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Hadean Bursa (Turkey) meteorite (4.2 Ga), Ir anomaly and impact in continental crust and layered PGE intrusion (2.5 Ga) N-W part for the Arctic region, Fennoscandian Shield

TAMARA BAYANOVA[1], ERSÄ°N KAYGISIZ[2], NAMIK AYSAL[3], SVETLANA DROGOBUZHSKAYA[4], KSENIA DOKUKINA[5], EVGENIY KUNAKKUZIN[1] AND MILOS HUBER[6]

[1]Geological Institute, Kola Science Centre, Russian Academy of Sciences
[2]Fatih Sultan Mehmet Vakif University, Research Center for the Conservation of Cultural Property of Foundation
[3]Istanbul University-Cerrahpasa
[4]Tananaev Institute of Chemistry and Technology of Rare Elements and Mineral Raw Materials KSC RAS
[5]Geological Institute of RAS
[6]Maria Curie-Skłodowska University

Chondrites of L6 from Bursa (Turkey) meteorite were identified based on petrological and mineral-chemical studies as the conditions of shock metamorphism. Recent new U-Pb (TIMS) age of the zircon-reidite was measurement and considered at 4.2 Ga. Amphibolites, gray gneisses, TTG and enderbate rocks from the Murmansk and Central Kola megablocks of the N-W part of the Fennoscandian Shield were dated using U-Pb (TIMS) on zircon and SHRIMP with almost Hadean data from 3.7 to 3.2 Ga (Van Kranendonk et.al, Elsevier, 2019). Based on Sm-Nd data protoliths of country rocks shows TDM values between 3.5 and 3.0 Ga, with εNd indications ranging from +2 to -3. Firstly concentrations of PGE and Ir anomalies for the basement rocks of the continental crust measured by using ICP-MS, reflect contribution extraterrestrial (ejecta) during the early history of the Earth of the two megablocks. Nevertheless basement rocks reflected high concentrations of ore Fe, Ni metals and other elements unusual for Earth rocks according to (Koeberl et.al, Precambrian Research, 2024).

All Paleoproterozoic Co-Cu-Ni-Cr-V- layered PGE intrusions (more then 30) on the N-E part of the Fennoscandian Shield according to isotope – geochemistry and petrology-geodynamic data are connected as mantle plume activity and break up of oldest Kenorland supercontinent (Bayanova et al., Minerals, 2019). Concentration of Ir first time was measured using Element-2 (Moscow) in sulfides minerals from PGE bearing layered intrusions (Mitrofanov et al., Doklady Earth Sciences, 2013). Granophiric rocks in Central Kola megablock (Monchegorsk) ore region (Jarva-Varaka Massif) with U-Pb (TIMS) ages are 2.5 Ga on baddeleyite and zircon are shown impact contribution (Nerovich et al., Geochemistry International, 2023). These studies were with the programs topics outlined in Scientific Research Contracts FMEZ-2024-0004.

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