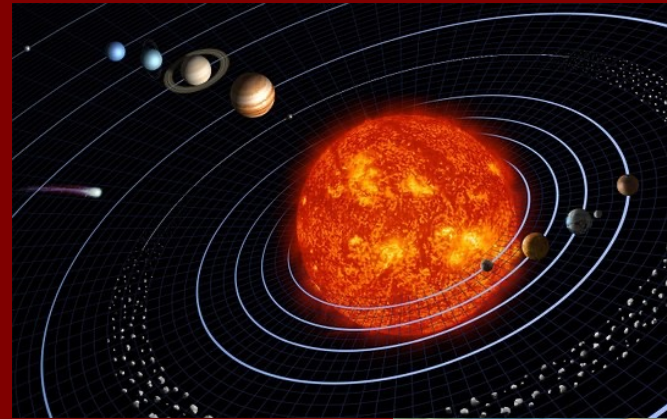


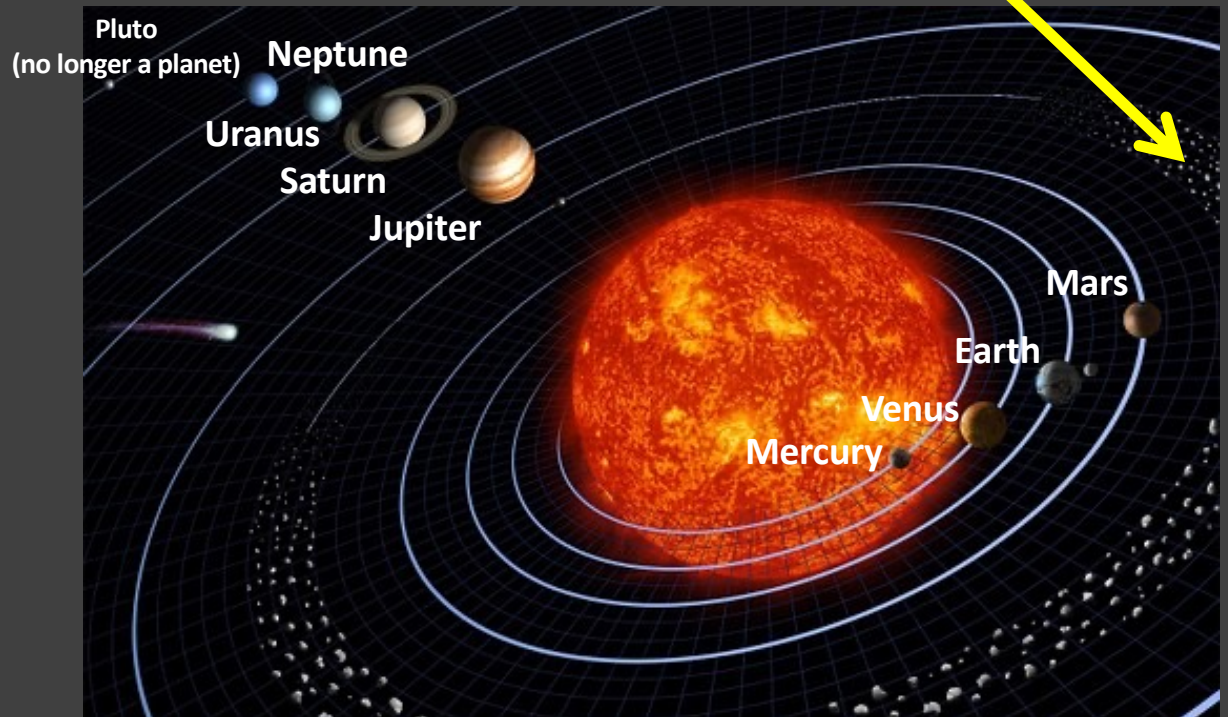
Asteroids, Comets, and Meteors

- Asteroids
- Meteors, Meteoroids, and Meteorites
- Comets



Asteroids

- Small rocky objects that orbit the Sun
- Billions of small rocky objects in a ring is called the ASTEROID BELT (between Mars and Jupiter)



TeachWithFergy

Preview File

Please enjoy this preview of your Student Version of the lesson. I've created this PDF for ease of viewing and to decrease the file size but of course, your lesson will be in PowerPoint format.

- Some slides appear blank because they have been removed.
- Student versions have portions of the text removed which is given in the teacher version and appear as _____
- Other slides may have on them, this represents writing that has been removed.

