

STABLE MAGGEMITE AS AN INDICATOR OF ASTEROID IMPACTS

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Maggemite is a reddish oxide of iron (Fe_2O_3) which, for a long time, was considered to be a very rare instable mineral, product of oxidation of magnetite, passing into hematite when being heated. We discovered a good deal of stable maggemite in Yakutia. This new mineral variety does not pass into hematite at heating. Its genesis is due to tempering of limonite in the ancient mantle of waste having 35 mln years ago formed the largest astrobleme Popigay. Maggemite formed as a result of asteroid attack is also present in red-coloured rocks of Mars, its surface being covered by some hundred large and fresh astroblemes.

More than 5.10¹⁵ tons of O₂ would have been needed to form a 1 km layer of red-coloured mantle waste, that surpasses the contemporary contents of O₂ in the Earth atmosphere (1.2.10¹⁵ tons). Martian river system is a sequence of abundance of water forming reddish mantle waste, the water becoming then ice. So much of O₂ in atmosphere being possible only due to photosynthesis, one can admit life existed on Mars.

One can suppose that martian ancient atmosphere was more dense and contained free O₂. The supposed asteroid impact is related to martian presumed third satellite having passed through the gravitational Roche threshold and fallen onto the planet surface. (We propose to name this satellite Tanatos - Death). Its falling pieces resulted in tempering the limonite mantle, transforming it into maggemite, throwing rock pieces back to cosmos, evaporating a bulk of atmosphere and annihilating life on Mars.