The Outcome of the Project T-REX, the Italian *progetto premiale* for E-ELT

Sexten (BZ, Italy), July 19-23, 2015

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FOREWORD

T-REX (**T**elescope to **R**each the **EX**treme) is the INAF *progetto premiale* devoted to the European Extremely Large Telescope (E-ELT) and funded by MIUR (the Italian Ministry of Education, University and Research) for two consecutive years. E-ELT, the highest infrastructural priority of the European astrophysical community, will be constructed by ESO and will be the largest telescope in the world. The aim of T-REX[1] is to favour the highest possible participation of Italian astrophysicists and industries to its development.

The size features of E-ELT and its expected performances require original and innovative approaches in the fields of opto-mechanics, metrology, engineering and construction. E-ELT is a long term project, where the timeframe of the project, which foresees the telescope in operation in ten years from now, the need of developing extreme technological solutions, in the telescope itself, in the adaptive optics system, in the focal instrumentation, and the perspective technological transfer, all require, for the full success of the Italian participation, a wide involvement of younger generations, graduate and undergraduate students, and postdocs.

T-REX promotes research, technology and formation activities in a coordinated way, with the aim of developing new frontier technologies useful for the entire national and international science communities. The project scheme, based on the synergy between different fields and expertise, provides the basis for the creation and formation of new experts and professional profiles of high specialization. With T-REX PhD student fellowships and several post-doc positions in different INAF structures have been funded.

In 2015 T-REX is at the end of its two-year duration. The Coordinating Unit of T-REX has thus decided to organise a workshop to summarise and make public the outcome of the various activities funded and initiated through the project. The workshop was hosted by the Sexten Center for Astrophysics[2] (Sexten, Bozen, Italy) from July 19th through July 23rd 2015 in the wonderful environment and breathtaking landscape of the Sexten Dolomites, a UNESCO World Heritage site.

The meeting was organized with oral contributions, as well as informal parallel sessions during the breaks to work on specific aspects of the project, possible follow-ups and new collaborations. One of the sessions was entirely devoted to the presentations by some of the Italian companies more interested to the E-ELT program: AdOptica, Astrel-Instruments, Criotec, EIE, Hyperteach, Media Lario and Tomelleri.

There were a total of 47 presentations, of which 11 were invited: three from ESO high-level officials, who offered an updated overview of the development status of the E-ELT telescope and instruments, one from the Head of the Ground-based Programmes Units of the INAF Science Directorate, one from the coordinator of the education and formation plan of T-REX, and six from the coordinators of the T-REX Operating Units. Due to the limited capacity of the Conference Room we decided to give higher priority to young fellows and students in the talk selection process. 13 talks were given by women, a fairly acceptable rate in a field traditionally male-dominated such as that of instrumental technology. It is a pleasure to acknowledge the high quality of all the contributions, that made the meeting a successful event.

We gratefully appreciated the presence of our ESO colleagues, who not only brought their expert and informative contributions, but triggered lively and interesting discussions during the

[1] Further information on T-REX can be found at the website http://www.bo.astro.it/premiale.elt/Premiale/

[2] The Sexten Center for Astrophysics (http://www.sexten-cfa.eu/) is sponsored by INAF, the University of Trieste, the Consortium for Physics in Trieste, the University of Ferrara, the Sexten Touristic Association, the Sexten Town Council, and the Raiffeisen.

whole workshop. We enjoyed the atmosphere of friendly collaboration that permeated the meeting.

It is a great pleasure to thank the Sexten Center for Astrophysics for the hospitality, and the members of the SOC and LOC for their active contribution. Laura Schreiber managed to organise an excellent and unusual conference dinner on Mount Helm, with the cooperation of the Sexten Cable Car people who opened and ran it for us on purpose. Italo Foppiani and Matteo Lombini succeeded in maintaining an efficient interface with the participants, and took care of all the technical and bus transfer aspects. We also thank Roberto Ragazzoni for taking the Conference Picture as well as many others.

Finally, the meeting wouldn't have been possible without Mrs Gabriella Deconi, who is the soul and the guardian angel of the Sexten Center for Astrophysics, able to make miracles on the spot for any kind of problems concerning the logistic organisation.

Paolo Ciliegi, Giovanni Pareschi and Monica Tosi

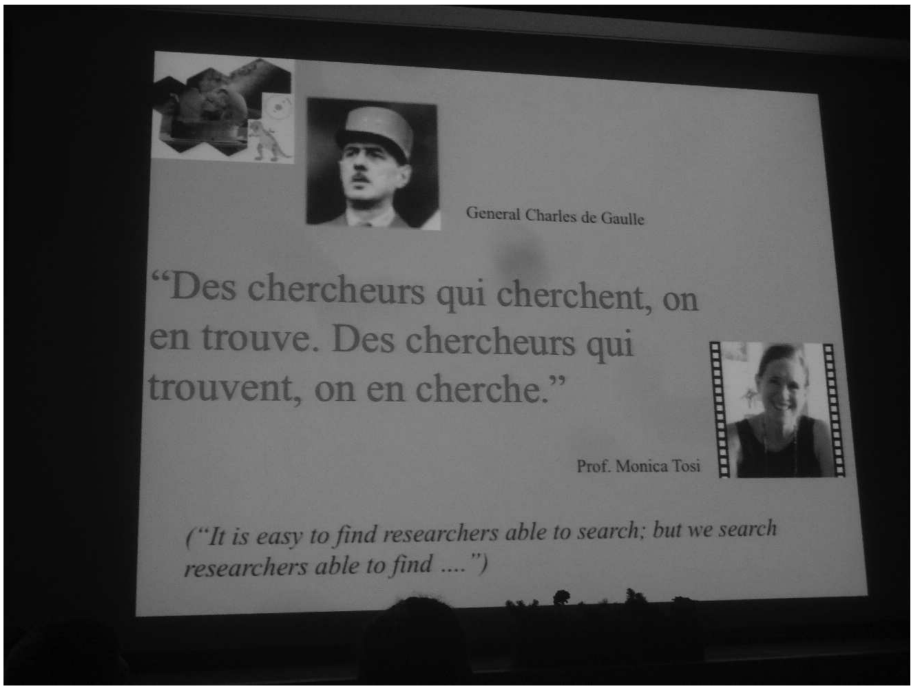

Fig. 1. The logo of the *progetto premiale* T-REX