

## ***REPORT ON THE RADIONET3 NETWORKING ACTIVITY***

**TITLE: LOFAR Magnetism KSP meeting**

**DATE:** *13 - 17 MAY 2013*                      **TIME:** (WHOLE DAY)

**LOCATION:** *(CITY & COUNTRY) SANT'ANTIOCO – CAGLIARI (ITALY)*

**MEETING WEBPAGE**                      <http://www.ira.inaf.it/meetings/MKSP2013/index.html>

**HOST INSTITUTE:** *OSSERVATORIO ASTRONOMICO DI CAGLIARI (OAC)*

**PARTICIPANTS NO:** *39*

## REPORT:

### 1. Agenda and/or programme of the meeting

#### May 13: General meeting

09:55 Welcome - Emanuela Orru'

#### Session 1: LOFAR updates

10:00 - 10:25 - **LOFAR: status updates** (Roberto Pizzo)

10:25 - 10:50 - **MSSS updates** (George Heald)

10:50 - 11:10 - **Status of the MKSP** (Rainer Beck)

**11:10 - 11:25 - Coffee break**

#### Session 2: Progresses on MKSP datasets

11:25 - 11:45 - **Status of the Polarization Commissioning** (Andreas Horneffer)

11:45 - 12:05 - **Current progress in HBA Observations of M51 and NGC891** (David Mulcahy)

12:05 - 13:00 - **Discussion I: (Reports from Working Groups - Cycle 0 observations - Exploitation of MSSS data)**

**13:10 - Lunch**

14:30 - 14:45 - **Galactic diffuse polarized emission seen with LOFAR** (Vibor Jelic)

14:45 - 15:20 - **Sensitivity of LOFAR antenna elements** (Tobia Carrozzi)

15:20 - 16:00 - **Discussion II (Status of commissioning and future commissioning needs)**

**16:00 - 16:15 - Coffee break**

16:15 - 16:35 - **Last beats of B1834+620** (Emanuela Orru')

16:35 - 16:55 - **The M81/M82 Group at low frequencies** (Bjorn Adebahr)

16:55 - 17:15 - **LOFAR observations of the Leo Triplet** (Rosita Paladino)

17:15 - 18:00 - **Discussion III (MKSP Project Plan and Cycle 1 observations)**

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#### May 14: General meeting

#### Session 3: Galaxy clusters science

09:00 - 09:20 - **Polarization of cluster radio halos with upcoming radio interferometers** (Federica Govoni)

09:20 - 09:40 - **Magnetic fields in cluster outskirts** (Marcus Brueggen)

- 09:40 - 10:00 - **Radio relics and magnetic field: a high resolution view** (Annalisa Bonafede)  
10:00 - 10:20 - **WSRT 350 MHz Legacy Survey: First results on cluster of galaxies** (Matthias Hoeft)  
10:20 - 10:40 - **LOFAR's role in understanding galactic winds and AGN feedback** (Christoph Pfrommer)

#### Session 4: Algorithms and technical upgrades

- 10:40 - 11:00 - **Information field theory** (Torsten Ensslin)  
**11:00 - 11:15 - Coffee break**  
11:15 - 11:35 - **High fidelity imaging and magnetic field inference** (Henrik Junklewitz)  
11:35 - 11:55 - **Capability of wide-band polarimetry for probing the IGMF** (Shinsuke Ideguchi)  
11:55 - 12:15 - **Clock/TEC separation on long baselines** (Alexander Drabent)

#### Session 5: Galactic Science

- 12:15 - 12:40 - **Pulsar experiments at SRT** (Andrea Possenti)  
12:40 - 13:00 - **First results from pulsar observations with the full LOFAR and the pulsar polarization calibration pipeline** (Aris Noustos)

#### 13:00 - Lunch

- 14:30 - 14:50 - **Exploring the galactic magnetic field with LOFAR** (Charlotte Sobey)  
14:50 - 15:10 - **Pulsar polarization calibration with the Effelsberg station** (Masaya Kuniyoshi)  
15:10 - 15:30 - **The elephant in the galaxy: the Fermi bubbles/S-PASS lobes** (David Jones)  
15:30 - 15:50 - **Reconstructing the galactic free electron density** (Maksim Greiner)  
15:50 - 16:10 - **Dynamic dynamo simulations** (Oliver Gressel)  
16:10 - 16:25 - **Coffee break**  
16:25 - 18:00 - **Business meeting**

**20:00 Social dinner at the restaurant "Da Achille" (35 euros)**

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#### May 15: Visit to SRT

- 08:30 ~ 11:00 - Travel from Sant'Antioco to SRT site  
11:00 ~ 12:00 - Talks about SRT and OAC  
12:00 ~ 13:00 - Visit to the antenna  
13:00 ~ 15:00 - Lunch at the restaurant "Su Nuraxi" (15 euros)

~ 15:00 ~ 17:00 Travel back to Sant'Antioco and small tour of the island.

