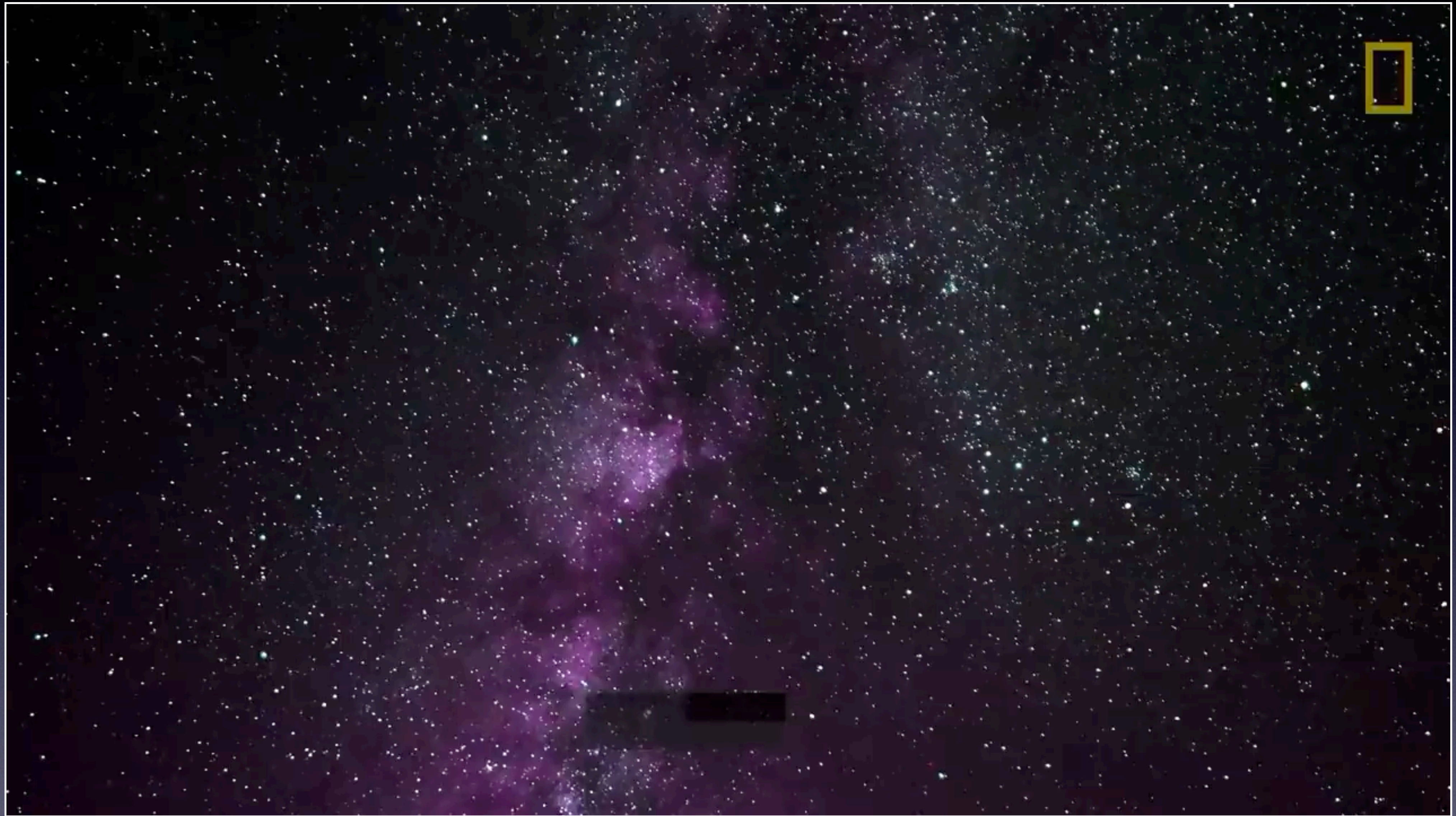


The Solar System

What are the different parts that makeup
our solar system?

