



An overview of the radiometers available on the FAAM BAe-146

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The FAAM aircraft



- Modified BAe-146 aircraft
- Joint facility of the Met Office and NERC
- Operating altitude 50-35000ft
- Endurance ~5 hours
- Science cruise speed 200kts IAS
- Large scientific payload (both in-situ and remote sensing instruments)
- Up to 20 scientists+crew on board



Met Office radiometers



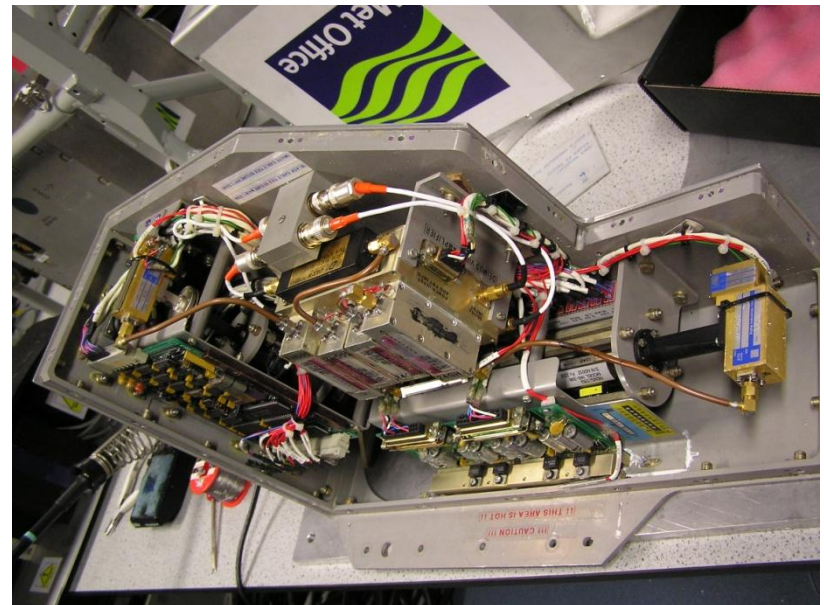
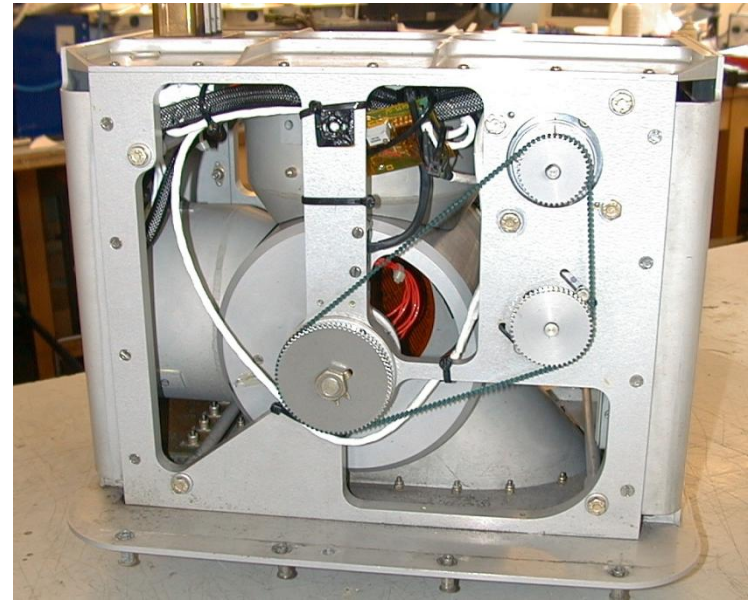
Microwave radiometers: SMR, ARIES, Deimos, MARSS

Vis/NIR spectrometers: SWS & SHIMS



Deimos

- Dual-channel microwave radiometer
- 23.8GHz & 50.3GHz (both dual polarisation)
- Along-track scan – views either up OR down
- Electronics, control and data acquisition currently being upgraded





Met Office

MARSS

- 5-channel microwave radiometer (AMSU-B)
- 89, 157 and 183+/- (1,3,7) GHz
- Single polarisation for each channel
- Along-track scan, both upward and downward views
- Recent upgrades to electronics, control, data acquisition and calibration system

