

## INVESTIGATIONS OF THE TRACKS OF GALACTIC COSMIC RAY NUCLEI IN OLIVINES FROM METEORITES

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Original etching-based technique of search and analysis of tracks of heavy cosmic ray nuclei ( $Z > 24$ ) in olivine crystals from meteorites developed by the author team. This enabled detecting and identifying 21,743 galactic cosmic ray tracks of nuclei heavier than iron in the olivine crystal from meteorites. The obtained data on the relative fraction of heavy and superheavy nuclei in galactic cosmic rays is discussed within the existing concepts of nuclei formations in astrophysical processes. The detected three tracks of nuclei with the estimated charges of  $119.6^{+10}$  and lifetimes of about a hundred years can be treated as direct experimental evidence of the existence of superheavy nuclei from the “island of stability”. Observed spatial distributions of iron group nuclei tracks also enable restoring the irradiation history of the meteorites.