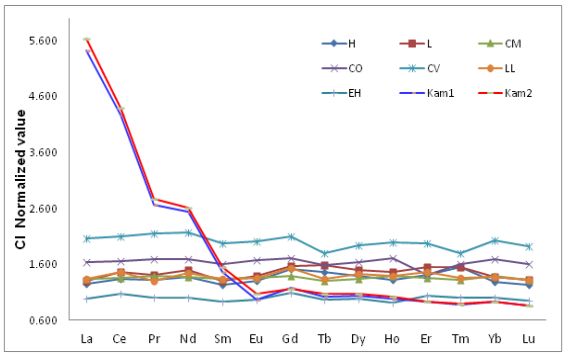
Rare Earth Elements pattern in Kamargaon L6 ordinary chondrite

BHASKAR J. SAIKIA[1], R.R. BORAH[2], G. PARTHASARATHY[3]

[1] Department of Physics, ADP College, 782002, India
[2] Department of Physics, Nowgong College, 782001, India
[3] CSIR- National Geophysical Research Institute, Hyderabad-500007, India

The distribution of trace and rare earth elements (REE) in meteorite will provide valuable information regarding the understanding of the origin of these materials. Meteorites and their constituents display variations in REE concentrations and abundance patterns that reflect evaporation/condensation processes in the nebula, parent-body aqueous alteration, metamorphism, magmatic differentiation, and terrestrial weathering during residence on the Earth's surface [1]. We analyzed the bulk REE compositions of two specimens of Kamargaon and the abundance of trace elements and REEs are normalized with CI chondrite according to Wasson & Kellemeyn (1988). All 14 REEs (La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu), Hf, Ta, Pb, Th, and U are determined by HR-ICP-MS. The total REE is 6.6 ppm and is enriched in LREE (5.9 ppm). The REE pattern shows LREE enrichment [$(La/Sm)_{cn}$ 3.6] with flat HREE [$(Tb/Yb)_{cn}$ 1.2)]. The CI-chondrite-normalized REE pattern of Kamargaon is compared with carbonaceous (CI, CM, CO and CV), enstatite (EH) and ordinary (H, L and LL) groups in (Fig.1). A significant departure of the smooth trends is observed for La, Ce, Pr, Nd and Sm. The rest nine normalized elemental values of Kamargaon are consistent to L chondrite.



References: [1] Geochimica et Cosmochimica Acta, 163, 2015, 234–261.