Published on *Lunar Science Forum 2010* (http://lunarscience2010.arc.nasa.gov)

Comparison of the PKT and SPA regions of the Moon revealed through Kaguya GRS

Author Names and Affiliations
First Name: Kyeong Ja
Last Name: Kim
Institution: Korea Institute of Geosciences & Mineral Resources (KIGAM)
Co-authors: James M. Dohm, Department of Hydrology and Water Resources, University of Arizona, USA
Jean-Pierre Williams, Division of Geological and Planetary Sciences, California Institute of Technology, USA
Javier Ruiz, Centro de Biología Molecular, CSIC-Universidad Autónoma de Madrid, Spain
Byeong-Hyeok Yu, University of Science & Technology, South Korea
Trent M. Hare, U.S. Geological Survey, USA
Nobuyuki Hasebe, Research Institute for Science and Engineering, Waseda University, Japan
Naoyuki Yamashita, Centre d'Etude Spatiale des Rayonnements, France
Yuzuru Karouji, Research Institute for Science and Engineering, Waseda University, Japan
Shingo Kobayashi, Japan Aerospace Exploration Agency, Japan
Makoto Hareyama, Japan Aerospace Exploration Agency, Japan
Masanori Kobayashi, Chiba Institute of Technology, Japan

The geological evolution of the Moon is dominated by impact crater events. The largest recognized impact structure is the South Pole-Aitken impact basin. The geometric shape of this impact structure has remained largely unaltered with relatively minor mare volcanism, recording mainly ancient activity on its surface. In addition to the South Pole-Aitken basin, an older, significantly larger, impact basin has been proposed in the Procellarum-Imbrium region located near the central part of the nearside of the Moon. This hypothesized basin has not been fully accepted, but topographic, geophysical, petrologic, mineralogic, and elemental evidence supports it as a site of a large, early impact. Our results show that the potassium and thorium are distinct in the Procellarum-Imbrium region when compared to the South Pole-Aitken basin region or the rest of the Moon. These elemental signatures strongly support an impact origin for the Procellarum basin and are consistent with different evolutionary histories between the two lunar distinctive geological structures. This presentation introduce to our approach associated with GIS-based comparison of the geologic evolution of the Procellarum-Imbrium and South Pole-Aitken basin regions using the gamma ray data of the Kaguya (SELENE).

Presenter Information
First Name: Kyeong Ja
Last Name: Kim
Affiliation: KIGAM

Administrators may login here.

- Freedom of Information Act
- Budgets, Strategic Plans and Accountability Reports
- The President's Management Agenda
- NASA Privacy Statement, Disclaimer, and Accessibility Certification
- Inspector General Hotline
- Equal Employment Opportunity Data Posted Pursuant to the No Fear Act
- Information-Dissemination Priorities and Inventories

- Author/Curator: Joseph Minafra
- NASA Official: Greg Schmidt
- Contact NASA

Source URL: http://lunarscience2010.arc.nasa.gov/comparison-pkt-and-spa-regions-moon-revealed-through-kaguya-grs