

**Earth Observation Envelope Programme
Earth Explorer Core Mission 2
ADM-AEOLUS – Mission Data Sheet**



Aeolus – Artist Impression

AEOLUS Mission

Provide global measurements of winds at all levels of the atmosphere, up to 30 km. Aeolus supports :

- Major improvements in understanding and modelling of tropical dynamics
- Improved accuracy of tropical forecasts
- Improved forecasting of intense wind events
- Better definition of planetary scale waves

Mission Duration

- Commissioning phase 3 months
- Lifetime 3 years

Mission Orbit and Satellite Attitude

Orbit Type : LEO, sun-synchronous, dawn-dusk

Altitude 320 km

Repeat Cycle 7 days

LTAN 6 p.m.

Inclination 97.056 degrees

Attitude Control : 3-axis stabilized with yaw steering

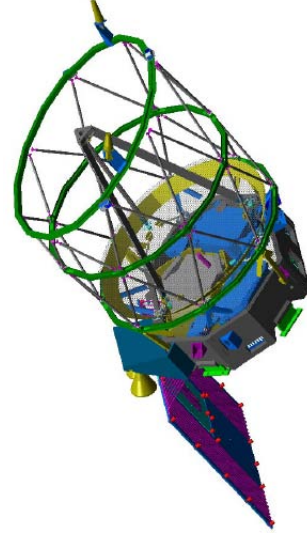
Payload : Aladin

Single Doppler Wind Lidar working at 355 nm. Able to measure both Mie scattering from particles and aerosols, and Rayleigh scattering from the upper atmosphere molecules.

Random Error (1 σ)

- 1 m/sec at altitudes less than 2 km
- 2 m/s between 2 and 16 km
- <0.7 m/s

Systematic Error (1 σ)



Catia Model of Aladin Instrument

Satellite

Custom built platform.

Mass

- Dry Mass 1200 Kg
- Max Fuel Load 280 Kg

Power

- Deployable solar array, GaAs triple junction cells
- Solar Array Power EOL 2300 W
- Li-ion battery nominal capacity 84Ah

Communication Links

- X-Band downlink 5 Mbps for science data, to ESRIN via Svalbard
- S-Band uplink 2 kbps
- S-Band downlink 8 kbps to and from ESOC via Kiruna

Launch Vehicle

Vega is the confirmed launch service provider.

Flight Operations

ESOC via Kiruna

Payload Data Processing

User Services and Payload Data Processing Centre in Tromsø and ECMWF under responsibility of ESRIN