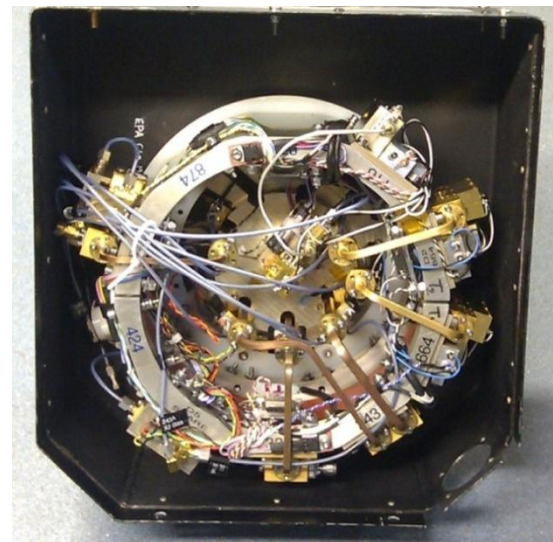




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ISMAR

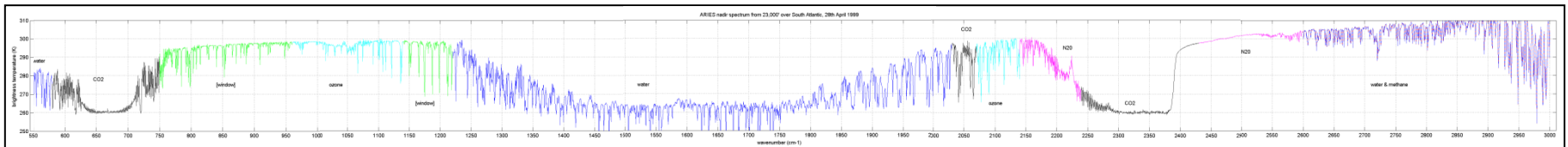
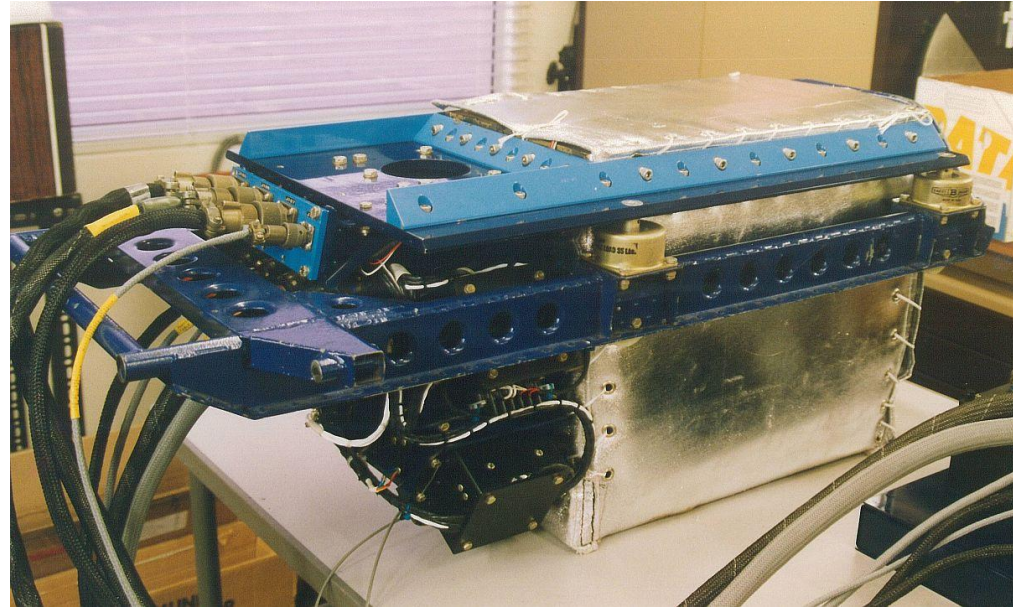
- International Sub-Millimeter Airborne Radiometer
- Multi-channel radiometer (118-664GHz). Channels centred on oxygen line (118GHz), water vapour lines (325, 448GHz) and quasi-windows (243, 664GHz)
- Dual polarisation in quasi-window channels
- 874GHz channels under development
- Designed for remote sensing of ice clouds (ICI demonstrator)
- Currently under development. 2 test flights completed, first campaign November/December 2014





ARIES

- Infra-red Fourier Transform Spectrometer
- 550–3000 cm^{-1} at 1 cm^{-1} resolution
- Cross-track scan (8 positions) + zenith view





SWS/SHIMS

- SWS (Short Wave Spectrometer) – radiance entrance optics
- SHIMS (Spectral Hemispheric Irradiance Measurement System) – Irradiance entrance optics
- Based on Zeiss MCS600 VIS and NIR1.7 spectrometers
- 320nm to 1080nm @ 3.3nm
- 950nm to 1690nm @ 3nm





Questions and answers