

### METEORITE IMPACT CRATERS IN SOUTH AMERICA: A BRIEF REVIEW.

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**Introduction:** The first enumeration of impact craters sites in South America is presented here. Proximately twenty proven, suspected and disproven structures have been identified by several sources in this continent until now. But everyone events proposed here aren't really produced by impacts at all. About some of them reasonable doubts exist. Brazil leading the record containing almost half detected and following it in the list Argentina. In Bolivia, Peru, Chile and Colombia only a few were observed. The rest of countries are awaiting for new discoveries.

The following possible and confirmed meteorite impact structures have been reported for this continent, country by country:

**ARGENTINA. Campo del Cielo** (S 27°30', W 61°42'). Impact crater-strewn field. At list twenty craters with an age of about 4000 years over sandy-clay sediments of Quaternary-Recent age. The impactor was an Iron-Nickel Apollo-type asteroid (meteorite type IA) and plenty of meteorite specimens survived the impact. **Bajada del Diablo** (S 42°45', W 67°30'). A very remarkable site of a new very large meteorite impact craters field. Almost 200 structures were identified there. Age is estimated between 0.13 and 0.78 Ma. Other possible craters are **Rio Cuarto** (S 32°52', W 64°14'), **Islas Malvinas** (S 51°00', W 62°00'), **Salar del Hombre Muerto** (S 25°12', W 66°55'), **Antofalla** (S 26°15', W 68°00'), **La Dulce** (S 38°14', W 59°12') and **General San Martín** (S 38°00', W 63° 18').

**BOLIVIA. Iturrealde** (S 12°35', W 67°38'). On Quaternary alluvial deposits, 8 kilometers in diameter. **Llica** (S 19°49', W 68°19') 2.8 x 2.5 kilometers, without specific geological information.

**BRASIL. Araguinha Dome** (S 16°46', W 52°59'). This is so far the largest well stated impact crater in South America. Is a 40-kilometer diameter crater in Paleozoic sediments of the Parana Basin. **Serra da Cangalha** (S 8°05', W 46°51'). Total diameter of multiple rings has been estimated in 12 kilometers. In Paleozoic sediments in the Parnaiba Basin. **Vergeao** (S 26°50', W 52°10'). Is a 12.4 kilometer-diameter circular depression located on Cretaceous basalts and Jurassic/Triassic sandstones of the Sao Bento Group of Parana Basin. **Vista Alegre** (S 25°57', W 52°41'). Is a 9.5 kilometer-wide circular structure in the Parana State, and it is located on the Cretaceous basalts of the Serra Geral formation. **Riachao** (S 7°42', W 46°38'). 4.0 kilometer diameter in sedimentary rocks of the Paranaiba Basin (sandstones from the Pedra de Fogo Formation). 200 Ma. Other possible craters are **Gilbues** (S 10°10', W 45°14'), **Sao Miguel do Tapuio** (S 5°38', W 41°24'), **Cerro Jarau** (S 30°12', W 56°33'), **Inajah** (S 8°40', W 51°00'), **Piratininga** (S 22°28', W 49°09') and **Colonia** (S 23°52', W 46°42').

**COLOMBIA. Rio Vichada** (N 4°30', W 69°15'). Has a diameter of 50 kilometers and it is the largest possible impact structure ever reported in the continental South America. Rocks exposed there include Precambrian meta-sedimentary and granitoid bodies with an extensive sedimentary Tertiary cover.

**CHILE. Monturaqui** (S 23°56', W 68°17'). Is emplaced in Jurassic granite rocks, overlain by a thin Tertiary-Quaternary ignimbrite sheet. The impacting asteroid was metallic: an Iron-Nickel object. 1 Ma.

**PERU. Carancas** (S 16°40', W 69°02'). H4-5 type ordinary chondrite fall on September 15, 2007 digging a crater of 15 meters.