

Towards Other Earths: Perspectives and Limitations in the ELT Era

19–23 October 2009, University of Porto, Portugal

The conference on the theme of the search for extrasolar planets is being jointly organised by the Center for Astrophysics, the University of Porto (CAUP) and ESO. To enable the discovery of other Earths, a new generation of instruments and telescopes is now being conceived and built by different teams around the world. This includes a new generation of Extremely Large Telescopes (ELTs). Thanks to the diameter of their primary mirrors, the detection of Earth-mass planets is expected to be within reach of these ELTs.

In parallel, a new generation of instruments for the current 8–10 m class facilities is being planned. This new cutting-edge suite of instruments includes high angular resolution adaptive optics (AO) imagers, microarcsecond astrometry with interferometers and ultra-stable spectrographs at the cm/s level. The synergy of these facilities with space-based observatories will play a key role in the discovery of Earth-mass planets.

What are the requirements that this instrumentation will have to match to allow us to find other Earths? Do we know how to

calibrate the instruments to achieve such a precision and stability? Equally important are the limitations imposed by intrinsic astrophysical phenomena such as stellar activity, granulation or oscillations. Are we preparing ourselves to deal with and to correct for these effects? What are the ultimate limitations of the different techniques mounted on ground- or space-based facilities? We want to gather together the community of planetary astronomers and instrumentalists working on the field to:

- review the current status of the search for telluric exoplanets, and present our understanding of their formation;
- discuss the implications of their main physical properties at the detection limits of different techniques;
- draw a coherent picture of the technical and physical issues that we have to solve in this fabulous endeavour of finding and characterising other Earths.

The conference will give particular emphasis to the contributions from the upcoming generation of ELTs to this task of finding and characterising other Earths. In addition to invited talks, contributed papers (oral or poster) can be presented. The SOC will select a limited number of contributions for oral presentation on the basis of the submitted abstracts.

The conference will take place in the town of Porto (Oporto in English), which is the second largest town in Portugal. It is located on the estuary of the River Douro, facing the Atlantic. The city is about 300 km north of the capital (Lisbon), and is renowned for its famous Port (Porto) wine. The beauty of this area is acclaimed and it is a UNESCO World Heritage Patrimony Site. Porto's historic centre was classified by UNESCO as a World Cultural Heritage site in December 1996.

Registration will open in January 2009. More details are available at <http://www.astro.up.pt/investigacao/conferencias/toe2009> or by sending an e-mail to toe2009@astro.up.pt.

EIROforum School of Instrumentation (ESI)

11–15 May 2009, CERN, Geneva, Switzerland

The EIROforum Schools on Instrumentation are held bi-annually and are jointly organised by the seven EIROforum organisations. The scientific programme of ESI addresses all aspects of instrumentation related to the missions of EIROforum.

The main objective of ESI is to teach the basic principles of instrumentation to young researchers, scientists and engineers, mainly from the EIROforum organisations. A fraction of the places will be reserved for particularly talented PhD students not directly connected with

EIROforum who work on instrumentation topics.

The school covers the following topics:

- Principles of radiation detection and detector technologies
- Introduction to detector electronics and data acquisition
- Detector systems and techniques for high energy physics

– Experimental setups, optics and detectors for neutrons and synchrotron radiation applications

– Space- and ground-based instrumentation for astronomy

– Control, dosimetry and detection in fusion experiments

– Radiation hardness of detection systems and electronics

For further details please visit the web page <http://www.cern.ch/eiro-school>.