

Main Results from LEND instrument after one year of lunar mapping onboard NASA's LRO I.G. Mitrofanov¹, M.L. Litvak¹, A.B. Sanin¹, V.I. Tretyakov¹, A.S. Kozyrev¹, A.V. Malakhov¹, M.I. Mokrousov¹, A.A. Vostrukhin¹, D. V. Golovin¹, A.B. Varenikov¹, V. N. Shvecov², W.V. Boynton³, K Harshman³, R.Z. Sagdeev⁴, G. Milikh⁴, G. Chin⁵, J. Trombka⁵, T. Mcclanahan⁵, R. Starr⁶, L. Evans⁷, V. Shevchenko⁸, ¹Space Research Institute, RAS, Moscow, 117997, Russia, imitrofa@space.ru, ²Joint Institute for Nuclear Research, Dubna, Russia, ³University of Arizona, Tucson, AZ, USA, ⁴University of Maryland, College Park, MD, USA, ⁵Goddard Space Flight Center, Greenbelt, MD, USA., ⁶Catholic University, Washington, DC, USA, ⁷Computer Sciences Corporation, Glenn Dale, MD, USA. ⁸Sternberg Astronomical Institute of Moscow State University, Moscow, Russia.

Introduction: Main scientific results are presented from Lunar Exploration Neutron Detector (LEND, [1,2]) after 1 year of lunar mapping onboard NASA's Lunar Reconnaissance Orbiter [3]. The main findings from LEND measurements will be described, which corresponds to the major objectives of LEND investigations at the first stage of LRO mission devoted to Moon exploration. They are mapping of hydrogen distribution over the lunar surface with spatial resolution of 10 km on the poles, testing of presence of water ice within cold traps at lunar poles and characterization of neutron component of lunar radiation environment. Perspectives of further LEND investigations will be discussed during the next stage of LRO, as the mission for space science.

References:

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