Wednesday, October 24

Agenda

- Announce:
  - Test Two Weeks
  - Project Ideas due by Halloween (1week)
- Discuss Movie Part I
- Probability Waves

Momentum versus Wavelength

- For massive objects:
  - High momentum means small wavelength (very localized)

Electrons in the Atom

- Finally a good explanation
- Electrons reach a balance
  - Charge attracts electron to nucleus
  - Electron "wants" to stay far away to minimize its momentum/energy
- QM can now solve for the states of the electron in atoms…

Wavefunction

- QM finds the wavefunction for a particle $\psi(x, y, z)$
- Its square gives a probability $|\psi(x, y, z)|^2$

Tunneling (again)

- Makes more sense (well, almost)
  - Probability wave doesn't just stop at wall
  - Extends a bit into wall