Carancas, Peru Meteorite Could Be 10 Tons

"From the size of the airwave, we can work out the kinetic energy of the impactor – about .03 kilotons of TNT. ...odds are good a multi-ton monster lurks at the bottom of the crater." - Peter Brown, Ph.D., Astronomer

Meteorite crater filled with ground water after 11:34 AM impact on September 15, 2007, in Carancas, Peru, south of Lake Titicaca near Bolivian border. Hole diameter measured between 7.4 to 7.8 meters (26 feet). Ring boundary of ejecta around hole measured between 13.3 to 13.8 meters in diameter. Crater depth from surface to groundwater estimated about 2 meters (7 feet).

October 11, 2007 Tucson, Arizona - I had hoped by now to have the final lab analysis on the water and soil at the Carancas, Peru, meteorite impact site. But Dr. Jose Machare, the geologist at Peru's Ingemmet geological institute in Lima, has been gone since September 29th, won't be back in his office until October 15th and no one at Ingemmet to date has provided a final lab report. When I last talked with Dr. Machare on September 28th, he was still saying that the National Geographic, *New York Times* and NASA's Spaceweather.com reports about a dense deposit of arsenic at the impact site were not true, or at least, not confirmed by Ingemmet analysis.

After the meteorite slammed into the Carancas plateau and created a 26-foot-wide crater on the morning of September 15th, some local residents described seeing water in the crater "boil" with a bad smell and complained afterward that they got sick. So, what is in the crater water and soil?

Since Ingemmet has not released analysis, I contacted meteorite-hunter Michael Farmer in Tucson, Arizona. On September 29th, Michael arrived in Carancas, Peru, to see for himself exactly what was there. Michael says he first went to the police station for directions to the crater and that every policeman had pieces of the meteorite in their pockets and sold Michael some samples. Michael also purchased meteorite fragments from farmers in a village near the crater.

Carancas, Peru, on September 29, 2007. Michael Farmer (green jacket) with his colleague, Moritz Karl (3rd from left) stand with local Carancas police at edge of meteorite crater. Image © 2007 by Michael Farmer.

Then, he says, the Carancas police got upset because they decided they wanted more than the $100 per rock that Michael said he paid. So, Michael decided he better get out of Peru quickly to avoid being put in jail by greedy law enforcement. So he fled to Bolivia and back to Tucson. After that, the police denied they sold meteorite fragments to Michael Farmer.

Michael estimates the Carancas meteorite could be as much as 10 tons, "probably the largest chondrite meteorite to have fallen" to Earth in modern times.

> [Editor's Note: There are two types of stony meteorites, Chondrites and Achondrites. Chondrite is a type of meteorite containing mineral spheres called *chondrules*. Most chondrites are believed to originate in the asteroids that orbit the Sun between Jupiter and Mars. Chondrites contain between 2% and 21% iron-nickel metal. A chondrule is a millimeter-sized mineral sphere found in stony chondrite meteorites. Chondrules are formed by re-melting of mineral grains in the solar nebula. Achondrite is a class of meteorites that do not have chondrules. Achondrites are formed by igneous processes on or near the surface of larger asteroids or planets.]

Michael cannot believe that Peruvian scientists did not get equipment to dig down through the water and remove whatever is there. Meanwhile, all that water which has still not been pumped out of the crater could be dissolving the stony meteorite's fragile rock. Michael confirmed for me that all the fragments he brought out of Peru are breccia and he is distributing on his own to meteorite scientists for analysis.

> [Editor's Note: Impact breccia (BRECH-ee-uh) are thought to be diagnostic of an impact event such as an asteroid or comet striking the earth, and are usually found at impact craters. Impact breccia, a type of impactite, forms during the process of impact cratering when large meteorites or comets impact with the Earth or other rocky planets and asteroids. Breccia of this type may be present on or beneath the floor of the crater, in the rim, or in the ejecta expelled beyond the crater. Impact breccia may be identified by its occurrence in or around a known impact crater, and/or an association with other products of impact cratering such as shatter cones, impact glass, shocked minerals, and chemical and isotopic evidence of contamination with extraterrestrial material such as iridium and osmium anomalies.]

