Meteorological Observation Conditions
- early morning cloud cover had vanished
- calm high pressure situation
- near surface wind dominated by local conditions: low wind speed
  - katabatic outflow from glaciers
  - sporadic cold air advection from south-west

First total solar eclipse observation by a BSRN station:
20 March 2015, Ny-Ålesund (78.9° N, 11.9° E), Svalbard
(09:10 - 11:11 UTC, totality from 10:09:53 to 10:12:11 UTC)

Data publication in Earth System Science Data,
as a base for follow-up studies on micrometeorology etc.

Radiation Measurements

Geometric Observation Conditions
- vernal equinox
- horizontal line shaped by mountains to the South
- partial shading of radiation instruments while solar elevation remains below horizontal line

Atmospheric Vertical Profiles
- surface based inversion below 100 m altitude
- stable conditions in the planetary boundary layer
- potential changes in altitude of inversion top over time are within the radiosonde detection limit
- no temperature changes in the vertical column can be attributed to solar eclipse

The total solar eclipse left its imprint on the surface radiation diurnal cycle under favorable meteorological conditions. The data provide the unique occasion to study the atmospheric response to rapid cut-off and turn-on of shortwave radiation under low solar elevation angles in an Arctic environment.

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Ny-Ålesund radiation data March 2015: doi:10.1594/PANGAEA.854326

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