Geology 104
The Geology of
National Parks and Monuments

Dr. Stewart

Today’s topics:
Syllabus on Compass
Origin of Earth
Earth’s internal structure

Nebular Hypothesis:
• Clouds of gas/matter contract under the force of gravity.
• Gasses (mostly H and He) compress into dense balls = Star
  – Heat by compression to > $1 \times 10^6$
  – Fuse heavier elements
  – Emit light and HEAT
• Supernova = exploded star
• Repeat process
Nebular Hypothesis:
Spinning Nebula condense into spinning solar systems

Look at the shape of these galaxies (not nebulae, but pretend)
See the disc shape produced from spinning

From Nebula to planets
Origin of the Moon!

Earth ‘separates’ into layers

(a) Iron
(b) Lighter matter
(c) Solid iron inner core (5,150–6,370 km)
(d) Liquid iron outer core (2,893–5,150 km)
(e) Crust (5–40 km)
(f) Mantle (40–2,893 km)
Earth’s structure: Composition vs. Rheologic layers