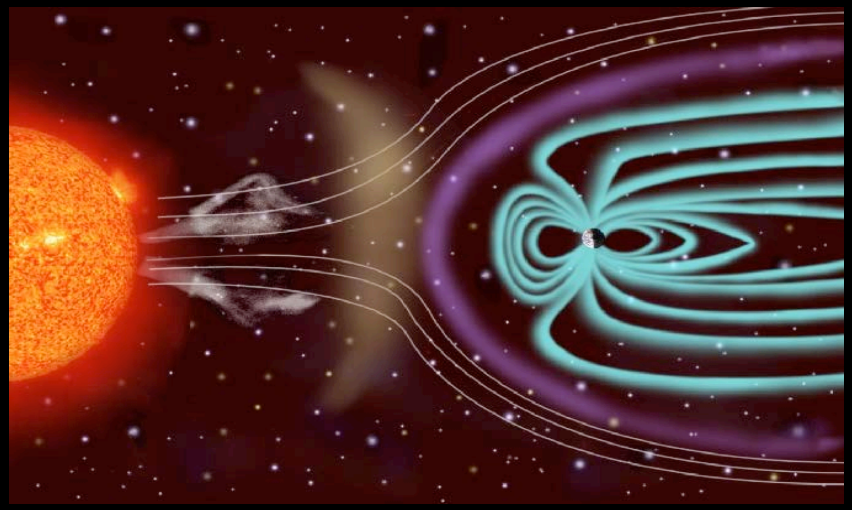
The MMS mission

Per-Arne Lindqvist

Space and Plasma Physics, KTH

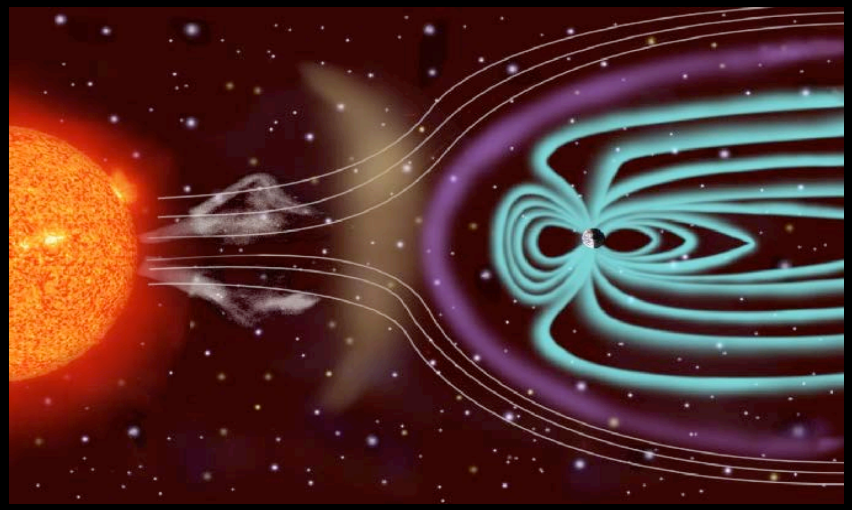
ASE XXVIII Congress, Stockholm, 22 September 2015

Sun-Earth connection and the Aurora



The Solar wind enters Earth’s magnetosphere...

Sun-Earth connection and the Aurora



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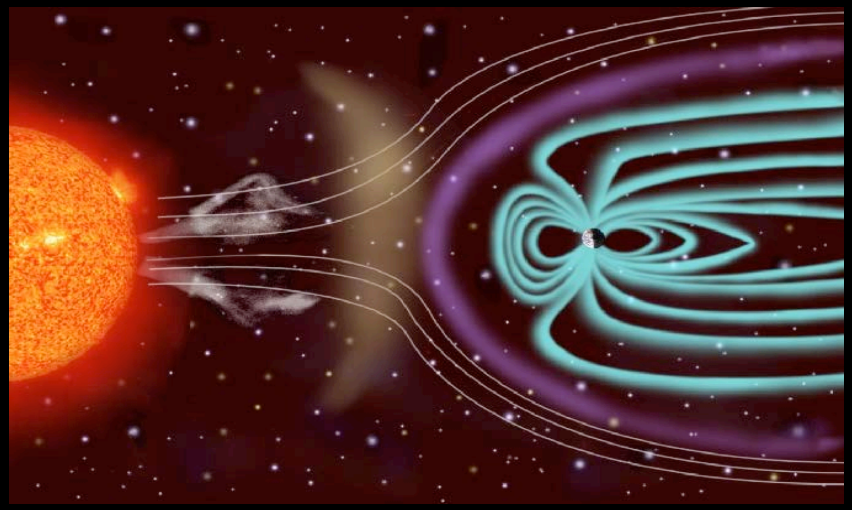

