

ISSI Workshop on *The Delivery of Water to Proto-planets, Planets and Satellites*

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11-15 January 2016

MONDAY 11 January, 2016

Room 205, 2nd floor

08:30-09:00	Registration	ISSI, Hallerstrasse 6, 1 st floor
09:00-09:15	Welcome, Introduction to ISSI, workshop origin and objectives	Michel Blanc, Helmut Lammer
		Chairperson: Helmut Lammer
09:15-09:45	Introductory talk: The importance of water in the Universe and for habitability	Frances Westall
Session 1	The environment of the young star, including the circumstellar disk	
09:45-10:15	Structure of the Young Star's environment and radiation output	Manuel Güdel
10:15-10:45	<i>Coffee break</i>	
10:45-11:15	Observational constraints on disk structure and evolution (both gas and dust)	Lee Hartman
11:15-11:45	Models of disk gas evolution (disk structure, evolution, photo-evaporation and time scales)	Richard Alexander
11:45-12:15	Condensation profiles for the different chemical species and solid evolution	Fred Ciesla
12:15-14:00	<i>Lunch</i>	
		Chairperson: Yann Alibert
14:00-14:30	Constraints from the meteorite record. 1- Chemistry	Conel Alexander
14:30-15:00	Constraints from the meteorite record. 2. Chronology	Kevin Mc Keegan
15:00-15:30	Constraints from the Rosetta mission	Kathrin Altwegg
15:30-16:00	<i>Coffee break</i>	
16:00-16:30	Thermal evolution of planetesimals (water alteration, water losses, predictions for planetary systems with different initial contents of ²⁶ Al)	Gregor Golabek
16:30-17:00	General discussion	
17:00	<i>Welcome reception</i>	

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TUESDAY 12 January, 2016

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Session 2	Giant planets and satellites formation	Chairperson: Alessandro Morbidelli
09:00-09:30	Giant planets formation and role of ice	Anders Johansen
09:30-10:00	Migration	Sijme-Jan Paardekooper
10:00-10:30	Gas accretion and formation of the circumplanetary disk	Oliver Gressel
<i>10:30-11:00 Coffee break</i>		
11:00-11:30	Sources of the solids and formation of the satellites	Sébastien Charnoz
Session 3	Terrestrial planets formation	
11:30-12:00	Terrestrial planets formation	Sean Raymond
12:00-12:30	Mechanisms of water delivery	David O'Brien
<i>12:30-14:00 Lunch</i>		
		Chairperson: Lindy Elkins-Tanton
14:00-14:30	Origin of planetary water. Constraints from D/H, light elements and noble gases	Henner Busemann
14:30-15:00	Earth total water content	Anne Peslier
15:00-15:30	Origin of Earth volatiles. Constraints from partitioning experiments	D. C. Rubie
<i>15:30-16:00 Coffee break</i>		
16:00-16:30	Differentiation of a water-rich body	Julien Monteux
16:30-17:00	Timing of Earth volatile accretion	Maria Schoenbaechler
17:00-17:30	First book discussion	A. Morbidelli/M. Blanc

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WEDNESDAY 13 January, 2016

Room 205, 2nd floor

Session 3 (cont'd)

Chairperson:

Maria Schoenbaechler

09:00-09:30 Water in the moon

Shun-Ichiro Karato

09:30-10:00 Water on Mercury, Venus, Mars and Vesta

James P. Greenwood

10:00-10:30 Extra-solar planets : constraints from their bulk composition

Heike Rauer

10:30-11:00 *Coffee break*

Session 4 Processes affecting the water budget

11:00-11:30 Role of magma ocean and primitive atmospheres for the hydration of planetary embryos

Masahiro Ikoma

11:30-12:00 Escape of water and volatiles from large planetary embryos

Petra Odert

12:00-12:30 Degassing of the magma ocean

Lindy Elkins-Tanton

12:30-14:00 *Lunch*

All afternoon Free time to visit the attractions of Bern and around
All ISSI rooms are available for small group discussions

19.30 **Workshop dinner (Kornhauskeller restaurant)**

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THURSDAY 14 January, 2016

WTI, Silva Casa Auditorium, ground floor

Session 4 (cont'd)

Chairperson: Keiko Hamano

09:00-09:30	Evolution of the steam atmosphere and ocean formation	Yutaka Abe
09:30-10:00	Impact losses of early atmospheres – volatile budget by impacts	Hilke Schlichting
10:00-10:30	Constraints on atmospheric losses from geochemistry	Sujoy Mukhopadhyay
<i>10:30-11:00 Coffee break</i>		
11:00-11:30	Loss of water over time from Venus, Earth and Mars	Feng Tian
11:30-12:00	Extreme water loss and abiotic oxygen build-up on planets through the habitable zone	Rodrigo Luger (by skype)
12:00-12:30	General discussion	

12:30-14:00 Lunch

Session 5

Young scientists session

Chairperson: Sean Raymond

14:00-14:20	Modelling collisions between solid, self-gravitating bodies	Christoph Schaefer
14:20-14:40	Growing planets with water-rich envelopes	Julia Venturini
14:40-15:00	Isotopic Enrichment of Forming Planetary Systems via Supernova Pollution	Tim Lichtenberg
15:00-15:20	Putting Hot Super-Earths, extrasolar terrestrial planets and gas-giant planets in context	Andre Izidoro
<i>15:20-16:00 Coffee break</i>		
16:00-16:20	Condensation line fossilization	Seth Jacobson
16:20-16:40	Water snowlines in the solar nebula	Anusha Kalyaan

Session 6

« water planets » and water in planets : the « big picture »

Chairperson: Michel Blanc

16:40-17:10	Present high-resolution observations of exoplanets in transits	Ignas Snellen
17:10-17:30	JAXA's MMX mission	Tomohiro Usui

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FRIDAY 15 January, 2016

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Session 6 (cont'd)

Chairperson: Michel Blanc

09:00-09:30	Future relevant Solar System observations	Olivier Grasset
09:30-10:00	Possible habitability of water worlds	Lena Noack
10:00-10:30	Space and ground-based future observations of water on planets	Michael Meyer
<i>10:30-11:00</i>	<i>Coffee break</i>	
11:00-11:30	Summary talk	Alessandro Morbidelli
11:30-12:30	Book discussion (authors Book plans, actions, schedule)	A. Morbidelli/M. Blanc

End of Workshop