



**HAL**  
open science

## The Joint Aeolus Tropical Atlantic Campaign 2021/2022 Overview- Atmospheric Science and Satellite Validation in the Tropics

Thorsten Fehr, William Mccarthy, Vassilis Amiridis, Holger Baars, Jonas von Bismarck, Maurus Borne, Shuyi Chen, Cyrille Flamant, Franco Marengo, Peter Knipperz, et al.

### ► To cite this version:

Thorsten Fehr, William Mccarthy, Vassilis Amiridis, Holger Baars, Jonas von Bismarck, et al.. The Joint Aeolus Tropical Atlantic Campaign 2021/2022 Overview- Atmospheric Science and Satellite Validation in the Tropics. EGU23, the 25th EGU General Assembly, Apr 2023, Vienna and Online, Austria. pp.EGU23-7249, 10.5194/egusphere-egu23-7249 . insu-04472814

**HAL Id: insu-04472814**

**<https://insu.hal.science/insu-04472814v1>**

Submitted on 4 Jun 2024

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution 4.0 International License

# About Joint Aeolus Tropical Atlantic Campaign

## What

The Joint Aeolus Tropical Atlantic Campaign (JATAC) used **ground-based, aircraft and balloon measurements** to validate data provided by ESA's Aeolus satellite and to support related science activities on the interaction of wind, dust and clouds

Measurements were made in the Tropical Atlantic, with most campaign components centred around Cabo Verde

## Why

JATAC supported a range of scientific objectives, including:

- investigating the interaction of Saharan dust, atmospheric waves, tropical convection and radiation
- improving our understanding of tropical storm and cyclone developments in the Tropical Atlantic
- improving climate and numerical weather prediction models
- preparing for upcoming ESA Earth Explorer missions, such as EarthCARE

## Who

While instigated by ESA, JATAC is a collaboration of research institutes and organisations from across Europe, working in partnership with NASA while receiving support from research centres in Cabo Verde

## When

JUN-SEP 2021	JUN-SEP 2022
-----------------	-----------------

Measurements were made in June-September of 2021 and 2022

## Data access

Aeolus data: [earth.esa.int/eogateway/missions/aeolus/data](https://earth.esa.int/eogateway/missions/aeolus/data)

JATAC campaign data will be made available online to the user community in 2023



Lidar



Radar



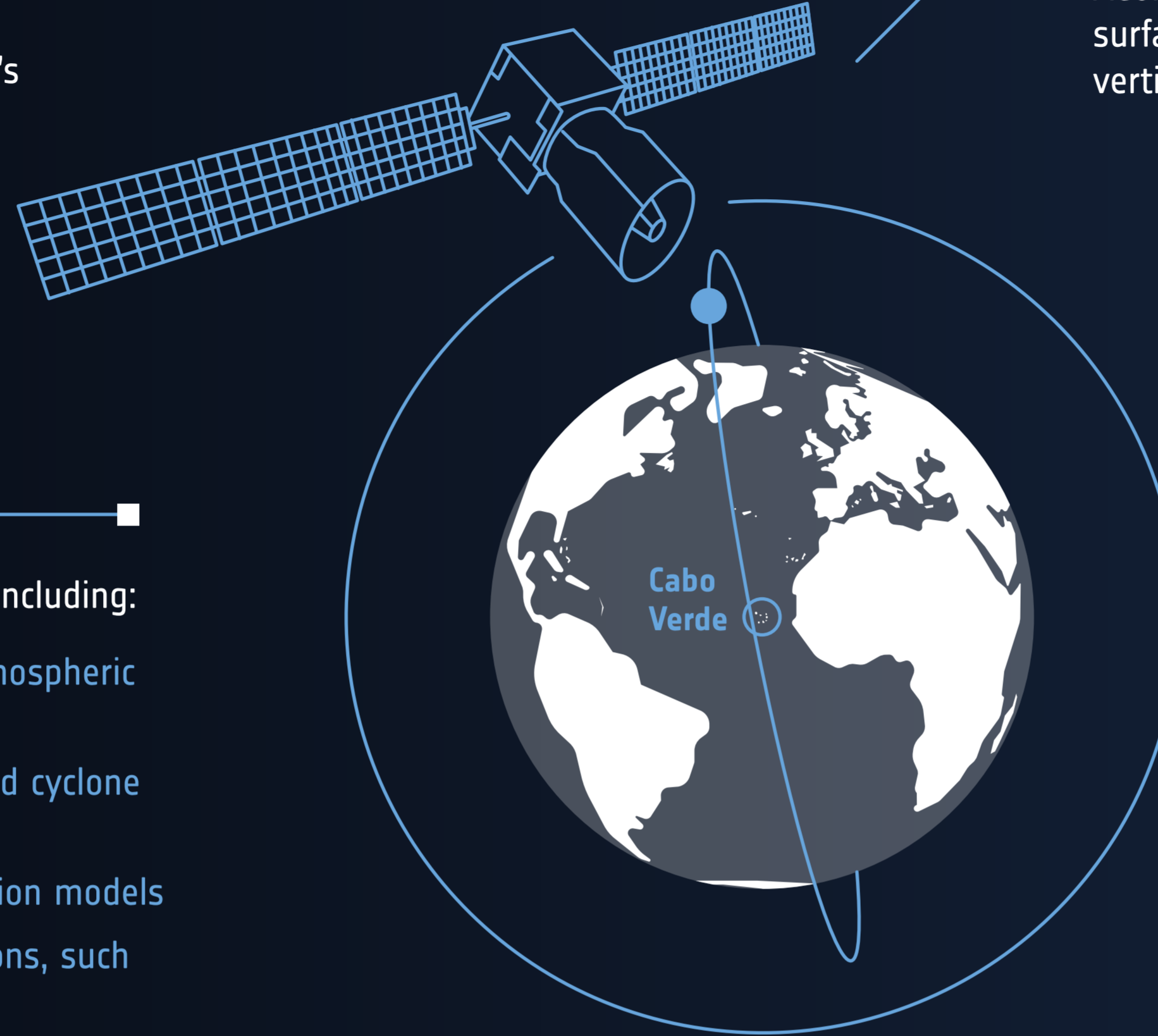
Radiation



Radiosondes/Drosondes



In-situ



Aeolus measures wind profiles from Earth's surface up to 30 km altitude as well as the vertical distributions of aerosols and clouds

## Aeolus



## Askos



**Askos** is the ground-based component of the JATAC campaign, and focused on the impact of Saharan dust and other aerosols on tropical convection, clouds and radiation

## CAVA-AW



**Calibration and Validation for Aeolus – Aerosols and Winds** focused on in-situ aerosol observations to validate Aeolus measurements of Saharan dust

## CPEX-AW & CPEX-CV



**Convective Processes Experiment – Aerosols and Winds/Cabo Verde** investigated the interactions of atmospheric dynamics, the marine boundary layer, convection and the Saharan Air Layer

## AVATART



**Aeolus VALIDation Through Airborne Lidars in the Tropics** focused on the role of scattering as a source of error in lidar wind measurements

## CADDIWA



**Clouds, Atmospheric Dynamics and Dust Interactions in West Africa** assessed the effect of dust aerosols on atmospheric dynamics, in both cloudy and clear conditions

