

Press Release

The President of Russian Federation Dmitry Anatolyevich Medvedev has awarded the President Prize of 2010 for young scientists for achievements in science and innovations to Drs. Maxim Mokrousov and Anton Sanin for development of unique space neutron detector LEND and for new results of Moon studies by this instrument

The President of Russian Federation Dmitry Anatolyevich MEDVEDEV has signed the decree on February 7, 2011, which awards the President Prize of 2010 for young scientists for achievements in science and innovations to Drs. Maxim Mokrousov and Anton Sanin for development of unique space neutron detector LEND and for new results of Moon studies by this instrument.

The winners of President Prize for young scientists are working in the laboratory of space gamma-ray spectroscopy of the Institute for Space Research of Russian Academy of Science. This laboratory studies space and celestial bodies of solar system by experiments onboard spacecrafts using the methods of nuclear physics. These researches allow to measure the elementary composition of the surface of celestial bodies and also to estimate the content of water and other volatiles in their regolith. In addition to understanding of physical environment of celestial bodies, these measurements characterize potential natural resources on Moon and Mars for supporting their future exploration. Presently this laboratory under the leadership of Dr. Igor Mitrofanov carries out three experiments in space – there are experiment BTN-Neutron on Russian segment of ISS, experiments HEND and LEND onboard NASA's Mars Odyssey and LRO missions, respectively.

Experiment onboard LRO is conducted for study of the Moon with the neutron telescope LEND (Lunar Exploration Neutron Detector), which has been created by this laboratory. This innovative space instrument has allowed to discover the regions of water-rich permafrost at lunar poles. These world-level results have drastically changed the previous views on the Moon, as water-lack body. They made the significant influence on the Russian program of Moon exploration. In particular, Federal Space Agency plans now to send to the Moon in 2013-2014 two landers of *Luna-Resource* and *Luna-Glob* projects, which should study in more details the regions of permafrost found by LEND.

Young scientists Maxim Igorevich Mokrousov (was graduated from Moscow Aviation Institute) and Anton Borisovich Sanin (was graduated from Moscow Institute of Engineering and Physics) have made the essential contributions to the creation of the unique space neutron telescope LEND and to obtaining the first results of Moon studies by this instrument. Anton was responsible for physical tasks related with the development and tests of this nuclear physics instrument, and for the first analysis of obtained experimental data. Maxim was responsible for design of the high-technology space hardware of LEND and for its ground validation for operations on the lunar orbit. Joint creative work of experimentator physicist Sanin and engineer-designer Mokrousov during past six years has insured the joint success of the all laboratory team – since June 20th, 2009, the Russian instrument LEND operates nominally in space, and the first results of performed studies have been accepted by the science community, as the world-level achievements.

Experiment LEND for studies of the Moon is performed now by the Space Research Institute of Russian Academy of Science under the supervision of the Federal Space Agency. The instrument LEND was created with contribution from the Science research institute of atomic reactors of State Corporation Rosatom, A.A.Blagonravov Institute of mechanical engineering of Russian Academy of Science, N.M.Fedorovsky all-Russia science and research institute of mineral resources and Joint institute of nuclear researches.

Further Information:

Dr. Maxim Mokrousov
+7-495-333-11-34, mokromax@iki.rssi.ru

Dr. Anton Sanin
+7-495-333-15-22, sanin@iki.rssi.ru

Dr. Igor Mitrofanov, head of the laboratory of space gamma-ray spectroscopy of the Institute for Space Research of Russian Academy of Science
+7-495-333-34-89, imitrofa@space.ru

Press-release and additional information on the web-site of the President of Russian Federation (in Russian)

<http://www.kremlin.ru/news/10249>

http://news.kremlin.ru/ref_notes/861

IKI Press-releases on the LEND instrument onboard LRO spacecraft (in Russian)

<http://www.iki.rssi.ru/events/2010/lend.pdf>

<http://www.iki.rssi.ru/events/2009/lend090922.doc>