

TAKE THE STEP OUT INTO SPACE, WITH US!

— SPACE ENVIRONMENTAL TESTING —



**SPACE LAB**  
Swedish Institute of Space Physics Kiruna



SPACELAB.IRF.SE

### Internship / M.Sc. project

Characterisation of the solar simulator of the large IRF SpaceLab Thermal Balance / Thermal Vacuum facility.

The solar simulator is the largest vacuum chamber at IRF SpaceLab, suitable for complete systems/payloads:

- Dimensions:  $d = 1.23\text{m}$ ,  $l = 1.3\text{m}$
- Mounting table: Cu,  $0.7 \times 1.2 \text{ m}$
- Temp. range:  $-45^{\circ}\text{C}$  to  $+90^{\circ}\text{C}$  on the table ( $-160^{\circ}\text{C}$  for the shrouds)
- Pressure down to  $10^{-6}\text{mbar}$  ( $10^{-5}$  after 1h)
- $0.4 \times 0.4 \text{ m}$  illuminated area:  $0\text{-}1350 \text{ W/m}^2$

Depending on the level of the trainee the work will include:

- Studying of the system's documentation
- Test runs
- Development of a system to characterise the solar beam size and integral intensity
- Characterization of the thermal environment
- Verification of the measured parameters against specifications
- Writing a report

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