



The Kamil "Patatrac" Crater (Gilf Kebir region, Egypt)

A rare sample for small-scale meteorite impact craters on Earth

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Dipl.-Geol.

The so named Kamil "Patatrac" Crater was located during a Google Earth "low flight" (1,000 m above ground level) by Vincenzo De Michele (Istituto Gemmologico Italiano).

G. Negro, V. De Michele, M. Di Martino and R. Serra discovered the crater during a preliminary survey in February 2009. The thousands of iron meteorite (ataxite rich in nickel) specimens found scattered within the crater and in the surrounding area confirmed the meteoritic impact origin of the crater. The crater is located at Djebel Kamil, south of Gilf Kebir nearby the Sudanese border. The crater is 45 m in diameter.

A geophysical expedition was then carried out in February 2010 in order to describe this model impact structure and to collect most meteorites specimens in the crater area. The Team identified 5,178 meteoritic fragments totaling 1.7 tons — the biggest single specimen weighs 83 kg.

The Kamil "Patatrac" Crater is not related to the widespread [crater-shaped structures](#) in the Gilf Kebir region. These are much older (28.2 to 26.7 million years) and are of subvolcanic origin.

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First details: <http://tin.er.usgs.gov/meteor/metbull.php?code=52031>

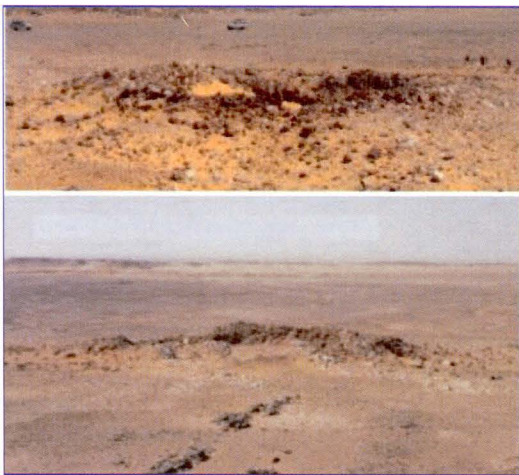
Quick status report: Online July 22, 2010 by [Science Express DOI:](#)

10.1126/science.1190990

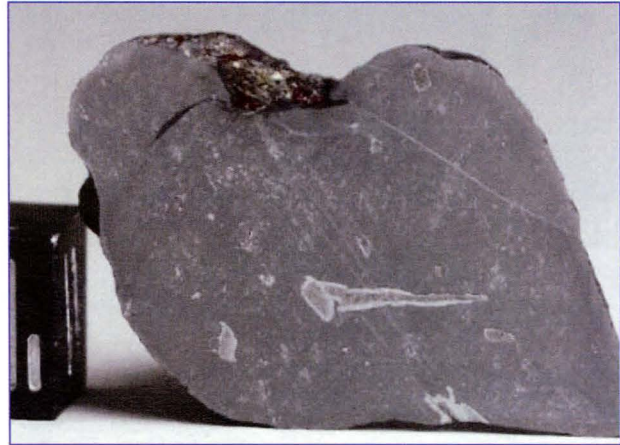
MNA website: <http://www.mna.it/hosts/Kamil/index.htm>



Geophysicists at work in the Kamil Crater to gather detail information of the crater morphology through Ground Penetrating Radar profiles



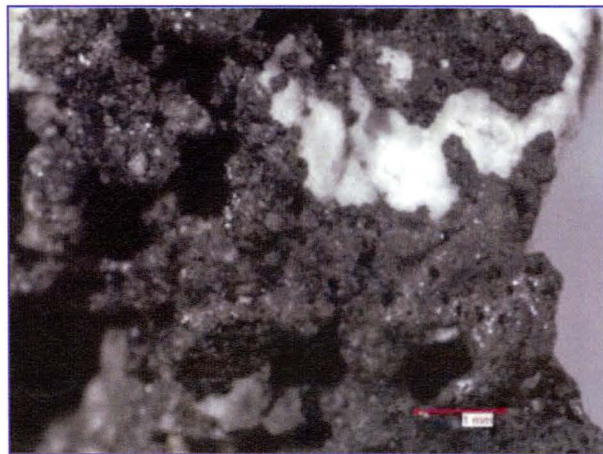
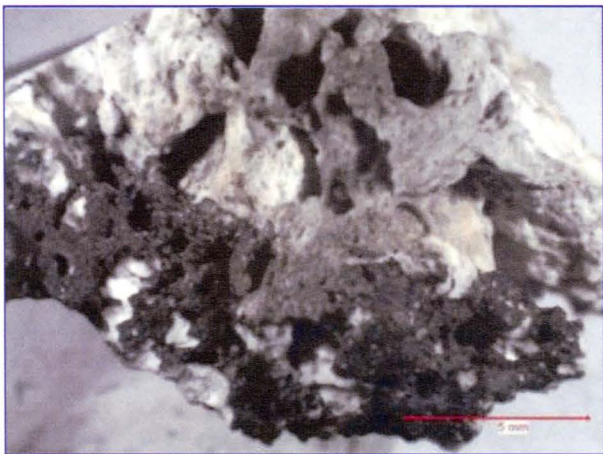
The biggest meteorite specimen found 230 m due north of the crater showing regmaglypts

