

Curriculum Vitae

Prof. Dr. Frank Postberg

Education

- 2012 Habilitation as Assistant Professor¹ [Privatdozent]
Faculty of Chemistry and Geoscience / University of Heidelberg
- 2007 PhD [Dr. rer. nat.]
Faculty of Physics and Astronomy / University of Heidelberg / carried out at MPI for Nuclear
Physics, Heidelberg / Supervisor: Prof. Dr. Eberhard Grün
- 2004 M.Sc.¹ [Diplom] in Physics, Minor¹ [Nebenfach] in Astronomy
Faculty of Physics / University of Darmstadt
- 1998 M.Sc.¹ [Diplom] in Chemical Engineering with specialization in Environmental Chemistry,
Faculty of Chemistry and Biochemistry / University of Appl. Sciences Darmstadt

Current position

- Since 2018 Full Professor in Planetary Sciences and head of 'Planetary Science and Remote Sensing' /
Institute of Geological Sciences / Freie Universität Berlin

Previous positions

- 2016 – 2018 Research Group Leader
Planetary Science by Space Missions / Institute of Earth Science / University of Heidelberg
- 2015 – 2016 Visiting Scientist (DFG Heisenberg Fellowship)
Laboratory for Atmospheric and Space Physics / University of Colorado / Boulder, USA
- 2015 Research Scientist (DFG Heisenberg Fellowship)
Institute of Earth Science / University of Heidelberg
- 2011 – 2014 Research Scientist
Institute of Space Systems (IRS), University of Stuttgart
- 2008 – 2011 Postdoc (Research-Fellowship), Cosmochemistry Group Prof. Dr. Mario Trieloff
Institute of Earth Science / University of Heidelberg
- 2005 – 2008 Research Assistant and Postdoc
Max-Planck-Institute for Nuclear Physics / Heidelberg / Cosmic Dust Group, Prof. Dr.
Eberhard Grün
- 1998 – 2005 Analytical Chemist (not a researcher position),
Chemlab GmbH / Analytical environmental chemistry / Bensheim, Germany

Most relevant projects & experiences

- 2019 Co - Investigator on ESA's Comet Interceptor Mission
- 2019 Co - Investigator of JANUS Camera System on ESA's JUICE Mission
- 2018 Project Lead (FU Berlin) of the High Resolution Stereo Camera (HRSC) on ESA's Mars Express
- 2017 Consolidator Grant of the European Research Council (ERC), Habitability of Oceans and
Aqueous Systems on Icy Satellites (Habitat-OASIS)
- 2017 Co-Investigator of the Destiny Dust Analyzer (DDS) Experiment on JAXA's Destiny Plus
mission
- 2015 Co-Investigator of the Surface Dust Analyzer (SUDA) Experiment on NASA's Europa Clipper
Mission
- 2010 Co-Investigator of the Cosmic Dust Analyzer (CDA) Experiment on the ESA/NASA *Cassini-
Huygens* mission
- 2008 – 2014 Member of the *Stardust* Interstellar Preliminary Examination Team (ISPE) of the *Stardust* space
mission to comet *Wild 2*

¹Translation from German to the best US equivalent, German original names are in parentheses.

Career breaks

2012 Paternal leave for daughter Elise, 6 months
2014 Paternal leave for son Richard, 4 Months

Fellowships and awards

2018 NASA Group Achievement for exceptional team performance and groundbreaking discoveries in characterizing sources, sinks, and dynamics of Saturn's dust environment
2014 Heisenberg-Fellowship of the German Research Foundation (DFG)
2013 NASA Group Achievement for work in the Stardust ISPE Team
2010 NASA Group Achievement for work in the Cassini-Huygens CDA Team
2008 FRONTIER Science Fellowship (funded within German University Initiative of Excellence)

Memberships with scientific societies

since 2015 NASA's Outer Planets Assessment Group (OPAG)
since 2010 American Geosciences Union (AGU)
since 2009 Division of Planetary Science (DPS) of the American Astronomical Society (AAS)
since 2006 European Geosciences Union (EGU)

Funding record (PI-proposals only)

