

S6E1.f. Compare and contrast comets, asteroids, and meteors

What are the characteristics of
comets, asteroids, and meteors?

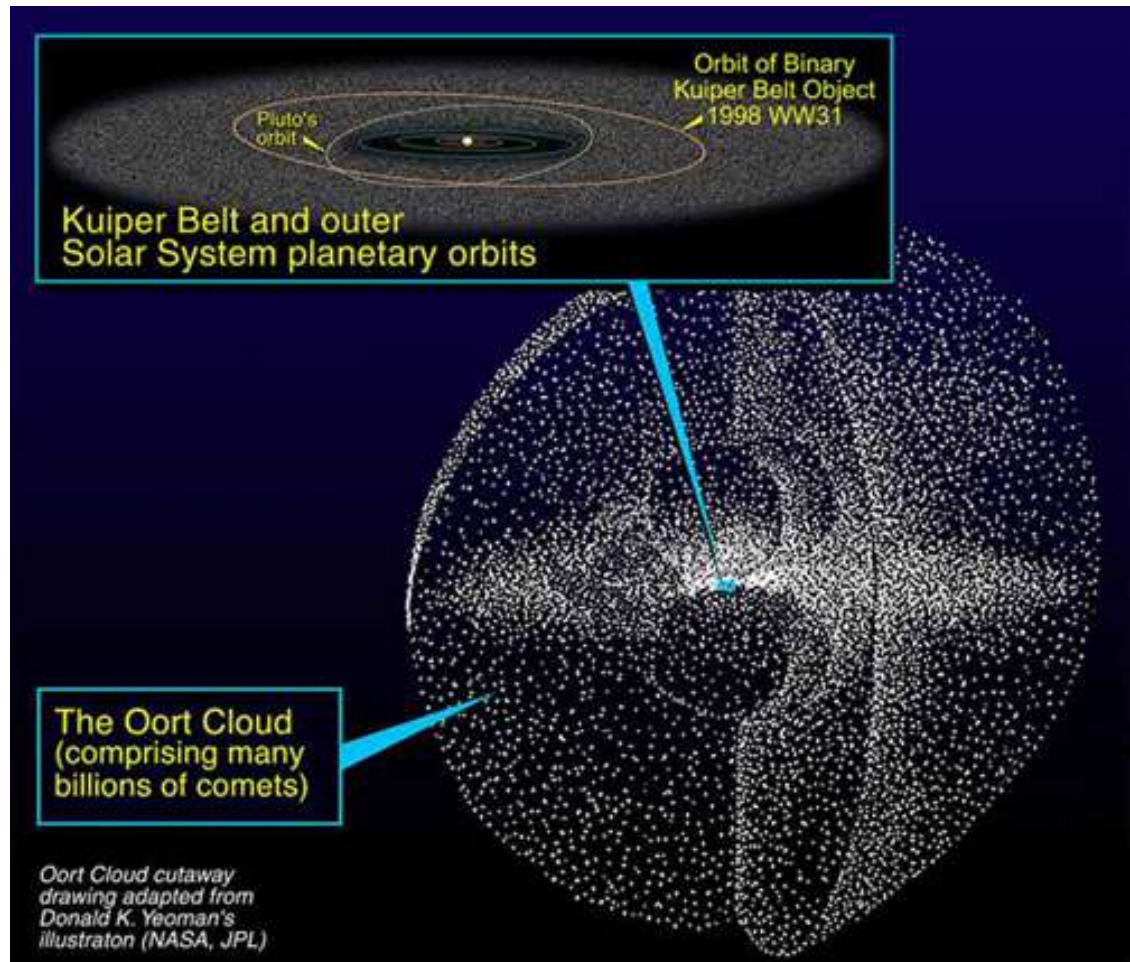
How are they alike/different?

Comets

Where do they come from?

