

ESA M4 Call

THOR

Turbulent Heating ObserveR

Science: Turbulent energy dissipation and particle energization

Courtesy: M.Palmrooth, Vlasiator code

Science

Theme:

Turbulent energy dissipation and particle energization

Science questions (shortened):

How turbulent fluctuations:

- 1) heat plasma,
- 2) accelerate energetic particles,
- 3) dissipate at large scale shocks.

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Orbit

Equatorial with apogee in solar wind ($\sim 30R_e$)

Spacecraft(s)

Sunpointer, slow spinner 2rpm

Payload

- improved energy resolution of particle instruments
- dedicated solar wind particle instrumentation
- 3D distribution of mass resolved ions at kinetic scales
- improved accuracy and sensitivity of E and B measurements
- resolving electron scales in solar wind/magnetosheath for both particle and waves

THOR designed to study the kinetic physics of dissipation with unprecedented detail!

THOR science team

100+ scientists, 19 countries

Contact us if you are interested to join.
andris.vaivads@gmail.com