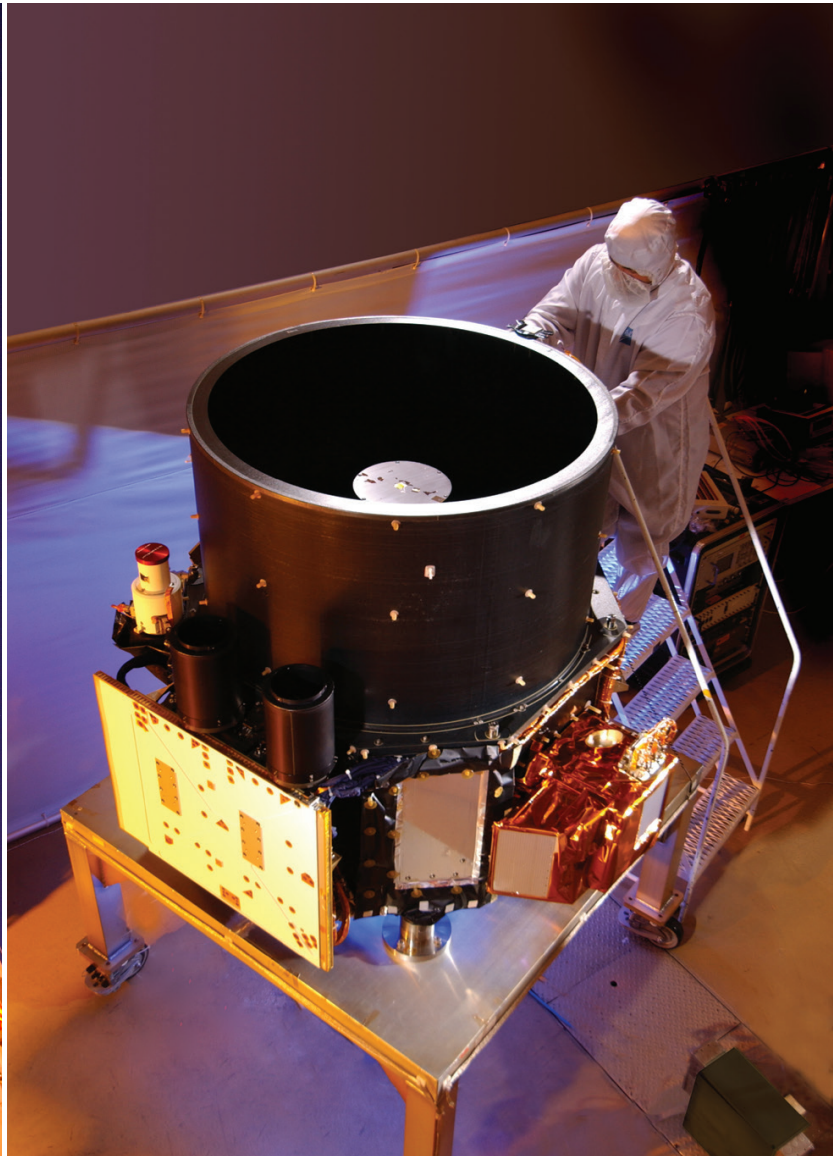
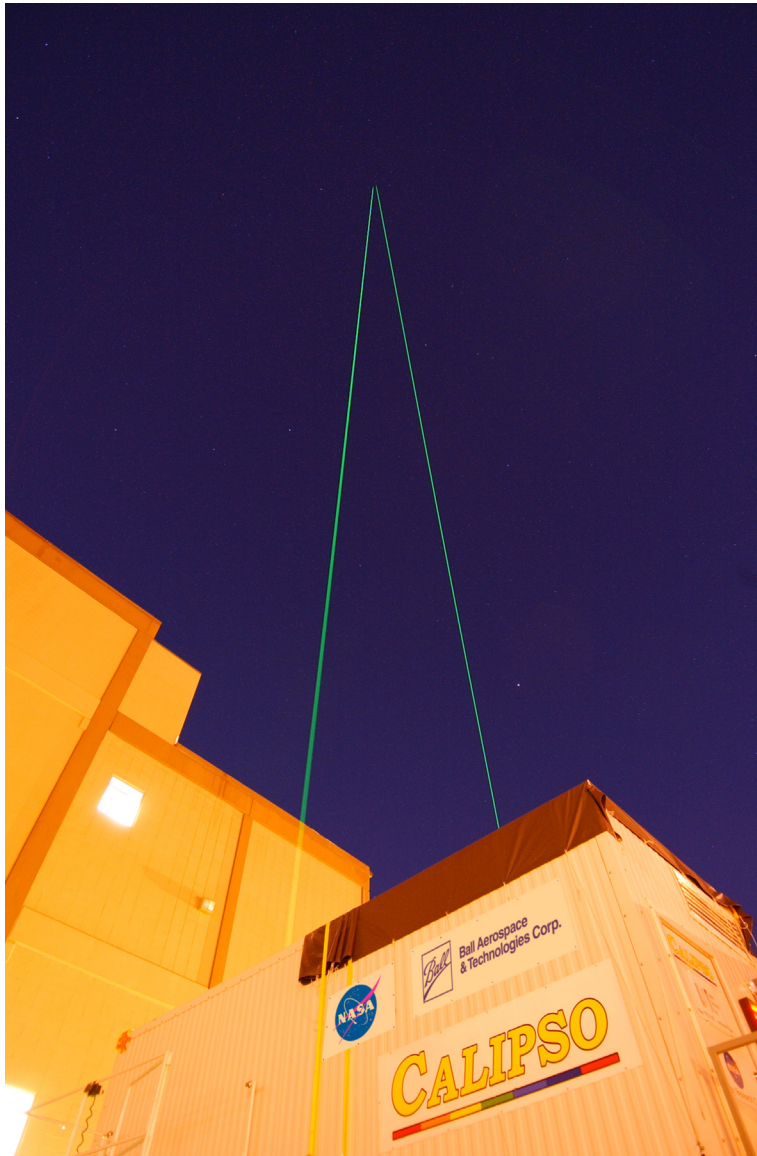


