



DR. ANNA GÜLCHER

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Researchgate: [Anna J. P. Gülcher](https://www.researchgate.net/profile/Anna-J-P-Gulcher)

PROFESSIONAL EXPERIENCE

- 01.2023 - present** **Postdoctoral Researcher**, NASA JPL/Caltech, Pasadena, CA, US
Planetary Interiors and Geophysics Division, NASA Jet Propulsion Laboratory
Division of Geological and Planetary Sciences, California Institute of Technology
- Summer 2023** **Planetary sciences guest lecturer**, Metavisionaries Academy (*part-time*) Oxford, UK (remote)
- 11.2018 - 12.2022** **Research assistant**, Institute of Geophysics, ETH Zürich Zürich, Switzerland
Geophysical Fluid Dynamics group
- 08.2015 - 08.2016** **Consultant Board of Education**, Geosciences Dept., Utrecht University Utrecht, the Netherlands
- 09.2014 - 07.2016** **Teaching assistant, lecturer**, Geosciences Dept., Utrecht University Utrecht, the Netherlands
- 06.2011 - 09.2016** **Outdoor instructor and coordinator** the Netherlands; Italy
Zeilschool Oer't Hout (NL) and Elba Travels (IT)

ACADEMIC QUALIFICATIONS

- 11.2018 - 11.2022** **Ph.D in Geophysics | Planetary Sciences**, ETH Zürich Zürich, Switzerland
Thesis: 'Shaping Earth's mantle flow through chemical and rheological heterogeneity in the lower mantle'
Advisors: Maxim D. Ballmer (UCL) and Paul J. Tackley (ETH)
- 09.2016 - 09.2018** **MS.c in Earth Sciences | Geophysics**, ETH Zürich (*4.0/4.0 GPA*) Zürich, Switzerland
Thesis: 'Plume penetration into Venusian lithosphere and the origin of coronae: 3D thermomechanical modelling'. Advisors: Taras V. Gerya (ETH) and Laurént Montési (UMD)
- 09.2013 - 07.2016** **BS.c in Earth Sciences**, Utrecht University (*Cum Laude: 4.0/4.0 GPA*) Utrecht, the Netherlands

LANGUAGES

- Dutch: native
- English: fluent
- German: excellent
- French: basic

SOFT SKILLS

- Goal-oriented and focused
- Excellent communication
- Storytelling; creative writing; design
- Team-worker and social

TECHNICAL (SELECTED)

- Maths, physics, chemistry, biology
- Coding and programming languages
- Finite differences and finite elements
- Adobe Illustrator, Affinity Designer

PRIZES, AWARDS, AND GRANTS

- **01.2023**, Awardee (**principal investigator**) of \$140K postdoc fellowship, Swiss National Science Foundation
- **2021-2022**, **\$2k Women-in-STEM Grant** for peer-mentoring group, 'Fix the Leaky Pipeline' program, ETH Zürich
- **05.2019**, **Outstanding Presentation Award**, EGU General Assembly, Vienna
- **10.2018**, **ETH MSc thesis Medal**: best MSc thesis in Dept. of Earth Sciences
- **2016-2018**, **Excellence Master Scholarship**, \$40k, ETH Zürich
- **05.2016**, Awardee of \$10k research grant, Mollengraaff Fonds, TU Delft

SPACE MISSION INVOLVEMENT

- 05.2023 - present VERITAS space mission, NASA JPL, Scientific collaborator
06.2022 - present EnVision space mission, ESA, Radio Experiment Science (RSE) team member

PROFESSIONAL SERVICE (SELECTED)