- ORIGIN:

- Left over from formation of solar system
- Kuiper Belt &
- Oort Cloud



Size of Comets



- About the size of a mountain (w/out the tail)
- Tails can be ≥ 100 million km

Composition of Comets

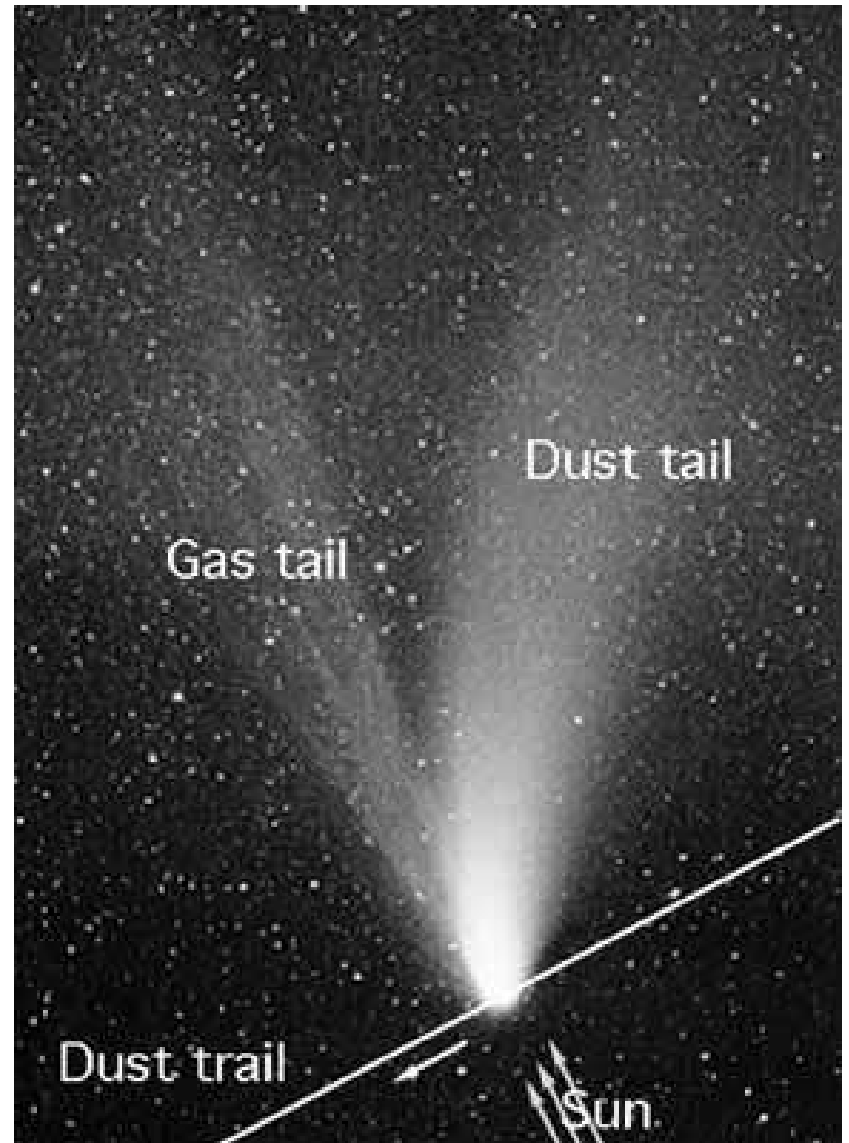
- Ice
- Dust
- Small rocky particles



