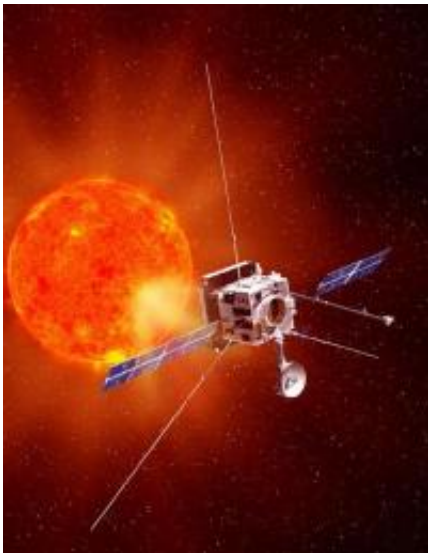


ESA To Collaborate with NASA on Solar Science Mission

October 6 2011



This is an artist's concept of the Solar Orbiter viewing the sun. Credit: Image courtesy of ESA

On October 4, 2011, the European Space Agency announced it's two next science missions, including Solar Orbiter, a spacecraft geared to study the powerful influence of the sun. Solar Orbiter will be an ESA-led mission, with strong NASA contributions managed from Goddard Space Flight Center in Greenbelt, Md.

Solar Orbiter will venture closer to the Sun than any previous mission. The spacecraft will also carry advanced instrumentation that will help

untangle how activity on the sun sends out radiation, particles and magnetic fields that can affect Earth's magnetic environment, causing aurora, or potentially damaging satellites, interfering with GPS communications or even Earth's electrical [power grids](#).

"Solar Orbiter will use multiple gravity assists from Venus to tilt its orbit until it can see the poles of the Sun, and that's never been done before," said Chris St. Cyr, NASA's project scientist for Solar Orbiter at Goddard. "A full view of the solar poles will help us understand how the sun's [magnetic poles](#) reverse direction every 11 years, causing giant eruptions and flares, called [space weather](#), that can affect the rest of the solar system."

Being so close to the sun also means that the Solar Orbiter will stay over a given area of the [solar surface](#) for a longer time, allowing the instruments to track the evolution of sunspots, active regions, coronal holes and other [solar activity](#) far longer than has been done before.

Solar Orbiter is also designed to make major breakthroughs in our understanding of how the sun generates and propels the flow of particles in which the planets are bathed, known as the solar wind. Solar activity and solar eruptions create strong perturbations in this wind, triggering spectacular auroral displays on Earth and other planets. Solar Orbiter will be close enough to the sun to both observe the details of how the solar wind is accelerated off the sun and to sample the wind shortly after it leaves the surface.

The mission's launch is planned for 2017 from Cape Canaveral, Florida aboard a NASA-provided launch vehicle. Solar Orbiter will be placed into an elliptical orbit around the sun. Its closest approach will be near the orbit of Mercury, 75% of the distance between Earth and the sun - some 21,000,000 miles away from the sun's surface.

Provided by NASA's Goddard Space Flight Center

Citation: ESA To Collaborate with NASA on Solar Science Mission (2011, October 6) retrieved 2 May 2024 from <https://phys.org/news/2011-10-esa-collaborate-nasa-solar-science.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.