- 2023 - present NASA Venus Exploration and Analysis Group (VExAG) Steering committee, member
- 2021 - present International Space Science Institute (ISSI) international team member, Bern, Switzerland
- Seismicity on Venus: Prediction & Detection (2023-2024)
 - Venus: Evolution through Time (2021-2022)
- 2020 - present Reviewer for scientific papers (16) and grant proposals (5)
- Earth and Planetary Science Letters, Journal of Geophysical Research (JGR): Planets, JGR: Solid Earth, Icarus, Geophysical Research Letters, Nature Communications, Science Advances
 - Funding agencies: NASA Solar System Workings panel, NSF, ANR (Agence Nationale de la recherche)
- 2020 - present Conference; session convener/chair
- Theme chair lead 'Earth's deep interior' for the Goldschmidt2024 conference
 - Leading scientific panels and foster discussions as session convener/chair (12)
 - Responsible for full geodynamic workshop and conference organisation (3)
- 05.2019 - 05.2022 Science communicator and outreach manager, European Geoscience Union (EGU)
- Blog editor and author for the Geodynamics blog webpage
 - Social media manager for the Geodynamics outreach channels
- 05.2020 - 05.2022 Early Career Scientist Representative, European Geosciences Union (EGU)
- Vital link between the scientific community, the Division leaders, and the Union board
- 05.2021, 04.2022 Mentor for female Early Career Scientists, EGU
- 07.2015 - 07.2016 President of the Geological Women's Society Utrecht (U.G.D.D. Saxifraga)

PEER-REVIEWED JOURNAL PUBLICATIONS

Google scholar citation count: 224 | h-index: 8 | i-10 index: 6

In preparation

10. Schouten, T., Gebraad, L. Noe, S., Gülcher, A. J. P., Thrastarsson, S., van Herwaarden, D., and Fichtner, A. Full waveform inversion reveals complex full mantle structure
9. Gülcher, A. J. P., Sabbeth, L. and Smrekar, S. S., An updated global database of Venusian coronae
8. Desiderio, M., Gülcher, A. J. P., and Ballmer, M. D., The control of basalt properties on the preservation of recycled and primordial heterogeneity in Earth's lower mantle
7. Gülcher, A. J. P., Ballmer, M. D., and Tackley, P. J., Bridgmanite-enriched domains stable in Earth's lower mantle: insights from global 3D mantle convection models

Published

6. Gülcher, A. J. P., Yu, T., and Gerya, T. V. (2023). Tectono-magmatic evolution of asymmetric coronae on Venus: Topographic classification and 3D thermo-mechanical modeling. *Journal of Geophysical Research - Planets*, 128, e2023JE007978, DOI: <https://doi.org/10.1019/2023JE007978>
5. Gülcher, A. J. P., Golabek, G., Thielmann, M., Ballmer, M.D., and Tackley, P.J. (2022). Narrow, fast, and "cool" mantle plumes cause by strain-weakening rheology in the lower mantle. *Geochemistry, Geophysics, Geosystems*, vol. 23, issue 10, e2021GC010314, DOI: <https://doi.org/10.1029/2021GC010314>
4. Gülcher, A. J. P., Ballmer, M.D. and Tackley, P.J. (2021). Coupled dynamics and evolution of primordial and recycled heterogeneity in Earth's lower mantle. *Solid Earth*, vol. 12, pp. 2097-2107, DOI: [10.5194/se-12-2087-2021](https://doi.org/10.5194/se-12-2087-2021)

3. **Gülcher, A. J. P.**, Gerya, T.V., Montési, L.G.J. and Munch, J. (2020) Corona structures driven by plume-lithosphere interactions and evidence for ongoing plume activity on Venus. *Nature Geoscience*, vol. 13, pp. 547-554, DOI: [10.1038/s41561-020-0606-1](https://doi.org/10.1038/s41561-020-0606-1)
2. **Gülcher, A. J. P.**, Gebhardt, D., Ballmer, M.D. and Tackley, P.J. (2020). Variable dynamic styles of primordial heterogeneity preservation in Earth's lower mantle. *Earth and Planetary Science Letters*, vol. 536, 116160, DOI: [10.1016/j.epsl.2020.116160](https://doi.org/10.1016/j.epsl.2020.116160)
1. **Gülcher, A. J. P.**, Beaussier, S. J. and Gerya, T.V., (2019). On the formation of oceanic detachment faults and their influence on intra-oceanic subduction initiation: 3D thermomechanical modeling. *Earth and Planetary Science Letters*, vol. 506, pp. 195-208, DOI: [10.1016/j.epsl.2018.10.042](https://doi.org/10.1016/j.epsl.2018.10.042)

