

“Role of Sample Return in Addressing Major Outstanding Questions in Planetary Sciences”

Workshop Program, February 5-9, 2018

February 5 th		Room 205
12:00-12:30	Registration in ISSI, Hallerstrasse 6, 1 st floor	
12:30-12:45	Welcome and Introduction to ISSI	Rudolf von Steiger (ISSI Director)
12:45-13:00	Workshop objectives, structure, and expected outputs	Mahesh Anand, Open University, UK (Lead convener)
13:00-13:45	The Moon as witness plate to solar system dynamical evolution - Keynote	Kevin McKeegan, UCLA, USA
Session 1	Initial conditions and workings of the Solar System I	Chair: Sara Russell, NHM, UK
14:00-14:30	Nucleosynthetic Anomalies, Dating and Planet Formation	Maria Schoenbachler, ETH, CH
14:30-15:00	Open Questions in Lunar Science and the need for 'New' Samples Needed to Address Them	Ryan Zeigler, NASA JSC, USA
15:00-15:30	<i>Coffee Break</i>	
15:30-16:00	The first 10 million years history of the solar system: Probed by returned samples from asteroids	Yangting Lin, IGG CAS, China
16:00-16:30	Irradiation effects on early solar system solids	Kuljeet Kaur Marhas
16:30-17:00	General Discussion/Brief Introduction about Europlanet	Andrea Opitz, Hungarian Acad. of Sciences, Hungary
17:00	<i>Welcome Reception at ISSI, Hallerstrasse 6, 1st floor</i>	

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February 6 th		Room 205
Session 2	Initial conditions and workings of the Solar System II	Chair: Kuljeet Kaur Marhas
09:00-09:30	What are the building blocks of terrestrial planets?	Klaus Mezger, University of Bern, CH
09:30-10:00	Looking for the terrestrial building blocks in the asteroid belt	Audrey Bouvier, UWA, Canada
10:00-10:30	Oxygen isotope analysis and planning for planetary science space missions	Trevor Ireland, ANU, Australia
10:30-11:00	<i>Coffee Break</i>	
11:00-11:30	Early Solar System dynamics and planetary genetics inferred from isotope anomalies in meteorites	Thorsten Kleine, U Muenster, Germany
11:30-12:00	Formation of chondrules, from the perspective of Cr isotopes	Liping Qin, USTC, China
12:00-12:30	Noble gases in carbonaceous chondrites (CI, CM, CR, C-ungr) and expectations for returned samples from C-rich asteroids	Henner Busemann, ETH, CH
12:30-13:30	<i>Lunch</i>	
Session 3	Initial conditions and workings of the Solar System III	Chair: Yangting Lin
14:00-14:30	Nitrogen isotope variations in the Solar System - Open questions	Evelyn Fueri, CRPG CNRS Nancy, F
14:30-15:00	Manufacturing water: From Itokawa to IDP's	Lydia Hallis, Univ of Glasgow, UK
15:00-15:30	Origin and evolution of water in extraterrestrial materials: Sampling the pyroclastic deposits	Hejiu Hui, Nanjing Univ, China
15:30-16:00	<i>Coffee Break</i>	
16:00-16:30	Environment Evolution of Mars: Tracked by H isotopes of Martian samples	Sen Hu, IGG CAS, China
16:30-17:00	The Importance of Phobos Sample Return for Understanding the Mars-moon system	Tomo Usui, Tokyo Inst of Tech, Japan
17:00-17:30	Sample return mission: the missing piece of the Martian puzzle	Vinciane Debaille, Univ de Libre Bruxelles, Belgium
17:30-18:00	Discussion	

