

Opening remarks

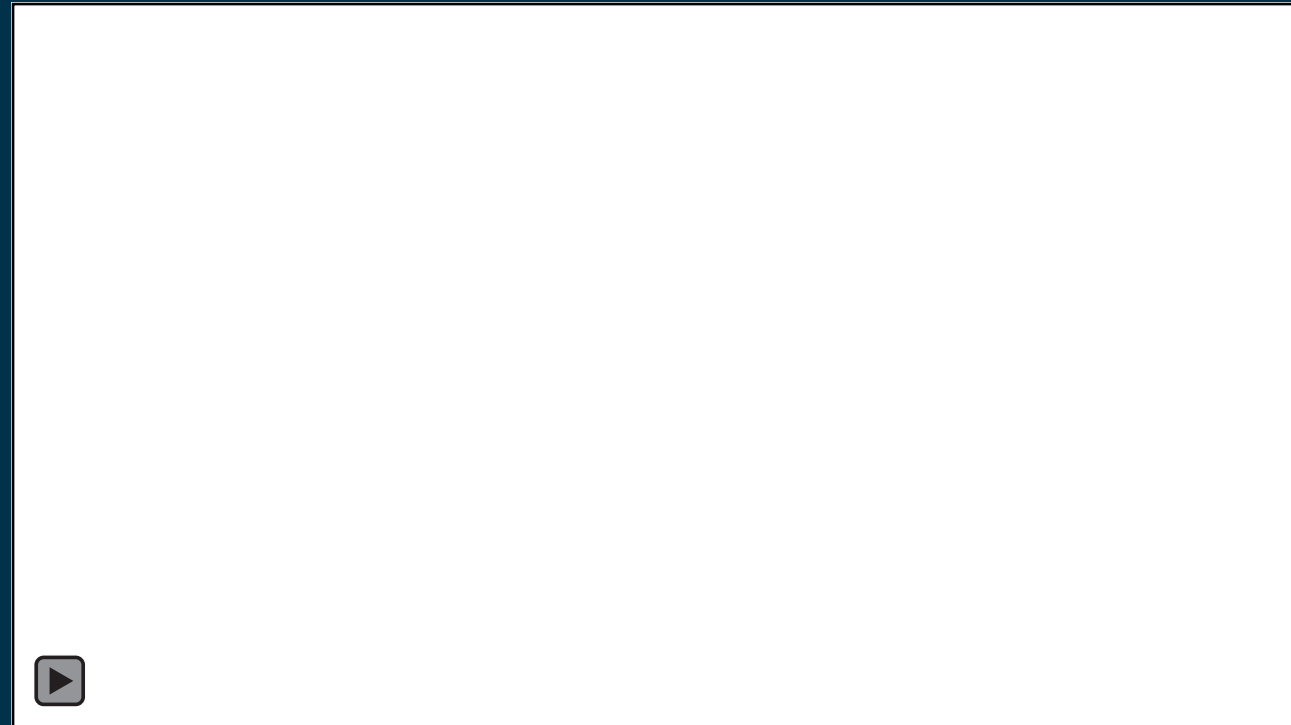
2nd ESA EarthCARE Validation Workshop

Dominique Gillieron, Earth Explorers Programme Manager

25-28 May 2021 (online)

