EUROPLANET-The European Planetology Network

Rucker, H.O. (1,2), M. Khodachenko (2), R. Nakamura (1,2), H.Lammer (2)

(1) Institute of Physics, Karl Franzens Universität Graz, Austria
(2)Space Research Institute, Austrian Academy of Sciences, A-8042 Graz, Austria

STRUCTURE OF THE EU-PROJECT EUROPLANET

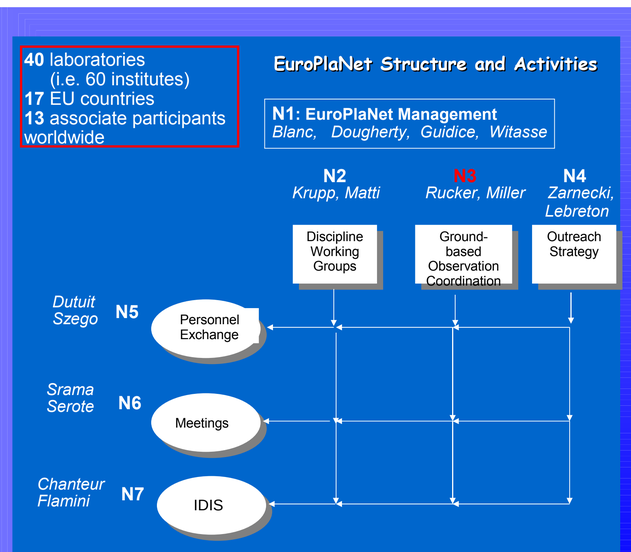
Launched on January 1st 2005, The European Union-funded project "European Planetology Network" (EuroPlaNet) will provide an important added value to the European Planetology Community and the science produced by the international planetary missions. During four years, EuroPlaNet will strengthen the networking of the European Planetary Sciences community by promoting the exchanges between its different partners and providing a support to the planetary exploration missions. The primary objective of the network will be to support the Cassini-Huygens mission. In the meantime, this project will take a particular attention to associate through specific outreach activities the European citizens to the planetary exploration programme in Europe.

EUROPLANET project scientist: Michel Blanc (CNRS France)

Web sites

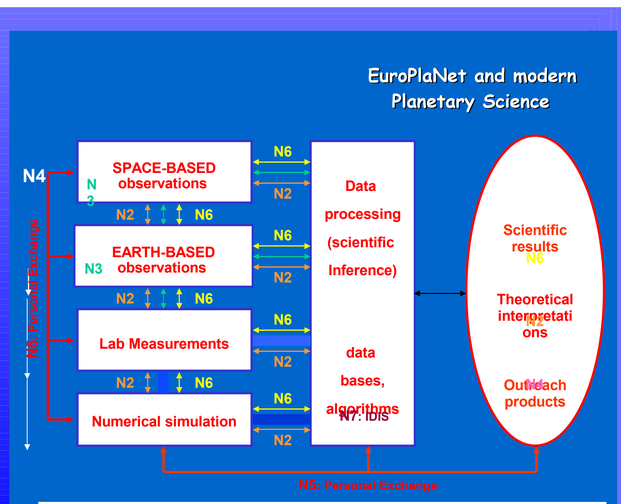
http://europlanet.cesr.fr/
http://europlanet.oeaw.ac.at

40 laboratories (i.e. 60 institutes)
17 EU countries
13 associate participants worldwide



Activity N2: Discipline working groups Establishment of "discipline working groups" in the different science areas of planetary sciences with the aim to cover all major fields of planetary sciences.

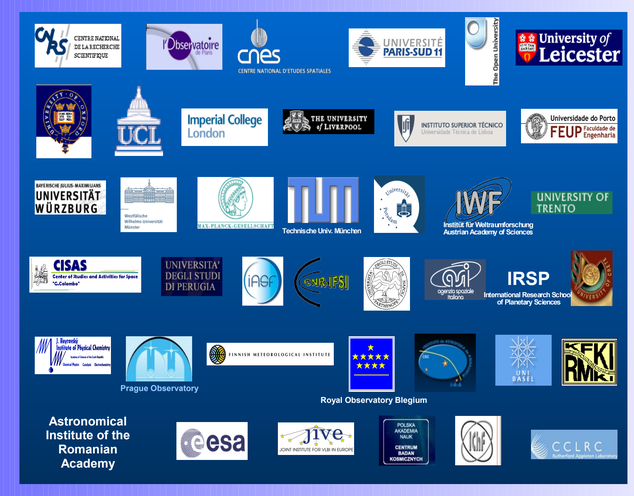
Activity N3: Coordinated space/earth-based observations
Developing synergies between in-situ exploration of the planetary systems and telescope observations from the ground or Earth orbit.