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February 7 th		Room 205
Session 4	Latest results from sample science research	Chair: Mahesh Anand, OU, UK
09:00-09:30	Distribution of presolar dust in the primordial solar nebula.	Yuchen Xu, Chinese Academy of Sciences, China
09:30-10:00	Causal linkage between pre-main sequence stages of the Sun with isotopic records in Ca-Al-rich inclusions.	Ritesh Kumar Mishra, Max Planck Institute, Heidelberg, Germany
10:00-10:30	Preparing for primitive asteroid sample return: the story from CI and CM chondrites	Ashley King, NHM, UK
10:30-11:00	<i>Coffee Break</i>	
11:00-11:30	High resolution in situ dating of planetary materials	Romain Tartese, University of Manchester, UK
11:30-11:45	Space weathering induced processes in the Solar System and their implications for sample return missions	Andrea Opitz, Hungary Academy of Sciences, Hungary
11:45-12:00	Itokawa samples and their space weathering degrees	Arnold Gucsik, Hungary Academy of Sciences, Hungary
12:00-12:15	High-precision oxygen isotope measurements relevant to sample return missions	Richard Windmill, Open Uni., UK
12:15-13:00	Discussion and Book Introduction	Conveners
13:00-19:00	Free time to visit the attractions of Bern Also: All ISSI facilities are available for group discussions	
19:00	<i>Workshop Dinner at the Kornhauskeller (organized by ISSI)</i>	

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February 8 th		Room 205
Session 5	Planetary habitats	Chair: Shogo Tachibana
09:00-09:30	Anticipating the potential challenges in the analyses of organics in samples returned by future missions	Queenie Chan, Open Univ., UK
09:30-10:00	The organic content of interstellar ices and primitive carbonaceous meteorites: a contribution towards future sample return missions	Zita Martins, Instituto Superior Técnico (IST), Portugal
10:00-10:30	Picoastronomy: the history of the Solar System as revealed by scanning transmission electron microscopy of planetary materials	Rhonda Stroud, NRL, USA
10:30-11:00	<i>Coffee Break</i>	
11:00-11:30	The secondary history of primitive cosmomaterials and the potential identification of asteroidal sources	Lydie Bonal, Univ. of Grenoble, France
11:30-12:00	Clues of planetary habitats recorded in the chemical variations of Antarctic micrometeorites and carbonaceous chondrites	Hikaru Yabuta, Hiroshima Univ., Japan
12:00-12:30	Why are microbiologists interested in sample return?	Charles Cockell, Univ. of Edinburgh, UK (may be remote presentation)
12:30-13:30	<i>Lunch</i>	
Session 6	Sample Curation	Chair: Mini Wadhwa, ASU, USA
14:00-14:30	An Astrobiology and Planetary Protection Perspective on Sample Returns: Restricted, Unrestricted, and ‘Natural’ Missions	John Rummel, SETI Institute, USA
14:30-15:00	Euro-Cares and a strategy for European sample return missions	Caroline Smith, NHM, UK
15:00-15:30	Past, present, and future curation of extraterrestrial samples	Ludovic Ferriere, NHM Vienna, Austria
15:30-16:00	<i>Coffee Break</i>	
16:00-16:30	Curation facility for asteroid sample return missions in Japan	Masanao Abe, JAXA, Japan
16:30-17:00	The role of analogue samples in a extraterrestrial sample curation facility	Jutta Zipfel, Senckenberg Forschungsinstitut, Germany

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February 9 th		Room 205
Session 7	Recommended future sample return missions	Chair: Michel Blanc
09:00-09:30	Plan for a possible mission to Venus	Anil Bhardwaj, PRL, India (by Skype: anil.bhardwaj43)
09:30-10:00	Asteroid sample return missions - Hayabusa-2 and OSIRIS-ReX	Shogo Tachibana, Hokkaido Univ., Japan
10:00-10.15	Summary of Asteroid and Comet Sample Return Forum, Beijing, China	Michel Blanc, ISSI, Bern, CH
10:15-10.30	Technological readiness for sample return missions and relative strengths of future <i>in-situ</i> and return strategies	Manuel Grande, Aberystwyth Univ., UK
10:30-11.00	<i>Coffee Break</i>	
11:00-12:00	Summary of workshop findings	Mahesh Anand, Open Univ., UK
12:00-13:00	<i>Discussion of the ISSI book (Authors, Book Plans, Actions, Schedule)</i>	<i>Conveners & All Participants</i>
13:30	<i>Workshop finished</i>	