BOOK CHAPTERS / REVIEW PAPERS / TECHNICAL PAPERS

In preparation

6. Byrne, P. Izenberg, N, **Gülcher, A. J. P.**, et al. (*in prep.*), Strategy for enabling Venus science, technology, and exploration in the near future

Submitted

5. Gillman, C., Golabek, G. J., **Gülcher, A. J. P.**, Lefèvre, M., and Avibe, G. Venus. *Submitted as chapter in Treatise on Geochemistry, 3rd edition*
4. Smrekar, S., Ghail, R., Byrne, P., et al. (**Gülcher, A. J. P.**), Volcano-tectonic processes on Venus, (*under review for Space Science Reviews*. (Chapter in book 'Venus: Evolution through Time', Springer, edited by Spohn et al.)

Published

3. O'Rourke, J., Wilson, C., Ghail, R., et al. (**Gülcher, A. J. P.**) (2023), Venus, the Planet: Introduction to Earth's Sister Planet. *Space Science Reviews*, vol. 219, 10. DOI: <https://doi.org/10.1007/s11214-022-00937-9> (Chapter in book 'Venus: Evolution through Time', Springer, edited by Spohn et al.)
2. Rolf, T., Weller, M., **Gülcher, A. J. P.**, et al. (2022), Venus mantle dynamics and evolution through time. *Space Science Reviews*, vol. 218, 70. DOI: <https://doi.org/10.1007/s11214-022-00937-9> (Chapter in book 'Venus: Evolution through Time', Springer, edited by Spohn et al.)
1. Cutts, J. A., et al. (**Gülcher, A. J. P.**), (2020) Venus Coronae and Tessera Explorer (VeCaTeX) Mission Concept Investigating the Surface of Venus from beneath the Clouds, *Venus Exploration and Analysis Group annual meeting*, 18, abstract 8031

OUTREACH ARTICLES (SELECTED)

See full list: www.annagulcher.com/outreach/

2. **Gülcher, A. J. P.** (2021). A surprisingly geologically active Venus – evidence for recent volcanic and tectonic activity. *The Science Breaker, Earth and Space*, DOI: [10.25250/thescbr.brk555](https://doi.org/10.25250/thescbr.brk555)
1. **Gülcher, A. J. P.** (2020). Evidence for a hotspot Venus - clues from mysterious coronae. *Nature Astronomy* "behind the paper", <https://go.nature.com/30HTHYP>

SUPERVISION

Student research internship mentoring and supervision

- 2023, K. Hearst, US San Diego, NASA Summer Undergraduate Program for Planetary Research 2023, 'Topography and gravity analysis of Venus'
- 2022, T. Yu, Georgia Institute of Technology, GA, ThinkSwiss Research Scholarship 2022, '3D thermo-mechanical modelling of coronae on Venus'

Undergraduate (BS.c) or graduate (MS.c) thesis research supervision

- 2021, BS.c, Theresa Eingartner, Department Computer Science (Visual Computing), Friedrich-Alexander-University Erlangen-Nürnberg, Germany, 'Scientific visualisation of 3D mantle domains inside the Earth'
- 2019, MS.c, Timothy Gray, Dept. of Earth sciences, ETH Zürich, 'Numerical models of mantle flow driven craton motions on Venus'
- 2019, BS.c, Deborah Stahler, Dept. of Earth sciences, ETH Zürich, 'The origin of asymmetrical coronae on Venus: insights from 3D thermomechanical modelling'
- 2018, MS.c, Alejandro Cortes, Dept. of Earth sciences, ETH Zürich, '3D thermo-mechanical modelling of oblique subduction zones'

