Curriculum Vitae | Robert Myhill

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School of Earth Sciences, University of Bristol,
Date of Birth: 16th March 1986. Nationality: British.

RELEVANT EXPERIENCE

4 years PhD experience in earthquake location and waveform modelling including receiver function analysis, directivity measurements and cross correlation. 4 years postdoctoral experience in high pressure experimental petrology on melts, silicate and oxide phases, using piston cylinder and multi-anvil apparatus. Analytical experience includes EPMA, SEM, XRD, Mössbauer, Raman and ERDA techniques. Experienced user of PerpleX and THERMOCALC thermodynamic software, and have implemented thermodynamic routines into the open-source BurnMan software package. I am fluent in the python and C++ programming languages.

EDUCATION

2012	PhD Geophysics *The Mechanisms of Deep Earthquakes*	University of Cambridge
2008	MSci Natural Sciences (1/32 in class) *Earth Sciences*	University of Cambridge
2007	MA Natural Sciences (1/36 in class) *Geology (plus Physics, Maths and Chemistry)*	University of Cambridge

PROFESSIONAL EXPERIENCE

2016	Postdoctoral Research Associate *Preparation for the InSight Mission*	University of Bristol
2015	Postdoctoral Researcher *Thermodynamics of core formation*	Bayerisches Geoinstitut
2012-2014	Alexander von Humboldt Research Fellow *High pressure experimental petrology*	Bayerisches Geoinstitut

SELECTED HONOURS AND AWARDS

2013-2014	Alexander von Humboldt Research Fellowship for Postdoctoral Researchers.
2011	Outstanding Student Poster Award, Geodynamics Division (European Geophysical Union General Assembly).
2010	The Kingsley Bye-Fellowship. Magdalene College, Cambridge.
2008	The Hugo de Balsham Prize for Exceptional Academic Distinction.
	The Harkness Scholarship (first-placed Finalist in Geological Sciences, University of Cambridge).
	The Huppert Prize in Geophysics
2007	The Henry Wilkinson Cookson Senior Scholarship in Natural Sciences.

SELECTED COMMUNITY ROLES

- Session convener at AGU Fall Meeting on seismology (2012), mineral physics (2015) and planetary sciences (2016)
- Reviewer for the Journal of Mineralogical and Petrological Sciences, American Mineralogist, GeoResJ and Minerals
- Chapter editor for Geochemical Perspectives
- Developer of BurnMan and ASPECT software

PUBLICATIONS

In preparation, submitted and accepted

1. Myhill, R., Teanby, N. and Wookey, J., Seismic diagnostics for the interior chemistry of Mars: guides for the InSight Mission, in prep.
2. Myhill, R., Rubie, D. and Frost, D. J., Partitioning between silicate and metal melts; a model for core formation, in prep.
3. Dannberg, J. et al., Grain-size dependent convection and seismic observables in the Earth's mantle, in prep.
4. Myhill, R. et al., Quenchable water-rich aluminous post-stishovite, and implications for water cycling and seismic scatterers in the lower mantle, American Mineralogist, in prep.
5. Teanby, N. et al., Anelastic seismic coupling of wind noise through Mars regolith for NASAs InSight Lander at short periods, submitted, Space Science Reviews.
6. Novella, D. et al., Melting phase relations in the systems Mg_2SiO_4-H_2O and $MgSiO_3$-H_2O at upper mantle conditions, in review, Geochimica et Cosmochimica Acta.
7. Myhill, R., Excess thermodynamic and elastic properties of mineral and melt solutions: modelling and implications for phase relations and seismic velocities, in revision, Contributions to Mineralogy and Petrology.

Published

1. Myhill, R. et al., 2016, Hydrous melting and partitioning in and above the mantle transition zone: insights from water-rich MgO-SiO_2-H_2O experiments, Geochimica et Cosmochimica Acta. doi:10.1016/j.gca.2016.05.027
2. Myhill, R. et al., 2016, On the P-T-fO_2 stability of Fe_4O_5 and Fe_5O_6-rich phases: a thermodynamic and experimental study, Contributions to Mineralogy and Petrology, 171.5:1–11, doi:10.1007/s00410-016-1258-4.
3. Frost, D. J. and Myhill, R., 2016, Chemistry of the Lower Mantle, in "Deep Earth" (AGU Geophysical Monograph), 225–240, doi:10.1002/9781118992487.ch18.
4. Ishii, T. et al., 2016, Generation of pressures over 40 GPa using Kawai-type multi-anvil apparatus with tungsten carbide anvils, Review of Scientific Instruments, 87:024501, doi:10.1063/1.4941716.
5. Rassios, A. et al., 2016, Preserving the non-preservable geoheritage of the Aliakmon River: A case study in geo-education leading to cutting-edge science, Bulletin of the Geological Society of Greece.
6. Wessel, P. et al., 2015, Semiautomatic fracture zone tracking, Geochemistry, Geophysics, Geosystems, doi:10.1002/2015GC005853.
7. Pamato, M. G., Myhill, R. et al., 2015, Lower mantle water reservoir implied by the extreme stability of a hydrous aluminosilicate, Nature Geoscience, 8:75–79, doi:10.1038/ngeo2306.
8. Myhill, R., 2013, Slab buckling and its effect on the distributions and focal mechanisms of deep-focus earthquakes, Geophysical Journal International, 192.2:837–853, doi:10.1093/gji/ggs054.
9. Myhill, R. and Warren, L. M., 2012, Fault plane orientations of deep earthquakes in the Izu-Bonin-Marianas subduction zone, Journal of Geophysical Research, 117:B06307, doi:10.1029/2011JB009047.
10. Myhill, R., McKenzie, D. and Priestley, K., 2011, The distribution of earthquake multiplets beneath the southwest Pacific, Earth and Planetary Science Letters, 301:87–97, doi:10.1016/j.epsl.2010.10.023.
11. Myhill, R., 2001, Constraints on evolution of the Mesohellenic Ophiolite from sub-ophiolitic metamorphic rocks, in Wakabayashi, J., and Dilek, Y., eds., Mélanges: Processes of Formation and Societal Significance: Geological Society of America Special Paper 480:1–20, doi:10.1130/2011.2480(03).