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Analysis of Mars Mid-Latitude Lobate Debris Aprons IAN DOUGHERTY, Rowan University, TIM MCCLANAHAN, NASA Goddard Space Flight Center — In 2008, the Mars Reconnaissance Orbiters Shallow Subsurface Radar Detector detected radar evidence of ice in mountainside formations known as lobate debris aprons (LDA) in the mid-latitude regions of Mars. Using the accumulation of 7 years of neutron maps from Mars Odyssey Orbiters high energy neutron detector (HEND), we search for evidence of an increase in epithermal neutrons in these same lobe-like structures. This pattern of neutron flux is indicative of the presence of water ice. Through t-means and f-variance testing, we compare the amount of epithermal neutrons in the LDAs with the amount of epithermal neutrons in the surrounding background regions which we assume to be dry. Our preliminary results indicate that the presence of water ice is highly probable in the aforementioned LDAs. Our research will help validate the previous study which has been performed on the LDAs, as well as provide potential targets for future exploration of water on Mars.

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