TEACHING

09.2019 - 06.2022 **Course teaching**, ETH Zürich, Switzerland

- 3rd yr Undergraduate / 1st yr graduate course ‘Dynamics of Mantle and Lithosphere’
- 2^{ns} yr Undergraduate course ‘Geophysical fieldwork’

09.2014 - 07.2016 **Course teaching**, Utrecht University, the Netherlands

- 2nd yr Undergraduate mathematical courses ‘Differential Equations in Earth Sciences’ and ‘Linear Algebra and Vector Analysis’
- 2nd yr Undergraduate Earth sciences courses ‘Deformation and Metamorphism of the Crust’ and ‘Geological fieldwork preparation’
- 1st yr Undergraduate courses ‘Physics’, ‘Mathematics’, and ‘Geology’

INSTITUTIONAL RESPONSIBILITIES

Dept. of Earth Sciences, ETH Zürich, Switzerland (selected)

- 09.2021 - 09.2022, **Fix the Leaky Pipeline** peer-mentoring group **co-organiser** (Women in STEM program)
- 05.2019 - 05.2022, **Leading organiser** of the **D-ERDW Doctoral Retreat**
- 01.2019 - 12.2022, Group meetings organisation, Geophysical Fluid Dynamics group
- 06.2019 - 09.2022, Weekly Department networking event organisation (**‘Friday Beers/Peers’**)

Geosciences Dept., Utrecht University, the Netherlands (selected)

- 2015 - 2016, Study Association’s Board of Advice, **student consultant**
- 2014 - 2016, **Writer and editor** of the Earth Sciences magazine ‘PanGeo’

APPEARANCE IN/COVERAGE BY MEDIA (SELECTED)

- On-camera commentary (expert interviewee) for [The History Channel’s ‘The UnXplained: Mysteries of the Universe’](#) documentary, *expected spring 2024*
- Expert opinion quote in *Scientific American* article [New map reveals secrets of Io, the solar systems most volcanic moon](#), 11.2023
- Expert opinion quote in *New York Times* article [Billions of Years Ago, Venus May Have Had a Key Earthlike Feature](#), 10.2023
- Interviewed for, and quoted in, the *Frankfurter Allgemeine Zeitung* article [Lava für die Liebesgöttin](#), 03.2023
- Expert opinion quote in *National Geographic* article [Venus is volcanically alive, stunning new find shows](#), 03.2023
- Interviewed for a Women-in-STEM interview by [GAIA \(Dutch network for women in Earth Sciences\)](#): [‘Interview with dr. Anna Gülcher’](#), 12.2022
- Scientific guest in podcast episode [‘Unraveling the geologic history of Venus’](#), *‘The Cosmic Cast’*, 04.2022
- [Vénus coronae et panaches actifs](#), *L’Astronomie*, vol. 145, pp. 4-7, 01.2021
- [Venus has crown-shaped hotspots that form its own ‘Ring of Fire’](#), *CNN Space + Science*, 07.2020
- [Venus has dozens of volcanic hotspots, says study](#), *Forbes*, 07.2020
- [The Venus ‘Ring of Fire’](#), *ETH News*, 07.2020
- [Scientists identify 37 recently active volcanic structures on Venus](#), *Reuters*, 07.2020
- [Volcanoes are still active on Venus](#), *Cosmos Magazine*, 07.2020
- [“Dit verandert onze kijk op Venus grondig”: volgens nieuwe studie is planeet actiever dan gedacht](#), *VRT nieuws* (July 2020)
- [Vulkanen op Venus zijn nog steeds actief](#), *Scientias.nl*, 07.2020

