National Conference "100 years of Tungus problem" June 27-29, 2008, Krasnoyarsk, Russia

Testing of the presence of large electromagnetic pulse during the Tunguska event for the Mirror Matter hypothesis

Gunther Kletetschka 1,2,3

1. Department of Physics, Catholic University of America, Washington D.C., USA
2. GSFC/NASA; Code 691, Greenbelt, MD, USA
3. Institute of Geology, Academy of Sciences, Prague, Czech Republic

Tel.: +1-301-286-3804
Email: Kletetschka@nasa.gov

Abstract:

Tunguska event suggested a presence of frequent lightning discharges at the site of the impact. Such discharges should be associated with anomalous magnetic fields. Magnetic fields like this will cause the affected material to record remanent magnetization and as such should be recorded in the material within the epicenter. Structure of the anomalous field may reveal the details of the electric discharges at the site of impact. This type of magnetic acquisition should resemble isothermal remanent magnetization (assuming that the temperature of the affected material did not rise significantly) [1]. We can verify such occurrence with demagnetization of the affected samples and find out the level of magnetization that occurred due to lightning discharge. The orientation of the final magnetization may also reveal the nature of the Tunguska event and provide a test if the Tunguska event have been caused my comet impact or if it could be related to the mixing between the mirror mater and regular matter. Test will be done on the standing trees that survived the event. Our previous measurement on trees showed that magnetization events are recorded in the wood of the trees [2][3]. We intend to test our hypothesis that the tree rings of the surviving trees, containing the tree rings form the Tunguska event, contain information about the anomalous magnetic episode and interpret this episode in light of the current hypothesis for Tunguska, including the mirror matter hypothesis.

[1] P. Wasilewski and G. Kletetschka,
Lodestone - Natures Only Permanent Magnet, what it is and how it gets charged, Geophysical Research Letters 26(15), 2275-2278, 1999.
[2] G. Kletetschka, P. Pruner, D. Venhodova, and J. Kadlec
Magnetic record associated with tree ring density: Possible climate proxy, Geochemical Transactions, 8:2, doi: 10.1186/1467-4866-8-2, 2007.
[3] G. Kletetschka, V. Zila, and P. J. Wasilewski,
Magnetic Anomalies on the Tree Trunks, Studia geophysica et geodetica , 47(2), 371-379, 2003