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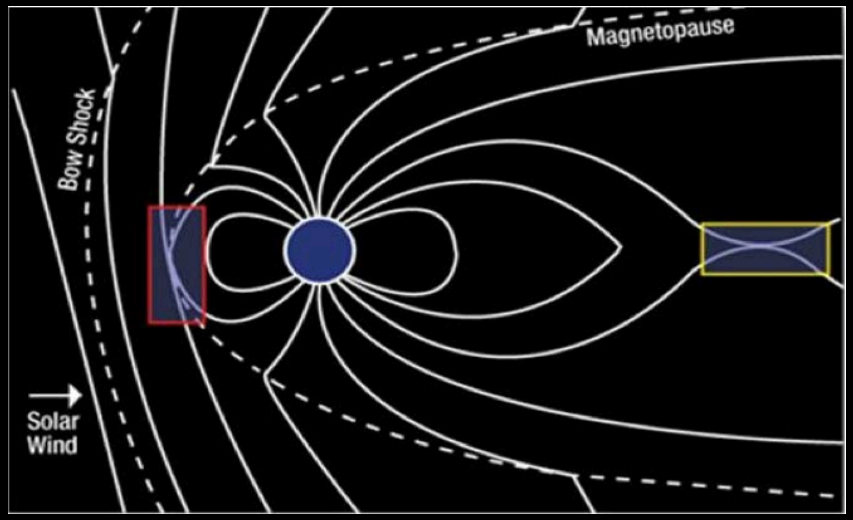
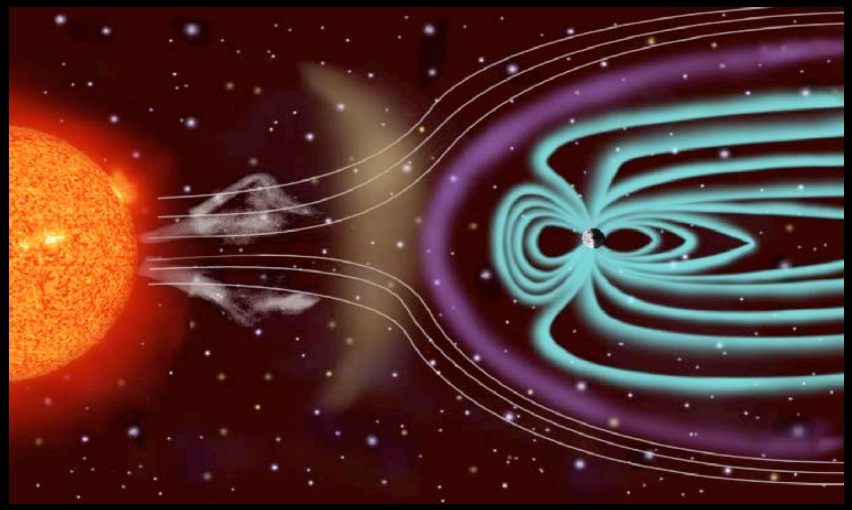


Details of plasma entry and acceleration...

Sun-Earth connection and the Aurora



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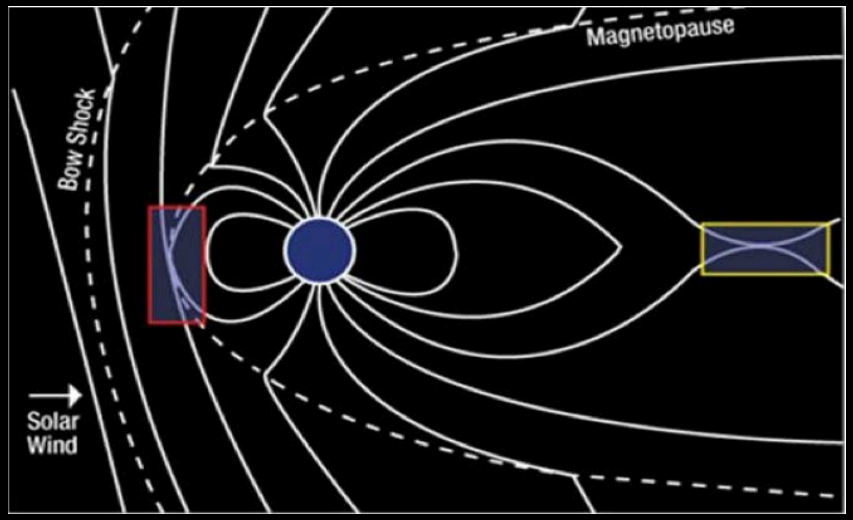