Activity N4: Developing an outreach strategy
Developing a pan-European outreach plan that will help to associate the European Citizens to the Planetary Exploration program activities in Europe (incl. space agencies, research institutes, Universities and science museums).

Activity N5: Personnel exchange
Supporting key exchanges of personnel between research groups with the aim to establish a long-term working relation between the groups.

Participants

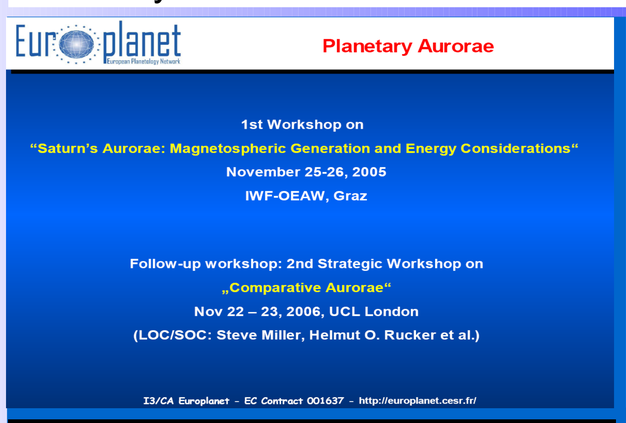


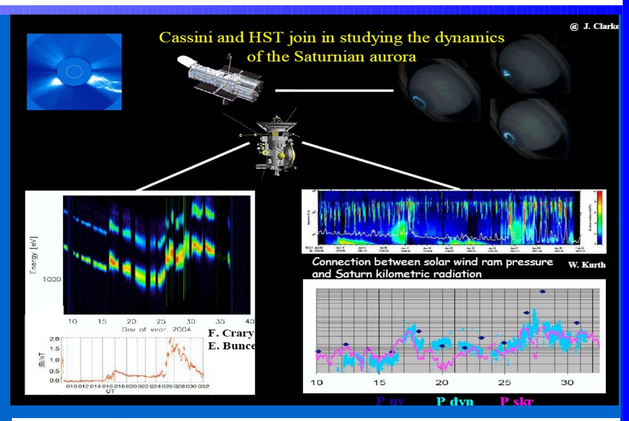
Activity N6: Meetings, conferences
Organisation of EuroPlaNet meetings during the project.

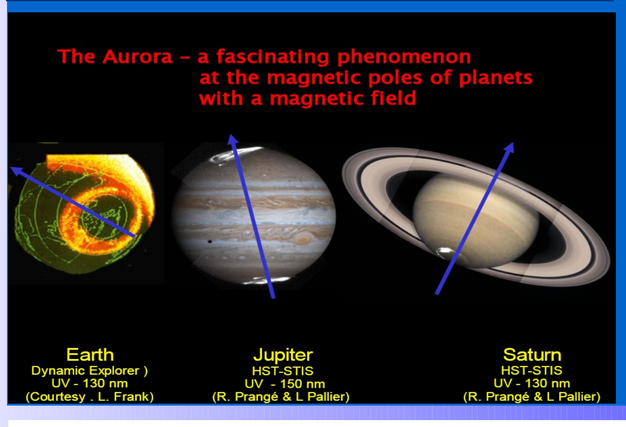
Activity N7: Design and development of the IDIS
Creation of an Integrated and Distributed Information Service (IDIS) and its further evolution into a European Virtual Planetary Observatory.

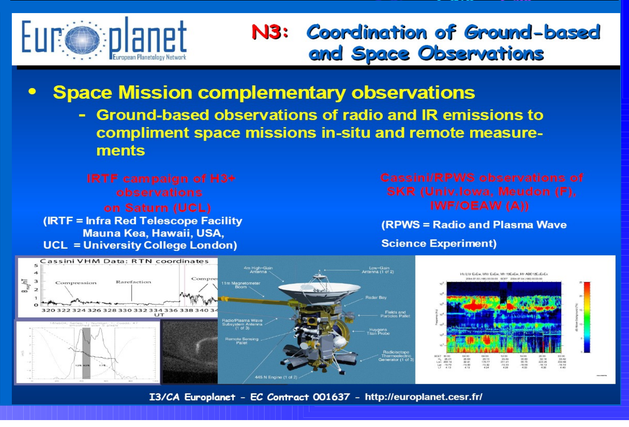
Examples of Strategic Workshops

Planetary Aurorae







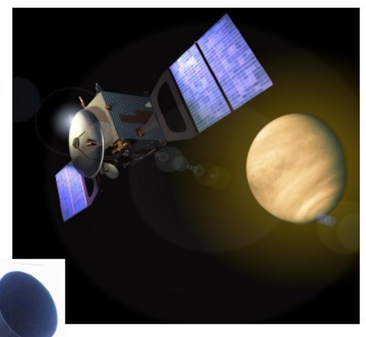


Joint EUROPLANET N3 and N4 Workshop

Joint EUROPLANET N3 and N4 workshop on "Amateur and Professional Astronomers Coordinated Observations in Support of Venus Express & SMART-1"