Funding Period	Title	Agency & Project Number	Amount awarded to Frank Postberg
2012 - 2016	Laboratory experiments for the interpretation of mass spectra from water ice particles measured in situ on-board Cassini and future space missions	German Research Foundation (DFG) PO 1015/2-1	210.000 €
2014 - 2017	In-situ-Analyse von Eispartikeln im Sonnensystem: Anwendungen & Methoden	DFG PO 1015/4-1	295.000 €
2015 - 2017	Heisenberg-Fellowship	DFG PO 1015/3-1	≈ 300.000 €
2016 - 2018	Characterizing Mineral Dust in the Saturnian System	European Space Agency (ESA) Contract 400118000	70.000 €
2016 – 2019	Marine Geology of Extra - Terrestrial Oceans	Chinese Scholarship Council (CSC)	PhD funding for 3.5 years
2017 – 2022	Habitability of Oceans and Aqueous Systems on Icy Satellites	European Research Council (ERC) Consolidator Grant 724908 / Habitat-OASIS	2.000.000 €
2019 – 2020	Dawn-Mission: Ceres-Chromatostratigraphie	DLR 50QM1505	108.000 €
2020 – 2021	Mars Express High Resolution Stereo Camera (HRSC), Systematische Datenverarbeitung, Mosaikierung und Dissemination	DLR 50QM2001	1.141.000 €

Additionally, I participated as collaborator (without direct funding) in 9 other successful proposals in Germany and the USA since 2008.

Teaching & Mentoring

- Since 2018 Master's Courses: 'Formation of the Solar Systems and Planetary Processes'
Faculty of Geosciences / Freie Universität Berlin
- Master's Seminar on 'Recent Research in Planetary Science and Remote Sensing'
Faculty of Geosciences / Freie Universität Berlin
- 2017 - 2018 Master's Course: 'Planetary Science'
Faculty of Chemistry and Geosciences / Heidelberg University
- Master's Seminar on 'Cosmochemistry and Planetary Processes'
Faculty of Chemistry and Geosciences / Heidelberg University
- 2012 - 2016 Diverse lectures in the course on 'Space Systems'
Institute of Space Systems / University of Stuttgart
- 2011 - 2016 Master's Course: 'From the Solar Nebular to Planets'
Faculty of Chemistry and Geosciences / Heidelberg University
- 2006 – 2007 Supervision and evaluation of undergraduate Physics practical laboratory coursework
Faculty of Physics and Astronomy / Heidelberg University
- Since 2012 Mentoring & supervision of 5 undergraduate (Bachelor & Master) students
Mentoring & supervision of 8 graduate (PhD) students

Publication statistics

From 2005 – 2020. As of February 27th 2020

- 72 peer reviewed articles published in journals and books, 12 as first author or shared lead author
- > 200 conference abstracts, over 20 invited
- Citations: > 2700 (google scholar) / > 1850 (Web of Science & Scopus)
- Citations 2019: ~ 470 (google scholar) / ~ 320 (Web of Science & Scopus)
- h-Index: 25 (google scholar) / 22 (Web of Science & Scopus)
- i10-index: 53 (google scholar)

10 most relevant publications (starting with latest)

- **Postberg, F.***, Khawaja, N*. and 18 co-authors (2018a) Macromolecular organic compounds from the depths of Enceladus. *Nature* **558**, 564–568, doi: [10.1038/s41586-018-0246-4](https://doi.org/10.1038/s41586-018-0246-4).
- Altobelli N.*, **Postberg F.***, Fiege K.* and 11 co-authors (2016) Flux and composition of interstellar dust at Saturn from Cassini's Cosmic Dust Analyser, *Science* 352, 312-318, doi: [10.1126/science.aac6397](https://doi.org/10.1126/science.aac6397).
- Hsu, H.W.*, **Postberg, F.***, Sekine, Y.*, Shibuya, T., Kempf, S., Horányi, M., Juhász, A., Altobelli, N., Suzuki, K., Masaki, Y., Kuwatani, T., Tachibana, S., Sirono, S., Moragas-Klostermeyer, G., Srama, R. (2015) Ongoing hydrothermal activities within Enceladus, *Nature*, Vol. 519, p. 207-210, doi: [10.1038/nature14262](https://doi.org/10.1038/nature14262).
- **Postberg, F.** and 58 co-authors (2014) Stardust Interstellar Preliminary Examination IX: High speed interstellar dust analogue capture in Stardust flight-spare aerogel, *Meteoritics & Planetary Science*, 49, Nr.9, 1666- 1679, doi: [10.1111/maps.12173](https://doi.org/10.1111/maps.12173).
- Westphal, A. and 65 co-authors incl. **Postberg, F.** (2014) Evidence for interstellar origin of seven dust particles collected by the Stardust spacecraft, *Science* 345, 786 – 791, doi: [10.1126/science.1252496](https://doi.org/10.1126/science.1252496).
- **Postberg, F.**, Schmidt J., Hillier, J.K., Kempf S., Srama, R. (2011a) A salt-water reservoir as the source of a compositionally stratified plume on Enceladus, *Nature*, Vol. 474, Issue 7353, p. 620-622, doi: [10.1038/nature10175](https://doi.org/10.1038/nature10175).

