

Foreword

The 2nd ARENA conference that we welcome here in Potsdam from September 17 to 21, 2007 is dedicated to identify and consolidate the best science cases that would motivate the implementation of a world class astronomical observatory in Antarctica based at the CONCORDIA station on Dome C. Dome C (about 1500 km southeast of the South Pole) is the only European station in the Antarctic inland operating all year round since 2005. Being cold, high, dry, stable, and completely dark for 3 long winter months, Dome C likely offers exceptional ground-based atmospheric conditions to achieve unique astronomical observations and wide-field (infrared to submillimeter) surveys. It also represents an outstanding follow-up platform for several major space missions of the 21st century.

In particular, the major features that may make Dome C unique for astronomical observations include

- the high infrared and submillimetre transmission,
- the low thermal background emission, and the very good stability of the cold atmosphere,
- the uninterrupted 3-month long night, without polar lights,
- the excellent seeing conditions above a thin (30 m) turbulent ground layer,
- quasi infinite flat space to deploy giant telescope arrays.

The scientific organizing committee (SOC) includes all network activity leaders and task leaders of the ARENA network (18 people). We have 22 invited talks and more than 40 contributed talks and posters. The discussion after each talk will be audio-taped.

A welcome reception will take place at the historic Telegrafenberg Refractor Building on Monday night and a guided tour to the first (1881) Michelson interferometer in the basement of the then Astrophysical Observatory Potsdam has been arranged. The conference dinner will take place on Thursday in *Le Manège* Restaurant at walking distance from Hotel Mercure (Potsdam) where most of the participants are staying. It will be spiced up by a public after-dinner presentation by Mrs. and Mr. Hawemann (Berlin) about their experiences sailing to Antarctica with a small boat named "Europa".

We thank the LOC from AIP for their help, particularly Frau Biering, Frau Goetz, and Frau Titz-Weider (DLR), as well as the AIP/DLR students and post-docs, and M.-L. Péronne, ARENA Project Manager from CNRS-Fizeau (ex-LUAN). Herr Hanschur, Herr Saar, and Herr Ruppert provided logistic support, such as internet connection and tape-recordings.

We expect that this conference will be helpful in identifying the most compelling science cases and in paving the way for the definition of the final roadmap and conclusions that will be presented at the final ARENA-3 conference in Rome in mid-May 2009.

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