ESA-EO Mission

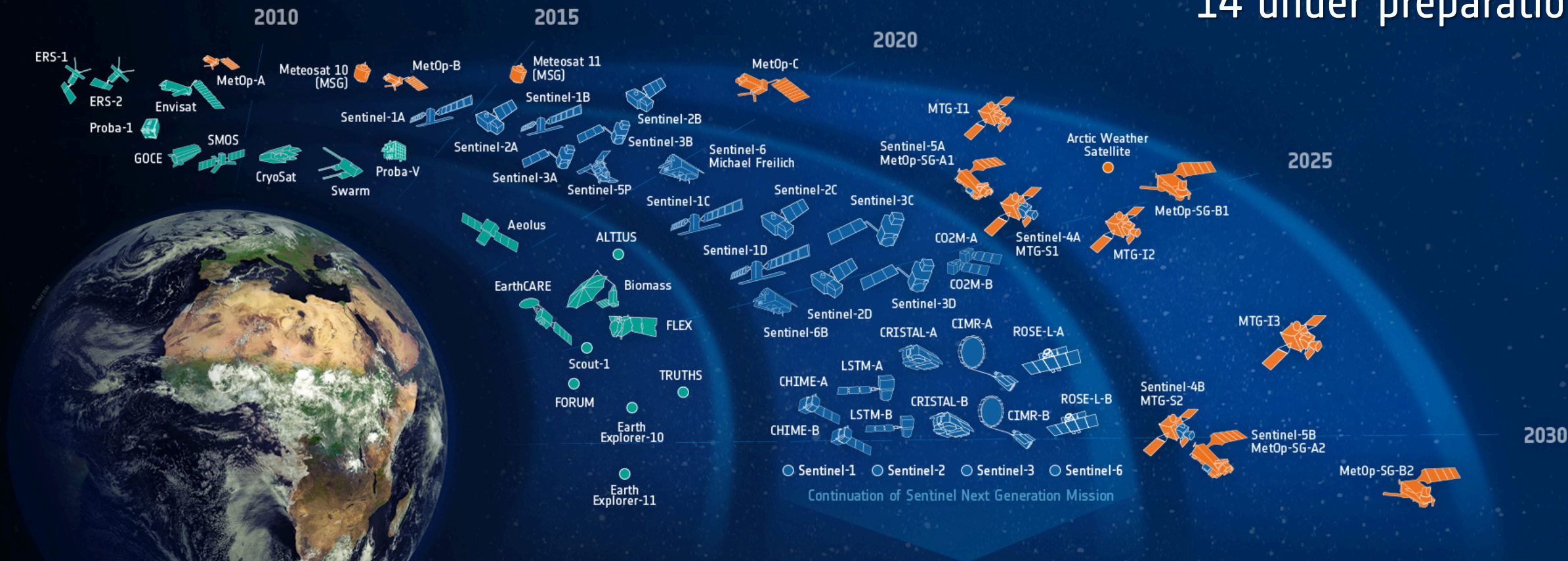
Develop world-class Earth
Observation systems
addressing scientific &
societal challenges
with European and global
partners



