

COSMOGENIC ELEMENT PRODUCTION IN METEORITES – THE INFLUENCE OF LONG-TERM VARIATION IN HELIO- SPHERIC STRUCTURE

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The heliosphere is identified as an important shield against interstellar hazards caused by cosmic rays and neutral atoms. It is demonstrated by quantitative modelling that a change of the interstellar medium surrounding the heliosphere, as a result of the Sun's Keplerian motion around the galactic center, can trigger significant changes of planetary environments due to enhanced fluxes of both neutral atoms and cosmic rays. Such enhanced cosmic ray fluxes should also have an influence on the production of cosmogenic elements in meteorites. Here we investigate the influence of increased cosmic ray fluxes on the build-up of cosmogenic isotope anomalies in meteorites during their migration from the outer heliosphere to the Earth. Probable candidates for influencing isotopic anomalies are anomalous cosmic ray particles in the energy range between 1 to 10 MeV/nucleon which attain their highest flux levels in the region close to the solar wind termination shock. We will present first results.