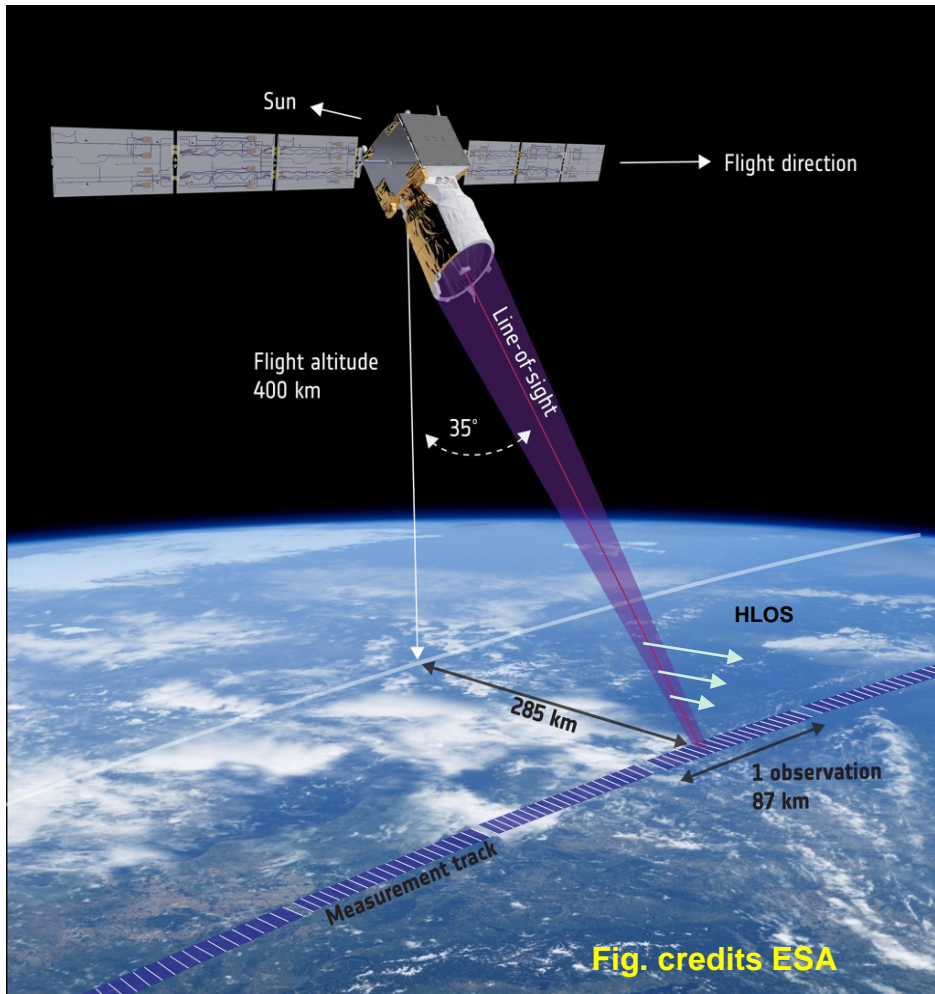


First wind lidar in space – ADM-Aeolus

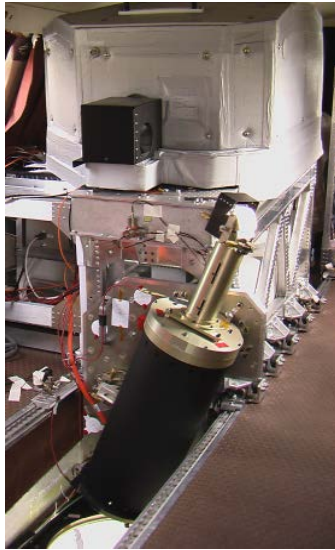
ADM-Aeolus with single payload
Atmospheric **L**aser **D**oppler **I**nstrument
ALADIN

- First **wind lidar** in space with molecular and aerosol/cloud channel: **wind+aerosol products**
- **Profiles of wind in line-of-sight LOS direction (mainly zonal wind) from ground up to 20-30 km**
- **Error requirements on horizontally projected LOS (HLOS)**
random error: $< 2 \text{ m/s}$
systematic error $< 0.7 \text{ m/s}$



