



Further Reading List for London Lecture: Why Earth developed into the crucible of life, and Venus into a hostile wasteland

Dr Sami Mikhail – University of St. Andrews

Wednesday 22 November 2017

The reading list can be found at: <https://www.geolsoc.org.uk/EarthvsVenus17>

Popular Articles and Resources

Background

- a. The Geological Society: Year of Risk
<https://www.geolsoc.org.uk/risk17>
- b. The Geological Society: Geology for Society – Geohazards
<https://www.geolsoc.org.uk/geohazards>
- c. The Geological Society: Volcanoes factsheet
www.geolsoc.org.uk/factsheets
- d. NASA: Our solar system: in depth
<https://solarsystem.nasa.gov/planets/solarsystem/indepth>
- e. National Geographic: Venus
<https://www.nationalgeographic.com/science/space/solar-system/venus/>

Habitable atmospheres

- a. The Geological Society –London Lecture Series: Earth's Climate Evolution
<https://www.geolsoc.org.uk/Events/Past-Meeting-Resources/London-Lectures/London-Lectures-2015/Earths-Climate-Evolution>
- b. BBC Earth: What is the hottest temperature life can survive?
<http://www.bbc.co.uk/earth/story/20160209-this-is-how-to-survive-if-you-spend-your-life-in-boilin-water>
- c. NASA: NASA Climate Modelling Suggests Venus May Have Been Habitable
<https://www.nasa.gov/feature/goddard/2016/nasa-climate-modeling-suggests-venus-may-have-been-habitable>

- d. New Scientist: Solar system mysteries: What happened to Venus?

<https://www.newscientist.com/article/2073640-solar-system-mysteries-what-happened-to-venus/>

Volcanism on Venus

- a. Geological Society Publications: Volcanism and tectonism across the inner solar system: an overview

<http://sp.lyellcollection.org/content/401/1/1>

- b. European Space Agency: Hot lava flows discovered on Venus

http://www.esa.int/Our_Activities/Space_Science/Venus_Express/Hot_lava_flows_discovered_on_Venus

- c. The Conversation: Venus has very few volcanoes – weirdly, this might be why it's as hot as hell

<https://theconversation.com/venus-has-very-few-volcanoes-weirdly-this-might-be-why-its-as-hot-as-hell-78363>

Books and journal articles

Mikhail, S., Heap, M.J., 2017 Hot climate inhibits volcanism on Venus: Constraints from rock deformation experiments and argon isotope geochemistry. *Physics of the Earth and Planetary Interiors* 268, 18–34

Heap, J. M., Byrne, P., Mikhail, S. 2017 Low surface gravitational acceleration of Mars results in a thick and weak lithosphere: Implications for topography, volcanism, and hydrology *Icarus* Volume 281, 103-114

Mikhail, S., Sverjensky, D.A., 2014. Nitrogen speciation in upper mantle fluids and the origin of Earth's nitrogen-rich atmosphere. *Nature Geoscience* 7, 816–819

Wilson, 2009. Volcanism in the Solar System. *Nature Geoscience* 2, 389–397

Oppenheimer, C., Pyle D. M., J. Barclay (eds) 2003. Volcanic Degassing, *Geological Society, London, Special Publications* Volume 213