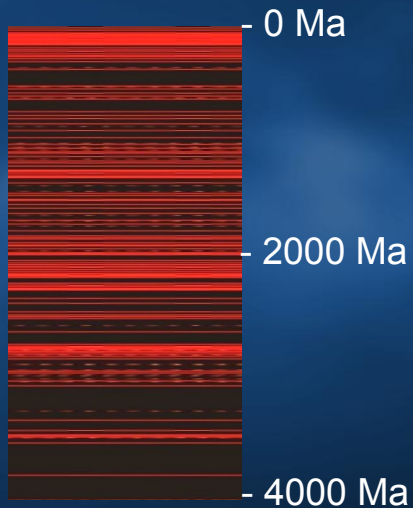


Massive Volcanism Leads to Heat-death of Earth-like Worlds



Lava flow and sulfur emission from 2014 Iceland



Massive volcanic events “Bar Code” in Earth history (back to 4000 Ma). LIPs occurring every ~30 M yrs

A statistical study of the largest volcanic events in Earth’s history demonstrated that similar events may have caused the heat-death of Venus and could potentially lead to the heat-death of Earth in the future.

- A recent study examined the timing of large igneous provinces (LIPs) throughout Earth's history to estimate the likelihood of nearly simultaneous events that could drive a planet into an extreme moist or runaway greenhouse, leading to the end of volatile cycling and causing the heat death of formerly temperate terrestrial worlds.
- Results indicated that the timing of such events was found to be random (bottom figure). LIPs that overlap by less than 1 million years are likely, which is less than the time over which terrestrial LIP environmental effects are known to persist.
- Data from this study support the conjecture that environmental impacts of LIPs, while narrowly avoiding grave effects on the climate history of Earth, could have been responsible for the heat death of our sister world Venus.