More then a dozen amateur astronomers from Austria, Germany, Italy, UK met with representatives from ESA and other space science organizations for lively discussions about future amateur support for specific ESA missions.

- **Time/ Place:** June 24-25, 2006, IWF, Graz, Austria
- **Participants:** 20 attendees (14 amat.)
- **Primary focus:** Organization of the coordinated joint amateur / professional astronomer observational campaign(s) dedicated to VEX and SMART-1; discussion of joint observations plans.



- **Topics under discussion:**
  - Technical issues regarding amateur and professional astronomers collaboration
    - * amateur involvements into coordinated campaigns
    - * data delivery (format, storage, etc.)
    - * webpages, databanks
    - * communication / coordination
    - * data management
  - Types of observations needed for VEX and SMART-1

Advantages of amateurs

- Large number of observers (better coverage of event)
- High quality of equipment
- Easy access to instruments and high mobility
- Public outreach aspect

Workshop on "Ionosphere-Magnetosphere Coupling"

Europlanet N3 activity: Ionosphere–Magnetosphere Coupling of Fast Flows/Flux Ropes in the Earth's Magnetotail

Cluster–Ground–based Coordination Workshop (1)

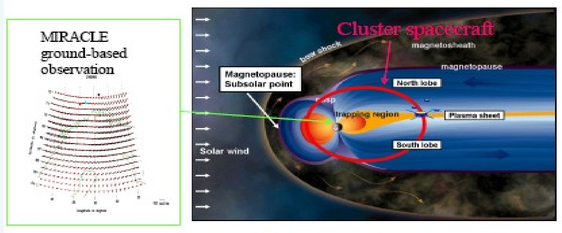
28 August–1 September, 2006 in IWF/Graz

13 Participants from 7 institutions in Austria, Finland, Japan, Norway, U.K., U.S.A.

Research topic:
Ionosphere–magnetosphere coupling of bursty bulk flows/flux ropes and their relevant night–side phenomena

Using data from: Cluster/DSP, MIRACLE, SuperDARN, IMAGE FUV, 210MM, (THEMIS, THEMIS GBO in future)

Coordinated observations

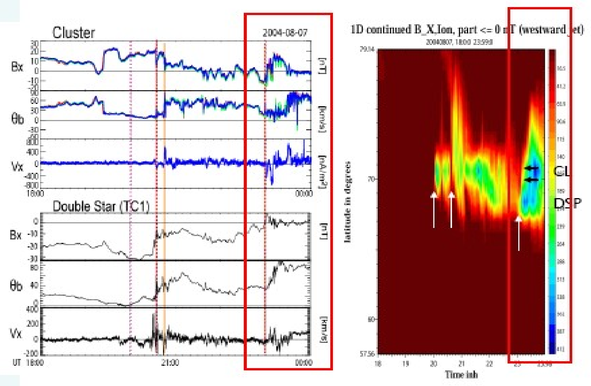


We selected events with good Cluster/MIRACLE conjunction. Observation types can be categorized as below.

1. Fast flows/flux ropes during growth phase/near onset of a substorm
2. Flow phenomena well after electrojet intensification
3. Bursty bulk flow during northward IMF
4. Detailed study of localized/isolated flux rope and BBF
5. PSBL/lobe waves

Example of Cluster–MIRACLE observation

- MIRACLE–Cluster observations along the same field line in the magnetosphere and ionosphere
- Cluster/TC1 observed fast flows in the beginning of ~23 UT substorms. Both SC at post midnight.
- MIRACLE observed enhance ionospheric current



Summary

- Coordinated events studies with good conjunction from multi–SC and ground are on–going
- Selected flow/flux rope events cover different condition:
  - Thin/thick plasma sheet
  - Cold dense plasma sheet
  - North/south IMF BZ interval
  - Different phases of substorms
- Target of the further activity:
  Better understanding of the bursty bulk flows/flux ropes in a local/large–scale context
- Future meetings planned in U.K. in Feb. 2007