2006 Joint Assembly
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Cite abstracts as **Author(s) (2006), Title, *Eos Trans. AGU,* *87*(36), Jt. Assem. Suppl., Abstract xxxxx-xx**

Your query was: **kletetschka**

HR: 17:00h
AN: **GP24A-04**
TI: Testing the origin of the magnetic record of chondrites
AU: *** Kohout, T**
EM: *tomas.kohout@helsinki.fi*
AF: *Division of Geophysics, University of Helsinki, P. O. box. 64, Helsinki, Finland*
AU: *** Kohout, T**
EM: *tomas.kohout@helsinki.fi*
AF: *Department of Applied Geophysics, Charles University in Prague, Prague, Czech Republic*
AU: *** Kohout, T**
EM: *tomas.kohout@helsinki.fi*
AF: *Institute of Geology, Academy of Sciences, Prague, Czech Republic*
AU: **Kletetschka, G**
EM: *gunther.kletetschka@gsfc.nasa.gov*
AF: *Institute of Geology, Academy of Sciences, Prague, Czech Republic*
AU: **Kletetschka, G**
EM: *gunther.kletetschka@gsfc.nasa.gov*
AF: *Department of Physics, Catholic University of America, Washington, DC United States*
AU: **Kletetschka, G**
EM: *gunther.kletetschka@gsfc.nasa.gov*
AF: *Laboratory for Extraterrestrial Physics, NASA Goddard Space Flight Center, Greenbelt, MD United States*
AU: **Pesonen, L J**
EM: *lauri.pesonen@helsinki.fi*
AF: *Division of Geophysics, University of Helsinki, P. O. box. 64, Helsinki, Finland*
AU: **Wasilewski, P J**
EM: *peter.j.wasilewski@nasa.gov*
AF: *Laboratory for Extraterrestrial Physics, NASA Goddard Space Flight Center, Greenbelt, MD United States*
AB: The method for determination of the meteorite magnetic record origin has been developed by Kletetschka et al, 2005. The technique utilizes a detailed AF (Alternating Field) demagnetization of NRM (Natural Remanent Magnetization), followed by AF demagnetization of the SIRM (Saturation Isothermal Remanent Magnetization) in the very same AF steps. The ratio of NRM(AF)/SIRM(AF) is plotted against AF demagnetization field. The slope of the NRM(AF)/SIRM(AF) curve contains information about the nature of NRM acquisition process. In the case of the TRM (ThermoRemanent Magnetization) or CRM (ChemoRemanent Magnetization) the coercivity spectrum of NRM should cover equally both the SD and MD particles resulting in the constant NRM(AF)/SIRM(AF) ratio. In the case of the IRM (Isothermal Remanent Magnetization) the low coercivity grains are much more susceptible to the magnetizing field that the high coercivity grains resulting in the increase of the NRM(AF)/SIRM(AF) ratio in the low coercivity (low AF field) region. We applied this method on three chondritic meteorites. The Neuschwanstein (EL6) reveals significant IRM component due to negative NRM(AF)/SIRM(AF) slope in the low

AF fields. The chondrules of Bjurbole (L4) reveals constant NRM(AF)/SIRM(AF) ratio pointing on TRM (or CRM) origin of the NRM. The interesting feature was observed on chondrules from the Avanhandava (H4) meteorite. Systematically lower values of the NRM(AF)/SIRM(AF) ratio in the low AF range points to partial demagnetization of MD grains what can be explained as an effect of the impact demagnetization of the parent body or as an effect of the time-decay of the magnetization. The method can serve as fast tool to determine the nature and origin of the magnetic record of the extraterrestrial and terrestrial materials and has potential application in the paleointensity studies. Kletetschka G., Kohout T., Wasilewski P. J., Fuller M. (2005): Recognition of thermal remanent magnetization in rocks and meteorites. IAGA, 10th Scientific Assembly of the International Association of Geomagnetism and Aeronomy, Toulouse, France, IAGA2005-A-00945, p. 53.
DE: 5440 Magnetic fields and magnetism
DE: 6205 Asteroids
DE: 6240 Meteorites and tektites (1028, 3662)
DE: 1533 Remagnetization
DE: 1540 Rock and mineral magnetism
SC: Geomagnetism and Paleomagnetism [GP]
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