

Validation preparations and timeline

Rob Koopman

2nd ESA EarthCARE Validation Workshop

25-28 May 2021 (online)

June 2018: 1st ESA EarthCARE Validation Workshop

March 2021: ESA Level 2 Algorithms Workshop

May 2021: 2nd ESA EarthCARE Validation Workshop

Q4 2022: Joint ESA-JAXA Pre-launch EarthCARE Validation Workshop

6 Months after launch: ESA-JAXA Preliminary Validation Results Workshop

TBC annual validation workshops during mission lifetime

June 2018: 1st ESA EarthCARE Validation Workshop

March 2021: ESA Level 2 Algorithms Workshop

May 2021: 2nd ESA EarthCARE Validation Workshop

2021 & 2022: Various online sessions as needed ---

- Subgroups
- Data exchange / formats
- Portal?
- Level 1 and Ch&C?

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TBC annual validation workshops during mission lifetime

- Products (number and **diversity**)
- Synergy (dependencies, **complexity**, assumptions on microphysics)
- Community (**heterogeneity** - consequence of diversity of products to validate)
- Sampling (multiple RS and *in situ* **aircraft** campaigns are of pivotal importance)

Due to the diversity of products the ECVT collaboration will be organised not only at 'plenary' level but also in subgroups per domain:

Validation group Coordination and Discussion

coordinators

Correlative Data Acquisition and Planning	Campaign coordination	Dirk Schüttemeyer
	Networks	Jonas Von Bismarck
	Models	Tobias Wehr
Data Analysis / Intercomparison	ATLID Level 1	Holger Baars, Michael Eisinger
	Radiation (Level 1, Level 2) and MSI (Level 1)	Nicolas Clerbaux, Almudena Velazquez, Michael Eisinger, Tobias Wehr
	Clouds and Precipitation (Level 2)	Eleni Marinou, Tobias Wehr
	Aerosol (Level 2)	Holger Baars, Michael Eisinger

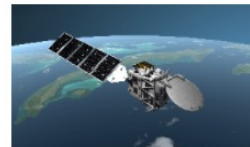
EarthCARE ESA Validation Portal

Created by Anonymous, last modified by EarthCare on May 10, 2021

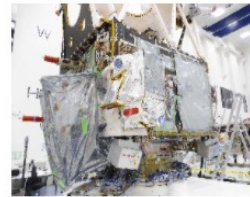


EarthCARE Validation portal is central information hub

- Information on ECVT PIs and plans
- Scientific Validation Plan (1.0)
- Workshop reports
- *In general: consolidated info*



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



The EarthCARE satellite in development

- Recommendation of the 1st ECVT workshop: an interactive collaboration space for ECVT

- Detailed content edited by ESA, algorithm teams, ECVT PIs CoIs etc.
- Collaboration spaces for subgroups
- Discussion board
- *Not-yet-consolidated information*