INVITED SEMINAR AND KEYNOTE TALKS

24. [09.2024](#), Ada Lovelace Workshop on Numerical Modeling of Mantle and Lithosphere dynamics, Sete, France (**Invited keynote speaker**)
23. [12.2023](#), Earth and Planetary Sciences department, UC Riverside, Hewett Club Lecture Series (**Invited seminar speaker**)
22. [11.2023](#), Earth, Planetary, and Space Sciences, University of California Los Angeles (UCLA), Geophysics seminar (**Invited seminar speaker**)
21. [10.2023](#), 31st Venus Exploration and Analysis Group meeting, status report on ‘Venus data accessibility’ (**Invited speaker**)
20. [10.2023](#), Department of Earth, Environmental & Planetary Sciences, Brown University, Lunch Bunch seminar series (**Invited seminar speaker**)
19. [10.2023](#), Department of Earth & Planetary Sciences, Yale University, EPS Colloquium (**Invited seminar speaker**)

18. [10.2023](#), Institute of Geophysics and Planetary Physics (IGPP), Scripps Institution of Oceanography, UCSD, Institute seminar (**Invited keynote speaker**)
17. [10.2023](#), Geological Society of America (GSA), 'Venus: Earth's hotter twin' session (*declined due to conflict of schedule*) (**Invited keynote speaker**)
16. [09.2023](#), Humans2Venus foundation Venus speaker series (**Invited speaker**)
15. [05.2023](#), Caltech seismolab geophysics seminar series (**Invited seminar speaker**)
14. [02.2023](#), LPI Venus Surface and Atmosphere meeting, 'Venus Tectonism' session (*declined due to conflict of schedule*) (**Invited keynote speaker**)
13. [12.2022](#), AGU Fall Meeting 2022, session 'Advances in Mantle Convection and Planetary Evolution' (**Invited speaker**)
12. [12.2022](#), Charles University Prague geophysics seminar (**Invited seminar speaker**)
11. [05.2022](#), EGU General Assembly 2022, session 'Towards the Decade of Venus' (**Invited session speaker**)
10. [04.2022](#), VEXAG "Second Planet Second Tuesdays" Colloquium (**Invited speaker**)
9. [08.2021](#), German/Swiss Geodynamics Workshop 2021, Bad Belzig, Germany (**Keynote speaker**)
8. [03.2021](#), NAS Planetary Science and Astrobiology Decadal Survey 2023-2032. 'Venus Geodynamics' open session (**Keynote speaker and panelist**)
7. [03.2021](#), Imperial College Earth and Planets Seminar
6. [02.2021](#), Zehijang University Earth and Data seminar
5. [02.2021](#), Oxford University Geophysics seminar
4. [11.2020](#), ETH Planetary Geophysics seminar
3. [10.2020](#), University of Maryland, Department of Geology seminar series
2. [08.2020](#), NASA GISS mini-conference 'Venus Science Today' (**Invited speaker and panelist**)
1. [07.2020](#), IGCP 648 seminar series 'Supercontinent Cycles and Global Geodynamics'