Asteroids

- Size ranges from 6 meters to 933 km

- _____
- _____



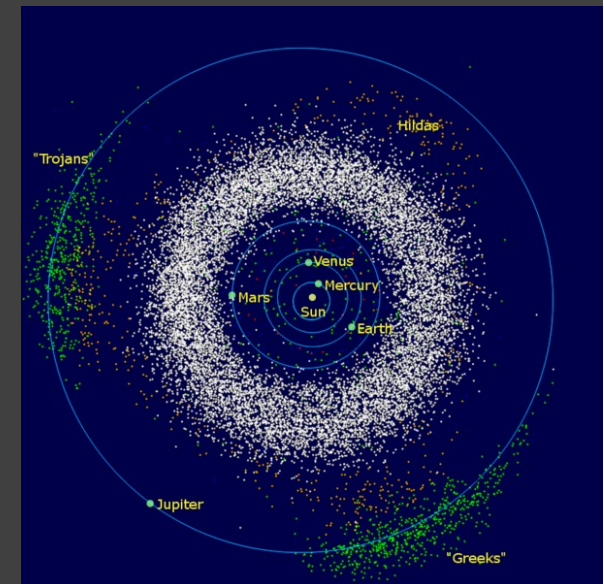
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Asteroid Impact –
Dinosaur Killer

The Asteroid Belt

- Most are small, boulder-size to a diameter of a few thousand feet
- 7,000 known
- Largest have names:
 - Each at least 250 miles (400 km) long
- Dwarf planet within: Ceres
 - 1/3 the mass of the whole belt
- ---
- Asteroids widely spaced apart



Asteroid Composition

- Three major types
- **C-type** (carbonaceous): >75% of known asteroids
 - Contain large quantities of carbon
- **S-type** (silicaceous): ~17% of known asteroids
 - Made of metallic iron with iron- and magnesium-silicates
- **M-type** (metallic): Most of the rest of the known asteroids
 - _____

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Meteors

- _____
- They burn in the mesosphere.
 - 22 miles (35 km) thick
 - Above the highest altitude for planes
 - Below the lowest altitude for orbit
- More gas molecules in mesosphere than layer above (thermosphere)
-
- Friction causes heat



Famous Meteors

- Murchison, town in western Australia
 - Sept. 28, 1969
 - Meteor exploded above Murchison
 - Meteor older than the solar system
 - Amino acids found in the meteor
- Allende
 - Feb. 8, 1969
 - Meteor landed in Chihuahua, MX
 - In 2012, found new mineral in Allende meteorite



Meteorite

- A meteorite is a meteoroid or asteroid that _____
- Most are small
- Size: pebble to boulder (up to 100 kg, 220 lbs)
 - Smaller than 2mm: micrometeorite
- 3 types
 - Stony: mostly silicate minerals (rock)
 - Iron: mostly metallic iron-nickel
 - Stony-iron: both rocky and metallic



February 2013 Meteor Explosion over Russia

- The meteor had an initial mass of about 12,000–13,000 metric tonnes (heavier than the Eiffel Tower), and measured between 17 and 20 meters in size (55-65 feet).
- It was moving at approximately
- It exploded 23.3 km above the ground, releasing the energy equivalent of 500 kilotons of TNT, 20–30 times more energy than was released from the atomic bomb detonated at Hiroshima (but without the radiation).
- The explosion created a shockwave, shattering windows, toppling smaller structures, and injuring thousands.

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Comets

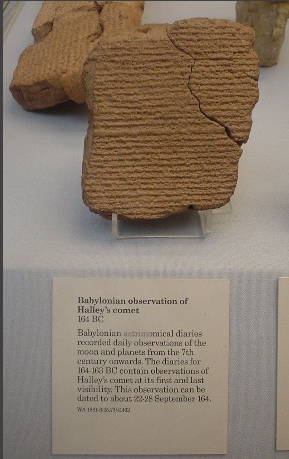
- Comets have been around since the formation of our solar system
- They give us clues about how that formation happened
- _____



Halley's Comet

- Most famous comet
- Passes by Earth about every 75 years

164 BC



240 BC



1066



1305



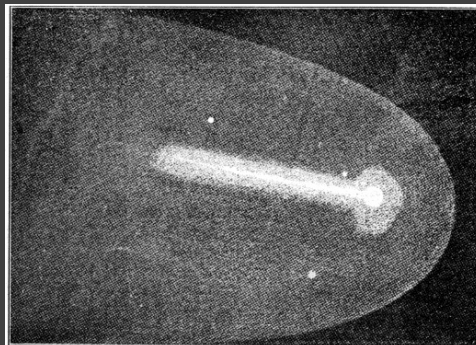
1682



1759



1835



1910



1986

