at improving our understanding of space weather phenomena.*



### **Background**

Space weather is the concept of changing environmental conditions in space. It is distinct from the concept of weather within our own atmosphere. Our space weather is a consequence of the behavior of the Sun and the nature of Earth's magnetic field and it can affect the Earth significantly.

Yet we know much less about space weather than we know about weather on Earth. Whilst the International Space Station (ISS), satellites and spacecraft mostly experience calm space weather conditions, at times solar eruptions and variations in the Earth's magnetic field lead to deteriorating conditions that represent real risks to astronauts and satellites in space, and may even disturb power supply and telecommunications on Earth.

Studying such events in the fields of solar, space and geophysics is increasingly important. Today more than ever before, space assets such as satellites controlling telecommunication and power lines impact our life on Earth. Hence if they are affected by space weather, we feel the impact instantly

### **Objectives**

SOTERIA aims at facilitating a more reliable space weather forecast, based on a space monitoring system. Analysing data from more than 20 satellites - some five of which are ESA missions - this project mobilizes more than 50 experts and resources from across Europe. New methods will be explored to analyse data on space weather not only from satellites but also from outposts on the ground.

The goal is to provide new and existing data from ground based and spaceborne observations and models crucial for space weather forecasting. The fundamental approach is to make the information from diverse sources readily available to the user in a homogeneous format.

### **Impact**

This endeavour will lead to the establishment of **new databases on space weather**, the quality of which go beyond the present state-of-the-art in this field. Moreover, the results springing from SOTERIA will be made available online to the scientific community at large, also **facilitating access to open data from relevant satellite missions**.



Europe has a key interest in the good design and operation of its space technical and human operations and of its large scale infrastructure (power lines, pipelines). Soteria will produce tools to better understand space weather events that pose a serious and even lethal threat to such activities.

**For more information, please visit the website: <http://www.soteria-space.eu/>**

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