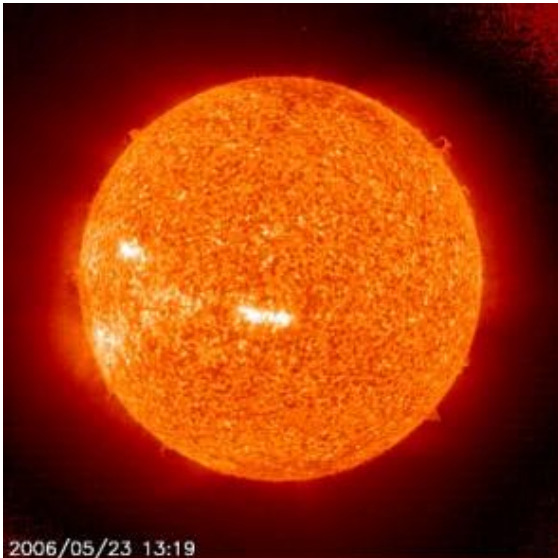


ESA's SOHO will lead a fleet of solar observatories



This image of the Sun was taken by SOHO's EIT (Extreme ultraviolet Imaging Telescope) instrument on 23 May 2006. EIT can take images of the solar atmosphere at several wavelengths, and therefore it is able to show solar material at different temperatures. In the images taken at 304 Angstroms the bright material is at 60 000 to 80 000 °C. In those taken at 171, at one million degrees; 195 Angstrom images correspond to about 1.5 million °C; 284 Angstrom, to 2 million degrees. The hotter the temperature, the higher you look in the solar atmosphere. Credits: ESA, NASA, SOHO/EIT team

New funding, to extend the mission of ESA's venerable solar watchdog SOHO, will ensure it plays a leading part in the fleet of solar spacecraft scheduled to be launched over the next few years.

Since its launch on 2 December 1995, The Solar and Heliospheric Observatory (SOHO) has provided an unprecedented view of the Sun – and not just the side facing the Earth. Two teams have now developed techniques for using SOHO to recreate the conditions on the far side of the Sun. The new funding will allow its mission to be extended from April 2007 to December 2009. Despite being over ten years old now, SOHO just keeps on working, monitoring the activity on the Sun and allowing scientists to see inside the Sun by recording the seismic waves that ripple across the surface of our nearest star.

More than 2300 scientists have used data from the solar observatory to forward their research, publishing over 2400 scientific papers in peer-reviewed journals. During the last two years, at least one SOHO paper has been accepted for publication every working day.

"This mission extension will allow SOHO to cement its position as the most important spacecraft in the history of solar physics," says Bernhard Fleck, SOHO's project scientist, "There is a lot of valuable work for this spacecraft still to do."

During the next two years, five new solar spacecraft will join SOHO in orbit. ESA is involved in two of these spacecraft. The Japan Aerospace Exploration Agency (ISAS/JAXA) has built Solar B and will launch it later this year. ESA will supply the use of a ground station at Svalbard, Norway in exchange for access to the data.

Next year, ESA will launch Proba-2, a technology demonstration satellite that carries solar instruments. In particular, it will carry a complementary instrument to SOHO's EIT camera. Whilst EIT concentrates on the origin and early development of solar eruptions, Proba-2's camera will be able to track them into space.

NASA plans to launch the STEREO pair of spacecraft later this year, and the Solar Dynamics Orbiter in 2008. Far from making SOHO obsolete, these newer solar satellites embrace it as a crucial member of the team. SOHO will provide a critical third point of view to assist the analysis of STEREO's observations. Also, SOHO's coronagraph will remain unique. The instrument is capable of blotting out the glare from the

Sun so that the tenuous outer atmosphere of the Sun is visible for study.

"By next year, we will have a fleet of spacecraft studying the Sun," says Hermann Opgenoorth, Head of Solar System Missions Division at ESA. This will advance the International Living With a Star programme (ILWS), an international collaboration of scientists dedicated to a long-term study of the Sun and its effects on Earth and the other solar system planets.

ILWS will possibly culminate in the launch of the advanced ESA satellite, Solar Orbiter, around 2015. It is designed to travel close to the Sun, to gain a close-up look at the powerful processes at the heart of our Solar System.

Source: European Space Agency

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