Japan Geoscience Union Meeting 2015
(May 24th - 28th at Makuhari, Chiba, Japan)

BPT23-01 Room:104 Time:May 25 09:00-09:15

Splashed Hadean Seawater Hypothesis

GENDA, Hidenori[1*] ; UENO, Yuichiro[2] ; USUI, Tomohiro[2] ; UETA, Shoji[2] ; FORIEL, Julien[1] ; BAO, Huiming[3] ; SUN, Tao[4]

[1]Earth-Life Science Institute, Tokyo Institute of Technology, [2]Department of Earth and Planetary Sciences, Tokyo Institute of Technology, [3]Louisiana State University, [4]JSC NASA

We propose a new hypothesis that the information about the Hadean Earth's seawater was recorded on the Moon's surface. Understanding of the Hadean Earth's environment is a key to reveal the origin of life on the Earth. However, the information about the Hadean Earth's environment is very limited, because there is no geological rock record on the present Earth. Therefore, we focus on the Moon. Hadean Earth experienced a lot of asteroid and/or comet bombardments, and some amount of Hadean seawater should be splashed into the space. Some fraction of salt dissolved in Hadean seawater should spread over the Moon's surface. According to our preliminary estimate, about 20% of Hadean seawater would be splashed out. Since the Moon orbited much closer to the Earth in Hadean time, significant amount of salt that was dissolved in the Hadean seawater is carried to the Moon's surface. We investigated the feasibility of this hypothesis, and discussed how to test this hypothesis.