EISCAT -3D User Meeting 2010

Place: Uppsala, Sweden
Date: May 19-21, 2010.

The meeting focuses on planning for the Preparatory Phase of the EISCAT_3D project, which will begin in autumn 2010. Particular aims are:

- To present the current plan of the EISCAT_3D Preparatory Phase project to the user community
- To clarify the plans for the scientific programme of the new radar, including ideas from future users outside the traditional EISCAT community.
- To explore the possible uses of EISCAT_3D for service applications, in areas such as space weather and space situational awareness.
- To discuss the different options for the delivery of these operational requirements, in terms of the system configuration and its technical realisation.

May 19, Wednesday:

- prenoon: arrival and registration of participants, informal gatherings

11:00-13:00 Lunch with local space physicists and friends of IS radars

- 13:00-13:30 Overview of the EISCAT_3D ESFRI project (Esa Turunen)
- 13:30-14:00 The EISCAT_3D Science Case (Ian McCrea)
- 14:00-17:00 Science applications of EISCAT_3D and resulting requirements for the new facility (16 min incl. discussion each)
  - Lower and middle atmosphere (Evgenia Belova)
  - Atmospheric chemistry (Pekka Verronen)
  - Upper atmosphere-ionosphere-magnetosphere (Stephan Buchert)
  - Twisted radar beams (Thomas Leyser)
  - Small scale structures (Hanna Dahlgren, Nickolay Ivchenko)
- 15:20-15:40 Coffee break
  - Large scale processes (John Kelly)
  - Dusty plasma (Cesar La Hoz)
  - Meteors and dust (Asta Pellinen-Wannberg)
  - Interplanetary Scintillations, Radio Astronomy (Andy Breen/Ian McCrea)
  - Service, space weather, space debris, etc (Mike Hapgood/Ian McCrea)

May 20 Thursday:

- 9:00-9:45 Recent EISCAT highlights (15 min each)
  - Recent EISCAT highlights (Ingemar Häggström)

- Plans for World Days 2011 (Ingemar Häggström)
- Hydrogen and Oxygen upflow (Stephan Buchert, Yasunobu Ogawa)

- 9:45-12:00 Other science projects of relevance to EISCAT (present and future)
  - AMISR developments (John Kelly)
  - Middle atmosphere radar: Pansy (Yasunobo Ogawa)
  - EISCAT Aperture Synthesis Imaging, EASI (Nickolay Ivchenko/Cesar La Hoz)
- 10:30-10:45 Coffee Break
  - LOFAR (Derek McKay)
  - Onsala Radio Observatory/Onsala LOFAR site (Hans Olofsson)
  - LOIS (Bo Tidé)
  - Swarm (Stephan Buchert)
  - Observation of Celestial and Atmospheric MeV-Gamma-Rays using a Wide Field of View Electron Tracking Compton Camera with Balloon Borne Experiment (Toru Tanimori)
- 12:00-13:15 Lunch
- 13:15-15:03 Presentation of technical concepts and designs, particularly on antennas, receivers, and digital signal processing (18 min each)
  - A LOFAR station as VHF receiver in Finland (Markku Lehtinen)
  - Aperture Synthesis Imaging Radar (ASIR) capabilities of the EISCAT_3D system (Markku Lehtinen)
  - Imaging with EISCAT_3D (Cesar La Hoz)
  - OAM (Bo Tidé)
  - Antenna Technology for the EISCAT_3D Radar (Tore Lindgren)
  - On the use of EISCAT measurements in technological applications (Biagio Forte)
- 15:03-15:33 Coffee Break
- 15:33-17:03 Radar coding and analysis methods
  - EISCAT 3D as a diagnostic for artificial ionospheric heating (Mike Rietveld)
  - 3D ionospheric electrodynamics and EISCAT 3D (Olaf Amm)
  - An introduction of multi-purpose modulations (Ilkka Virtanen)
  - Random thoughts on radar transmission coding and analysis (Juha Vierinen)
  - Venabili (Paul Gallop)

May 21, Friday

- 9:00-10:00 Overview of the EISCAT_3D Preparatory Phase
- 10:00-11:00 WP3 of the EISCAT_3D Preparatory Phase, Science Planning and User Engagement
- 11:00-12:00 Summaries and future actions