ESA-Developed Earth Observation Satellites



16 in operation
38 under development
14 under preparation



Science



Copernicus



Meteorology



→ THE EUROPEAN SPACE AGENCY

Science: Earth Explorers



First 2 Scout missions selected

Operational missions designed to deliver science in orbit based on SmallSat

Very strict cost/schedule boundaries

- 3 years from KO to launch
- 30M€ total mission cost

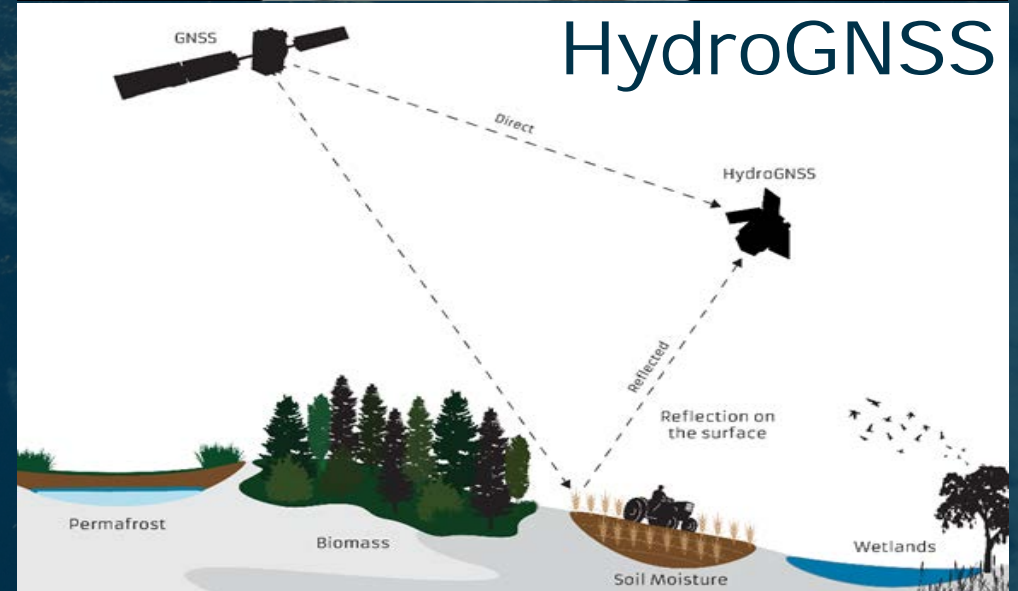
Agile and good value for money

- Agency's response to a quickly evolving scientific and technological environment in the Earth Observation (EO) sector
- Reduction of time and cost to deliver demonstrations of novel EO techniques and results in the Earth sciences
- Easily scalable if successful

Innovative implementation

- Service contracts to provide scientific data
- ESA role focused on main critical risks with higher delegation to industry in direct contact with institutes and labs
- Application of NewSpace standard

