43rd COSPAR Scientific Assembly 2020

Space Studies of the Earth-Moon System, Planets, and Small Bodies of the Solar System (B)
Exoplanet Detection and Characterisation: Current Research, Future Opportunities and the Search for Life Outside the Solar System (B6.1)
Consider for oral presentation.

SOLAR SYSTEM-EXOPLANET SCIENTIFIC SYNERGIES IN THE CONTEXT OF HORIZON 2061 SCIENCE QUESTIONS ABOUT PLANETARY SYSTEMS AND OF THE PROGRAMMATIC LANDSCAPE

Dr. Heike Rauer, heike.rauer@dlr.de
Institut für Planetenforschung, Berlin, Germany
Presenting author: **Michel Blanc**, michel.blanc@irap.omp.eu
IRAP/University of Toulouse-France/CNRS, Toulouse, France
Michel Blanc
IRAP/University of Toulouse-France/CNRS, Toulouse, France, michel.blanc@irap.omp.eu
Veronique Dehant
Royal Observatory of Belgium, Brussles, Belgium, v.dehant@oma.be

Until the detection of extrasolar planets around solar-like stars, the solar system was our only example where to gain detailed insights into the formation and subsequent evolution of a planetary system, study its working processes and search for the emergence of life. Today, thousands of extrasolar planets and hundreds of multiple-planets systems are known, which surprise us by their large diversity. Yet, a planetary system similar to our own, including planets which harbor life, remains to be detected. A mandatory consequence of this extreme diversity is that, to properly address the six key science questions about planetary systems identified in the Horizon 2061 foresight exercise, one needs to study both the solar system and extrasolar planetary systems in a synergistic way.

This talk will first describe how, by combining the detailed knowledge we have about the solar system with the statistical information we gain on extrasolar planets, we can gain access to a much wider parameter range in terms of planetary and stellar parameters to address these key science questions. It will then provide an overview of upcoming space missions for solar system and exoplanet research and show how they are going to provide a unique base to address these key questions.

The material presented is mainly the result of the presentations and discussions held among participants to the ISSI-europlanet forum "Solar System/Exoplanet Science Synergies in a multi-decadal Perspective", held at ISSI, Bern, Switzerland, on February 19th and 20th, 2019.