

**Planets:** An Approximate guide to what you should know. While a significant portion of the following will be covered in lectures, there are some things that will not be discussed: you should then dig the relevant material out of the book.

**1) Basic data and appearance from Earth:**

- Sidereal period of orbit , distance from sun, orbital peculiarities (e.g. eccentricity, significant inclination of orbit with respect to the ecliptic)
- Rotational period (sidereal), retrograde?
- Visible from earth? Brightness.
- When/where visible: e.g. whole night or only near sun at sunrise/sunset?

**2) Type of planet:**

- Terrestrial or Jovian?
- Size (compared to Earth) - big or small.
- Atmosphere - does it have one? What kind? How did it get that way?
- Impact craters? Erosion?
- Presence of liquid water? Now? In the past?

**3) Moons/Rings:**

- Does it have rings, and if so how pronounced?
- How many (significant) moons (approximately)?
- What kind of moons?

**4) Interesting features/peculiarities. What is considered interesting will be discussed and defined more clearly in lectures. Examples include:**

- Plate tectonics on Earth
- Greenhouse effect on Venus, Earth and Mars
- Seasons/polar caps on Mars
- + others

**5) General issues**

- Characteristics of terrestrial and jovian planets
- How different planetary atmospheres evolved
- The ways in which a planet can acquire a moon.
- Rings and how they are formed
- Volcanism
- Tidal effects: synchronous rotation of moons and (possibly) planets, “Circularizing” of orbits, resonant sweeping of rings and asteroid belt, the Roche limit
- Cause of belts, zones and spots on gas giants

**Comment concerning numerical data:** I do not expect you to memorize tables of data for each planet, but I would like you to know things about the planets in comparison to each other. I also would like you to know the approximate scales of things. For example, is Jupiter’s diameter about 10 times that of Earth, or is it 100 times? What about the masses? How about Uranus and Jupiter? Is Pluto only a few A.U. from the Sun, a few tens of A.U. or a few hundred?