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Composition and structure of fresh ammonia clouds on Jupiter based on quantitative analysis of Galileo/NIMS and New Horizons/LEISA spectra

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Highlights

- In 2002 Baines et al. identified fresh NH₃ clouds on Jupiter using Galileo NIMS.
- Identification of NH₃ was based on absorption features at 2 and near 3 microns.
- New Horizons observed Jupiter with a 1.25-2.4 micron imaging spectrometer in 2007.
- LEISA observations detected many small clouds with 2 micron absorption of NH₃.
- We used quantitative modeling of NIMS and LEISA spectra to constrain cloud properties.
- LEISA spectral features at 2 microns are consistent with large ammonia particles.

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