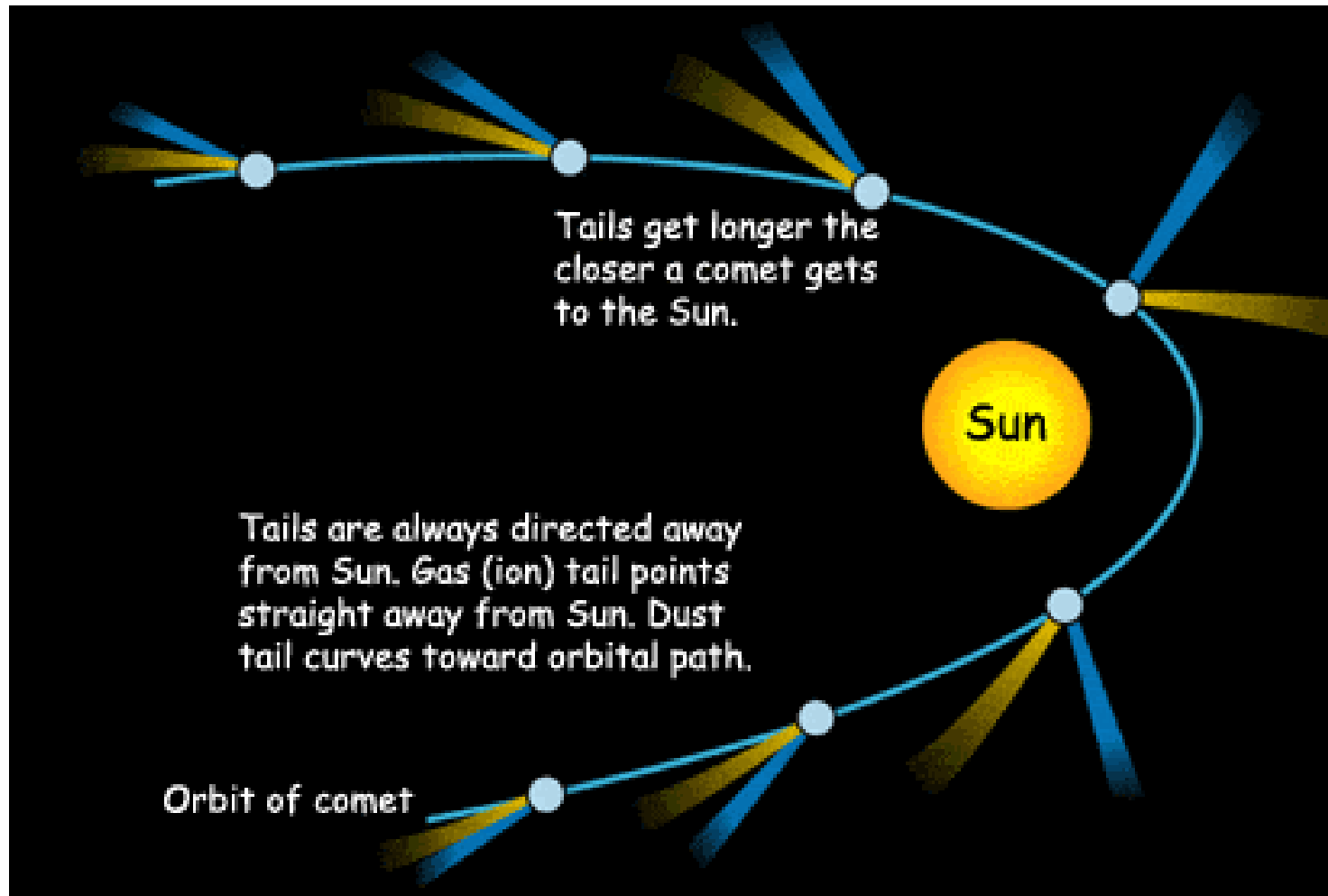
Parts/Vocabulary for Comets:

CORE:

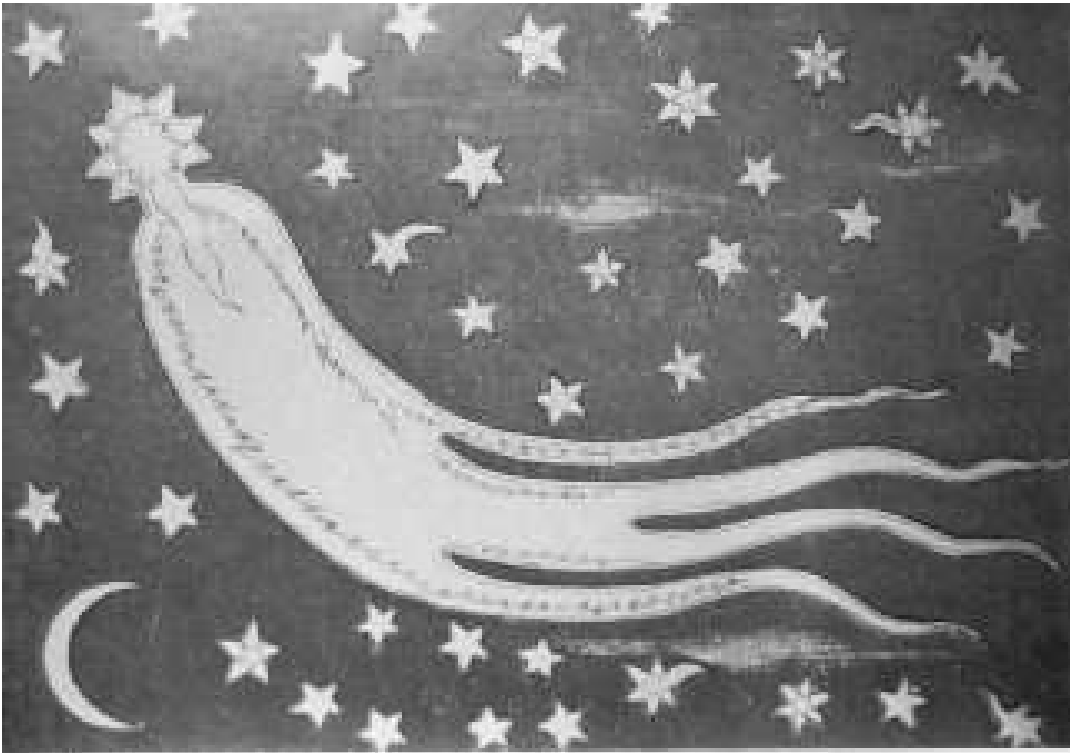
- **Nucleus** – solid inner core
- **Coma** – cloud of dust & gas
- **Tail** – gas & dust can be seen as the sun heats the comet & blows it *away from the sun*