CONFERENCE/WORKSHOP CONTRIBUTIONS

Conference/workshop talks

36. **Gülcher, A. J. P.** (2024) Unveiling Venus' tectonic furnace: geodynamic modelling, future missions, and insights into rocky planets. Rocky Worlds III workshop, Zürich, Switzerland
35. **Gülcher, A. J. P.** and Gerya, T. (2023) Prolonged magmatic activity and eclogite recycling at asymmetric coronae on Venus. AGU Fall meeting, San Francisco, USA
34. Desiderio, M., **Gülcher, A. J. P.** and Ballmer, M. (2023) The Fate of Primordial Mid-Mantle Heterogeneities and Their Synthetic Seismic Signal. AGU Fall meeting, San Francisco, USA
33. **Gülcher, A. J. P.** and Hahn, B. (2023) Venus data and resources transparency. 21st Annual Meeting of the Venus Exploration and Analysis Group. Albuquerque, New Mexico, USA (**invited talk**)
32. **Gülcher, A. J. P.**, Yu, T.Y., Stadler, and Gerya, T. (2023) The role of geodynamic modelling of Venus' tectonics and volcanism in paving the way for the 'Decade of Venus'. International EnVision Venus Science Workshop, Berlin, Germany
31. Van Zelst, I., **et al. (Gülcher, A. J. P.)** (2023) Estimates on the expected annual seismicity of Venus. International EnVision Venus Science Workshop, Berlin, Germany
30. Desiderio, M., **Gülcher, A. J. P.**, and Ballmer, M. (2023). The Heterogeneous Earth Mantle: Numerical Models of Mantle Convection and their Synthetic Seismic Signature. EGU General Assembly, Vienna, Austria
29. **Gülcher, A. J. P.**, Yu, T.Y., Stadler, and Gerya, T. (2023) Corona Structures at Topographic Margins on Venus Reveal Interior Dynamic Processes. Lunar and Planetary Sciences Congress, Houston, USA
28. Van Zelst, I., **et al. (Gülcher, A. J. P.)** (2023) First results of our ISSI team: Estimating the current seismicity of Venus. LPI Venus surface and atmosphere workshop, Boulder, Colorado, USA
27. **Gülcher, A. J. P.**, Ballmer, M., and Tackley, P. (2022). 3D Spherical Mantle Convection Models illuminate the Coupled Preservation of Recycled and Primordial Heterogeneity in Earth's Lower Mantle. AGU Fall meeting (virtual) (**invited talk**)
26. **Gülcher, A. J. P.**, Golabek, G., Thielmann, M., Ballmer, M., and Tackley, P. (2022). Narrow, fast, and "cold" mantle plumes on Earth explained by strain-weakening rheology in the lower mantle. EGU General Assembly, Vienna, Austria
25. **Gülcher, A. J. P.**, Gerya, T., and Montesi, L. (2022). Corona structures as a window into volcano-tectonic activity on Venus: key insights and ways forward. EGU General Assembly, Vienna, Austria (**invited talk**)
24. Desiderio, M., **Gülcher, A. J. P.**, and Ballmer, M. (2021). The interplay between recycled and primordial heterogeneities: constraints on Earth mantle dynamics via numerical modeling. EGU General Assembly, Vienna, Austria

25. **Gülcher, A. J. P.**, Golabek, G., Thielmann, M., Ballmer, M., and Tackley, P. (2021) Shaping Earth's mantle convection via strain-weakening rheology in the lower mantle, AGU Fall Meeting (virtual)
24. **Gülcher, A. J. P.**, Ballmer, M., and Tackley, P. (2021) Breakdown of primordial layering in the early Earth: implications for tectonic regime and ancient geochemical signals through time, Goldschmidt 2021 conference (virtual)
23. **Gülcher, A. J. P.**, Ballmer, M., and Tackley (2021). Coupled dynamics of primordial and recycled heterogeneity in Earth's lower mantle, and their present-day seismic signatures. EGU General Assembly (virtual)
22. **Gülcher, A. J. P.**, Ballmer, M. and Tackley, P. (2020). The coexistence of recycled and primordial heterogeneity in Earth's lower mantle: a geodynamical perspective. AGU 2020 Fall Meeting (virtual)
21. **Gülcher, A. J. P.**, Montesi, L. and Gerya, T. (2020). Widespread ongoing plume activity on Venus revealed by variations in the morphology of large coronae. Europlanet Science Congress (virtual)
20. Cutts, J. A. **et al. (Gülcher, A. J. P.)**, (2020) Venus Coronae and Tessera Explorer (VeCaTEx) Mission Concept Investigating the Surface of Venus from beneath the Clouds, Venus Exploration and Analysis Group (VExAG) annual meeting (virtual)
19. **Gülcher, A. J. P.**, Yan, J., Ballmer, M., and Tackley, P. (2020) The formation, preservation and seismic signatures of chemical heterogeneities in the lower mantle. Goldschmidt 2020 conference (virtual)
18. **Gülcher, A. J. P.**, Ballmer, M., Tackley, P., and Koelemeijer, P. (2020) The formation, preservation and seismic signatures of chemical heterogeneities in the lower mantle. EGU General Assembly (virtual)