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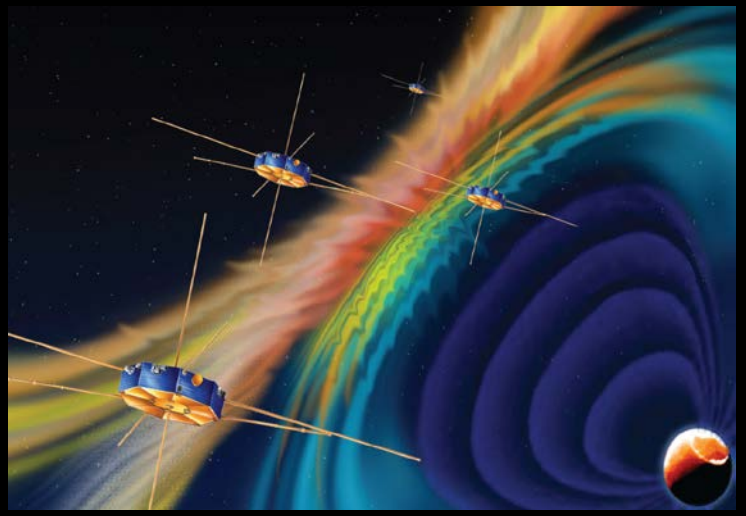
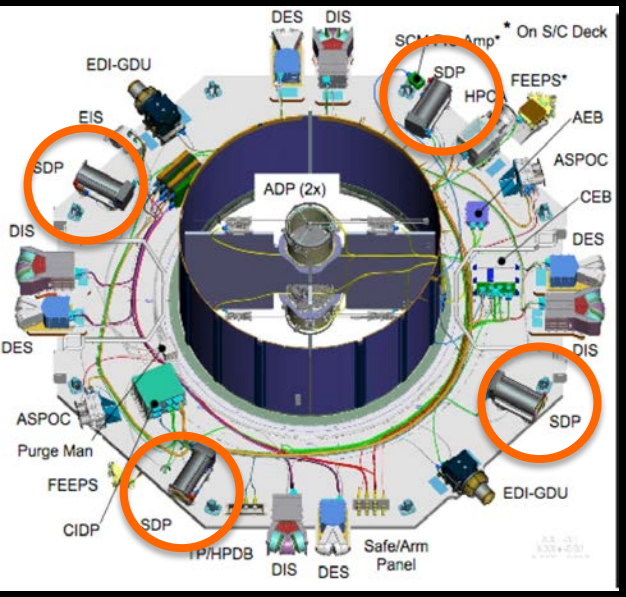
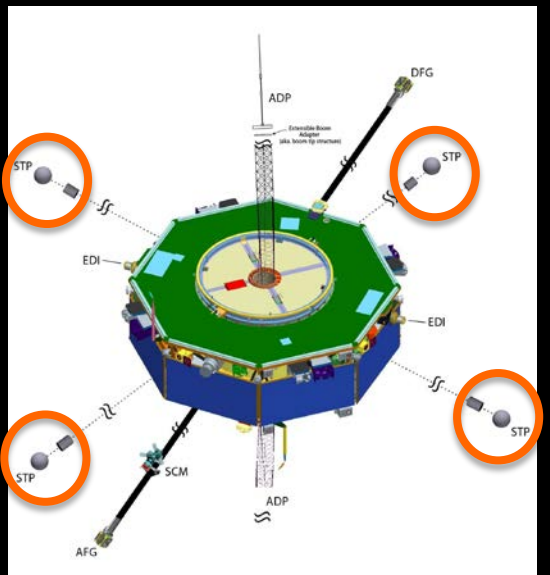


