Astronomy 161 -- Autumn 2007
In-Class Quiz 4 Study Guide

General Solar System
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Names of the 8 planets
Dwarf Planets (names of the 3 initial dwarf planets)
Order of planets in the Solar System
Main types of planets & other bodies

Origin of the Solar System
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Clues to the formation in the present-day properties of the Solar System
  clues from the orbital motions
  clues from composition differences at different distances from the Sun
Primordial Solar Nebula
Condensation of gases into solid grains as the Solar Nebula cools.
The "frost line"
Formation of planetesimals from grains
Formation of the Terrestrial Planets
Formation of the Jovian Planets
Formation of the Asteroids, Comets, and Kuiper Belt Objects

Terrestrial Planets
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Mercury
  Rotation Period locked in 3:2 tidal resonance with Sun
  Impact craters
  Caloris Impact Basin & jumbled terrain at the antipodes
  Mercury's atmosphere (such as it is)
  How did it get that way?
  Mercury's interior
  large iron core and its supposed origin in a head-on impact
  weak magnetic field

Venus
  Slow, retrograde rotation
  Venus' atmosphere
    composition
    pressure and temperature
    clouds
    How did it get that way?
  Runaway Greenhouse Effect
  Venus' surface
    radar mapping results
    rolling plains, valleys, & highlands
    extinct (?) volcanos & impact craters
    lack of plate tectonics
    upwelling & downwelling tectonism
  Contrast with the Earth

Mars
  2 moons: Phobos & Deimos
  Martian Atmosphere
    composition
    pressure & temperature
    dust storms
    How did it get that way?
  Martian Surface Features
    plains & cratered highlands
    volcanos (Olympus Mons & Tharsis Region)
    canyons & channels
    polar caps
    Water on Mars
  Comparison of the Terrestrial Planets
  Interiors & Surfaces (differences & similarities)
    cratering as a way to determine terrain ages

Jupiter & Saturn
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Gas Giants
  atmosphere composition
  internal structure
  internal heat
  atmospheric features
  belts & zones
  winds
  Great Red Spot of Jupiter
  differences between Jupiter & Saturn
  magnetic field of Jupiter

Uranus & Neptune
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Ice Giants
  Rocky cores and slushy icy mantles
  Extreme tilt and Extreme seasons of Uranus
  Lack of internal heat on Uranus and its effect on Uranus' weather
  Internal heat of Neptune and its effect on Neptune's weather
  Comparison of the Jovian Planets
  Differences in internal structure
  Differences in amount of internal heat and its relation
  to the different "weather" on each of the Jovian planets.
  Differences in magnetic fields