

# SPP1833

## Building a Habitable Earth

### PROGRAMME

General Meeting 2019

SPP 1833 "Building a Habitable Earth"

Geo/Bio-Hörsaal, Zülpicher Straße 49, Köln

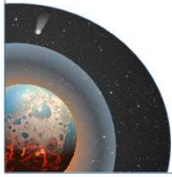
#### Wednesday, March 27th: Evolution of the early solar system and planets

- 14.00-14.20 Carsten Münker, Köln: Introductory remarks and Update on SPP activities
- 14.20-14.40 Patrick Barth, Heidelberg: Coupled Atmosphere-Interior Model for Terrestrial Exoplanets
- 14.40-15.00 Jan Leitner, Mainz: Ongoing isotopic, chemical and mineralogical characterization of organic and inorganic nitrogen-carriers in chondritic meteorites
- 15.00-15.20 Janos Kodolanyi, Mainz: Iron-60 as a Heat Source for Melting and Differentiation of Earth-forming Planetesimals and Planetary Embryos
- 15.20-16.10 *Coffee Break*
- 16.10-16.30 Maxwell Thiemens, Brüssel: Hf/W insights to the early Moon
- 16.30-16.50 Mario Fischer-Gödde, Köln: The ruthenium isotopic composition of the Earth's pre-late veneer mantle
- 16.50-17.10 Mario Trieloff, Heidelberg: Tracing mantle and crustal degassing via the palaeoatmospheric  $^{40}\text{Ar}/^{36}\text{Ar}$  ratio
- 17.10-17.30 Markus Pfeifer, Bristol: Applications of the Proteus collision cell MC-ICPMS to Earth evolution studies.
- 17.30 *Icebreaker Reception and Dinner in the Foyer*

#### Thursday, March 28th: Archean Processes

- 9.00-9.20 Jonas Tusch, Köln: Heidelberg: Tungsten isotope patterns of rocks from the Pilbara Craton, Australia
- 9.20-9.40 Annika Dziggel, Aachen: Evolution of an Archean large hot orogen, SW Greenland
- 9.40-10.00 Samprii Basak, Bochum: Can partial melting and differentiation from an early mafic crust yield a tonalitic / enderbritic crust?
- 10.00-10.40 *Coffee Break*
- 10.40-11.00 Elis Hoffmann, Berlin: Halogens as a potential novel proxy for early habitats in hydrothermal systems
- 11.00-11.30 Lena Noack, Berlin: Thermo-chemical modeling of Archaean Earth - from interior to surface
- 11.30-11.50 Boris Kaus, Mainz: Control of mantle potential temperature on plume-lid interaction and implications for the earliest continental crust
- 11.50-12.10 Mike Jansen, Köln: Early mantle heterogeneities in modern mantle plumes – new insights from  $^{182}\text{W}$  measurements
- 12.10-14.00 *Lunch Break*





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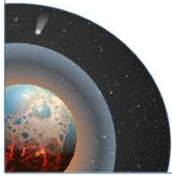
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#### Thursday, March 28th: Origin and early evolution of Life

- 14.00-14.20 Allison Enright, Tübingen: Characterizing the ability of silicate particles to shield cells from UV-radiation damage
- 14.20-14.40 Achim Herrmann, Kaiserslautern: Surviving the ferruginous Archean ocean – Assessing the potential toxicity of Fe<sup>2+</sup> on basal Cyanobacterial strains under anaerobic conditions
- 14.40-15.00 Helge Mißbach, Göttingen: Tackling the origin of organic signatures in early Archean rocks
- 15.00-15.40 *Coffee Break*
- 15.40-16.00 Raul Martinez, Jena: The raise and fall of Archean atmospheric oxygen: Did temporary carbon burial as Fe(ox)-DOM complexes play a modulating role?
- 16.00-17.30 *Poster Session*
- 16:45-17:30 *Lab Tours*

#### Friday, March 29th: Early Oceans

- 9:00-9:50 *General Discussion*
- 9.50-10.10 Ashley Martin, Hannover: Uranium isotope fractionation in Archean Carbonates: Insights from the Tumbiana Formation, Western Australia
- 10.10-10.30 Sukanya Sengupta, Göttingen: Triple oxygen isotopes in cherts as a proxy for temperature and  $\delta^{18}\text{O}$  of Precambrian seawater
- 10.30-10.50 Jakub Surma, Göttingen: Triple oxygen isotope signatures in marine carbonates – insights from high resolution gas source isotope ratio mass spectrometry
- 10.50-11.10 Sonja Geilert, Kiel: Si isotope fractionation during BIF formation – inferences from a modern Archean ocean analogue
- 11.10-11.30 David Ernst, Bremen: Non-detrital Gallium and Aluminium in Early Precambrian Marine Chemical Sediments and the Potential Use of the Ga/Al Ratio as a Geochemical Proxy for Metal Sources and Relative Fluxes to the Early Ocean
- 11.30-11.35 *Conclusion*



# SPP1833

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### POSTERS

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Wafa **Abouchami**, Cologne: Cadmium isotope fractionation in the Earth-Moon system

David **Ernst**, Bremen: Non-detrital Gallium and Aluminium in Early Precambrian Marine Chemical Sediments and the Potential Use of the Ga/Al Ratio as a Geochemical Proxy for Metal Sources and Relative Fluxes to the Early Ocean

Lanita **Gutieva**, Bochum: The complexity of the Scottish Lewisian Complex: a contiguous Archean craton or several disparate terranes?

Inga **Köhler**, Jena: Tephra associated with microbial mats of the Archean Moodies Group, Barberton Greenstone Belt (BGB), South Africa: Resemblance to potential biostructures and ecological implications

Jonathan A. **Lewis**, Berlin: Elucidating Eoarchean geodynamic processes by multiple sulfur isotopes

Joachim **Reitner**, Göttingen: 3.5 Ga-old "stinky" black barite (Dresser Fm, Pilbara, Western Australia) – a geological conundrum

Eric A. **Runge**: Putative impact tsunami deposit of the 3.5 Ga Dresser Fm., Pilbara, Australia

Julia **Schmidt**, Berlin: Understanding and comparing calculations of partition coefficients: how P-T conditions affect the enrichment of trace elements in the crust

Falko **Schulz**, Berlin: Magma oceans and their implications on modelling the early stages of mantle convection

Esther **Schwarzenbach**, Berlin: Sulphur as a tool to identify alteration processes in ultramafic oceanic lithosphere

Sara **Vulpus**, Berlin: Global volatile cycles on early Earth

Matthias **Willbold**, Göttingen: Early Earth mantle heterogeneities – an isotope perspective

*Note that only the first author of each poster is given, all co-authors are cited in the abstracts*