...are studied by the MMS mission

The MMS mission Magnetospheric Multiscale





MMS instruments:

Particles

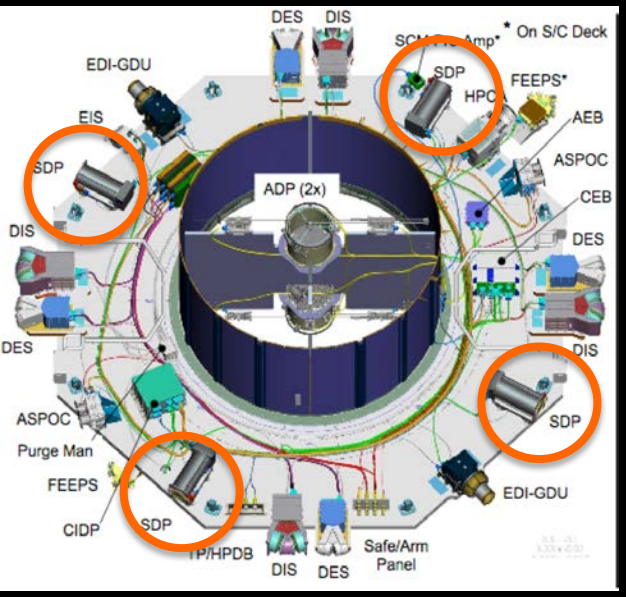
DES – Electron spectrometer
DIS – Ion spectrometer
EIS – Energetic ions
FEEPS – Energetic particles
HPCA – Hot plasma composition

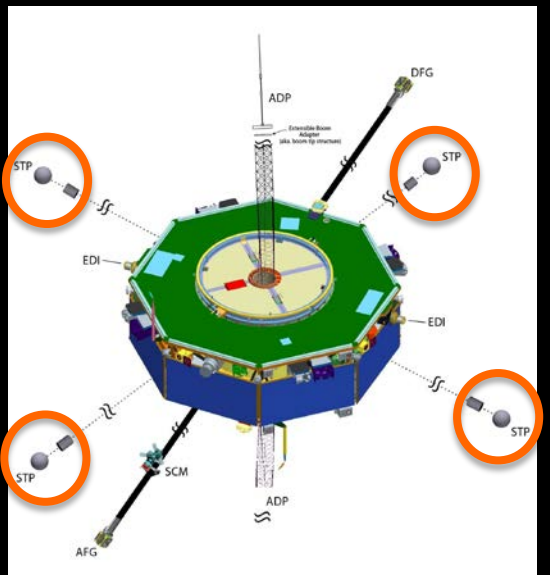
FIELDS

ADP – Axial double probe **E**
AFG – Analog fluxgate **B** (on boom)
CEB – Central electronics box
DFG – Digital fluxgate **B** (on boom)
EDI – Electron drift **E**
SCM – Search-coil **B** (on boom)
SDP – Spin-plane double probe **E**

(from KTH, Space and Plasma Physics)

The MMS mission Magnetospheric Multiscale





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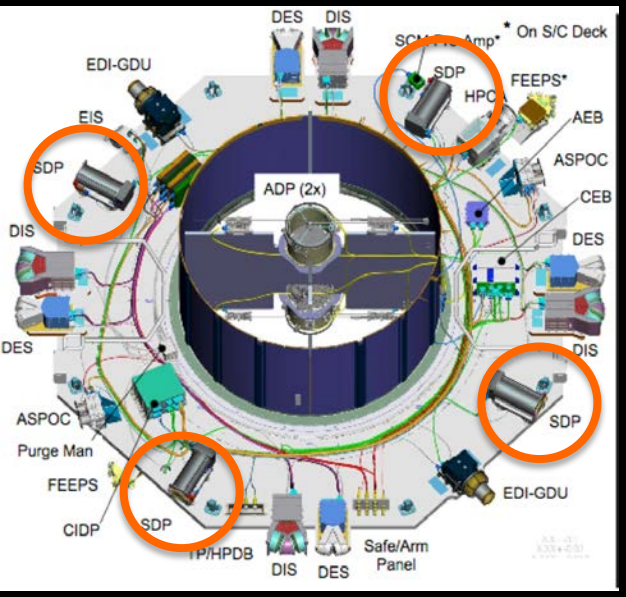

