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A multi model investigation of the lunar interior

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The interior of the Moon is gaining significance given possible hazards and resources for human exploration. The current understanding of the lunar interior is limited by the paucity of available datasets. I discuss ongoing effort to increase our insight by modeling the interior composition and structure of the Moon. This includes an electromagnetic sounding analysis using a geophysical forward model capturing magnetic induction from conducting layers within a vacuum, a plasma induction model capturing the kinetic plasma environment within the wake cavity around a conducting Moon, a multidisciplinary modeling analysis including geochemical, geophysical, and geodynamical considerations of the deep lunar interior. Lastly, I will discuss an emerging project to characterize the near surface composition of on the Moon with a neutron spectrometer payload development currently scheduled to launch on Astrobotic mission one.
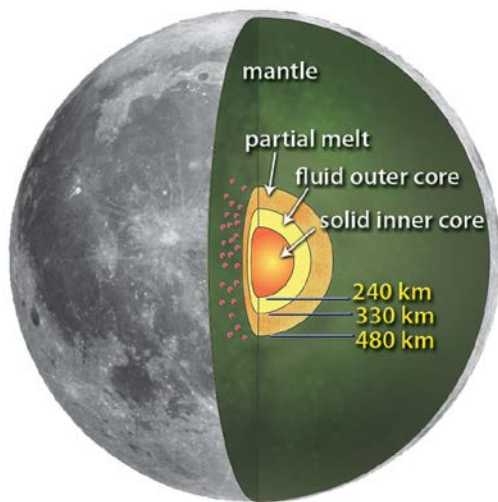

Image: While seismic observations point to a differentiated lunar interior following crystallization, several key questions remain.

https://www.nasa.gov/topics/moonmars/features/lunar_core.html, [Weber et al., 2011]