CALIPSO



GO BEYOND WITH BALL.®

The Cloud-Aerosol Lidar and Infrared Pathfinder Spaceborne Observations (CALIPSO) satellite provides the science community a better understanding of how clouds and atmospheric particles impact the Earth's climate and weather, improving our ability to predict future climate change and improve weather forecasts.

OVERVIEW

CALIPSO uses an active lidar instrument and passive infrared and visible imagers to measure the vertical profiles of aerosols and clouds, providing scientists with new insights into our planet's weather and climate patterns.

CALIPSO was launched in April 2006 with the Ball-built CloudSat satellite, which uses radar to measure cloud properties from space. CALIPSO and CloudSat are highly complimentary and enable scientists to construct never-before-seen 3D models of our atmosphere.

OUR ROLE

Ball Aerospace built the lidar and wide-field camera (WFC) instruments, communications equipment and integrated the payload.

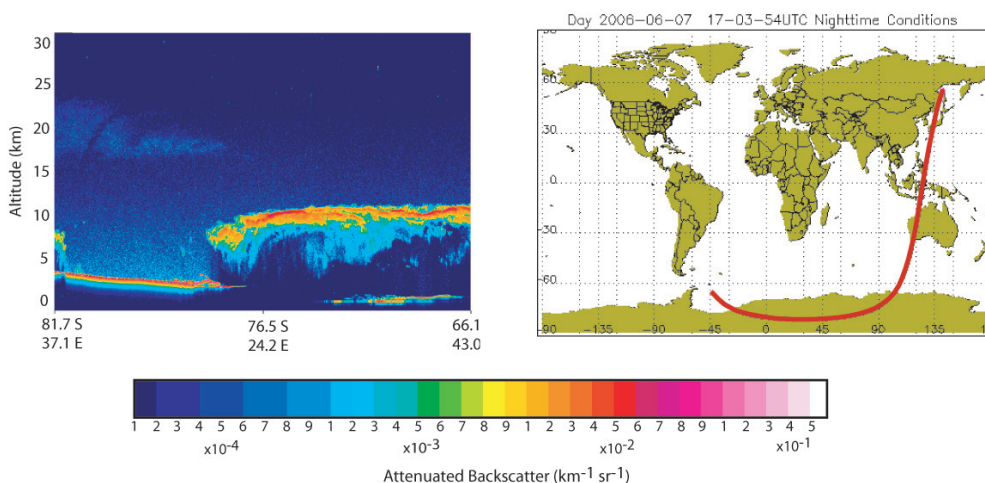
The CALIPSO lidar is a two-wavelength (532 nm and 1064 nm) polarization-sensitive lidar that scans the atmosphere with green and infrared laser light and detects backscatter from clouds and aerosols.

The WFC is a modified version of the commercial, off-the-shelf Ball CT-633 star tracker camera. It is a fixed, nadir-viewing imager with a single spectral channel covering the 620-670 nm region.

Since launching in 2006, CALIPSO has traveled more than 1.5 billion miles and fired its laser more than 5.8 billion times, producing more than 90 terabytes of data. Originally designed for a life of three years, scientists continue to use data from CALIPSO to construct 3D models of the atmosphere that improve our ability to predict future climate change.

QUICK FACTS

- CALIPSO and CloudSat were launched aboard a Delta II rocket on April 28, 2006
- Was part of a constellation of Earth-observing satellites including Aqua, PARASOL and Aura — collectively known as the “A-Train”
- Managed by NASA Langley Research Center, Hampton, Va., for the NASA Earth System Science Pathfinder program
- A collaborative effort with the French space agency Centre National d’Etudes Spatiales, Ball, Hampton University, and the Institut Pierre Simon Laplace
- The lidar instrument has three receiver channels: one measuring the 1064-nm backscattered intensity, and two measuring orthogonally polarized components of the 532-nm backscattered signal
- The WFC is operated in a push-broom mode, collecting images with 125-meter (78 mile) spatial resolution over a 61-km (37 mile) cross-track swath centered on the lidar instrument’s footprint



CALIPSO “first light” lidar measurements release June 2006. Courtesy of NASA Langley Research Center.