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Magnetite Formation from Thermal Decomposition of Siderite: Implications for Inorganic Magnetite Formation in Martian Meteorite ALH84001. Richard V. Morris, SR/NASA Johnson Space Center, Houston. TX 77058

A biogenic mechanism for formation of a subpopulation magnetite in Martian meteorite ALH84001 has been suggested [McKay *et al.*, 1996; Thomas-Keprta, *et al.*, 2000]. We are developing experimental evidence for an alternating working hypothesis, that the subpopulation was produced inorganically by the thermal decomposition of siderite [Golden *et al.*, 2000].

McKay *et al.*, *Science*, 273, 924, 1996; Thomas-Keprta *et al.*, *Geochem. Cosmochim. Acta*, 64, 4049, 2000; Golden *et al.*, *Amer. Mineral.*, 86, 370, 2001.