Anna Mittelholz

PhD

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EDUCATION

Since May 2019	**Postdoctoral Fellow**, *The University of British Columbia, Vancouver, Canada* Topic: Mars magnetic field, with Prof. Catherine L. Johnson
2013 - 2019	**PhD**, *The University of British Columbia, Vancouver, Canada* Upgrade from MSc to PhD in May 2015 Thesis: Mars' external and internal fields from orbital observations, with Prof. Catherine L. Johnson
2010 - 2013	**BSc**, *Technical University of Munich and Ludwig-Maximilians-Universität, Munich, Germany* Thesis: Marsquakes - Single station planetary seismology, with Prof. Heiner Igel

PROFESSIONAL EXPERIENCE

May 2018 - Jan 2019	**Science Outreach Consultant**, *Department of Education, The University of British Columbia, Vancouver, Canada* Developing teaching material for future highschool teachers. Integrating museum resources and exhibitions of the Pacific Museum of the Earth into easily accessible material for teachers and interested museum visitors.
2013 - 2019	**Teaching Assistant**, *Department of Earth, Ocean and Atmospheric Sciences, The University of British Columbia, Vancouver, Canada* Courses: The Solid Earth: A Dynamic Planet (EOSC110), Laboratory Exploration of Planet Earth (EOSC111), Computational Methods in Earth, Ocean and Atmospheric Sciences (EOSC211), Earth and Life Through Time (EOSC326), The Earth and the Solar System (EOSC310)
2012 - 2013	**Assistant for Instrument System Integration** *Kayser-Threde, Dr. Clemens Kaiser, Ralf Paschetag and Jürgen Breitkopf, Munich, Germany*
March/April 2012	Overview of company projects (TET, Sentinel5, Galileo) by starting with an apprenticeship followed by a job offer.

Since May	Working in two different areas for the weather satellite "Meteor Third Generation" (MTG): "Mechanical Ground Support Equipment" (MGSE); "Assembly, Integration and Testing" (AIT) Tools: IBM DOORS, Microsoft Office and CATIA.

VOLUNTEER ACTIVITIES

2014	**Mars Workshop**, *The University of British Columbia, Vancouver, Canada* Organization of the new Mars Pacific Museum of the Earth workshop that was presented at the GSA meeting in October. The Workshop is created for kids from 2nd grade upwards as introduction to planetary science with a focus on Mars.
2013 - 2016	**Graduate Council**, *The University of British Columbia, Vancouver, Canada* Grad Council Coordinator 2014-2016; organized academic and social events to engage graduate students; represented graduate students in department committees. Positions held: Council Coordinator, Social Coordinator, Public Relations / Internal Relations Representative, Officer of Sustainability.
2015 - recent	**Climbing Gym Monitor**, *The Aviary Climbing Gym, The University of British Columbia, Vancouver, Canada* Supervising, belay testing and teaching climbers of all levels Vicepresident of the gym overseeing administrative tasks

AWARDS AND SCHOLARSHIPS

2020	Harvard Daly Fellowship (starting date September 2021)
2020	ETH Fellowship (starting date September 2020)
2020	Marie-Curie Fellowship (declined)
2019	Outstanding Student Paper Award (EGU Vienna)
2015 - 2019	Four Year Fellowship ($18,200/year)
2015	Outstanding Student Paper Award (AGU Fall Meeting)
2015	MacKay Memorial Scholarship ($9,990.00)
2015	Departmental Teaching Assistant Award ($500)
2014 - 2018	CREATE CPSX Natural Sciences and Engineering Research Council of Canada (NSERC)
2014 - 2015	DAAD: Jahresstipendien für Graduierte und Promovierte (€950/Monat)
2014	W H Matthews Scholarship ($2,500.00)
2014	J.Jay McNee Memorial Scholarship ($1,600.00)
2013 - 2019	International tuition award

PUBLICATIONS

- S. C. Stähler, Widmer-Schnidrig R., Scholz J.-R., van Driel M., **A. Mittelholz** , ..., (2020). Geophysical observations of Phobos transits by InSight, Geophysical Research Letters(submitted)
- M. Fillingim, Johnson C. L., **A. Mittelholz** , ..., (2020). A first comparison between ionospheric and surface level magnetic fields at Mars, JGR Space Physics (submitted)

