RESEARCH CONFERENCES

ESF-FWF Conference in Partnership with LFUI

Putting our Solar System in Context: Origin, Dynamical and Physical Evolution of Multiple Planet Systems

Universitätszentrum Obergurgl (Ötz Valley, near Innsbruck) • Austria

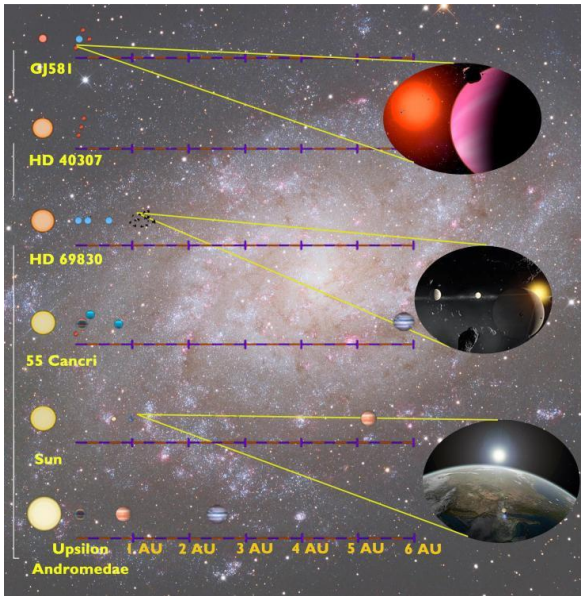
25 - 30 April 2010

Chair: **Dr. Mario G. Lattanzi,** INAF, Osservatorio Astronomico di Torino, IT

Co-Chairs: **Dr. Alessandro Sozzetti**, INAF, Osservatorio Astronomico di Torino, IT

The present-day catalogue of extrasolar planets includes a panoply of astoundingly diverse systems containing more than one planetary companion. The observational data on multiple systems (orbital architectures, mass distributions, stellar host properties) have important implications for the proposed models of formation and early evolution of planetary systems, provide important clues on the relative role of several proposed mechanisms of dynamical interactions between forming planets, gaseous/planetesimals disks, and distant companion stars, and allow to measure the likelihood of formation and survival of terrestrial planets in the Habitable Zone of the parent star. Multiple-planet systems are thus clearly excellent laboratories to search for fossil evidence of formation and dynamical evolution mechanisms. However, given the present theoretical limitations to elucidate in an unified manner the complex processes of planet formation and evolution, some of the key questions on the physical architecture of planetary systems still await a definitive answer. To this end, help from future data, obtained with a variety of techniques, over a wide range of wavelengths, both from the ground and in space, will prove invaluable.

This conference will aim at reaching two overarching goals. First, it will strive to create a global picture of the origin, dynamical and physical evolution of multiple-planet systems, as well as of extrasolar planets orbiting stars in multiple stellar systems, by comparing the latest observational findings with new theoretical developments in the field. This could help in the design of incipient ESA and NASA exoplanet research programs and could also help guide future ground-based and space-borne observing campaigns. Second, and perhaps more important, would be the further integration of Solar-system science into the astronomy of exoplanets. To date, exoplanet research has been driven by astronomers, while planetary scientists have by and large focused almost exclusively on our Solar System. However, the expertise in planetary science is vast, and merging such knowledge with the new discoveries outside the Solar System would greatly enrich both.



© Diagram left: DEEP FLY. Top Right: Karen Wehrstein. Middle Right: Courtesy of European Southern Observatory. Bottom Right: Wallpaper download from www.wallpapers-free.org/12/-/Sun_Earth/

Invited Speakers will include:

Yann Alibert
UTINAM, Observatoire de Besançon, FR
Armando Blanco
Università del Salento, IT
Alberto Cellino
Osservatorio Astronomico di Torino, IT
Anne Eggenberger
Observatoire de Grenoble, FR
Daniel Fabrycky
Harvard-Smithsonian Center for Astrophysics, US
Tristan Guillot
Observatoire de la Côte d'Azur, FR
Lisa Kaltenegger
Harvard-Smithsonian Center for Astrophysics, US
Wilhelm Kley
University of Tuebingen, DE
Helmut Lammer
Space Research Institute (IWF), AT
Jacques Laskar
Institut de mécanique céleste et de calcul des éphémérides (IMCCE), FR
David W. Latham
Harvard-Smithsonian Center for Astrophysics, US
Renu Malhotra
University of Arizona, US
Francesco Marzari
University of Padova, IT
Alessandro Morbidelli
Observatoire de la Côte d'Azur (OCA), FR
Amaya Moro Martin
Centro de Astrobiologia, SP
Princeton University, US
Elke Pilat-Lohinger
University of Vienna, Institute of Astronomy, AU
Heike Rauer
Germany Aerospace Center (DLR), DE
Sean Raymond
Observatoire de Bordeaux, FR
Diana Valencia
Observatoire de la Côte d'Azur, FR
Jason Wright
Pennsylvania State University Department of Astronomy & Astrophysics, US

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Closing Date for Application **15 February 2010**

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