

**Kick-Off Meeting: 22 – 26 October 2007, ISSI, Bern, Switzerland  
Start 9am Monday 22<sup>nd</sup> October**

## **Meeting Agenda**

### **Prerequisites from each team member**

- 10 minute presentation from each attendee describing the regions/boundaries they see in their dataset and from their point of view; also to include a rough description of physical processes and properties.
- Description of the magnetosphere in terms of radial/local-time/longitudinal ranges with description, terminology, properties, and physical processes [to be ready a week in advance of the meeting and will be collated in a team map to be developed during the meeting].

### **Day 1 – Terms of reference and the global picture**

1. Welcome (CSA/HJM/NA).
2. Welcome from ISSI (Vittorio Mano).
3. Introductions (ALL).
4. Outline of the purpose of the team – a reiteration of our proposal: what are our goals and what are the specific goals for this kick-off meeting? (CSA, HJM & NA).
5. Outline the planned structure of the meeting and the expected team interactions (CSA, HJM & NA).
6. Reminder of MAPS Rules of the Road as they apply during team interactions.

#### **7. Phase 1 (ALL)**

To operate in workshop mode interactively drawing out a schematic of Saturn's magnetosphere on a wipe board.

- 7.1. Ten minute presentations from each team member on their view of Saturn's magnetosphere.
- 7.2. Overview of all orbits so far to highlight local time and latitudinal coverage and identify useful orbit groups for comparative studies (NA).
- 7.3. Synthesise presentations and pre-prepared maps from each team member – identify typical intervals of data which can be used for cross-comparison. Produce common team nomenclature to describe and label the magnetosphere.

- 7.4. Converge on a working definition and description of each region. From this we can identify sub-teams and leads for each region - the problem being where regions overlap.
- 7.5. Identify working sub-teams, charged with evaluating each region – team members might be involved with multiple sub-teams.

**8. Presentations on conceptual aspects of Saturn’s magnetosphere**

- 8.1. Krishan Khurana – “Rotational Modulations of Saturn's Magnetosphere and Synchronous Regeneration of its Asymmetry”
- 8.2. Ed Sittler – “Cassini Observations of Saturn’s Dawn-Magnetotail Region: Preliminary Results”

**Day 2 - Boundary locations, properties and internal/external influences**

1. Distribution of minutes and presentation of overview from Day 1 (CSA/HJM/NA).
2. Identify the nature and location of internal and external boundaries and the physical processes occurring at each boundary – for example magnetopause, plasmopause, plasma-sheet edge, magnetodisc transition region.
3. What signatures of a solar wind interaction are present? For example, reconnection, aurorae, local-time asymmetries? Which regions are affected by this and how?
4. What signatures of planetary rotational modulation are present? For example, magnetic field and flow observations of corotating convection, longitudinal density asymmetries, plasma sheet oscillations? Which regions are affected by this and how?
5. Consider the boundary definitions, i.e. there may be a field rotation together with a change in the plasma characteristics at the magnetopause (*question 1 and 3*). Also consider radial and latitudinal boundaries, i.e. the plasmsdisc extends to  $15R_S$  and  $\pm 5^\circ$ .
6. Action a team member(s) to compile lists of magnetospheric states and events, such as intensifications/drop-outs of SKR, compressed/expanded magnetospheres, highly mass-loaded states, intervals of tail reconnection, etc..

**Day 3 – Physical processes**

1. Distribution of minutes and presentation of overview from Day 2 (CSA/HJM/NA).
2. Within the context of the outline map from Day 1, identify dynamical processes observed by instrument, e.g., injections, waves, flux-tube interchange, flapping current sheets, and/or large-scale temporal changes.

3. Identify regions where information is lacking and action a team member to investigate, i.e. are injection signatures ever observed outside of  $10 R_S$ ?
4. What is our current understanding of how these regions are interlinked? (*question 5*).
5. Within the context of the outline map, identify current understanding of plasma sources/sinks inferred by instrument and/or models. What is the current range of values of rates of plasma production and loss? What discrepancies exist? (*question 4*).
6. Identify regions where information is lacking and action a team member to investigate, i.e. what are the expected plasma losses downtail through planetary wind and/or substorm processes.
7. Telecon with absent team members.

#### **Day 4 – Key parameters**

1. Distribution of minutes and presentation of overview from Day 3 (CSA/HJM/NA).
2. From the context map, boundary definitions, and physical processes, where are the useful parameters, e.g., densities, composition, temperatures, current densities, field configuration, for each region (*question 2*).
3. Identify regions where information is lacking and action a team member to derive required parameters, e.g. electron temperatures in the lobes.
4. What dependence do the key parameters have on the physical processes and boundary locations?
5. Produce approximate values for each parameter and add to context map.
6. Action team members to investigate parameters and study statistics, dependence on internal/external influences and physical processes.
7. Sub-team discussions – divide into sub-teams (where possible) and discuss region, meeting findings, identify future work and action team members.

#### **Day 5 – Consolidation and wrap-up**

1. Distribution of minutes and presentation of overview from Day 4 (CSA/HJM/NA).
2. Presentation of outline context map and distribute copies (CSA/HJM/NA).
  - a. Review preliminary findings and amend as necessary (ALL).
3. Review individual and sub-team actions (CSA/HJM/NA).
4. Review current project timeline (CSA/HJM/NA).
5. Identify possible team publications and prioritise first publication (CSA/HJM/NA).
6. Identify work required on context map before release to the Cassini community can be accepted (CSA/HJM/NA).



## **MAPPING MAGNETOSPHERIC REGIONS AT SATURN: A MINI JOVIAN ANALOGUE?**

7. Identify tools that need to be developed: coordinate systems/transformations, longitude systems, field models, plasma/neutral/dust models, etc. (NA).
8. AOB
9. DONM (CSA/HJM/NA)
  - a. Currently 20-24 October 2008 at ISSI.
  - b. Other opportunities to meet? Fall AGU, EGU.
10. Wrap up (CSA/HJM/NA).