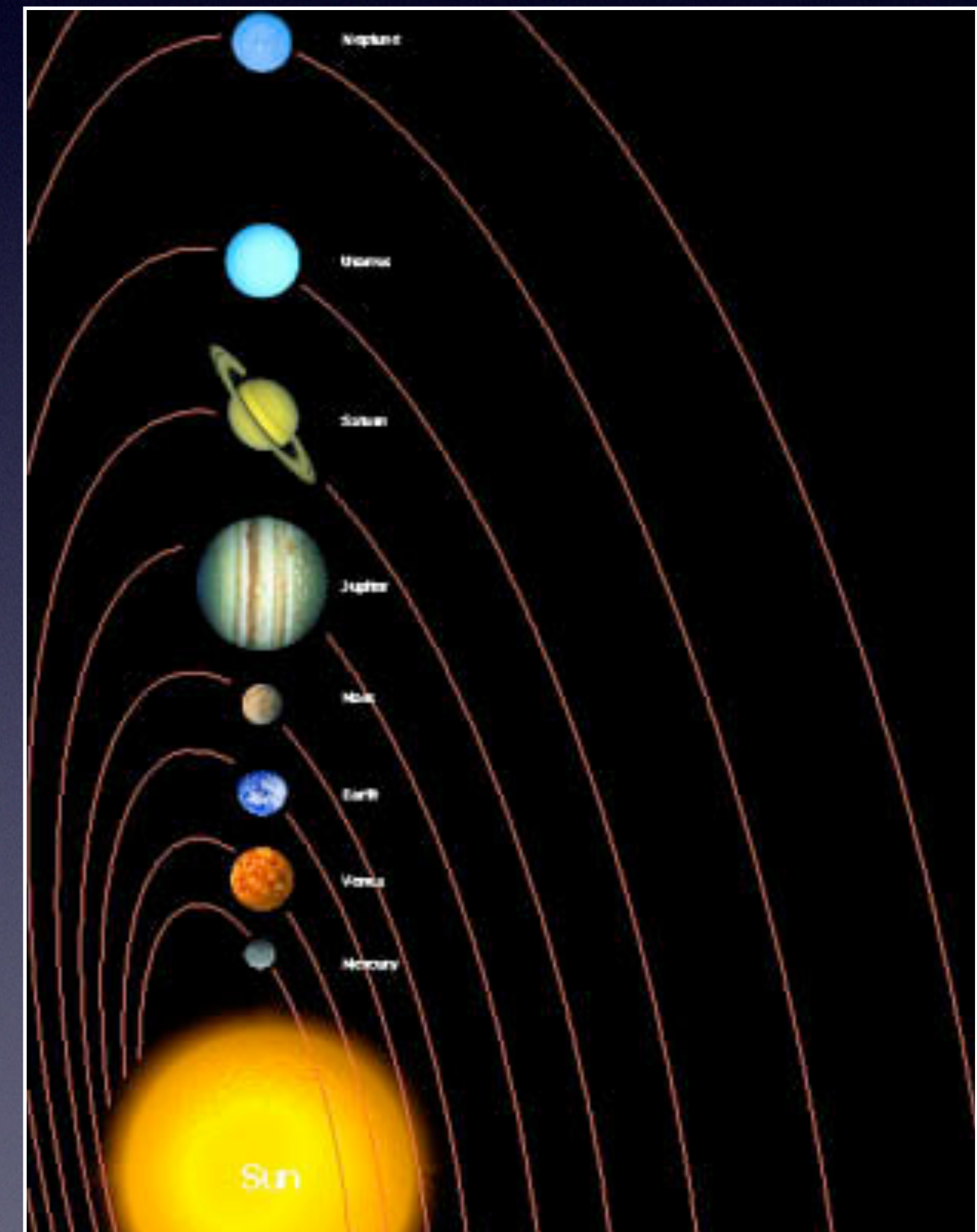


Origins of the Solar System



The Solar System

- Solar System - all the objects that orbit the Sun under its gravitational influence
- The Sun accounts for 99% of the mass in the solar system



