

ARENA, ANTARCTIC RESEARCH, A EUROPEAN NETWORK FOR ASTROPHYSICS

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The Antarctic plateau provides unique environmental conditions for astronomical observations. Astronomers are seriously considering Antarctica as a possible site for the construction of a new large observatory mainly dedicated to infrared and very high angular resolution observations to investigate extra-solar planets, the formation and evolution of planets, stars and galaxies, and cosmology. Two Member States, Italy and France, have recently completed the all-year round operated station CONCORDIA at Dome C, in the heart of Antarctica.

The present programme is aimed to structure, reinforce and network several European laboratories and operators involved or willing to be involved in Antarctic astronomical investigations with the final objective to set up state of the art large instruments and focal plane equipment in the coming decade. The network involves 21 Research laboratories, Polar Institutes and Industrial partners in Europe and Australia; it will operate during the years 2006-2008 performing 4 main activities aimed at: i) qualifying the site for astronomy, ii) identifying the technical constraints on the design of large astronomical instruments for polar environment emphasizing robotization, iii) fostering collaborations between the operators of CONCORDIA and their users to add value to CONCORDIA, iv) identifying and selecting appropriate key scientific programs, implemented in synergy with other ground based observatories and space missions.

The project will contribute to the currently on-going site qualification, and will help the structuring of the teams of European astronomers interested in Antarctic astronomy; this will be achieved through the organization of specialized workshops putting operators, users and industrial partners in close contact, at annual large international Conferences.

The network will deliver a detailed report on the site qualification over a period of 5 years, industrial reports and studies addressing the problems of building large instruments at Dome C, a book of carefully selected scientific key-programmes, and recommendations on the timeline of instrumental developments.