

Primordial Rock Aggregates of Asteroids to Active Water-Planet Earth

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Introduction: Present Planet Earth is complete uniform (pure) three systems of air (atmosphere), liquid (Ocean water)-rock (crust-mantle-core), because active planet reveals complicated systems increased activities (from one to three system, each system with different characters, rocks on the surfaces with all different features with increased larger ocean water system. This is mainly because rock system with stable system remained in lower PT condition on the different surface PT conditions among air, liquid and hard metallic rocks presently. The point is how to form these complicated systems initially, intermediately, and final present processes. The purpose of the paper is be clear rocky body of Asteroid (Hayabusa) also from overall rock process to be formed actively [1-6].

Rocks significance: Ions and elements (isotopes) are formed chemically in the star (nuclear reaction) condition, which can find widely in the space world. However rock and mineral (crystal) are formed by giant atomic composition and structure (at more stable reaction time and space) which are found on the surface on rocky body of Asteroids or planets (as in Earth-type planet and asteroids). This means that rock are only stable in the low PT conditions as longer existences on the Solar System [1-3].

Energy sources significances: The present energy sources on the Active Earth are three sources of planetary impacts (as meteorite impacts), Earthquake and volcano now. 1) The outer-spaced sources (to the Earth) are meteorite impact, gravitational sources of Earth quake, and volcano are occurred on active Earth. 2) Probable missing sources of meteorite- meteorite (asteroids) impacts on Earth are considered to be occurred (especially sources of fluid waters on the Earth) [1-6]. (Table 1).

Rocks variety: Rocks on the Solar Systems are used mixed minerals and unclear intermediate fluids with glassy solids usually. However, terminology of mineral is used for prefect crystal (gem) and crystalline solids (definition on Earth mineral crystals), though its crystal has been formed at stable condition under plates boundary with magmatic melt condition widely or longer. Therefore, mineral-like parts of rocky stones on Asteroid (on the Moon and Mars also), which are different completely by Earth's mineral crystal. Main point difference is that Earth minerals are completely crystal (with stable high PT condition, and longer kept condition), though Asteroid mineral-like parts are quick shock-wave condition with unstable and less time reaction with various PT conditions). It might be used mineral-like or meteoritic mineral for extraterrestrial solid rocks [4-6].

Inhomogeneous rocks on the Earth: Active Earth shows **phase states of air, liquid and solid** uniform materials, though these systems are slow, long changes with quick mixing. Especially solid rocks are remained last formation. In fact Earth surface is formed largely sea **bottom rocks of carbonates** even large continents widely now which show wide **sea bottom rock** are as fundamental rock now. Even in the present sea bottom are remained changed shapes by ocean-impact effects only. It is **not continuous cyclic structure of active Earth** (even longer ca.4.9gyears). This means that original Asteroid rock are started to **bigger planet rock formation** except longer high PT condition possible in active water-planet. This shows that **many sea rocks and land rock** are formed by **various surface sites** on the Earth now [3-6]. (Table 1)

Table.1 Comparison of rocks of Earth, Asteroid and other extraterrestrial bodies [1-6].

Celestial bodies	Mineral and Rocks	Carbon-bearing System
Earth (active, water planet)	Perfect mineral crystals with mixed as rock	Organic life and inorganic bone system (3phases)
Asteroids, the Moon and Mars	Shocked solids with a few mixed solids	C-bearing solid, Si-C solids, bone-like solid.

Summary: The present works are summarized as follows.

1. Active planet Earth shows three phase system with variable changed and remained on the rocks and minerals now.
2. Solid rocks are only stable in the low PT conditions as longer existences on active Earth, but others inactive bodies are found on Asteroids the Solar System widely.
3. The present energy sources are planetary impacts, Earthquake and volcano, where gravitational sources are also found, though Asteroids impacts on Earth and Asteroids are occurred (as fluid sources there).
4. Rocks on the Solar Systems are used mixed minerals and unclear intermediate fluids with glassy solids. Asteroid mineral-like parts are quick shock-wave condition as meteoritic mineral for the solid rocks.
5. Earth surface remade as various active behavior, originally from Asteroid rock widely.

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