- C. Charalambous, McClean J. B., ..., **A. Mittelholz** , ..., (2020). Aeolian Changes at the InSight Landing Site: Multi-instrument Observations, Geophysical Research Letters (submitted)
- **A. Mittelholz** , C. L. Johnson , S. N. Thorne, ..., (2020). The origin of observed magnetic variability for a sol on Mars from InSight, JGR Planets (submitted)
- **A. Mittelholz**, C. L. Johnson, J. Feinberg, B. Langlais, R. J. Phillips, (2020). New constraints on dynamo timing and crustal magnetization on Mars from MAVEN observations, Science Advances
- B. Banerdt, S. Smrekar, ..., C. L. Johnson, **A. Mittelholz**, ... (2020). Early Results from the InSight Mission: Mission Overview and Global Seismic Activity, Nature Geoscience. doi:10.1038/s41561-020-0544-y
- C. L. Johnson, **A. Mittelholz**, B. Langlais, ... (2020). Crustal and Time-Varying Magnetic Fields at the InSight Landing site on Mars, Nature Geoscience. doi: 10.1038/s41561-020-0537-x
- D. Banfield, A. Spiga, ..., C. L. Johnson, **A. Mittelholz**, ... (2020). An overview of the initial results on atmospheric science from InSight measurements, Nature Geoscience. doi: 10.1038/s41561-020-0534-0
- C. Hanneson, C. L. Johnson, **A. Mittelholz**, M. M. Al Asad, C. Goldblatt (2019). Dependence of the Interplanetary Magnetic Field on Heliocentric Distance at 0.3–1.7 AU: A Six-Spacecraft Study, JGR Space Physics, doi: 10.1029/2019JA027139
- R J.Lillis, M. O. Fillingim, Y. Ma, F. Gonzalez-Galindo , F. Forget, C. L. Johnson, **A. Mittelholz**, ... (2019). Modeling wind-driven ionospheric dynamo currents at Mars: Expectations for InSight magnetic field measurements, Geophysical Research Letters, 246, doi: 10.1029/2019GL082536
- S. E. Smrekar, P. Lognonné, T. Spohn, ..., C. L. Johnson, **A. Mittelholz**, ... (2019). Pre-mission InSights on the Interior of Mars, Space Science Reviews, 215: 3, doi: 10.1007/s11214-018-0563-9
- D. Banfield, J. A. Rodriguez-Manfredi, C. T. Russell, ..., C. L. Johnson, **A. Mittelholz**, ... (2019). InSight Auxiliary Payload Sensor Suite (APSS), Space Science Reviews, 215: 4, doi: 10.1007/s11214-018-0570-x
- G. Osinski, M. Battler, C. Caudill, ... , **A. Mittelholz**,... (2019) The CanMars Mars Sample Return Analogue Mission, Space Science Reviews, 166: 110-130, doi: 10.1016/j.pss.2018.07.011
- C. Caudill, A. Pontrefact, **A. Mittelholz**, A. Grau Galofre, T. Tianqi, G.R. Osinski, and the CanMars Science team (2019). CanMars mission Science Team operational results: Implications for operations and the sample selection process for Mars Sample Return (MSR). Planetary and Space Science, 172: 43-56, doi: https://doi.org/10.1016/j.pss.2019.04.004
- **A. Mittelholz**, A. Morschhauser, C. L. Johnson, B. Langlais, R.J. Lillis, F. Vervelidou, B. Weiss (2018). The last 3 Mars2020 landing sites from a magnetic field perspective, Earth and Space Sciences, 5.9: 410-424, doi: d10.1029/2018EA000420
- **A. Mittelholz**, C. L. Johnson, A. Morschhauser (2018). A New Magnetic Field Activity Proxy for Mars from MAVEN Data, Geophysical Research Letters, 45.12: 5899-5907, doi: 10.1029/2018GL078425.
- **A. Mittelholz**, C.L. Johnson, R.J. Lillis (2017). Global-scale external fields measured at satellite altitudes, JGR Planets,122, 1243-1257, doi:10.1002/2017JE005308.