Conference/workshop posters

17. **Gülcher, A. J. P.**, Smrekar, S., and Gurnis, M. (2023) Applying 3D rift models to Venus. AGU. San Francisco, USA
16. Casciolo, G. **et al. (Gülcher, A. J. P.)** (2023) The VERITAS Gravity Science Investigation. AGU. San Francisco, USA
15. Hearst, K., **Gülcher, A. J. P.**, and Smrekar, S. (2023) Topographic flexure and compensation: possible subduction at Ambarona Corona on Venus? AGU Fall meeting. San Francisco, USA
14. **Gülcher, A. J. P.**, Smrekar, S., and Gurnis, M. (2023) The peculiar case of rift tectonics on Venus. Lunar and Planetary Sciences Congress, Houston, USA
13. **Gülcher, A. J. P.**, Yu, T-Y., Stadler, D., and Gerya, T. (2022) The origin of asymmetrical coronae on Venus: Morphology classification and 3D models of plume-margin interactions. AGU Fall meeting (virtual)
12. **Gülcher, A. J. P.** (2021) The enigma of Venusian coronae and tectonics. AGU Fall Meeting (virtual)
11. Desiderio, M., **Gülcher, A. J. P.**, and Ballmer, M. (2021). The interplay between recycled and primordial heterogeneities: predicting Earth's mantle dynamics via numerical modeling. EGU General Assembly (virtual)
10. Golabek, G., **Gülcher, A. J. P.**, Thielmann, M., Tackley, P., and Ballmer, M. (2020) Strain-weakening rheology in Earth's lower mantle and its control on mantle convection and tectonics. AGU Fall Meeting (virtual)
9. Golabek, G., **Gülcher, A. J. P.**, Thielmann, M., Tackley, P., and Ballmer, M. (2020) Strain-weakening rheology in Earth's lower mantle: a multi-scale numerical endeavour. EGU General Assembly (virtual)
8. Cigala, V. **et al. (Gülcher, A. J. P.)** (2020) SciComm via the European Geoscience Union Divisions' blogs: experiences from the editorial teams. EGU General Assembly (virtual)
7. **Gülcher, A. J. P.**, Ballmer, M., and Tackley, P. (2019) Constraints on Primordial Heterogeneity Preservation in the Lower Mantle and Implications for Global-Scale Mantle Dynamics. AGU 2019 Fall Meeting, San Francisco, USA
6. Ballmer, M., Yan, J., **Gülcher, A. J. P.**, and Gebhardt, D. (2019) Mantle heterogeneity in terrestrial planets: Formation, mixing, and segregation through time. AGU Fall Meeting, Washington DC, USA
5. **Gülcher, A. J. P.**, Ballmer, M., and Tackley, P. (2019) Rheological constraints on primordial heterogeneity preservation in Earth's lower mantle. Ada Lovelace workshop on modelling lithosphere and mantle dynamics, Sienna, Italy
4. **Gülcher, A. J. P.**, Ballmer, M., and Tackley, P. (2019) Investigating the effect of rheological and tectonic parameters on the preservation of primordial reservoirs in Earth's lower mantle: a numerical study. EGU General Assembly, Vienna, Austria (**Outstanding Student Poster Presentation award**)
3. **Gülcher, A. J. P.**, Gerya, T., and Montesi, L. (2018) Plume Penetration into Venusian Lithosphere and the Origin of Coronae. AGU Fall Meeting, Washington DC, USA
2. Ballmer, M., **Gülcher, A. J. P.**, Gebhardt, D., and Waszek, L. (2018) The formation and preservation of large-scale primordial heterogeneity in the Earth's mantle. AGU Fall Meeting, Washington DC, USA
1. **Gülcher, A. J. P.**, Beaussier, S., and Gerya, T. (2017) On the formation of oceanic detachment faults and their influence on intra-oceanic subduction initiation: 3D thermomechanical modeling. XV International Workshop on Mantle and Lithosphere Dynamics 2018, Putten, the Netherlands