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

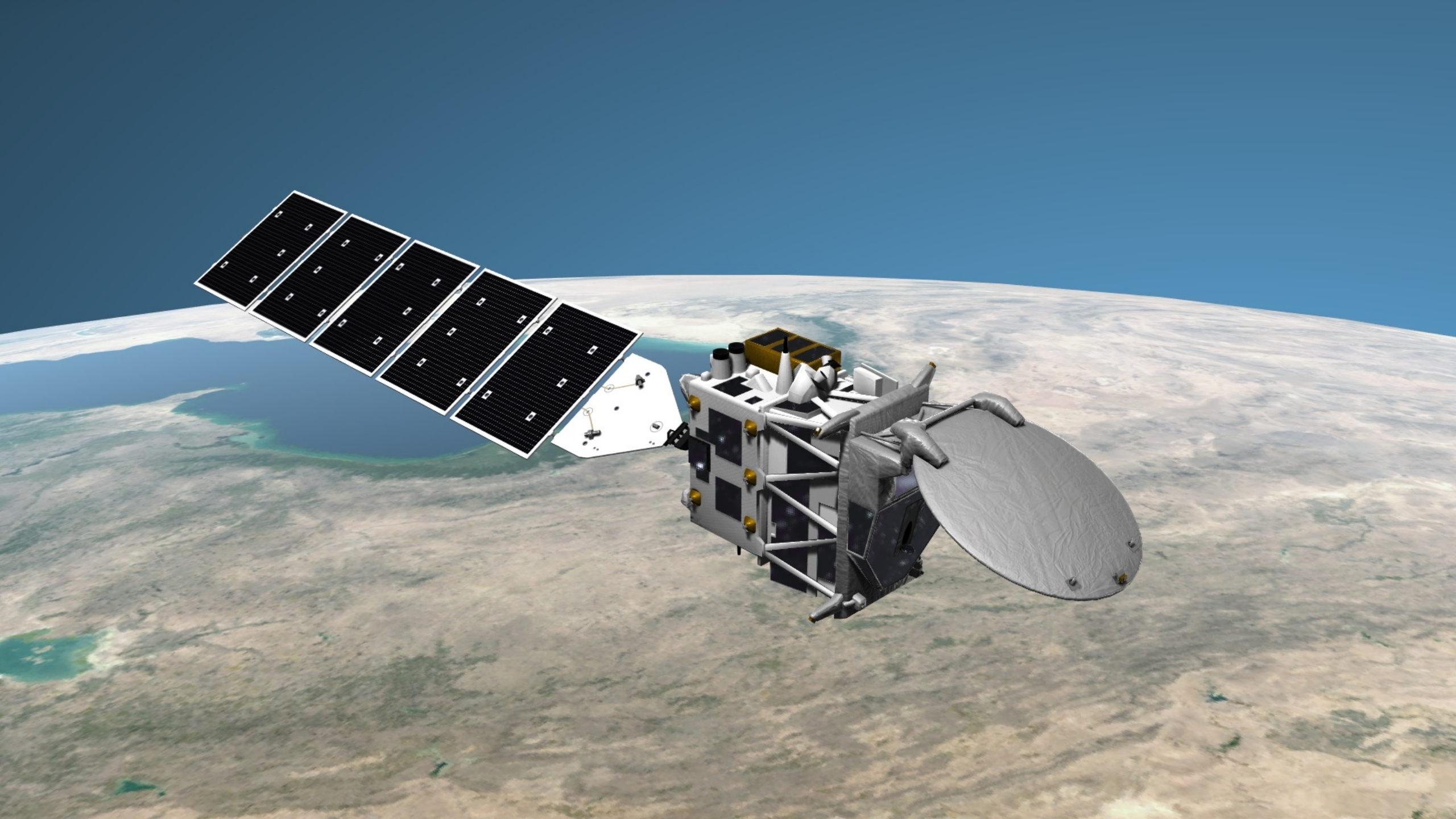
EarthCARE, ESA's Clouds, Aerosols and Radiation Explorer mission developed in co-operation with JAXA, the Japanese Aerospace Exploration Agency, will address the need for a better understanding of the interactions between cloud, radiative and aerosol processes that play a role in climate regulation. 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.