- **Postberg, F.**, Grün, E., Horanyi, M., Kempf, S., Krüger, H., Schmidt, J., Spahn, F., Srama, R., Sternovsky, Z., Tieloff, M. (2011a)
- **b)** Compositional mapping of planetary moons by mass spectrometry of dust ejecta, *Planetary and Space Science*, Vol. 59, p. 1815–1825, doi: [10.1016/j.pss.2011.05.001](https://doi.org/10.1016/j.pss.2011.05.001).
- **Postberg, F.**, Kempf, S., Schmidt, J., Brillantov, N., Beinsen, A., Abel, B., Buck, U., Srama, R. (2009) Sodium Salts in E Ring Ice Grains from an Ocean below the Surface of Enceladus, *Nature*, Vol. 459, Issue 7250, p. 1098 – 1101, doi: [10.1038/nature08046](https://doi.org/10.1038/nature08046).
- **Postberg, F.**, Hillier, J.K., Kempf, Srama, R., Green, S.F., McBride, N., and Grün, E. (2008) The E-ring in the vicinity of Enceladus II: Probing the moon's interior - the composition of E-ring particles, *Icarus*, vol. 193, p. 438-454, doi: [10.1016/j.icarus.2007.09.001](https://doi.org/10.1016/j.icarus.2007.09.001).
- **Postberg, F.**, Kempf, S., Srama, R., Green, S.F., Hillier, J.K., McBride, N., Grün, E. (2006) Composition of Jovian Dust Stream Particles, *Icarus*, vol. 183, p. 122-134, doi: [10.1016/j.icarus.2006.02.001](https://doi.org/10.1016/j.icarus.2006.02.001).

* = These authors contributed equally to this work.

Recent public articles (not peer reviewed)

- Denk, T., & **Postberg, F.**, Hutkrempen und Schwimmreifen, Cassini erkundet die seltsamen Monde des Saturn, *Sterne und Weltraum*, November 2019, pages 40 - 45
- Tieloff, M., Altobelli, N., **Postberg, F.**, Fiege, K., Coverstory: Die Jagd nach dem interstellaren Staub, *Sterne und Weltraum*, March 2017, pages 26 - 35
- **Postberg, F.**, Tobie, G., Dambeck T., Under the Seas of Enceladus, *Scientific American*, October 2016, pages 34 – 39.
- An updated version of the above article in *Scientific American*, Special Issue “Wonders of the Cosmos”, September 2017, pages 92 – 97.
- **Postberg, F.** & Dambeck, T., Coverstory: Heisses Wasser in der Tiefe des Enceladus, *Spektrum der Wissenschaft*, Ausgabe 6/2015, Pages 32 – 41.

Selection of recent international invited presentations

- 2019 EPSC/DPS joint meeting, Geneva, Switzerland
Title: The long Journey of Organic Material from Enceladus Hydrothermal Core into the Plume
- 2019 Astrobiology Science Conference (AbSciCon), Seattle (WA). USA
Title: Origins of Organic Matter in Enceladus' Plume
- 2018 Fall Meeting of the American Geosciences Union (AGU), Washington (DC), USA
Title: From a hydrothermal core into space: life and fate of Enceladean organic molecules
- 2018 Molecular Origins of Life Symposium, Munich, Germany
The Subsurface Ocean of Enceladus - a Habitable Place in our Solar System
- 2018 NASA's Outer Planetary Assessment Group (OPAG) Meeting, Pasadena (CA), USA
Title: Macromolecular Organic Compounds from the Depths of Enceladus
- 2017 14th International Planetary Probe Workshop (IPPW), Den Haag, Netherlands
Title: Science Objectives in the Saturnian System
- 2017 ESA Symposium: Ices in the Solar System, Madrid, Spain
Title: Exploring ocean worlds by icy dust spectrometry
- 2016 Enceladus and the icy moons of Saturn conference / Boulder, USA
Title: The plume and surface composition of Enceladus
- 2016 Sino-German Frontiers of Science Symposia by 'Alexander von Humboldt Foundation' and the 'Chinese Academy of Sciences' / Shenzhen, China
Title: Exploring subsurface oceans on icy moons as potential habitats in the solar system