Water during Planet Formation and Evolution

12-16 February 2018 @ University of Zurich, Irchel campus, Y24-G-55

Workshop schedule

#waterZRH

Monday, 12 February 2018

11:00-13:00 Arrival and registration
13:00-13:15 Welcome address and LOC information

13:15-14:10 Talk session SOLAR SYSTEM #1 (Chair: Maria Schönbächler)

- 13:15-13:50 **Alessandro Morbidelli** (Nice Observatory)
  Modeling the evolution of water in the Earth's zone
- 13:50-14:10 Yamila Miguel (Leiden University)
  Constraints on Jupiter interior from Juno mission

14:10-15:45 Research groups assignment and meetings
15:45-16:15 Coffee break

16:15-17:15 Talk session SOLAR SYSTEM #2 (Chair: Maria Schönbächler)

- 16:15-16:35 Martin Hilchenbach (MPS Göttingen)
  In-situ Cometary Dust Particle Observations
- 16:35-16:55 Isaac Schroeder (University of Bern)
  Rosetta / ROSINA Investigations into Cometary Water from the Comet 67P
- 16:55-17:15 Sona Hosseini (JPL/Caltech)
  Next generation of remote high spectral resolution spectrometers to observe water and OD/OH in faint extended gases

17:15-17:45 Poster flash talks
17:45-19:00 Welcome drink & poster session

Tuesday, 13 February 2018

09:15-10:30 Talk session SOLAR SYSTEM #3 (Chair: Gregor Golabek)

- 09:15-09:50 **Alice Stephant** (Open University)
  Source of hydrogen in the inner solar system revealed by meteorites
- 09:50-10:10 Antoine Pommerol (University of Bern)
  Experimental studies of the sublimation of ice/dust mixtures and implications for the formation and evolution of planets
- 10:10-10:30 Julie Brisset (University of Central Florida)
  The influence of water ice grains on ejecta production upon low-velocity impacts

10:30-11:00 Coffee break

11:00-12:15 Talk session INHERITANCE & DISK PROCESSING #1 (Chair: Sascha Quanz)

- 11:00-11:35 **Ilsedore Cleeves** (CfA Harvard)
  Water formation and evolution in protoplanetary disks: observations and theoretical challenges
- 11:35-11:55 Maria Drozdovskaya (CSH Bern)
  Pre- and protostellar roots of complex organic molecules in comets
- 11:55-12:15 Susanne Wampfler (CSH Bern)
  Water in star-forming regions - lessons learned from Herschel

12:15-13:30 Lunch break
13:30-15:00 Research groups meeting

15:00-16:20 Talk session INHERITANCE & DISK PROCESSING #2 (Chair: Sascha Quanz)

15:00-15:20 Merel van 't Hoff (Leiden University)
Imaging the water snowline in protostellar envelopes

15:20-15:40 Diana Powell (UC Santa Cruz)
Using Ice and Dust Lines to Constrain the Surface Densities of Protoplanetary Disks

15:40-16:00 Colin McNally (Queen Mary University London)
Wind driven protoplanetary discs and how planets move in them

16:00-16:20 Shota Notsu (Kyoto University)
Possibility to locate the position of the H_2O snowline in protoplanetary disks through spectroscopic observations

16:20-17:00 Coffee break
17:00-18:00 Poster session

Wednesday, 14 February 2018

09:15-10:55 Talk session COMPOSITIONAL INVENTORY #1 (Chair: Ravit Helled)

09:15-09:50 **Jay Farihi** (University College London)
Water-rich planetesimals in the terrestrial zone of extrasolar planetary systems

09:50-10:10 Maria Cavallius (Stockholm University)
Missing Water Vapour in the Beta Pictoris system

10:10-10:30 Arazi Pinhas (University of Cambridge)
H_2O abundances in ten giant exoplanets and their implications for planetary formation

10:30-11:00 Coffee break

11:00-11:40 Talk session COMPOSITIONAL INVENTORY #2 (Chair: Ravit Helled)

11:00-11:20 Sebastian Marino (University of Cambridge)
Inward scattering of exocomets by a planet chain: exozodi levels, impacts and the scattered disc between the planets

11:20-11:40 Mohamad Ali-Dib (CPS Toronto)
The role of icelines in planet formation: evidences from the gas giants occurrence rate