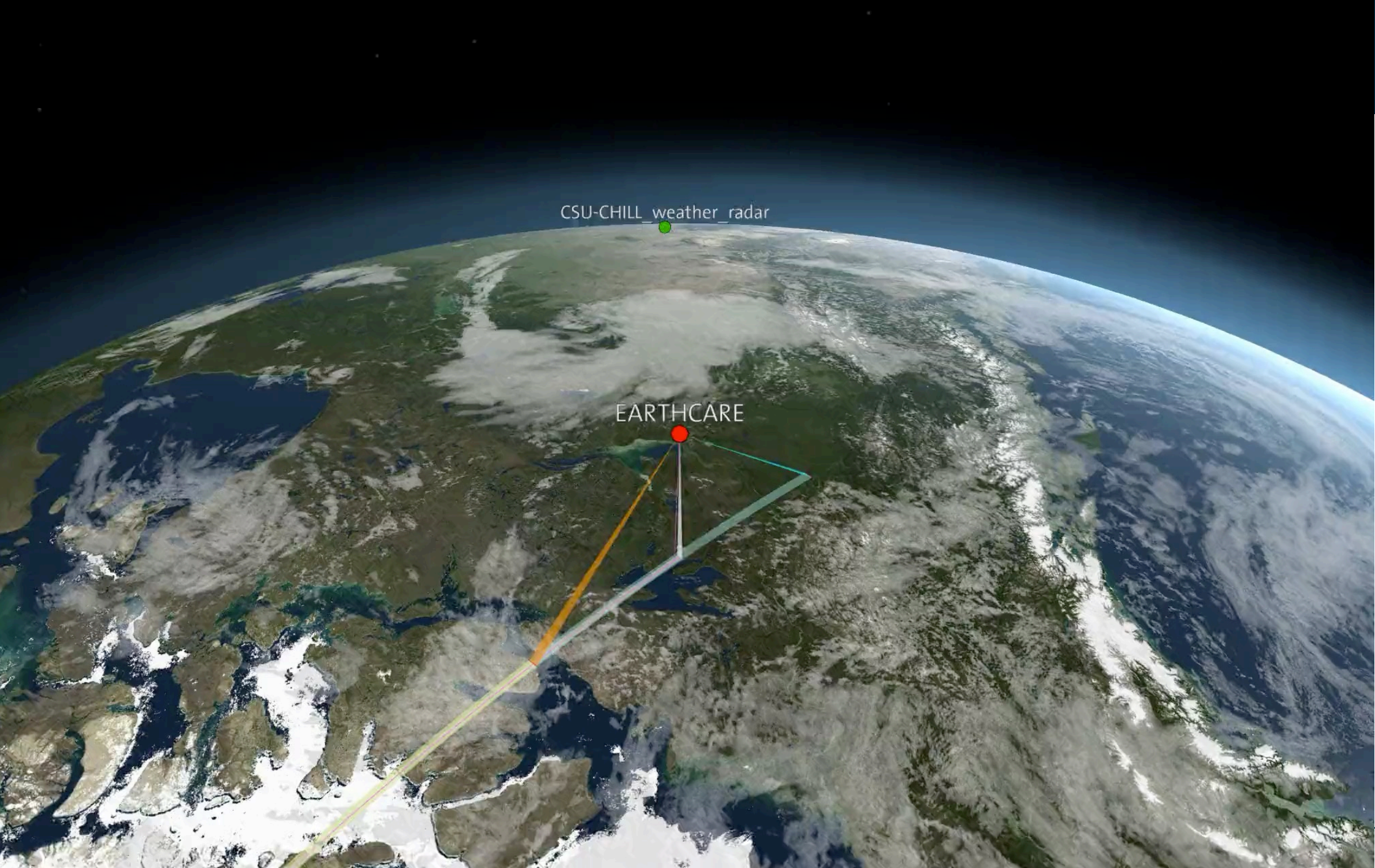
The EarthCARE mission aims to improve the representation and understanding of the Earth's radiative balance in climate and numerical weather forecast models by acquiring vertical profiles of



Validation preparation timeline: actions

- ESA: ECVT account creation for Co-Investigators will be resumed (was on hold until last week's upgrade of the licence) Next week
- ESA&PI: Consolidation of the workshop feedback including follow-on activities 2021
- ESA&PI: Organisation of the collaboration via ECVT subgroups Q2 2021
- PI&ESA: Preparation for correlative data handling and interaction with EVDC (data centre) 2021/2022
- ESA@PI: Consolidate the list of online sessions/trainings dedicated to specific topics (possible sessions could be "file conversion and GEOMS metadata" "overpass predictions" "EVDC satellite segment" "EarthCARE simulated data" etc. Q3 2021
- ESA & JAXA & PI: organise collaboration ECVT and JAXA Validation Team 2021
- PI&funding sources: funding convergence 2021/2022
- PI: Finalise validation setup 2022
- ESA&PI: Validation Rehearsal Q4 2022
- ESA&PI: Joint ESA-JAXA pre-launch validation workshop Q4 2022
- ESA&PI: Prepare issue 2.0 of the Scientific Validation Implementation Plan Q4 2022
- And then...





EarthCARE (Validation) in context

**Aeolus
CALIPSO
++**

**CloudSat
GPM
++**

**CERES
GERB
++**

EarthCARE

Aeolus FO

++

ACCP

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Libera

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This broader context is partially ensured as:

- Several EarthCARE PIs have been, are, and will be involved in multiple missions.

Another element could be to collaborate and develop/document common approaches for aerosol profile validation, cloud-property profile validation, etc.

- Does not limit diversity in intercomparison methods, but supports interpretation of differences in findings
- Advances and structures elaborations and interactions (e.g. “*possible methods to intercompare instruments with different vertical sampling and resolution*”, or “*how to apply the combination of airborne in-situ with remote sensing (air, ground) for intercomparison with satellite products*”, etc.) that would otherwise take place sometimes as late as the mission operations phase.
- Broadens context, which can be further justification for any funding requests
- If sufficient community momentum is mobilised, then formalisation as CEOS WGCV common practice can be pursued (see the example of the CEOS biomass validation common practice on the “seed document” page on the ECVT portal)

Questions?

