

Meteoritic impact crater in China

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We found best candidate of Chinese impact craters in highlands of 2,200m to 4,000m in height. There are few active volcanic rocks, but primordial basement rocks of granitic and gneiss rocks are found. The following two possible craters are selected here from satellite images, rock collections and material analyses :

Possible impact crater A: Black and red impact-like melt breccias are collected at south and north sides, respectively, of the Qinghai Lake, Qinghai Province, P. R. China. Brecciate rocks are found at western part of the lake. Shatter cone like texture on black shale can be found at west and east sides of the lake. Present large lake (ca.60kmx30km) shows irregular shape where fault line to form low lands are crossed to the center of the lake during Chinese joining from a few smaller continents. The Qinghai Lake is the largest salt-rich lake in China, which reveals strange water circular system to flow out to the bottom of the lake (maybe along the crack lines). Therefore, its lake is considered to be joint lakes from three small lakes (ca.10km in size) by tectonic movement of the join to form larger lake. We found brecciate limestone from north-west part of the Qinghai lake which contains carbon minerals and Fe-Ni rich grains in limestone by analytical electron microscopy of Yamaguchi University. This indicates that it mixed with meteoritic grains during complicated rock formation.

Probable impact crater B: satellite image photo shows quasi-circular structure with central peaks as ca.20km size in Qinghai province, P.R. China. The north and south rims of the crater structure reveal black and red impact melt rocks, respectively. This crater structure is broken by radiated direction with three rivers and fault lines which were formed by crustal movement after impact event. We found silica rich rocks with various Fe-rich metallic components mixed with granitic elements.

There are two candidates of Chinese impact craters with impact melt rocks. Melt breccias and glassy texture of samples indicate possible impact-related rocks in China.