

Preface

From the 12th to the 16th of November 2012 about 100 astronomers met in Garching, Germany, at the Max-Planck-Institute for extraterrestrial physics (MPE) to present and discuss recent results on the search and characterization of extrasolar planets. Since the first discovery of (rocky) planets around pulsars more than twenty years ago the field of exosolar planets counted an impressive number of discoveries and a rapidly increasing number of astronomers dedicated their attention to the subject. Our conference “Hot Planets and Cool Stars” focused in particular on the detection and study of planets near their parent stars. Due to their proximity they are “Hot”. On the other hand, we were looking for (main sequence) stellar hosts of low mass, that are cooler than the Sun. These dwarf M-stars are “Cool” also because in principle it should be easier to find potentially habitable planets around them. The conference comes at the end of the RoPACS (Rocky Planets around Cool Stars) project, an Initial Training Network of the FP7 Marie-Curie Program of the European Community. Four years long, RoPACS funded 12 PhD projects (“early stage researchers”, ESR) and 4 PostDocs (“experienced researchers”, ER) in six sites distributed over Europe (two in the UK, Hertfordshire and Cambridge, two in Spain, Madrid and Tenerife, one in Kiev, Ukraine, and one at MPE), furthermore collaborating with our industrial partner ASTRIUM. Our conference gave the opportunity to our ESRs and ERs to present the results of their research to an audience of recognized experts. Moreover, thanks to the generous conference fund’s allocation foreseen in the RoPACS contract, we were able to invite almost 50 astronomers external to the network, covering a wide range of exoplanet research. Indeed, the programme contains a wide range of science including exciting results from the WFCAM Transit Survey, the CoRoT and Kepler missions, and other transit surveys, present and future radial velocity studies of planetary systems, characterization of planet atmospheres, planet habitability and interesting eclipsing binaries. Moreover, it covers other important aspects linked to the subject, like the search and characterization of (cool) brown dwarfs, the characterization of host stars, the modeling of atmospheres, the observation, formation and evolution of planetary disks and systems. Finally, a review of future (planned) space missions is given. This book, realized thanks to the RoPACS funds, collects all these interesting contributions.

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