11:40-12:15 Discussion #1 / progress report
12:15-13:30 Lunch

13:30-15:00 Research groups meeting
15:00-19:00 Free time / guided tour in Zurich

19:00 Conference dinner

Thursday, 15 February 2018

09:15-10:30 Talk session DUST EVOLUTION & PLANETESIMAL FORMATION #1 (Chair: Kees Dullemond)

09:15-09:50 **Til Birnstiel** (LMU Munich)
Dust evolution and the water snowline

09:50-10:10 Sebastiaan Krijt (University of Chicago)
Impact of pebble formation and migration on observable gas-phase volatiles on both sides of the snowline

10:10-10:30 Djoeke Schoonenberg (University of Amsterdam)

The behaviour of pebbles around the snowline

10:30-11:00 Coffee break

11:00-11:40 Talk session DUST EVOLUTION & PLANETESIMAL FORMATION #2 (Chair: Kees Dullemond)

11:00-11:20 Sebastien Charnoz (IPGP Paris)

Water transport and planetesimal formation in the early protoplanetary disk

11:20-11:40 Sebastian Stammler (LMU Munich)

Dust coagulation at the water ice line during an FU Orionis outburst

11:40-12:15 Talk session PLANETARY INTERIORS & EVOLUTION #1 (Chair: Martin Jutzi)

11:40-12:15 **Keiko Hamano** (ELSI Tokyo Tech)

Role of water in the evolution of molten terrestrial planets

12:15-13:30 Lunch break

13:30-15:00 Research groups meeting

15:00-16:15 Talk session PLANETARY INTERIORS & EVOLUTION #2 (Chair: Martin Jutzi)

15:00-15:35 **Lena Noack** (FU Berlin)

Influence of water on the long-term evolution of the mantle

15:35 -15:55 Arnaud Salvador (Université Paris Sud)

The relative influence of H_2O and CO_2 on the primitive surface conditions and evolution of rocky planets

16:00-16:30 Coffee break

16:30-17:10 Talk session PLANETARY INTERIORS & EVOLUTION #3 (Chair: Martin Jutzi)

16:30-16:50 Christoph Burger (University of Vienna)

Realistic modeling of collisional water transfer and loss during late-stage planet formation

16:50-17:10 Maxim Ballmer (ETH Zurich)

Compositional fractionation of terrestrial magma oceans

17:10-18:00 Discussion session #2

Friday, 16 February 2018

09:15-10:45 Talk session ROCKY PLANETS & HABITABILITY (Chair: Yann Alibert)

09:15-09:50 **Chris Ormel** (University of Amsterdam)

Rocky planet formation and the H_2O iceline

09:50-10:10 Nader Haghighipour (IfA Hawaii)

The First Accurate and Quantitative Model of the Formation of Terrestrial Planets and Origin of Earth's Water

10:10-10:45 **Laura Schaefer** (Arizona State University)

TBD

10:45-11:15 Coffee break

11:15-11:45 Discussion session #3

11:45-12:15 Research groups meeting

12:15-13:30 Lunch

13:30-15:00 Presentations from research groups

15:00-15:15 Group award

15:15-15:30 Summary and closing address

Poster list

Posters sessions Monday & Tuesday evening

Steven Adams (Clemson University)
Hot water and OH in the inner disk of the Herbig Ae/Be star HD 101412

Sareh Ataiee (University of Bern)
Spiral shock heating in protoplanetary disks: effect on the snow-line

Jean-David Bodenan (University of Zurich/ETH)
The role of water in the alteration of CO and CV chondrite CAIs

Irene Bonati (ELSI Tokyo)
Predicting the observability of protoplanetary collisions

Dan Bower (CSH Bern)
TBD

Barbara Celi Braga Camargo (UNESP-Brazil/ Tübingen)
Mass Evolution of Protoplanet in Compact Binary Systems

Sean Brittain (Clemson University)
Spectro-astrometric Study of Warm Gas in Disks with iSHELL on the IRTF

Remo Burn (University of Bern)
New determination of the ice-line position: Radial drift and concurrent water depletion of planetesimals

Caroline Dorn (University of Zurich)
Constraining the amounts of water on exoplanets: limitations and perspectives

