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Evidence of a Liquid-Liquid Phase Transition Hot Dense Hydrogen[1] ISAAC SILVERA, VASILY DZYABURA, MOHAMED ZAGHOO, Department of Physics, Harvard University, Cambridge, MA 02138 — We use pulsed laser heating of hydrogen at static pressures in the megabar pressure region generated in a diamond anvil cell to search for the plasma phase transition (PPT) to liquid atomic metallic hydrogen. Heating the sample substantially above the melting line we observe a plateau in a temperature vs laser power curve that otherwise increases with power. This anomaly in the heating curve is closely correlated with theoretical predictions for the PPT, falling within the theoretically predicted range and having a negative slope with increasing pressure. Details will be presented.

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