



Launch Services Program presents...

OCO

The Orbiting Carbon Observatory (OCO) is a new Earth-orbiting mission sponsored by NASA's Earth System Science Pathfinder (ESSP) Program. The ESSP Program addresses unique, specific, highly focused requirements in Earth science research. These missions support a variety of scientific objectives related to Earth science, including studies of the atmosphere, oceans, land surface, polar ice regions, and the solid Earth.

OCO will be placed in a polar low-Earth orbit by a Taurus XL rocket launched from Vandenberg Air Force Base, CA. This mission will collect space-based measurements of atmospheric carbon dioxide from the top to the bottom of Earth's atmosphere with the precision, resolution, and coverage needed to improve our understanding of carbon dioxide sources and sinks and the processes controlling their variability.

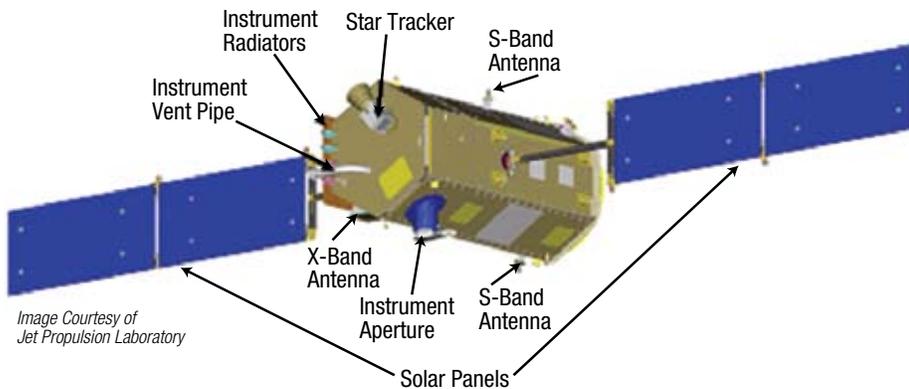
Carbon dioxide is an important component of the Earth's atmosphere. OCO will collect measurements that will help scientists better understand the processes that regulate carbon dioxide in the atmosphere and its role in the carbon cycle. These data will help scientists provide more reliable forecasts of the distribution of carbon dioxide in the atmosphere and how changes impact Earth's climate.

Launch Vehicle: Taurus XL
Launch Location:
Vandenberg Air Force Base, CA
Launch Date: 2009

LSP

OCO

The Orbiting Carbon Observatory (OCO) spacecraft will be launched from Vandenberg Air Force Base, California on a dedicated Taurus XL rocket in early 2009. OCO will produce the first, global space-based survey of atmospheric carbon dioxide that has the accuracy and resolution needed to identify the "sources" where carbon dioxide is emitted into the atmosphere, and the "sinks", where it is absorbed by land plants and by the oceans. The spacecraft will fly in a near polar orbit to enable the instrument to observe most of the Earth's surface at least once every sixteen days and will help to document the natural processes and human activities that regulate the abundance and distribution of this important greenhouse gas. The spacecraft will fly in Sun synchronous orbit so that all observations take place at about 1:27 p.m. The Observatory has a planned operational life of 2 years.



S-Band Antenna - Antenna for transmitting and receiving data at a radio frequency near 2000 megahertz.

X-Band Antenna - Antenna for transmitting science and housekeeping data at a radio frequency near 8000 megahertz.

Star Tracker - An instrument that measures the positions of stars to determine the spacecraft attitude.

Instrument Radiators - Radiates heat to space to cool the instrument optical bench and detectors.

Instrument Vent Pipe - Allows water vapor and other contaminants to escape from the interior of the instrument to space.

Instrument Aperture - The opening where light reflected from the Earth enters the telescope.