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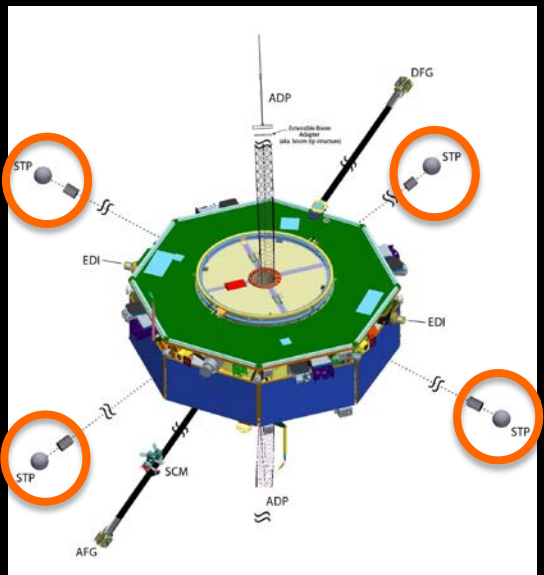
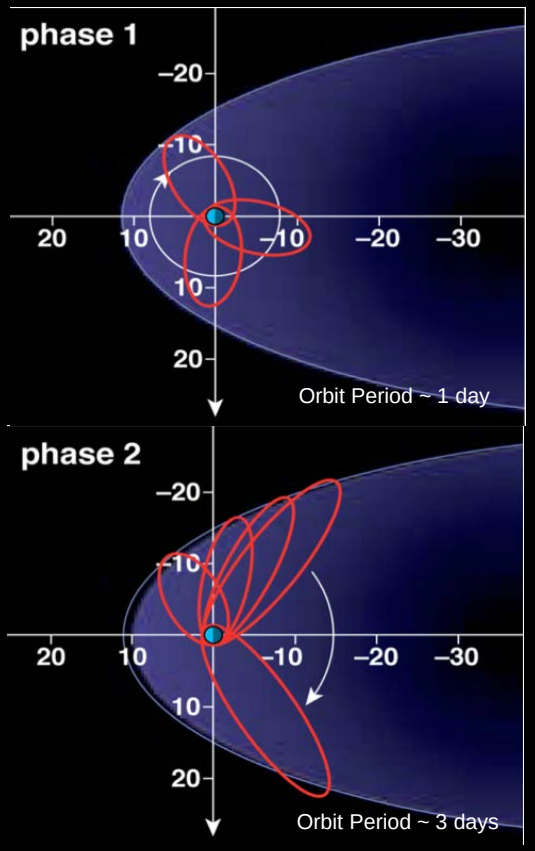
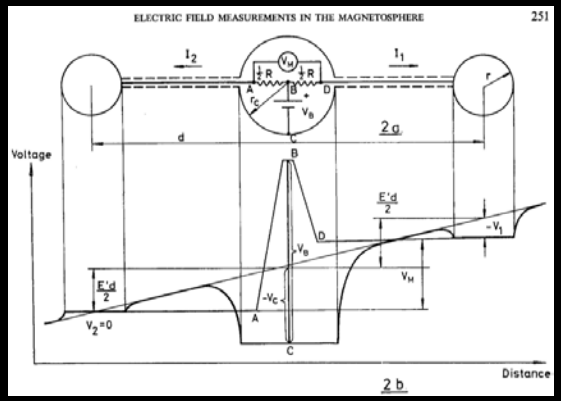