The Solar System

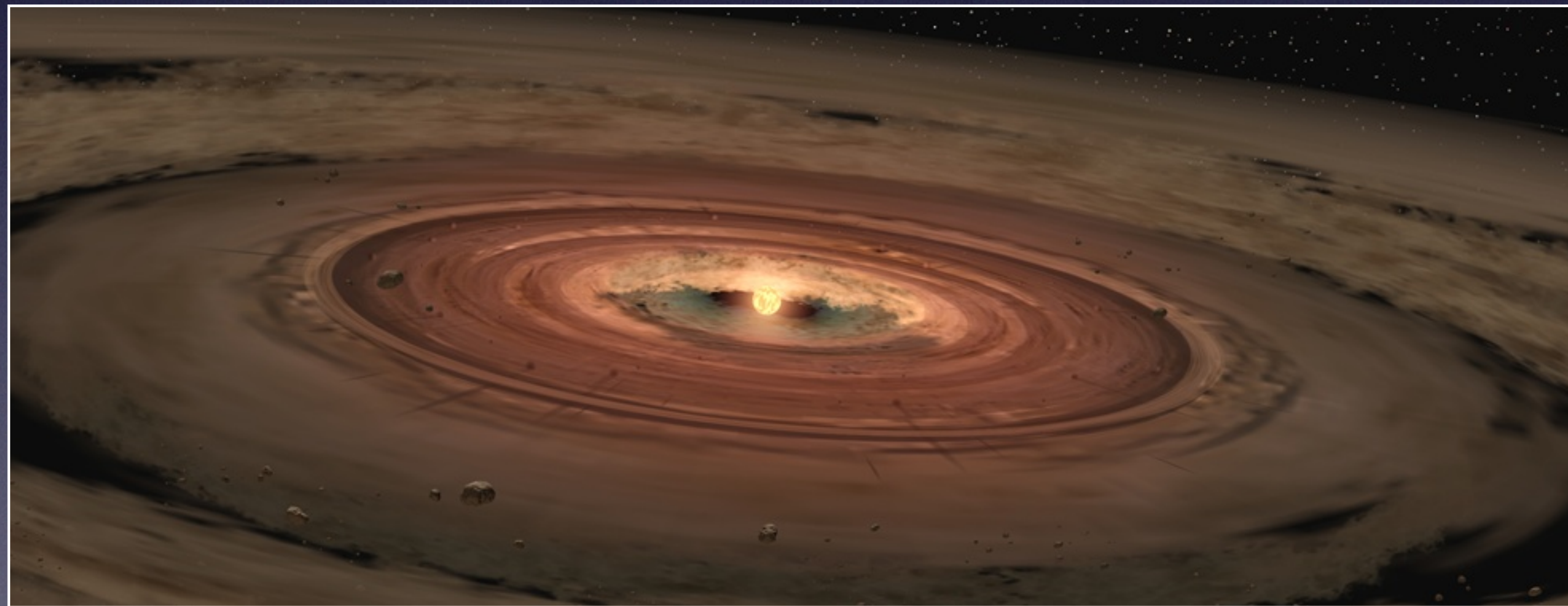
- Solar System Formation:
 - Forming 4.5 billion years ago from a cloud of gas and dust called a solar nebula



