

# Home-Made Particle Detector

- High energy muons striking the earth are caused by very high energy cosmic rays striking the upper atmosphere.
- A muon is simply a more massive version of an electron.
- High energy muons interact weakly with materials and so we can detect their *trails* as they move through a cloud.
- We also can detect the trails of electrons that the muons excite as they pass through.
- High energy cosmic muons can even pass through 330 feet of earth and be detected by ATLAS' muon spectrometer.
- A homemade diffusion cloud chamber can be made from an inverted \$1.00 olive jar, \$3.00 bottle of 90% isopropyl alcohol, and \$5.00 block of dry ice (from the local grocery store), \$1.00 black felt, and craft glue.

