

The PARASOL Satellite Moving Off the A-Train's Track

January 4 2010, by Angelita Kelly/Rob Gutro



An artist's rendition of the PARASOL satellite. Credit: CNES

(PhysOrg.com) -- After nearly 5 years of concurrent operations with the Afternoon Constellation, known as the "A-Train," the PARASOL satellite is going on another orbit "track." The A-Train includes a number of NASA satellites that orbit the Earth one behind the other on the same track and until this month, PARASOL has been part of that train.

PARASOL is an Earth observation mission, managed by the French Space Agency (CNES). PARASOL stands for "Polarization and

Anisotropy of Reflectances for Atmospheric Sciences coupled with Observations from a Lidar." According to CNES, it was maneuvered to leave its position inside the A-Train at 12:48 UTC, December 2, 2009.

The A-Train satellite formation currently consists of five satellites flying in close proximity: Aqua, CloudSat, CALIPSO, PARASOL and Aura. Each of these satellites cross the equator within a few minutes of each another at around 1:30 p.m. local time. By combining the different sets of nearly simultaneous observations, scientists are able to gain a better understanding its main mission, studying the important parameters related to [climate change](#). As an additional benefit, the A-Train satellites provide unique information about [tropical cyclones](#), the collective term for tropical depressions, tropical storms, hurricanes and typhoons.

The PARASOL satellite has now reached an orbit of 3.9 kilometers (2.4 miles) under the A-train, which will enable it to keep on sharing data periodically with the A-train members, while gradually leaving the A-Train neighborhood. Based on a typical decay of its orbit, it is expected to be completely out of the A-train neighborhood at the end of 2012. The CNES team will continue to coordinate operations with the A-Train Mission Operations Working Group to ensure safety.

PARASOL's measurement of aerosols is based on polarization, so is unique within the existing A-Train. Its departure leaves a data gap that will be filled when Glory (also a [polarization](#) spectrometer) launches in 2010. Cross-calibration between Glory and PARASOL, to merge the 2 datasets into a single long-term trending dataset, will take longer with PARASOL in a different orbit.

Steven Platnick, Acting Earth Observing System Project Scientist at NASA Goddard Space Flight Center in Greenbelt, Md. said, "With its novel combination of polarimetry and multiangle capabilities, PARASOL continues to provide a unique and important perspective on

cloud and aerosol properties. More important, as a strong complement to other A-Train instruments, POLDER has contributed to an unprecedented data set that will be studied for years to come."

CNES launched PARASOL into the A-Train orbit in December 2004. For the past five years, PARASOL, originally designed to be a 2-year mission, flew within ~30 seconds of the CALIPSO and CloudSat satellites.

More information: For more information about PARASOL, visit: smsc.cnes.fr/PARASOL/

Provided by JPL/NASA

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