

Abstract Submitted
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Crater Ages, Hydrogen Deposition and LRO Neutron Mapping of the Lunar Surface¹ DANIEL MCNEEL, New Mexico State University, LARRY EVENS, TIMOTHY MCCLANAHAN, NASA GSFC, Code 691, BORIS KIEFER, New Mexico State University — The knowledge of the abundance and distribution of natural resources on the moon has been a challenge for many decades. Neutron observation from the Lunar Prospector mission suggests the presence of water/ice mainly in the permanent shadows of craters close to the lunar north- and south-pole. In contrast to previous mission, LRO has a much smaller field of view and it will be possible to use these improved neutron count rates to locate water/ice much more accurately. According to current theory hydrogen particles in the solar wind are deposited on the surface of the moon over time. The neutron detectors on both the 1998 Lunar Prospector and the current LRO missions detect the presence of hydrogen by the decrease of the epithermal count. This research compares the neutron maps made by Lunar Prospector to the ages of craters from the Lunar Impact Crater Database to determine if there is a relationship between neutron flux and age of the crater. This method incorporates many more craters for a survey of the neutron count over all of the lunar history. Using this method, it is possible to determine how much the LRO sensitivity can increase our knowledge of crater age.

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Daniel McNeel
New Mexico State University

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