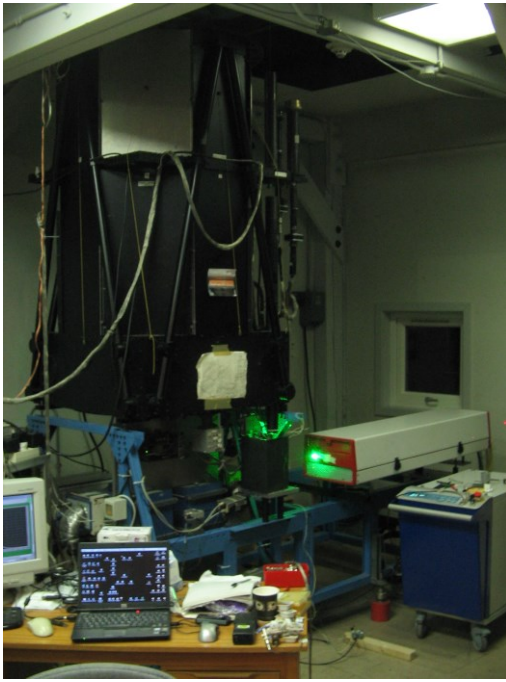


aerosol/temperature lidar

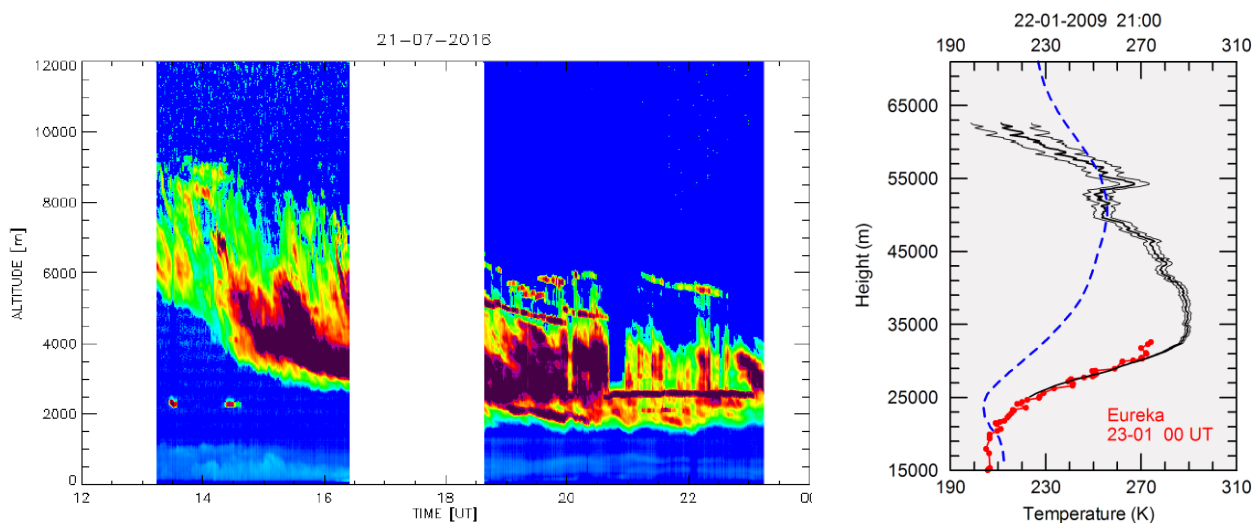


The lidar measures vertical profiles of aerosol, clouds, and temperature. These are necessary to study: radiation budget and climate processes in the Arctic; stratospheric processes related to the ozone depletion.

The profiles are derived from the backscattered fraction of laser pulses shot vertically in the atmosphere. The atmospheric echoes are collected by a series of telescopes.

The first version of the lidar was installed at Thule in November 1990 by University of Rome and ENEA.

The instruments now use a Nd:YAG laser emitting at 1064 and 532 nm; has a large (80 cm diameter) and two small (50 mm diameter) telescopes. Signals are collected at 1064, and at 532 nm on two polarizations.



Left: evolution of cloud backscatter at 1064 nm on 21 July, 2017; right: middle atmospheric temperature profile on 22 January, 2009, during the most intense stratospheric warming ever recorded.

Contact person: Tatiana Di Iorio (tatiana.diiorio@enea.it)