Joanna Drazkowska (University of Zurich)
Planetesimal formation at water snowline

Francesco Flammini Dotti (Xi'an Jaotong-Liverpool University)
The long-term evolution of planetary systems in stellar clusters

Alexander Gagliano (Los Alamos National Laboratory)
Cosmological Origins of Water

Jonas Haldemann (University of Bern)
TBD

Christian Lenz (MPIA Heidelberg)
Pebble Flux Regulated Planetesimal Formation

Tim Lichtenberg (ETH Zurich)
Devolatilization of planetesimals and planets by internal heating from short-lived radionuclides

Michael Lozovsky (University of Zurich)
Constraining the Composition of Exoplanets

Francisco J. Pozuelos (University of Liège)
Main Belt Comets: ocean-water source closest to Earth?

Christoph Schaefer (University of Tuebingen)
A Smooth Particle Hydrodynamics Code to Model Collisions Between Solid, Self-Gravitating Objects

Judit Szulagyi (ETH/University of Zurich)
Water ice in the circumplanetary disk and icy satellite formation

Tomas Tamfal (University of Zurich)
TBD

Hiroshi Terada (NAOJ)
Observations of Water Ice in Protoplanetary Disks

Miles Timpe (University of Zurich)
TBD

Neal Turner (JPL/Caltech)
TBD

Participants

Steven Adams (Clemson University)
Yann Alibert (University of Bern)
Mohamad Ali-Dib (University of Toronto)
Sareh Ataiee (University of Bern)
Maxim Ballmer (ETH Zurich)
Til Birnstiel (LMU Munich)
Jean-David Bodenan (University of Zurich/ETH)
Irene Bonati (ELSI, Tokyo)
Dan Bower (University of Bern)
Julie Brisset (University of Central Florida)
Christoph Burger (University of Vienna)
Barbara Celi Braga Camargo (UNESP-Brazil/ Tübingen)
Sean Brittain (Clemson University)
Remo Burn (University of Bern)
Maria Cavallius (University of Stockholm)
Sebastian Charnoz (IPGP Paris)
Alice Chau (University of Zurich)
Ilsedore Cleeves (CfA Harvard)
Hongping Deng (University of Zurich)
Caroline Dorn (University of Zurich)
Joanna Drazkowska (University of Zurich)
Maria Drozdovskaya (University of Bern)
Kees Dullemond (University of Heidelberg)
Jay Farihi (University College London)
Francesco Flammini Dotti (Xi'an Jaotong-Liverpool University)
Alexander Gagliano (Los Alamos National Laboratory)
Gregor Golabek (BGI Bayreuth)
Nader Haghighipour (IfA Hawaii)
Jonas Haldemann (University of Bern)
Keiko Hamano (ELSI, Tokyo Tech.)
Tom Hands (University of Zurich)
Ravit Helled (University of Zurich)
Martin Hilchenbach (MPS Göttingen)
Sona Hosseini (JPL-Caltech)
Mark Hutchinson (University of Zurich)
Martin Jutzi (University of Bern)
Sebastiaan Krijt (University of Chicago)
Christian Lenz (MPIA Heidelberg)
Tim Lichtenberg (ETH Zurich)
Michael Lozovsky (University of Zurich)
Thomas Maindl (University of Vienna)
Sebastian Marino (University of Cambridge)
Collin McNally (QMU London)
Yamila Miguel (Leiden University)
Alessandro Morbidelli (Nice Observatory)
Simon Müller (University of Zurich)
Lena Noack (FU Berlin)
Shota Notsu (Kyoto University)
Chris Ormel (University of Amsterdam)
Arazi Pinhas (University of Cambridge)
Diana Powell (University of California Santa Cruz)
Antoine Pommerol (University of Bern)
Francisco J. Pozuelos (University of Liège)
Sascha Quanz (ETH Zurich)
Arnaud Salvador (Université Paris Sud)
Christoph Schaefer (University of Tuebingen)
Laura Schaefer (Arizona State University)
Maria Schönbächler (ETH Zurich)
Djoeke Schoonenberg (University of Amsterdam)
Isaac Schroeder (University of Bern)
Sebastian Stammler (LMU Munich)
Alice Stephant (Open University)
Clement Surville (University of Zurich)
Judit Szulagyi (ETH/University of Zurich)
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