Crab Nebula

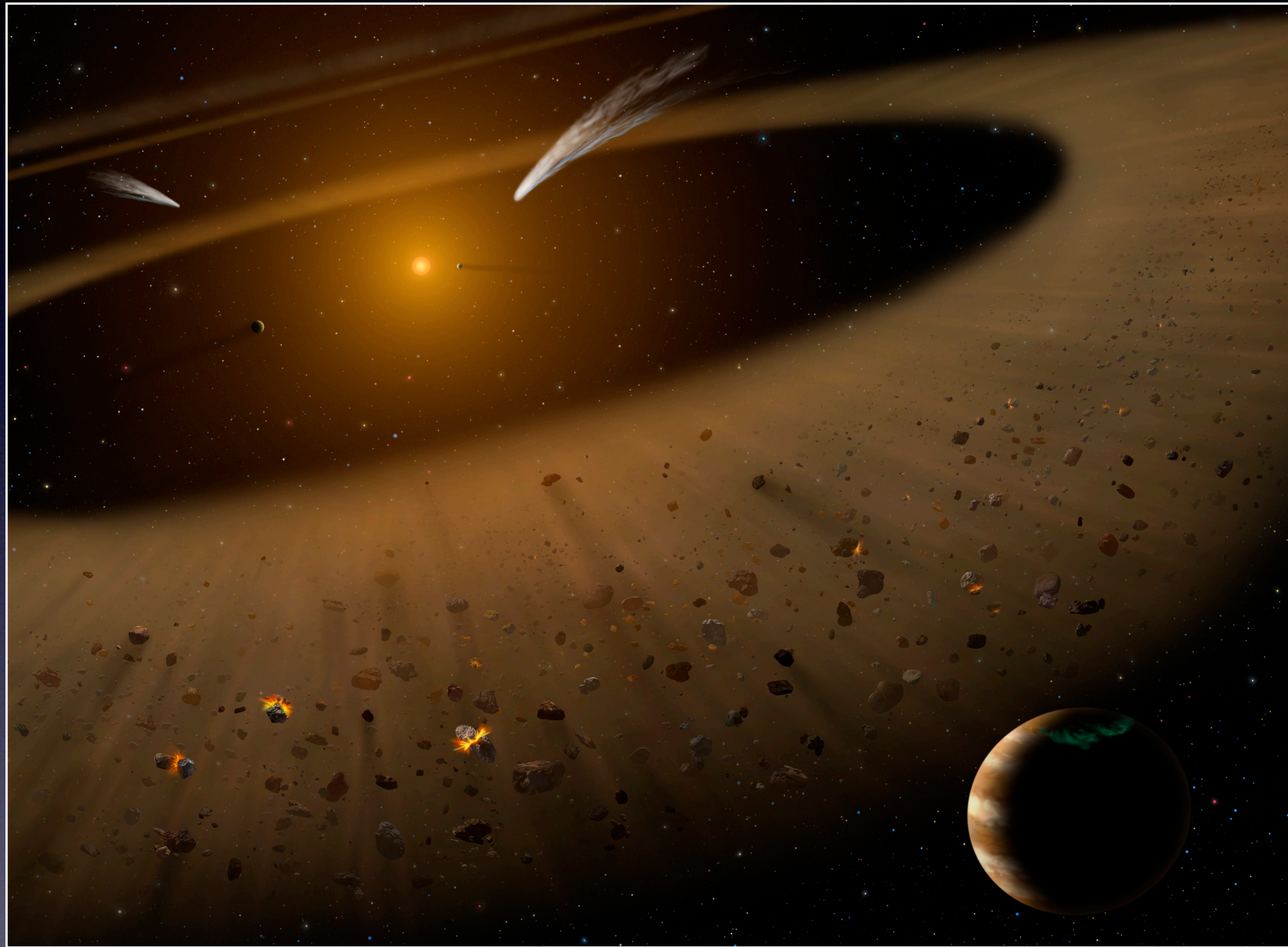
The Solar System

- Solar System Formation [continued]:
 - Gravity caused the nebula to collapse and spin



The Solar System

- Solar System Formation [continued]:
 - A massive collection of gas and dust accumulated in the center
 - When it was massive enough it would undergo nuclear fusion and create the Sun
 - The additional material clumped together to form planets, dwarf planets, asteroids and moons