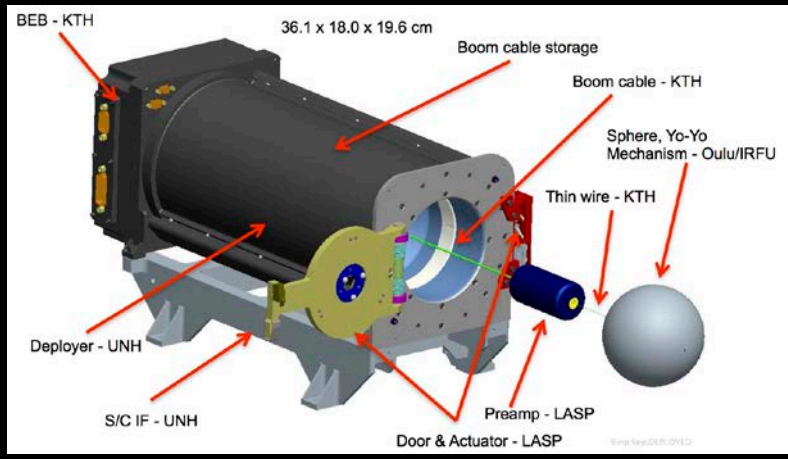
MMS orbit during 2 years

The MMS double probe electric field instrument

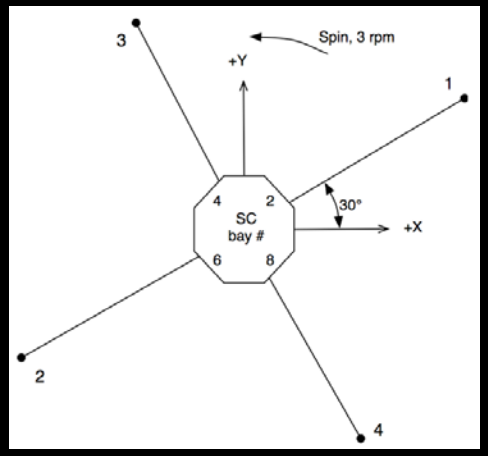


Measurement principle developed at KTH in 1967

Titanium Nitride probe hemisphere and gold-plated yoyo mechanism

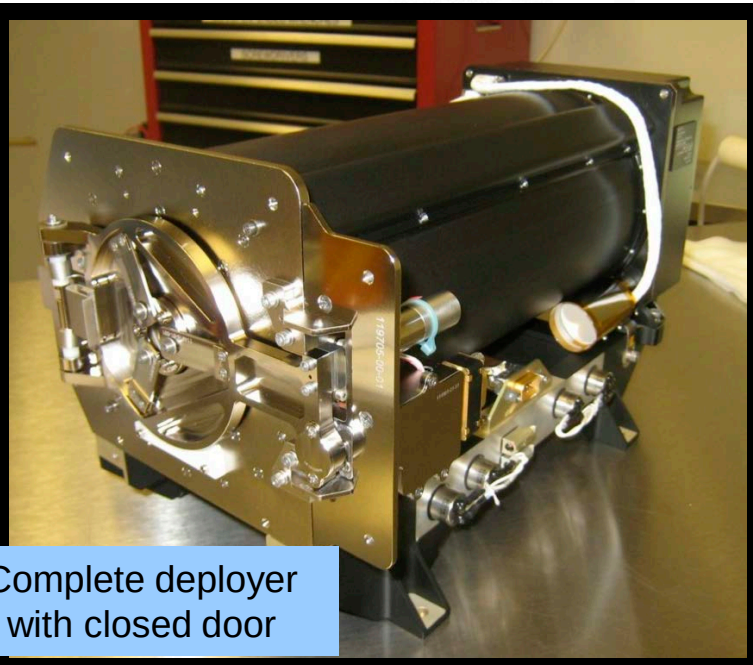


1 of 3 Boom Electronics Boards (BEB) / unit



MMS carries 4 probes on 60 m booms in spin plane

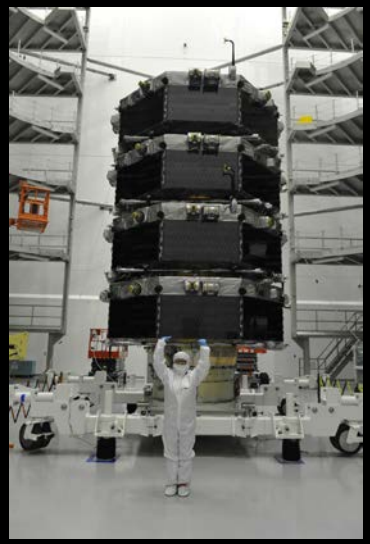
DAG-coated preamp with inner/outer guard



Complete deployer with closed door

Instrument description: Lindqvist et al., Space Sci. Rev. 2014

MMS stacking and launch



Stack of 4 spacecraft

Fairing closure

Separation from upper stage

On launch pad SLC-41, launched 12 March 2015

Boom deployments

Благодарю Вас!
Thank you!

Per-Arne Lindqvist
Space and Plasma Physics, KTH

ASE XXVIII Congress, Stockholm, 22 September 2015