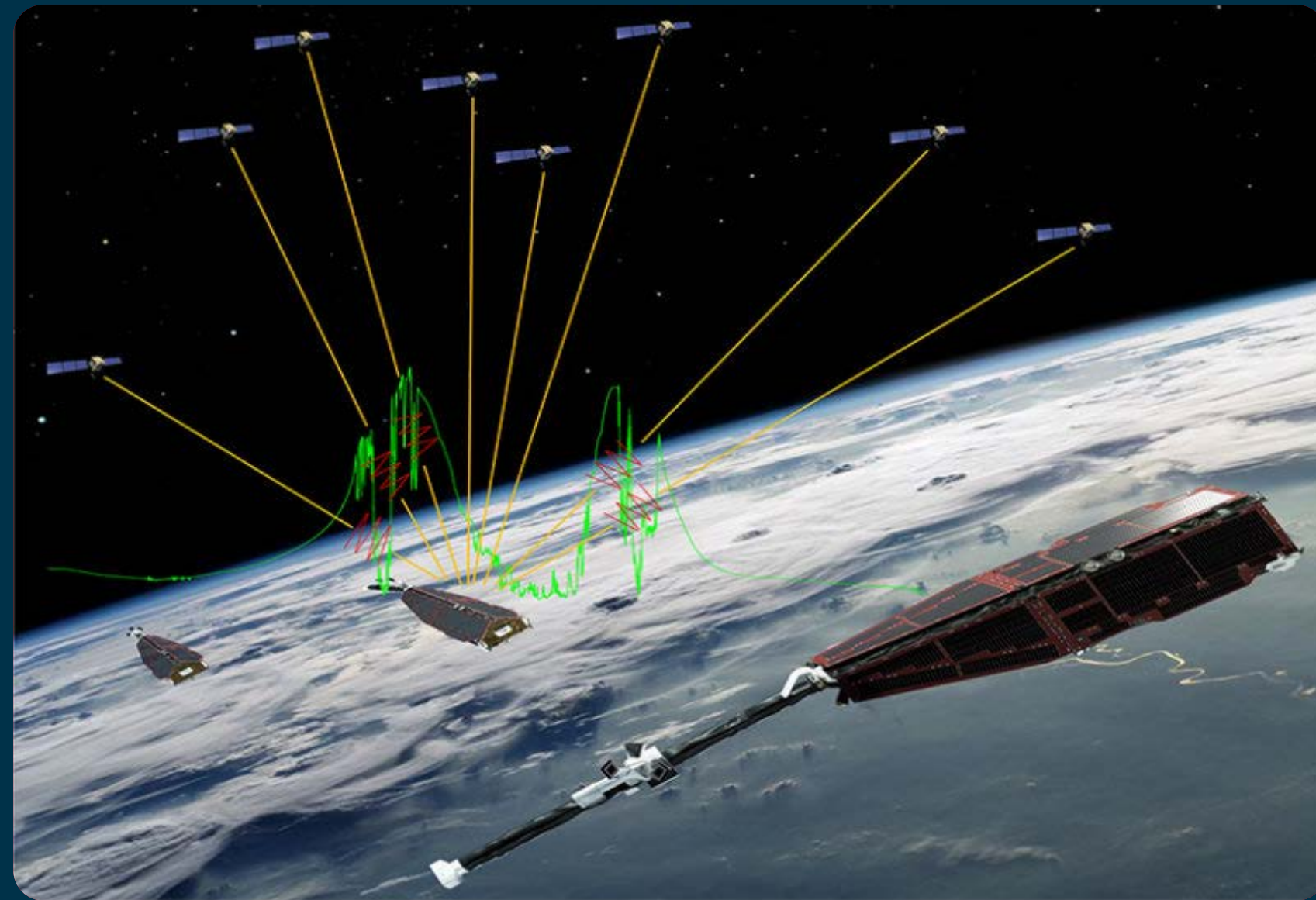
ESP-MACCS







Unexpected Swarm Discovery



GNSS Blackout
Phenomenon due to
'thunderstorms' in the
ionosphere

© ESA-ATG medialab

