

# Gravity changes along the Moon

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Moon. Image credit: NASA

Using detailed topographic information from NASA's Lunar Reconnaissance Orbiter mission, Curtin's Western Australian School of Mines (WASM) spatial scientists, Dr. Christian Hirt and Professor Will Featherstone, were able to reveal the fine structure of the Moon's gravity field in brand new detail.

Dr. Hirt, who calculated the new gravity maps, said that the findings showed existing gravity models neglected approximately 50 per cent of the lunar gravity signal.

“The [Moon](#)'s gravitational pull is about one-sixth of the Earth's. Our new lunar gravity map now shows, for the first time, how the pull of gravity

changes from location to location over the rugged surface of the Moon,” Dr Hirt said.

“This reveals features of the lunar gravity field, including pockmark signatures, showing gravity accelerations are higher at the bottom of impact craters than the elevated crater rim, and revealing the strength and variation of gravity acceleration over the entire surface of the Moon.”

Dr. Hirt said the research to improve [gravity](#) field maps for the Moon came from an approach that was successfully tested on Earth and could also be used for other solid planetary bodies.

Dr. Hirt and Professor Featherstone’s research findings were recently published in the prestigious journal *Earth and Planetary Science Letters* (Issue 1. May 2012, Vol. 329-330, pages 22-30).

Provided by Curtin University

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