

MÖSSBAUER STUDIES IN IMPACTITES FROM HUAMALIES PROVINCE IN HUANCVELICA REGION, PERU

A. Bustamante¹, S. Espinoza¹, G. Morales² and R. B. Scorzelli³. ¹Facultad de Ciencias Físicas, Universidad Nacional Mayor de San Marcos, Apartado Postal 14-0149, Lima-14, Perú. ²Museo de Historia Natural, Ave. Arenales 1251, Lima-11, Peru. ³Centro Brasileiro de Pesquisas Físicas, Rua Dr. Xavier Sigaud 150, RJ, Brasil. abustamante@unmsm.edu.pe

Here we report on Mossbauer studies of three impactite samples denominated PMe-8, PMe-9, and PMe-11 from the Huanuco Region in Peru. The first geological and meteoritical interesting place, in the region, is the locality of Rondobamba, 20 Kms away from Llata's capital, and 300m at the right side of the road, where there is a depression with a crater of 15m diameter and 5-7m deep. The gathered rocky has got extended-pear shape about 15 cms length, with smoothly face and exquisite dark brown color. After a cut, the rock shows a siliciness composition with quartz grains included in a matrix of dark brown color (ferruginous). The surrounding rock of the depression of Yagapasa (sample PMe-9) is a limestone of beige color with layers of horizontal position. The ⁵⁷Fe Mössbauer spectra (MS) at RT were obtained in transmission geometry, using a drive operating in triangular mode. Isomer shifts were measured relative to an iron foil. The analysis of the MS spectra reveals an hyperfine magnetic structure with broadened lines, for samples PMe-8 and PMe-9. The spectra were fitted using a distribution model with two (PMe-8) and one (PMe-9) doublets corresponding to aluminum silicates phases. The magnetic hyperfine field obtained was 39T that corresponds to the presence of small particles of goethite. The MS for the sample PMe-11 showed a well cristallized hematite ($B_{hf} \approx 51T$, $\epsilon_Q \approx -0.213$ mm/s, $IS=0.378$ mm/s). More detailed experiments are in progress.