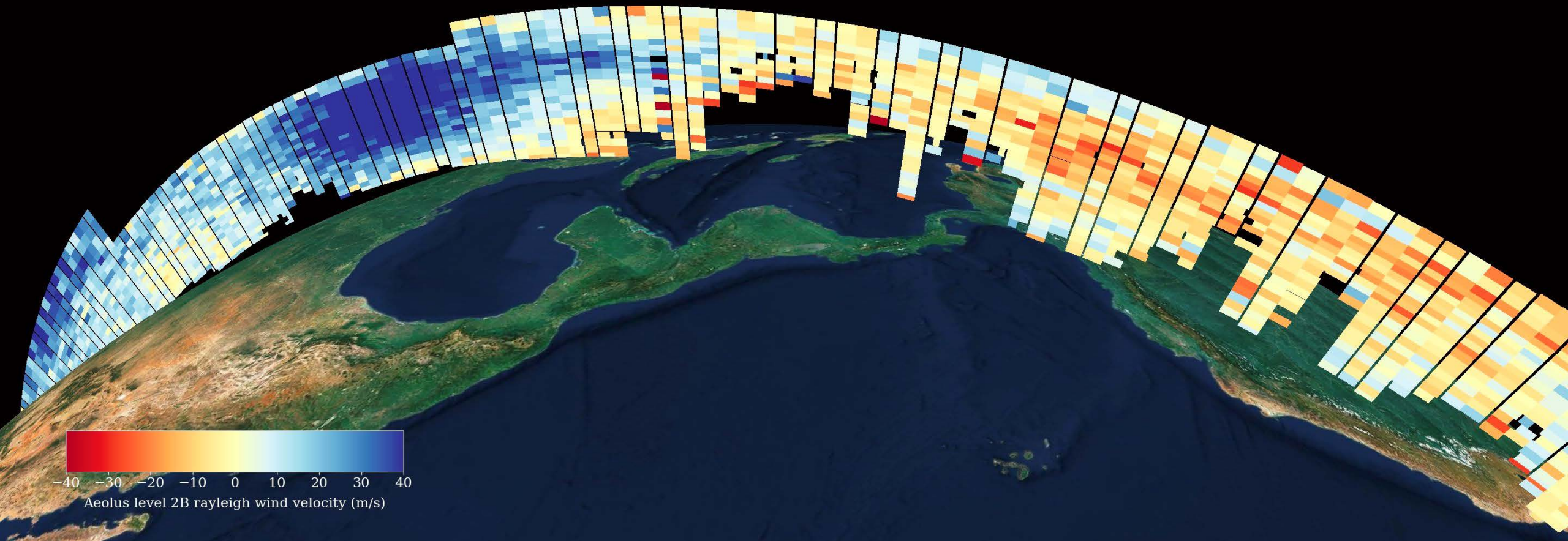




Aeolus data is operational and impactful



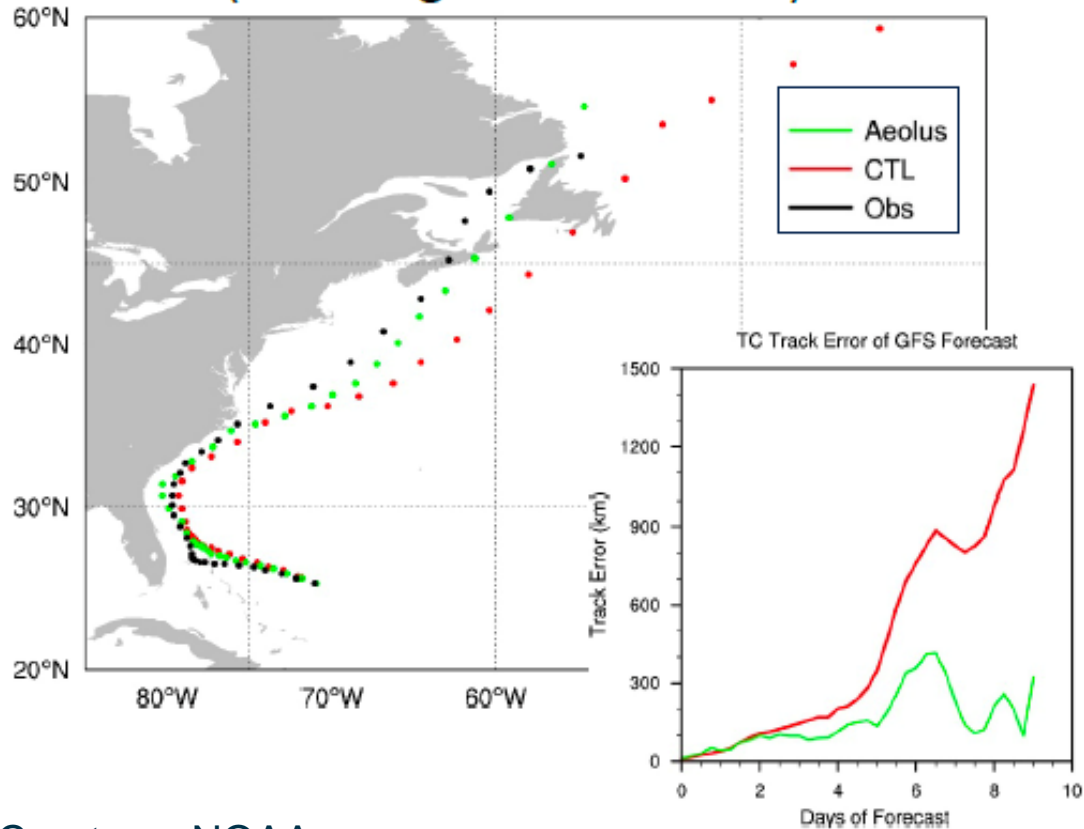
Aeolus gauges hurricane Lota wind velocities
17 November 2020



