

# SPIDER-1 measurements (LP, GPS, SMILE) inside an aurora

**SND-ID:** 2021-38-1. **Version:** 1. **DOI:** <https://doi.org/10.5878/mdsv-ym34>

## Download data

2021-38\_1\_V1.zip (1.91 MB)

## Citation

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## Creator/Principal investigator(s)

[Gabriel Giono](#) - Royal Institute of Technology, Space Plasma Physics

[Nickolay Ivchenko](#) - Royal Institute of Technology, Space Plasma Physics

## Research principal

[Royal Institute of Technology](#) - Space Plasma Physics

## Description

A series of CSV files containing some of the measurements performed by the SPIDER-1 sounding rocket inside an aurora. The rocket was launched at 21:09UT on February 2nd 2016 from Esrange (Kiruna, Sweden) and ejected 10 Free Falling Units (FFUs) inside a westward-traveling active aurora. Each FFU was equipped with a deployable Langmuir probe (LP) to measure the plasma properties (the electron density  $n_e$ , the electron temperature  $T_e$ , and the plasma potential  $V_p$ ), as well as a 3-axis fluxgate magnetometer (SMILE) measuring the magnetic field and a positioning recorder (GPS).

Usable data from two of the FFUs (FFU02 and FFU06) is presented, which was used in the JGR-Space Physics article named "Multi-point measurements of the plasma properties inside an aurora from the SPIDER sounding rocket."

The data was collected by two of the SPIDER Free Falling Units (FFU02 and FFU06). It included:

- Measurements from the Langmuir probe (LP, current measurements for each voltage bias steps) -
- Measurements from the 3-axis magnetometer (SMILE)
- Processed data from the Langmuir probe, namely the electron density ( $n_e$ ), electron temperature ( $T_e$ ) and plasma potential ( $V_p$ ).
- GPS position of the two FFUs.

## Data contains personal data

No

## Language

[English](#)

## Time period(s) investigated

2016-02-02 - 2016-02-02

## Data format / data structure

[Numeric](#)

[Text](#)

## Geographic spread

Geographic location: [Kiruna Municipality](#)

Geographic description: Rocket flight from Esrange, near Kiruna. The trajectory was towards north-west from the launch site, reaching ~135 km altitude and ~100 km downrange.

## Responsible department/unit

Space Plasma Physics

## Research area

[Geophysics](#) (Standard för svensk indelning av forskningsämnen 2011)

[Meteorology and atmospheric sciences](#) (Standard för svensk indelning av forskningsämnen 2011)

[Embedded systems](#) (Standard för svensk indelning av forskningsämnen 2011)

[Aerospace engineering](#) (Standard för svensk indelning av forskningsämnen 2011)

[Geoscientific information](#) (INSPIRE topic categories)

## Keywords

[Ionosphere/magnetosphere dynamics](#), [Aurorae](#)

## Polygon (Lon/Lat)

20.234055054816, 68.764256091431

20.234055054816, 67.874213799674

21.171894246791, 67.874213799674

21.171894246791, 68.764256091431

20.234055054816, 68.764256091431

## Accessibility level

Access to data through SND

Data are freely accessible

## Use of data

[Things to consider when using data shared through SND](#)

## License

[Public Domain Mark 1.0](#)

## Versions

Version 1. 2021-03-09

## Download metadata

[DataCite](#)

[DDI 2.5](#)

[DDI 3.3](#)

[DCAT-AP-SE 2.0](#)

[JSON-LD](#)

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[File overview \(CSV\)](#)

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