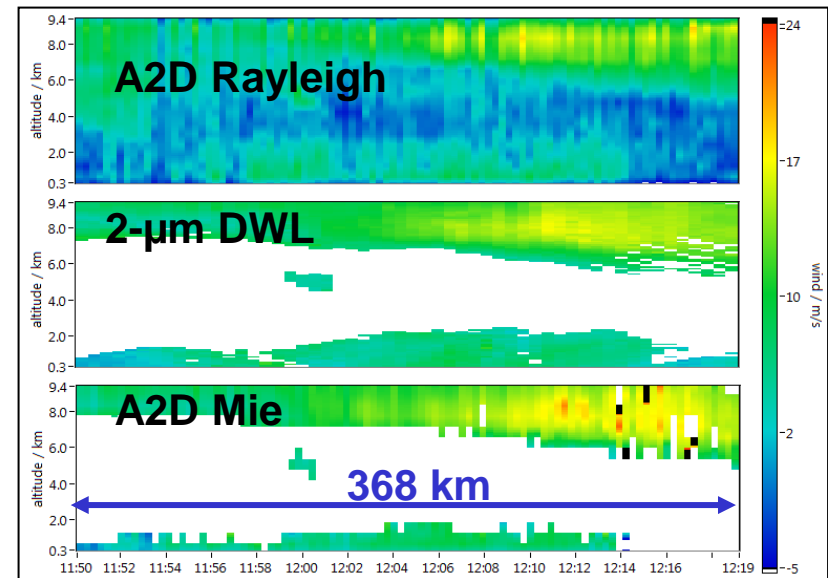
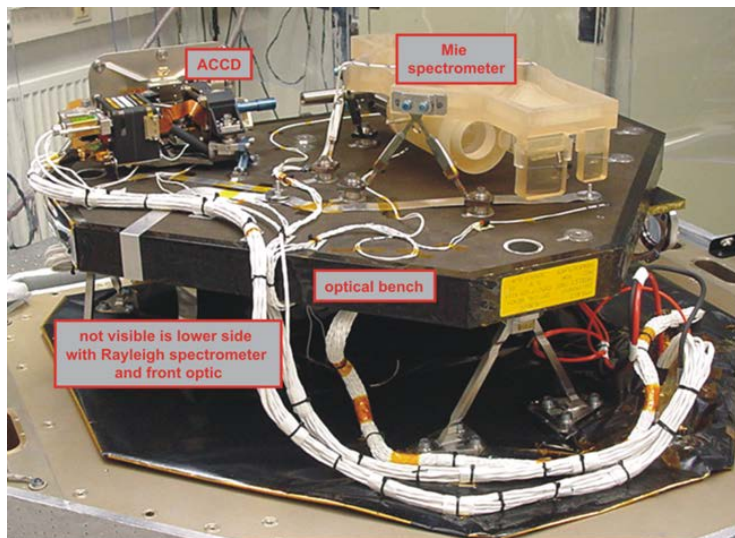
ESA (2008), ADM-Aeolus Science Report

ALADIN airborne demonstrator @ DLR



Validation of ADM-Aeolus after launch

- airborne demonstrator as test-bed for Aeolus
- airborne campaigns planned in Europe, North Atlantic and Tropics (tbd) with international partners
- validation of wind products (Level 1b, Level 2b) and aerosol products (Level 2a)
- ALADIN airborne demonstrator A2D in combination with reference wind lidar (2- μm DWL) on DLR Falcon aircraft



