

Study on classification of terrestrial impact structures and concentration of impact-related carbon light elements

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Terrestrial impact structures indicating remnants of the surface activity are classified largely as follows:

1) Type 1 impact structure: Impact crater structures formed at crystalline igneous and sedimentary rocks on large continental crust are almost this type remained at present continents. Eject direction from target rocks is opposite direction for ejecta with vapor.

2) Type 2 impact structure: Impact structures formed at sedimentary and limestone basement rocks of sea (ocean) - water is buried and broken by plate-movements, which should be checked precisely by drilled and physical explorations. Soft or porous target rocks of the type II impact produce comparatively penetration of ejecta or light gas vapor in the progress direction.

The type 2 structure is classified to sea-bottom and lands by remained sites of impact remnants. Sea-bottom type 2 structure can be explored due to young formation, but land type 2 remained at lands is classified more at lowlands remained structures (Akiyoshi and Takamatsu), and at highland remained at the summit (Santa Fe, USA etc.).

The Santa Fe impact structure which has been explored by research scientists of the University of New Mexico in 2011 fall during my stay at the UNM University, is to be classified as highland type 2 structure because we found new limestone breccias with impact-related carbon-bearing micro-materials by our FE-ASEM works in this study.

Terrestrial elemental concentration of mineral deposits formed at high temperature, can be formed at impact breccias to produce high contents of carbon and rare-earth elements, as well as previous igneous magmatic melting on the Earth planet.

The present idea of impact concentration can be checked at the Apollo lunar breccias samples with the elemental concentration, which will be applied significantly to other planets and Asteroids for next new exploration of resources and rock-minerals.

Keywords: impact structure, classification, impact carbon-bearing materials, ocean impact, concentration reservoir, limestone breccias