Michael Farmer: "This is every piece of the barely 300 grams of meteorite fragments I recovered, either via finding them myself, or purchasing from the locals. A sad haul for a meteorite, which must weigh many tons. But the local government is more interested in watching the meteorite rot in sewage water (locals urinated) than preserving it." Image © 2007 by **Michael Farmer.**

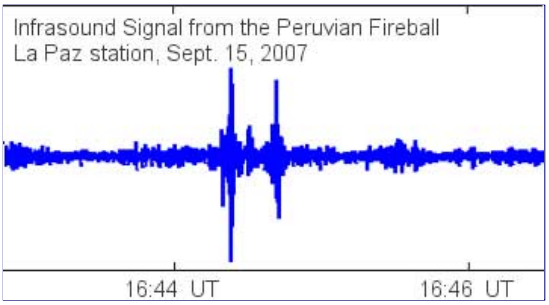
Michael Farmer: "These are the largest pieces I acquired of the Carancas meteorite. Note the black fusion-crusted areas of the meteorites. It is actually not fusion crust, but rather these are clasts that were inside the matrix and blasted out on impact. These meteorite fragments are covered in black shock-veins, showing that this meteorite is clearly a very nice breccia. The meteorite seems to be very fragile, whether naturally, or from the pressure of the impact with planet Earth." Image © 2007 by **Michael Farmer.**

Michael Farmer and Harold Connolly, Ph.D., Editor, *Meteoritical Bulletin*.
Michael Farmer: "We are examining samples of the Carancas meteorite. This meteorite is already being distributed by me to labs all around the world. I will ensure that as many scientists as possible can study specimens." Image © 2007 by **Michael Farmer.**

Infrasound Data from Airwave

There is other data from NASA's Spaceweather.com about the actual impact moment on September 15, 2007, in Carancas, Peru, south of Lake Titicaca near the Bolivian border. I'm quoting now from Spaceweather.com's October 7th news update:

> "On September 15th, a fireball was seen streaking across the skies of Peru and soon thereafter a watery crater was discovered by local residents near the town of Carancas. At first, experts dismissed the connection; the crater didn't look like a meteorite impact. But since then minds have changed.
>
> 'Without reservation this is definitely a meteorite," says astronomy professor Peter Brown of the University of Western Ontario, Canada. 'We found some infrasound data recorded by a station in LaPaz about 70 kilometers (43 miles) away. From the size of the airwave, we can work out the kinetic energy of the impactor – about .03 kilotons of TNT.' The infrasound impact was recorded at 16:44 Universal Time. The residents said the impact was at 11:34 AM local time.



Courtesy of Peter Brown, Ph.D., Prof. of Astronomy, University of Western Ontario, Canada.

> Prof. Brown said, 'Something like 20 to 30 kilograms of the meteorite have already been recovered, but odds are good a multi-ton monster lurks at the bottom of the crater. The bad news: It is below the water table, the rainy season is coming and unless some action is taken ASAP, the rock will quickly oxidize and crumble. We are digging for seismic data of the actual impact – the first actual seismic recording of a terrestrial meteorite impact!'"

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Websites:

Michael Farmer, Meteorite Hunter: http://meteoriteguy.com /carancasfallexpedition2.htm

Peru Geology, Mining and Metallurgical Institute: http://www.ingemmet.gob.pe

Spaceweather.com: http://www.spaceweather.com/

Meteoritical Bulletin: **http://www.meteoriticalsociety.org /simple_template.cfm?code=pub_bulletin**

Astronomer Peter Brown, Ph.D.: http://www.cascaeducation.ca/files /cdn_profile_brown.html

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