Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Infrared study of high-pressure HD: observation of the A-phase[1]
AKOBUIJE CHIJIOKE, ISAAC SILVERA, Lyman Laboratory of Physics, Harvard University, Cambridge MA 02138 — Infrared absorption was used to investigate the phase diagram of solid HD up to pressures of 156 GPa at temperatures ranging from 4 to 200K. A re-entrant phase line between the low-pressure and broken-symmetry phases (BSP) was observed, in agreement with Raman scattering results, with a 0 K transition pressure of $\sim$ 65-70 GPa. A phase transition was observed with an onset at $\sim$154 GPa (at 5K), consistent with the transition to the A-phase, previously observed in H_2 and D_2. The infrared spectra in the compressed low-pressure and BSP phases complement existing Raman spectra in these phases.

[1]Research supported by the US Army Missile Command

Isaac Silvera
Lyman Laboratory of Physics, Harvard University, Cambridge MA 02138

Date submitted: 30 Nov 2005 Electronic form version 1.4