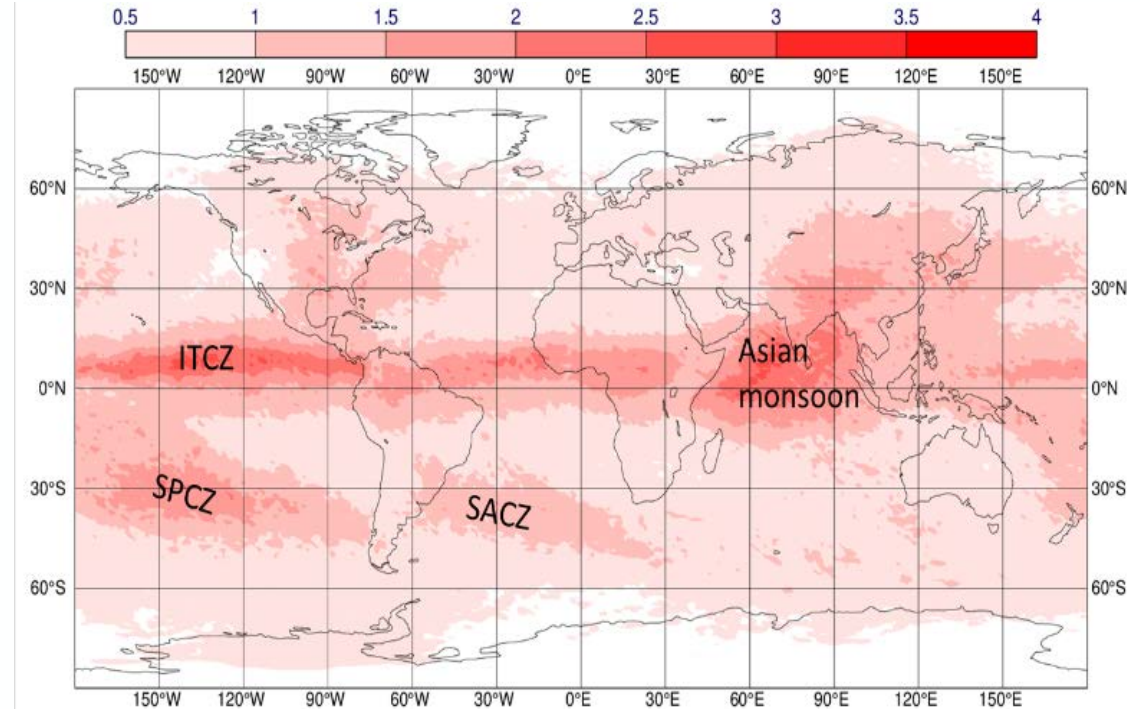
Aeolus data is operational and impactful

10-Day Forecast of Hurricane Dorian

(from Aug 31 00UTC 2019)



