

Abstract Submitted
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Sequestration of noble gases in giant planet interiors HUGH WILSON, Dept of Earth and Planetary Science, UC Berkeley, BURKHARD MILITZER — The Galileo probe showed that Jupiter’s atmosphere is severely depleted in neon compared to protosolar values. We show, via density functional theory molecular dynamics simulations of the partitioning of neon between hydrogen and helium phases, that the observed depletion can be explained by the sequestration of neon into helium-rich droplets within the postulated hydrogen-helium immiscibility layer of the planet’s interior. We also demonstrate that this mechanism will not act upon argon, consistent with the observed lack of depletion of this gas.

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