Comet's tail ALWAYS
points away from the Sun as the solar
winds blow the tail away



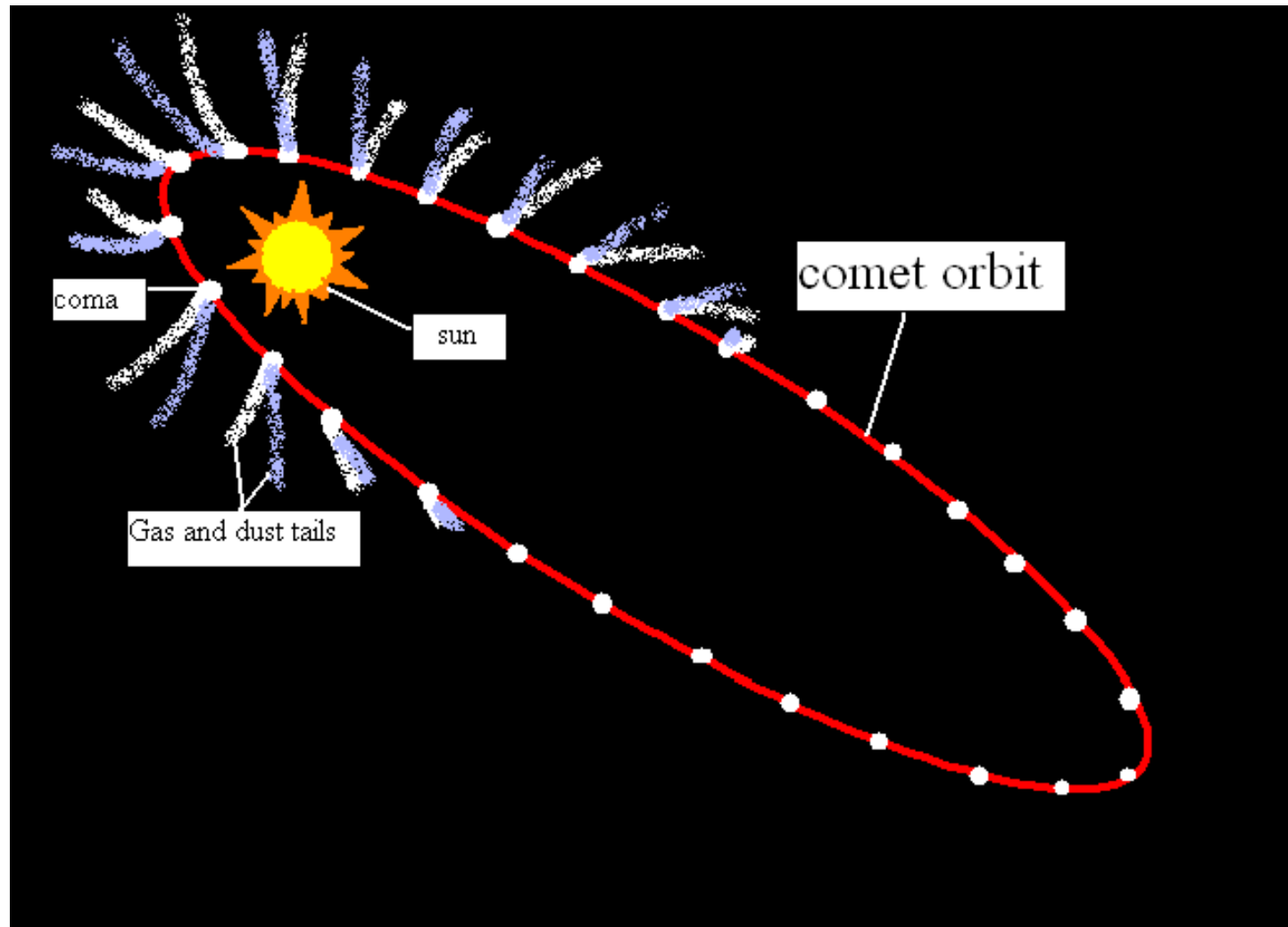
Other details about Comets:



- A.K.A. “Dirty Snowballs”
- Comet means “Long-haired star”

Other details about Comets:

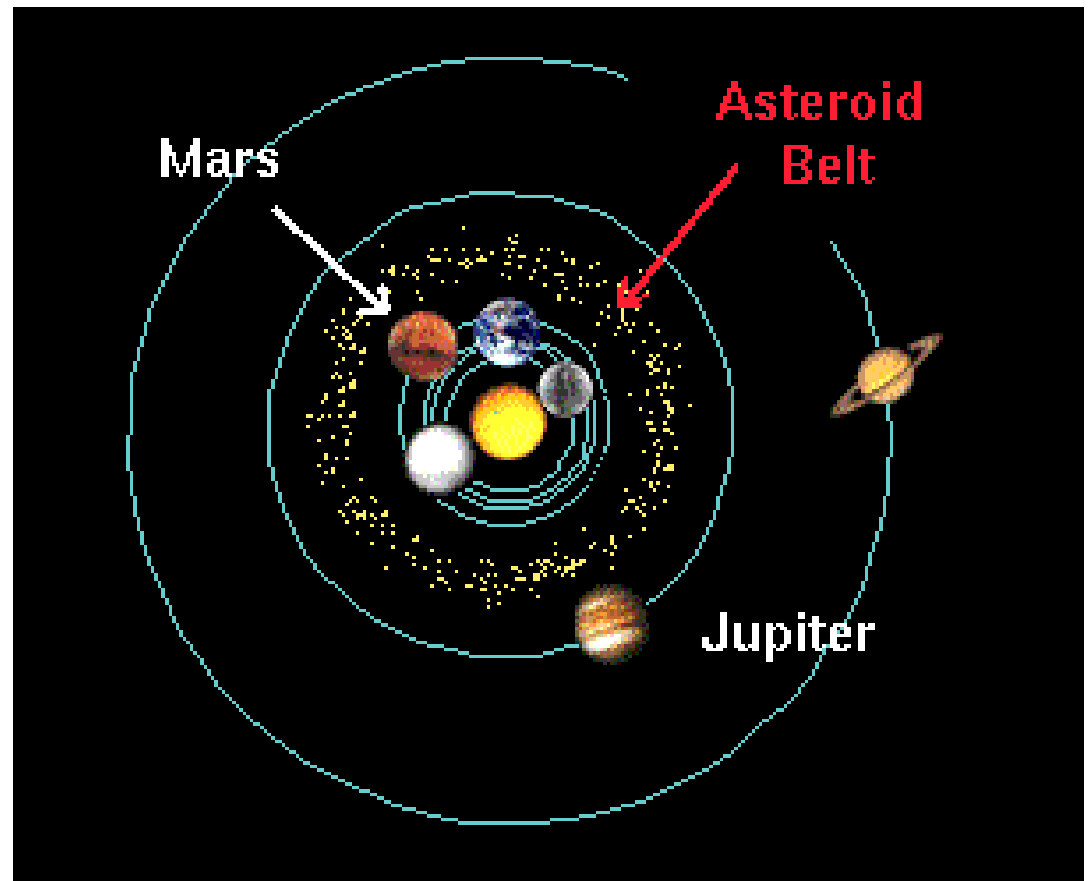
Comets orbit in long, narrow, elliptical paths around the Sun.