### **May 16: Busy day**

10:00 - 17:00 Commissioning status and future (Andreas: extended version).  
Discussion about Tobia's results and possible tests

#### **RM software**

### **May 17: Busy day**

09:30 - 13:00 Reports on datasets: sharing problems and solutions

## **2. Scientific Summary**

This workshop is one of the periodic meetings of the LOFAR Magnetism Key Science Project (MKSP).

The purpose of the workshop is to discuss about current and future work of the MKSP and LOFAR, the participation in the first LOFAR survey, address details of the commissioning status, software developments and other tasks related to the project. The main topic for this meeting has been planning for LOFAR Cycle 1 observations.

The first two days of the meeting have been focused on the status of LOFAR and of the MKSP commissioning, with fruitful a discussion about the planning of commissioning and LOFAR cycle 1 observation.

Some science talks about early LOFAR results and related topics have been also presented.

Furthermore, 2 scientists from the host institute (Osservatorio Astronomico di Cagliari) have been invited to give talks about their own research.

The last two days of the meeting have been dedicated to discussions about practical problems in data reduction, and operative organization of future proposals and plans.

On Wednesday 15 May, the OAC offered a visit to the Sardinia Radio Telescope (SRT), at the moment under commissioning. At the telescope site, some talks about SRT project and the facilities offered to the users have been presented.

The visit has been followed by a small bus trip around the beaches of Sant'Antioco, to give the participants a taste of the beauties of the hosting island.

The attendance to this kind of meetings is usually expected by MKSP full members: the percentage of attendance of full members to this meeting has been 75%.

Furthermore, 18 MKSP associated members attended, and 3 scientists from the host institute, interested in the project.

The percentage of women attending the meeting has been 28%, while more than 70% of the attendees were young researchers and students involved in LOFAR project. The conference picture has been taken during the visit to SRT:



### **3. Attendance list (incl. participant names, affiliation and country) confirmed by the organizer**

- 1) Björn Adebahr -- Astronomisches Institut Ruhr-Universität Bochum Germany
- 2) Rainer Beck -- MPIfR Germany
- 3) Nadya Ben Bekhti -- Argelander-Institut für Astronomie University Bonn
- 3) Annalisa Bonafede -- Hamburger Sternwarte Germany
- 5) Marcus Brueggen -- University of Hamburg Germany
- 6) Tobia Carozzi -- Onsala Space Observatory Chalmers Uni. Sweden
- 7) Krzysztof Chyzy -- Astronomical Observatory Jagiellonian University
- 8) Alexander Drabent -- Thüringer Landessternwarte Tautenburg Germany
- 9) Torsten Ensslin -- MPI for Astrophysics Germany
- 10) Katia Ferriere -- Observatoire Midi-Pyrenees France
- 11) René Gießübel -- Max-Planck-Institut für Radioastronomie Germany
- 12) Federica Govoni -- INAF - OA Cagliari Italy
- 13) Maksim Greiner -- MPI for Astrophysics Germany
- 14) Oliver Gressel -- Nordita Sweden
- 15) George Heald -- ASTRON Netherlands
- 16) Matthias Hoeft -- Thüringer Landessternwarte Tautenburg Germany
- 17) Cathy Horellou -- Onsala Space Observatory Sweden
- 18) Andreas Horneffer -- MPIfR Germany

- 19) Shinsuke Ideguchi -- Kumamoto University Japan
- 20) David Jones -- Radboud University/IMAPP The Netherlands
- 21) Henrik Junklewitz -- Max-Planck-Institute for Astrophysics Germany
- 22) Uli Klein -- AlfA Germany
- 23) Masaya Kuniyoshi -- MPIfR Germany
- 24) Jana Köhler -- MPIfR Germany
- 25) David Mulcahy -- MPIfR Germany
- 26) Matteo Murgia -- INAF - OA Cagliari Italy
- 27) Aristeidis Noutsos -- MPIfR Germany
- 28) Emanuela Orru -- Astron The Netherlands
- 29) Rosita Paladino -- INAF - IRA Italy
- 30) Christoph Frommer -- Heidelberg Institute for Theoretical Studies Germany
- 31) Roberto Pizzo -- ASTRON The Netherlands
- 32) Andrea Possenti -- INAF-OAC Italy
- 33) Wolfgang Reich -- Max-Planck-Institut für Radioastronomie Germany
- 34) Charlotte Sobey -- MPIfR Germany
- 35) Carlos Sotomayor -- Ruhr-Universität Bochum Deutschland
- 36) Yuichi Tashiro -- Kumamoto University Japan
- 37) Monica Trasatti -- AlfA Germany
- 38) Valentina Vacca -- Università di Bologna - INAF IRA Italy
- 39) Cameron Van Eck -- Radboud University Nijmegen Netherlands

#### **4. Financial Report / RadioNet3 contribution**

RadioNet3 contributed to the event by providing sets of useful material (folders, pens, paper, stickers, pencils), and by covering the expenses for the coffee breaks, during the meeting, and the small bus trip to visit Sant'Antioco Island, on May 15.

No travel funding for participants have been used.

#### **5. Conference Proceedings and Web page**

All the presentations made at the meeting are available at:

<http://www.ira.inaf.it/meetings/MKSP2013/program.html>



## Participants list

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Rosita Paladino