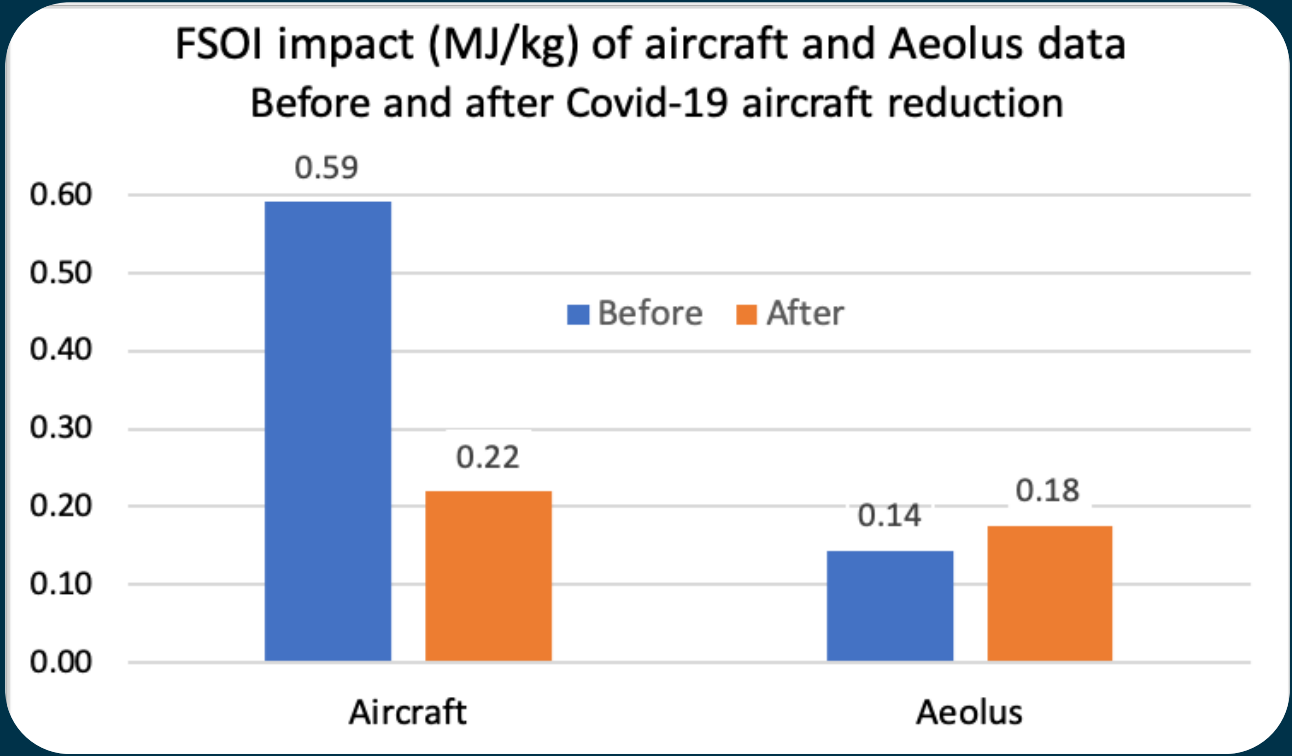
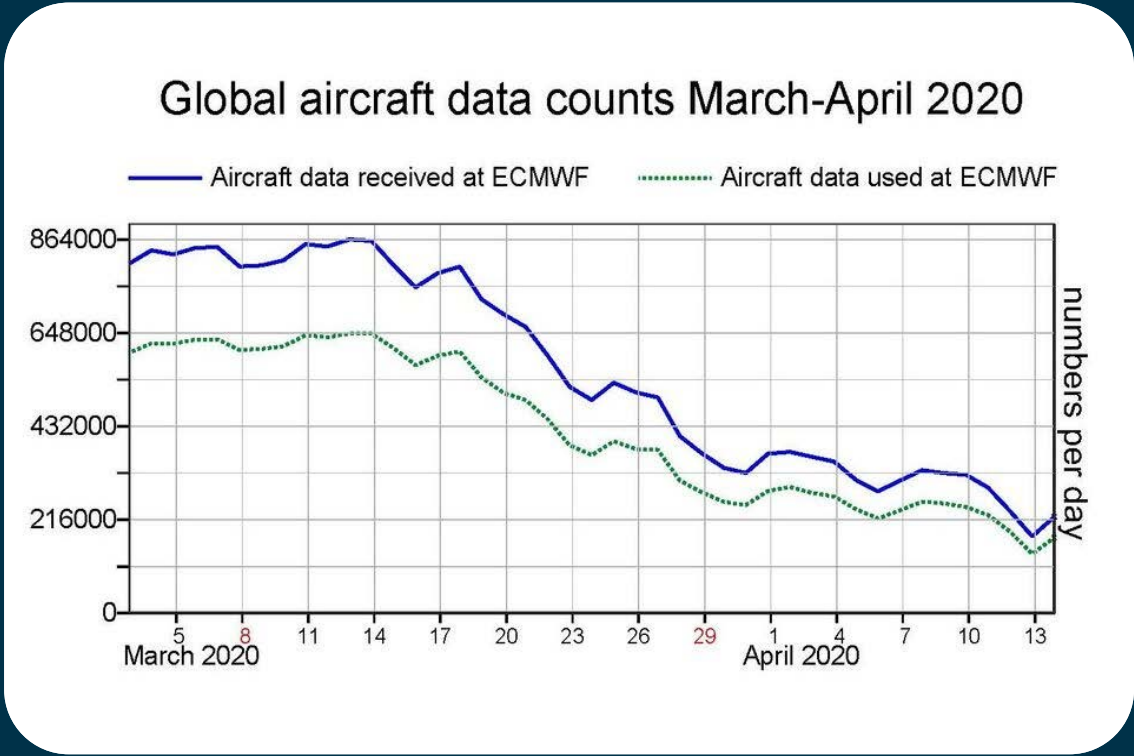
Courtesy: NOAA



Positive impact (red) when assimilating Aeolus winds from 4 April to 19 August 2020 (M. Rennie – ECMWF)

Aeolus partially fills weather data observation gap

- With many planes grounded the amount of aircraft data available for NWP at ECMWF has dropped
- Operational use of Aeolus mission data in NWP has helped filling this observation gap



Scientific Excellence

International Cooperation

Prepare for the future

Fully applicable to EarthCARE
Validation and Scientific Utilisation

→ Join / Cooperate / Prepare!