SELECTED CONFERENCE PUBLICATIONS

- **A. Mittelholz**, C.L. Johnson, B. Langlais, R. J. Phillips, J. Feinberg (2019). New Constraints on the Crustal Magnetic Field from MAVEN (talk), AGU Fall Meeting, San Francisco, USA.
- **A. Mittelholz**, C.L. Johnson, B. Langlais, ...(2019). Mars Crustal Magnetism: Lessons Learned from Orbit and on the Ground (talk), 9th Mars Conference, Pasadena, USA.
- **A. Mittelholz**, C.L. Johnson, B. Langlais, ...(2019). First results from the InSight FluxGate magnetometer: Constraints on Mars' crustal magnetic field at the landing site (poster), EGU Meeting, Vienna, Austria.
- **A. Mittelholz**, A. Morschhauser, C.L. Johnson (2017). New crustal field models of Mars (poster), AGU Fall Meeting, New Orleans, USA.
- **A. Mittelholz**, C. Johnson (2017). New insights on crustal magnetic fields on Mars from MAVEN data (poster), LPSC, Houston, USA.
- **A. Mittelholz**, C.L. Johnson (2016). Crustal magnetic fields on Mars from MAVEN data (oral), AGU Fall Meeting, San Francisco, USA.
- **A. Mittelholz**, C.L. Johnson (2016). Global-scale external fields at Mars measured at satellite altitudes: Preparation for magnetic sounding of the martian interior (poster), LPSC, Houston, USA.
- **A. Mittelholz**, M. Maloney, G. R. Osinski (2016). The use of Raman spectroscopy for the 2015 CanMars MSR Analogue Mission (poster), LPSC, Houston, USA.
- **A. Mittelholz**, C.L. Johnson (2015). Global-scale magnetic fields at Mars from Mars Global Surveyor data (poster), AGU Fall Meeting, San Francisco, USA.
- **A. Mittelholz**, C.L. Johnson, B. Langlais (2014). Large-scale geometry and temporal variability of the Martian external magnetic field (poster), AGU Fall Meeting, San Francisco, USA.

ADDITIONAL PRESENTATIONS

- Visiting Speaker (2019), *Simon Fraser University, Vancouver, Canada*: "Mars Crustal Magnetism: Progress and Puzzles"
- Pint of Science (2019), *Vancouver, Canada*: "InSight - Getting to the Heart of Mars"
- Visiting Speaker (2019), *ETH Zurich, Switzerland*: "Mars Crustal Magnetism: Lessons Learned from Orbit and on the Ground"
- Mars 2020 Landing Site Workshop (2018), *Pasadena, USA*: "The Mars 2020 Candidate Landing Sites: A Magnetic Field Perspective"
- Visiting Speaker (2017), *Berlin, Germany*: "Global-scale external magnetic fields at Mars"
- InSight Science Team Meeting (2017), *Oxford, England*: "Crustal Magnetic fields near the InSight Landing Site"
- NSERC CREATE CPSX annual meeting (2017), *Utah, USA*: "Understanding Mars"
- InSight Science Team Meeting (2016), *Pasadena, USA*: "Magnetic field update"
- NSERC CREATE CPSX annual meeting (2016), *Canada, Kingston*: "The large-scale geometry and temporal variability of the external magnetic field of Mars"
- InSight Science Team Meeting (2015), *Zurich, Switzerland*: "MAVEN magnetic field data over the InSight landing site"
- 3 Minute thesis competition (2015), *The University of British Columbia, Vancouver, Canada*:

"The Magnetic Field of Mars"

- EarthTalks (2015), *The University of British Columbia, Vancouver, Canada*: "The Martian Magnetic Field"

WORKSHOPS

- Participation in the CanMars analogue mission (2015/2016) as part of the Science team operating from London (ON). One paper on this is published (Osinski et al., 2019), one further paper (Caudill et al., 2019) has been submitted.
- Participation in field work and workshops offered during NSERC CREATE meetings 2016/2017