Asteroids

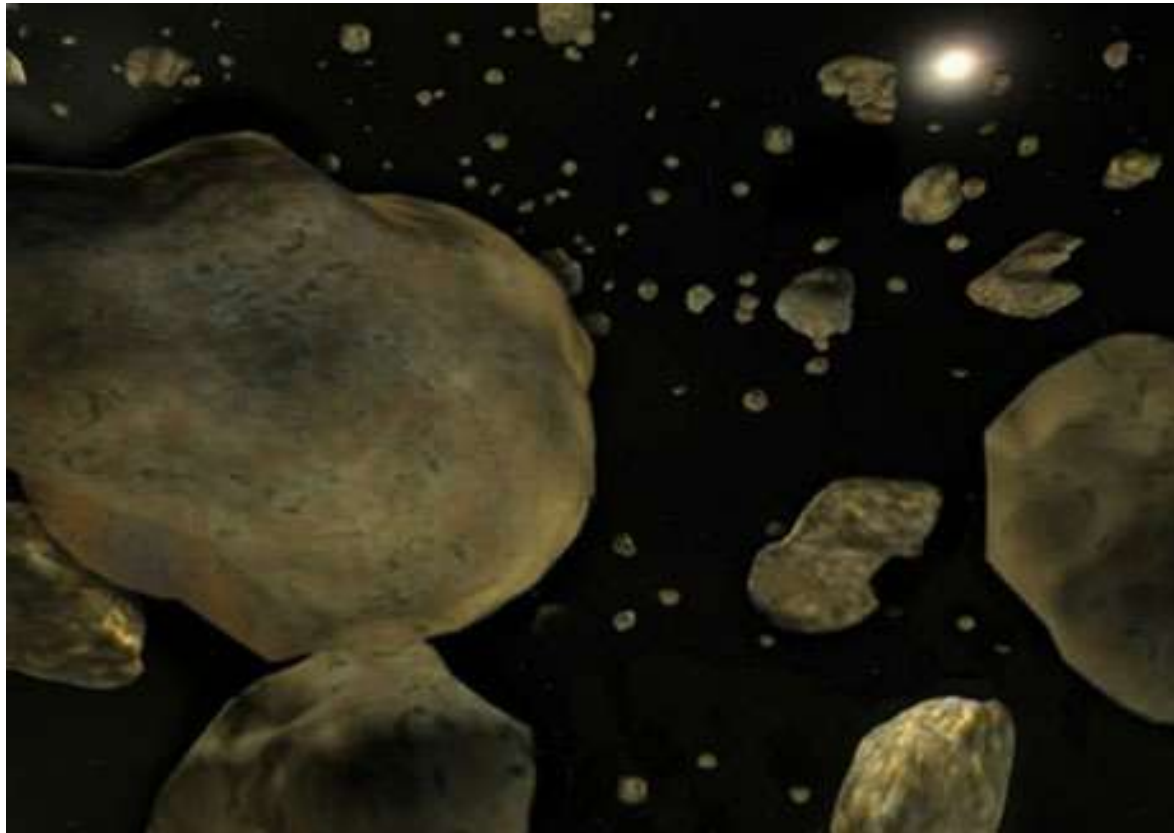
Where do
asteroids come
from?

