Abstracts in Alphabetical Order by First Author

Estimate of the magnetic paleofields during the formation of our solar system

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Recent advances in understanding the extraterrestrial processes indicate that magnetization of the extraterrestrial materials may be related to shock history, and other dynamic nebular and astrophysical phenomenon such as: magnetohydrodynamics (MHD), X-ray flare, super novae shock, lightening, magnetic decoupling in giant molecular cloud (GMC). Presence of the remanent magnetization in the chondritic meteorites indicates the existence of 10^{-5} ~10^{-3} T magnetic fields in the early Solar System accretion disk (Wiechen et al., 2005). Such shock history can be found in the terrestrial samples, for example the Vredefort crater has an evidence that impact generated plasma may significantly influenced the resulting magnetization. Therefore we need to view the magnetic data of Bjurbole in terms of the shock history and possible influences due to plasma fields. We employ the efficiency of magnetization as an indicator of the intensity of the process of magnetization. In general the larger the efficiency, the larger the magnetizing field. By studying shocks history of terrestrial materials have an application for search for the parent bodies and the formation of meteorites and other extraterrestrial small bodies. Well educated estimate for the location of the formation may be possible. Also the origin of the magnetization can be inferred. There is no straightforward relation to the location within the solar nebula due to the complex astrophysical processes that originate magnetic fields. Assuming a simple shock magnetization, the efficiency may relate to the magnetic field of the plasma magnetic fields that may have bring the magnetic material close to saturation. Magnetic record of the Bjurbole chondrule may be seen from these above point of view. It may gives information about the distance from the Sun during the formation and/or about the level of plasma field generated during the impact. Bjurbole chondrule may have preserved such record.