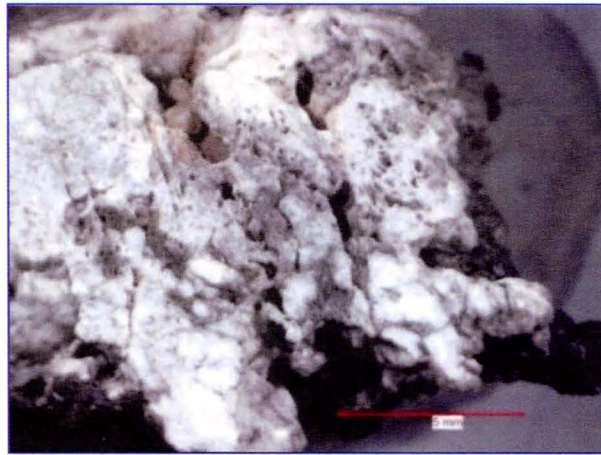
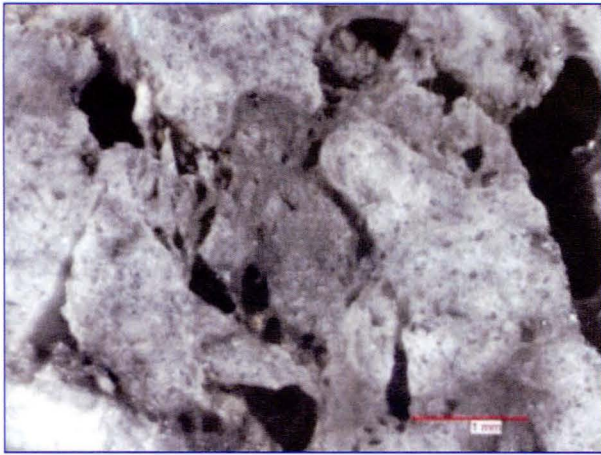


Polished and etched internal surface of shrapnels showing schreibersite inclusions



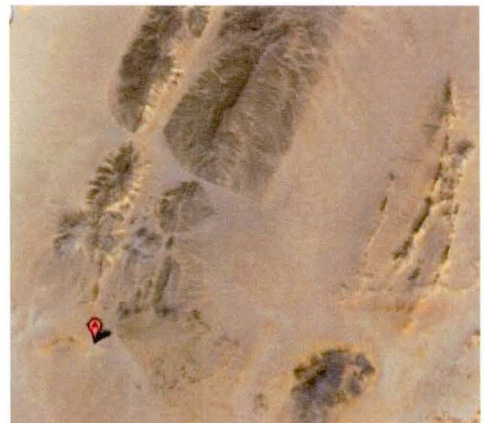
Field photograph of the impact glass associated with Kamil Crater



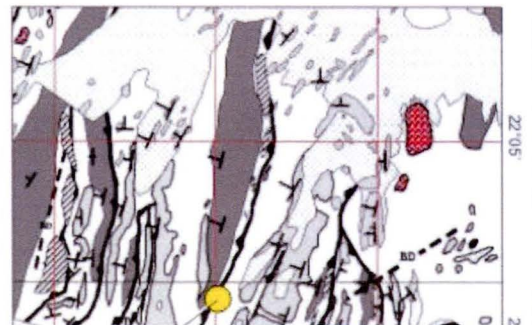


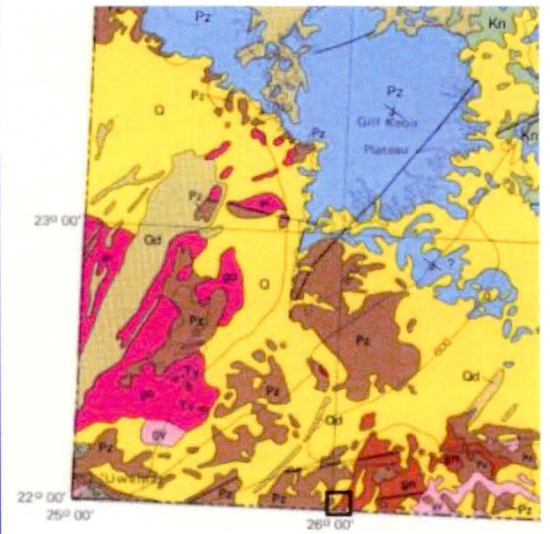
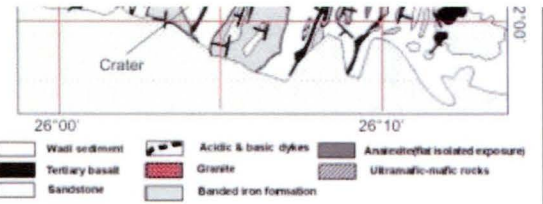
Kamil crater impact glass. Credit: Giancarlo Negro

The geological age of the target-rocks



The Djebel Kamil is known throughout the Gilf Kebir region for the outcrop of Precambrian Basement (gn). According to geological maps are some prominent sandstone hills in the Djebel Kamil of Paleozoic (Pz) origin. The habitus of the sandstones is similar to the sandstones of the southern Gilf Kebir (Aqaba Passage, Kemal-el-Din Plateau), and therefore as there also of Devonian age. The Gilf Kebir and Djebel Kamil are the remains of a once uniform blanket of Devonian sandstones. Its are on a uplifted block of the Basement, which is bounded by faults. Since the end of the Devonian only erosion took place, interrupted only by shallow-marine flooding in the Cretaceous period. These deposits are mostly eroded again. Thick deposits of the Cretaceous period (Kn) are found in the Abu Ballas region, in east of the presumed main-fault, where the Basement and Paleozoic sandstones are about 500 m deeper.





Geological situation