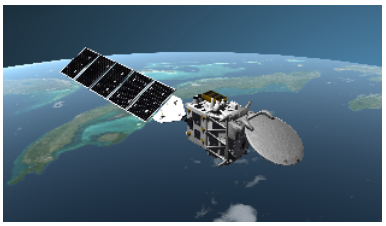
EarthCARE ESA Validation Portal

blocked URL



Click on the image above to see a video of (a simulation of) EarthCARE in orbit



The EarthCARE satellite during system testing at ESTEC

Welcome to the EarthCARE ESA Validation Portal.

This part of the EarthCARE validation website serves as introductory information for scientists interested in EarthCARE validation, and also acts as a landing page for the (restricted) collaboration environment for the Principal Investigators of the ESA EarthCARE Validation Team. Scientists that are interested to collaborate on EarthCARE Validation are requested to contact esa-ecvt@earthcare.esa.int in order to obtain information on how to join the EarthCARE Validation Team.

EarthCARE Validation Team Principal Investigator access

http://ecvt.esa.int

Introduction to the EarthCARE mission

EarthCARE , ESA's Clouds, Aerosols and Radiation Explorer mission developed in co-operation with JAXA, the Japanese Aerospace Exploration Agency, will address the need for a better understanding of the interactions between cloud, radiative and aerosol processes that play a role in climate regulation. That ESA-JAXA Joint mission was selected as the 6th Earth Explorer Mission and 3rd ESA Earth Observation Core Mission during the Granada ESA meeting in October 2004.

The EarthCARE mission aims to improve the representation and understanding of the Earth's radiative balance in climate and numerical weather forecast models by acquiring vertical profiles of clouds and aerosols, as well as the radiances at the top of the atmosphere. Aerosols control cloud properties, while clouds control the production of precipitation and convection influences stratospheric humidity. The observations of EarthCARE will therefore lead to more reliable climate predictions and better weather forecasts through the improved representation of processes involving clouds, aerosol and radiation.

The satellite will weigh about 2350 kilograms (including propellant) and will be placed in a quasi-polar orbit of 97° inclination at an altitude of about 400 kilometres. EarthCARE will be launched on a Falcon 9 in May 2024. The four instruments of the payload consist of an Atmospheric Lidar, a Broad-Band Radiometer and a Multi-Spectral Imager developed by ESA, and a Cloud Profiling Radar developed by JAXA. This instrument suite has been optimised to provide co-located samples of the state of the atmosphere along the satellite flight track.

News

- EarthCARE will be launched in May 2024
- ESA invites applications for an internal research fellow post in EarthCARE products, algorithms and Cal/Val. The candidate must be a national from an ESA (Associate) Member State or Cooperating State. The closing date is 7 December 2022. For more information: https://jobs.esa.int/job/Frascati-Internal-Research-Fellow-%28PostDoc%29-in-EarthCARE-products%2C-algorithms-and-CalVal/868058101/
- The EarthCARE Validation Preparations were presented at the Living Planet Symposium
- The presentation of the IEEE webinar on EarthCARE Validation with LALINET is available for download
- The report of the 2nd ESA EarthCARE Validation Workshop is available here. All presentations are available on the workshop page

EarthCARE Mission resources

Further information about the EarthCARE mission in general can be obtained from the following resources:

- The ESA EarthCARE website at https://www.esa.int/Our_Activities/Observing_the_Earth/The_Living_Planet_Programme/Earth_Explorers/EarthCARE
- The ESA Earthnet portal at https://earth.esa.int/web/guest/missions/esa-future-missions/earthcare
- The EarthCARE site at the EOportal https://directory.eoportal.org/web/eoportal/satellite-missions/e/earthcare
- The JAXA EarthCARE website at https://global.jaxa.jp/projects/sat/earthcare/
- A scientific paper about the EarthCARE Mission in the Bulletin of the American Meteorological Society

EarthCARE Validation

The geophysical validation of EarthCARE involves a suite of correlative instruments and methods. This portal provides an **overview of the validation activities.** These activities are resulting from the responses to the 2017 ESA Announcement of Opportunity (AO) for the Validation of EarthCARE.

The activities have been presented and reviewed during the 1st ESA EarthCARE Validation Workshop in June 2018 in Bonn, Germany.

The scientists in the EarthCARE validation team will collaborate with ESA algorithm and instrument experts and will be provided with preliminary EarthCARE data products as soon as available, hence well before public release of the consolidated data products.

Scientists that are interested in collaboration and joining the ESA EarthCARE Validation Team are invited to contact esa-ecvt@earthcare.esa.int

EarthCARE Validation Resources

Websites

- A Summary of activities in the ESA EarthCARE Validation Programme
- The (restricted) portal for the ESA EarthCARE Validation Team Principal Investigators (in preparation)
- The ESA Atmospheric Validation Data Centre (EVDC)

Documents

- The EarthCARE Scientific Validation Implementation Plan (1.2)
- The reference documents of the EarthCARE Validation Announcement of Opportunity (the proposal submission function is now deactivated, but you can still contact esa-ecvt@earthcare.esa.int in case you are interested in collaboration)
- The EarthCARE product list v6

Meetings/Workshops

Date	Venue	Title (link to workshop home page and presentations)	Report
13-15 June 2018	Bonn, Germany	1st ESA EarthCARE Validation Workshop	20180613-15 ESA CalVal Workshop Report_(1.0).pdf
10 March 2021	Online	EarthCARE Geophysical Data Products and Retrievals	
25-28 May 2021	Virtual / Online	2nd ESA EarthCARE Validation Workshop	20210525-28 2nd ESA EarthCARE Cal_Val Workshop Report.pdf
9-13 October 2023	Frascati, Italy	ESA-JAXA Prelaunch EarthCARE Science and Validation Workshop	
6 Months after Launch	Frascati, Italy	ESA-JAXA Preliminary Validation Results Workshop	
During Mission Life Time	TBC	Annual Validation Workshops	

Note that several additional meetings may be organised by validation subgroups and are not listed here.