

Characteristics and Significant Exploration of Small Solar System Bodies

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Characteristics and significant exploration of the small Solar System bodies are summarized as follows:

- 1)Small bodies of the Solar System are primordial materials to form the planets by the impact processes.
- 2)Small bodies of the Solar System are remained as nano-solid materials after air-liquid phases during impact processes.
- 3)Impacts on heterogeneous surfaces penetrate light elements of carbon and water hydrogen to the interior and be stored for magmatic melting with lift-up eruption of volcano-like process.
- 4)Light elements on the present Earth are not used for the small bodies, because the Earth is changed so much by ocean water system.
- 5)Monomer carbons of organic compounds are formed everywhere if shock-wave reaction is generated there. However, to form high molecules of supra- to giant-molecules for organic life compounds are required for stable and long high temperature condition, which is not impact condition process in smaller bodies in the Solar System .

In short,

- 1)Sample return plan with carbon and hydrogen is significant to our Earth due to be loss by in-situ exploration.
- 2)Life carbon organic compounds are not expected on smaller bodies due to difficulty of measurements, because shock-wave reaction makes any monomer organic compounds.
- 3)Thus there are no scientific significance except sample returning,if engineering supports are not expected.

Keywords: Smaller bodies, Characteristics, Exploration, Carbon and water, Life organic compounds, Mini bubble texture