

ISSI-Europlanet 2020 Forum # 1

Objectives and participants' roles

The first ISSI-Europlanet forum of the H2020 contract of Europlanet will gather at ISSI in Bern 33 of the leading experts in Solar System planetary science, together with 10 experts in space mission technology, to work together and address two complementary sets of objectives.

The planetary science experts will prepare and present a series of talks proposing a comprehensive coverage of solar system sciences to:

- Identify the **outstanding open questions** concerning our modern understanding of Solar System objects, their origin, formation and evolution, their processes and their system aspects, and their potential habitability;
- In association with this list of outstanding open questions, identify related **representative ambitious space missions** that could potentially address these questions over the coming 50 years, in preparation for the upcoming AAE-Cospar-Europlanet Colloquium on "Planetary Exploration, Horizon 2061";
- Address these objectives **in the context of the rapidly-expanding science of exoplanets and their systems**, which was the subject of the previous 2012 ISSI-Europlanet forum (Lammer et al., *Astrobiology*, 2013);
- Propose a **short list of Workshops** addressing some of these outstanding science questions, with the aim of helping to make progress in the understanding of the science issues and in the definition of the corresponding representative space missions; three of these Workshops will be organized in the ISSI-Europlanet collaboration framework over the coming three years (2017-2019).

The technology experts will build on the set of presentations by the planetary scientists to identify the **major needs and challenges in terms of technologies and space/ground-based infrastructures** that will need to be addressed to make it possible to fly the « representative space missions » identified by the planetary scientists.

The ISSI Workshop projects identified by this forum will be submitted to the autumn 2016 session of the Science Committee (SC) of ISSI, in order for ISSI and Europlanet to be ready to implement them in the relevant time frame.