- Origin:
- “Asteroid Belt”
between orbits
of Mars &
Jupiter



Size of Asteroids

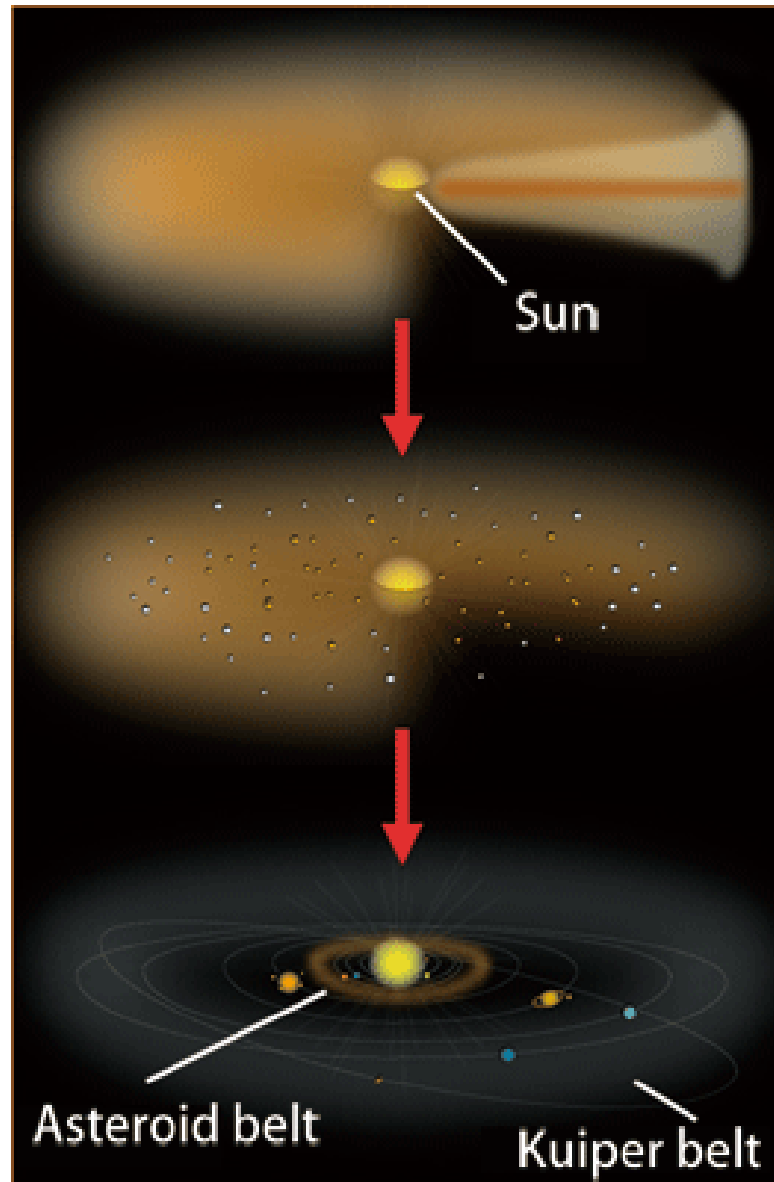
From $< 1\text{km}$ to
 $> 300\text{km}$ in diameter



Composition of Asteroids

What are asteroids made of?

- Rocky objects left over from the formation of the solar system



Other details about asteroids

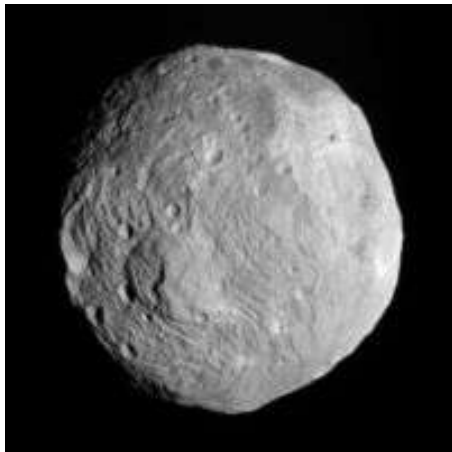


- Scientists believe **asteroids** may have caused the extinction of the dinosaurs

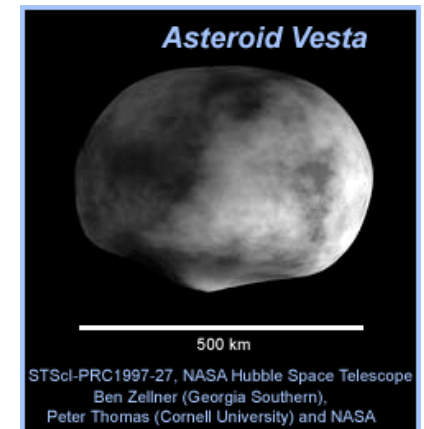


Other details about asteroids

- Asteroids move in very elliptical orbits
- The largest are Pallas, Juno & Vesta



*Ceres was once called an asteroid, but is now a dwarf planet!



Meteoroids

Where do
meteors come
from?

- Broken pieces
of Comets or
Asteroids!



Size of meteoroids

- Smaller than the comets or asteroids from which they come



The Perseid Meteor Shower (happens every August) which has been observed for 2000 years!

(since they are broken pieces of these!)

Composition of Meteoroids

- What are meteors made of?
- Rock & dust



Parts/Vocabulary for Meteors

- Meteoroid – CHUNK of ROCK/DUST in SPACE
- Meteor – STREAK of LIGHT made by meteoroid, burn up as they enter Earth's atmosphere
- Meteorite – a meteoroid that HITS Earth



Other details about meteors

- A.K.A. “Shooting Stars”
- Meteor Showers happen regularly