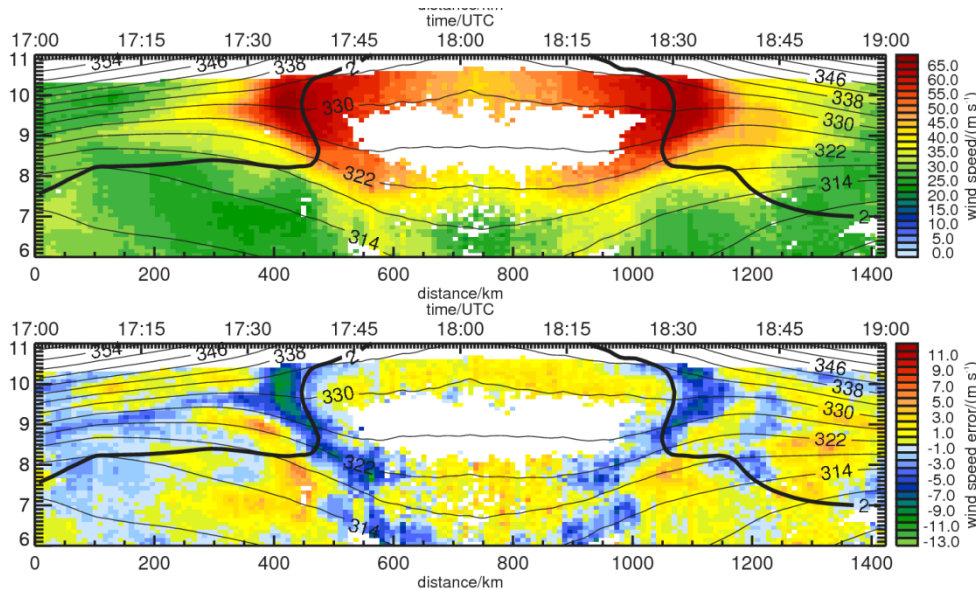
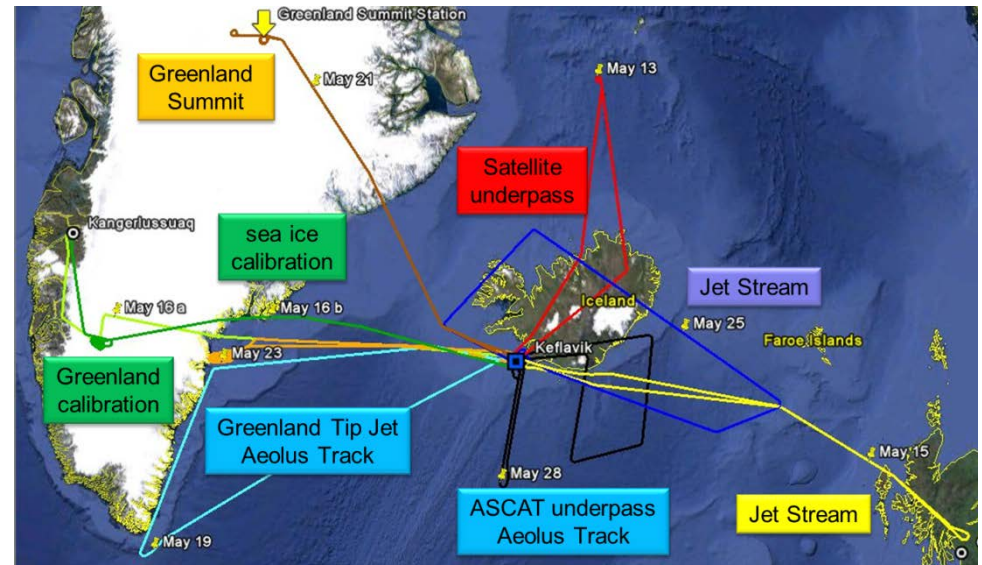
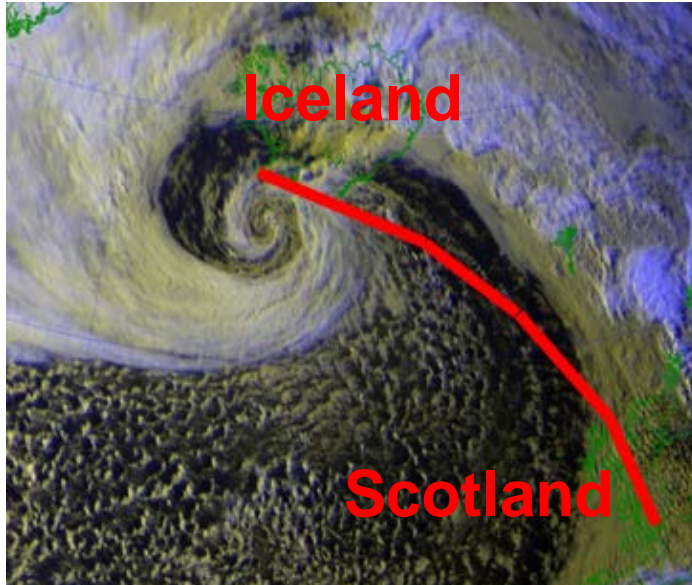
wind observations along Greenland coast 2009



ADM-Aeolus WindVal
11. - 29. May 2015



WindVal Campaign from 2015



2- μm wind lidar measurement of jet stream winds on May, 15 2015

Difference ECMWF model to wind lidar, underestimation of jet stream winds up to 10 m/s in maximum of jet