

## The Terrestrial Planets

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- read book - chapter 8 = similar/different between planets

Terrestrial  
Planets:**MERCURY**

(Distance from the Sun = .4 AU)

- radius =  $\frac{1}{3}$  of size of Earth      mass = .5 of Earth
- really high density  $5 \text{ gms/cm}^3$  - high IRON content
  - possibly result of impact stripping much of its rocky mantle
- NO atmosphere:

1. close to the Sun<sup>2</sup> (one side really hot); too small<sup>1</sup>2. Lack of volcanic activity<sup>3</sup>

Escape velocity so small any gas readily escapes

3. comets - impacted mercury often - bring in water vapor/ice

Small ice cap on Mercury

70° @ Equator - ice caps @ N. pole?

- sunlight (radiation)

• Light and ~~dark~~ sideSide not facing sun on Mercury - need atmosphere to affect other side.  
no convection taking place

conduction - only rock (rock poor conductor of heat)

dark side is coldest place in atmosphere.

Extreme Indirect sunlight - N. pole

- heavily cratered = no activity

3 orbits for 2 spins - w/ Sun

7° - orbit w/ respect to Ecliptic plane

Weak Magnetic Field =

1. Spins so slowly

Does have maria (impacts) like Earth's moon (.7 AU from the Sun)

**VENUS** - see tops of clouds (Sulfuric Acid)

Earth sized planet (active geologically)

Electromagnetic spectrum - RADAR - view VENUS

## (← cont. VENUS)

- dense atmosphere - Carbon Dioxide (runaway Greenhouse Effect)
- G.H.E. = radiation coming from the sun - warm planet - produce infrared - carbon dioxide absorb radiation - trap it - Energy going out is less than energy coming in.

Surface very hot

- Craters, volcanic activity
- retrograde (Spins backward)
- Inhospitable place

## MARS (1.5 AU from the sun)

Smaller than Earth

- has an atmosphere = carbon dioxide (thin)
- clouds of carbon dioxide
- Storms, weather, active weather systems, erosion = WIND
- Ice caps, No liquid water
- Terrain forming features:
  - ↓ produces terrain forming features.

1. WIND

2. IMPACTS - modified by wind

\* Most visited planet in our solar system (Robots, vehicles, etc)

See right through atmosphere - Earth Telescopes

F.Y.I. = • people most want to visit = problem = 2015 year

ionizing radiation = outside of Earth - protect space ship

→ solar winds \* We need better technology \*