

# IRON DEPOSIT AND ITS BEARING ON THE METEORITE IMPACT EVENT IN THE LIBYAN GLASS AREA SOUTHWESTERN EGYPT

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## ABSTRACT

Iron deposit rich strip trending roughly WNW-ESE and consisting of goethite, hematite, quartz and other subordinate phases has been traced in the interdune corridors of the western side of the glass area between latitudes  $25^{\circ} 23' - 25^{\circ} 40' \text{ N}$  and longitudes  $25^{\circ} 24' - 25^{\circ} 32' \text{ E}$ , north of a little exposure of the mixed breccia [1,2]. The S.S country rocks are noticed as fragments of various sizes ~ mm up to 20-cm within the iron deposit. On a petrographic ground, the iron oxy-hydroxides cement and diffuse through shattered and fragmented quartz grains, some of which shows PDFs.

The chondrite-normalised REE pattern shows the least degree of LREE enrichment relative to the HREE where the LREE/HREE is less than 3, with moderate Eu deficiency. These observations suggest that the iron deposit, like the detected chalcedony patches [3] mark meteorite impact effects on the Libyan glass distribution, in agreement with the locating of a small chunk of rock containing diamond grains and other phases of extraterrestrial origin [1,2,4].

**References:** [1] Barakat, A. 2005. *Meteorite impact effects in the Libyan glass area southwestern Egypt. Ph.D. Thesis, Cairo University, 196p.* [2] Barakat A. 2012. *The precious gift of meteorites and meteorite impact processes. Nova Science Publishers.* [3] Barakat, A. 2005. *Annals Geol. Surv Egypt*, 28, 587-597. [4] Belyanin, G.A. et al., 2018. *Geochimica et Cosmochimica Acta* 223, 462-492.