

# Hydrogen Enrichments on the Moon

A recent study produced a new global map of lunar hydrogen abundances (*top figure*) from analysis of two-decade-old neutron data from the Lunar Prospector Neutron Spectrometer.

- Data from NASA's Lunar Prospector mission was used to characterize five hydrogen "reservoirs" on the lunar surface:
  - 1) pyroclastic deposits; 2) evolved materials; 3) solar wind hydrogen; 4) surficial water; 5) permanently shaded craters
- Results from the study show that hydrogen enrichment at Aristarchus Plateau (*bottom figure*) supports the idea that water played a role in some lunar magmatic events. Furthermore, hydrogen enrichment in evolved (KREEP-rich) lunar materials implies that water played a role in the formation of the lunar magma ocean.

***This new global dataset provides a roadmap for better understanding the role of hydrogen and water on the Moon, as well as targeting locations for future human exploration.***

Lawrence et al. (2022) *JGR: Planets*

