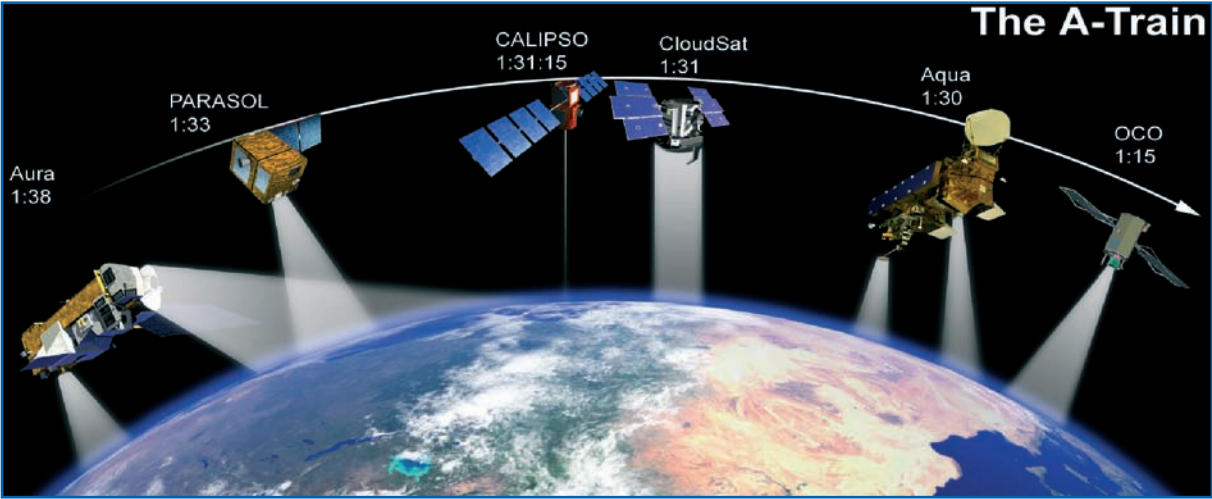


Parasol, Calipso and the A-Train

Description

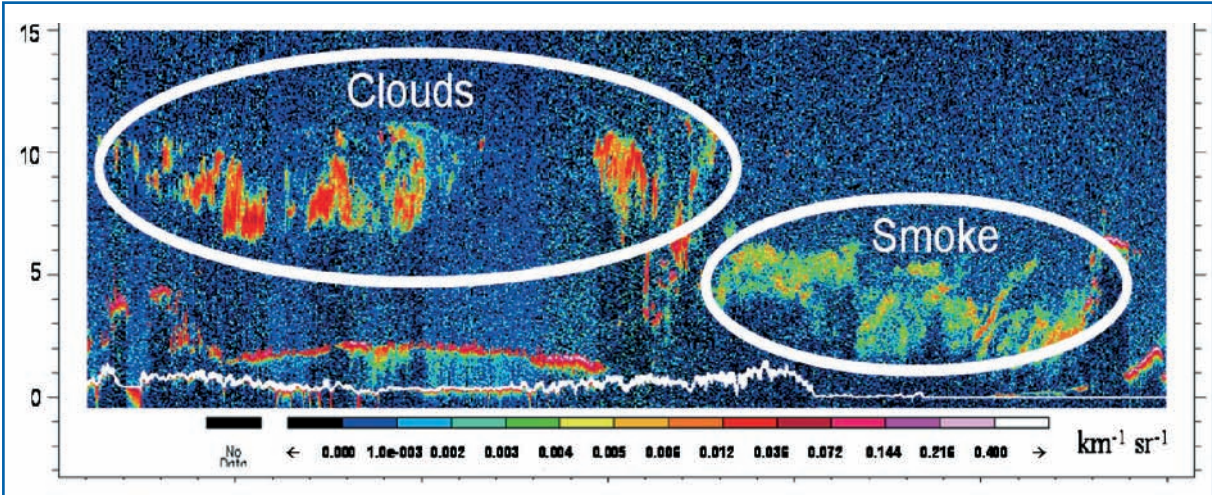
Parasol, a French microsatellite developed by Cnes, has been launched in December 2004 to fly as a part of the A-Train constellation. It is carrying a wide-field imaging radiometer-polarimeter called Polder, the goal of which is to improve our knowledge of the radiative and microphysical properties of clouds and aerosols by measuring the directionality and polarization of light reflected by the Earth-atmosphere system.

Calipso, a Nasa-Cnes satellite, has been launched in April 2006 to fly in tandem with Cloudsat, as a part of the A-Train constellation. The Calipso payload is composed of a backscattering lidar designed to supply vertical atmospheric profiles of aerosols and clouds, a visible camera, and an infrared imager. The goal of Calipso is to measure global vertical profiles of the radiative and microphysical properties of clouds and aerosols.



Added value

It has been proved that the main uncertainties about climate change predictions are associated to the cloud and aerosols radiative impact. Together with the other A-train satellites, the purpose of Parasol and Calipso is to provide the global measurements of aerosols and clouds required to obtain a better understanding of the aerosols and clouds role in the climate system, and to improve our abilities to predict long-term climate change and seasonal-to-interannual climate variability.



Relevance to GEO

Parasol and Calipso are mainly relevant for one Societal Benefit Area :

- Climate: Understanding, assessing, predicting, mitigating, and adapting to climate variability and change.

It will contribute to the following GEOSS implementation target:

- “Establish actions securing the provision of key data for climate studies and forecasting from satellite systems”.

Participants

- Cnes
- Nasa
- Laboratoire d’Optique Atmosphérique (Lille),
- Thematic data center Icare (Lille)

Current status and next steps

Inside the A-Train, Parasol and Calipso currently supply very good and continuous data. Corresponding aerosols and clouds data and products can be accessed on the Icare Web site (<http://www-icare.univ-lille1.fr/>).

An international symposium devoted to A-train observations and modelling results on aerosols and clouds will occur in Lille, October 22-25, 2007

In the absence of failure, Parasol and Calipso should provide useful data on aerosols and clouds until 2009.

