

## **Review Sheet for Lecture #02: Birth of the Earth**

**Terms and Definitions:** Nebular Theory of Planet Formation, Theia, planetesimal, trans-Neptunian objects, mantle, core, axial tilt, accretionary bombardment, asteroids, comets, outgassing, Late Heavy Bombardment (LHB), Nice model, Nuvvuagittuq Greenstone Belt

**Persons:** none

### **Dates:**

Age of the Earth: 4.57 billion years

Oldest Moon Rocks: 4.51 billion years

Oldest Mineral Grain: 4.40 billion years

Oldest Crustal Rocks: 4.32 billion years

Late Heavy Bombardment Period: 4.00-3.80 billion years

### **Places:**

Nuvvuagittuq Greenstone Belt

### **Review Questions:**

Which four dwarf planets have orbits that are unusual compared to all other planets in the solar system?

What are three unusual facts about our Moon, that any hypothesis of its formation must be able to explain?

Describe the four hypothesis that have been put forth to explain the origin of our Moon. How have all three been falsified, except the impact hypothesis?

How does the “Nice Model” re-envision the formation of our early solar System?

How are the rocks of the Nuvvuagittuq Greenstone Belt evidence for both an early ocean, and presence of significantly thick crust early in our planet’s formation?