Origins of the Solar System

The Solar System

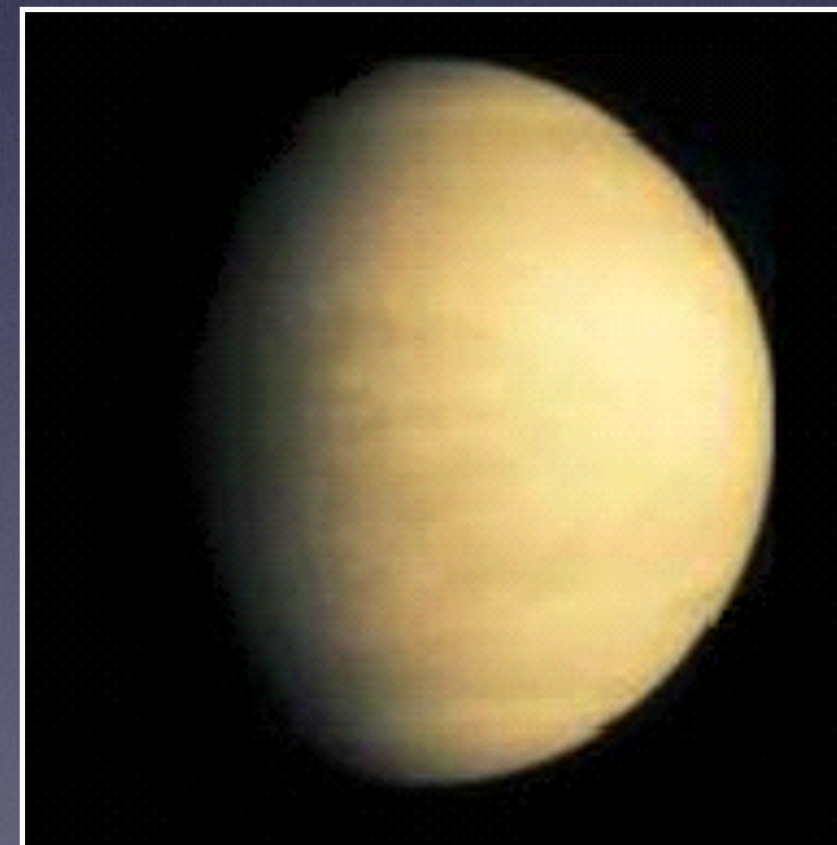
- Terrestrial Planets - solid surfaced planets with smaller diameters and higher densities that are close to the Sun



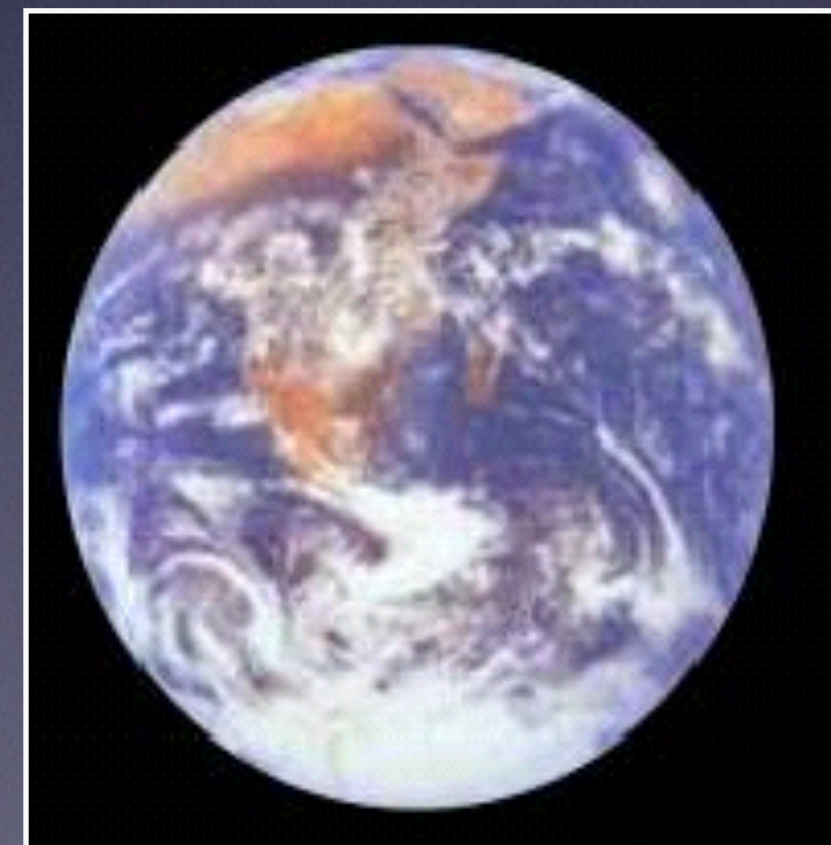
Mercury



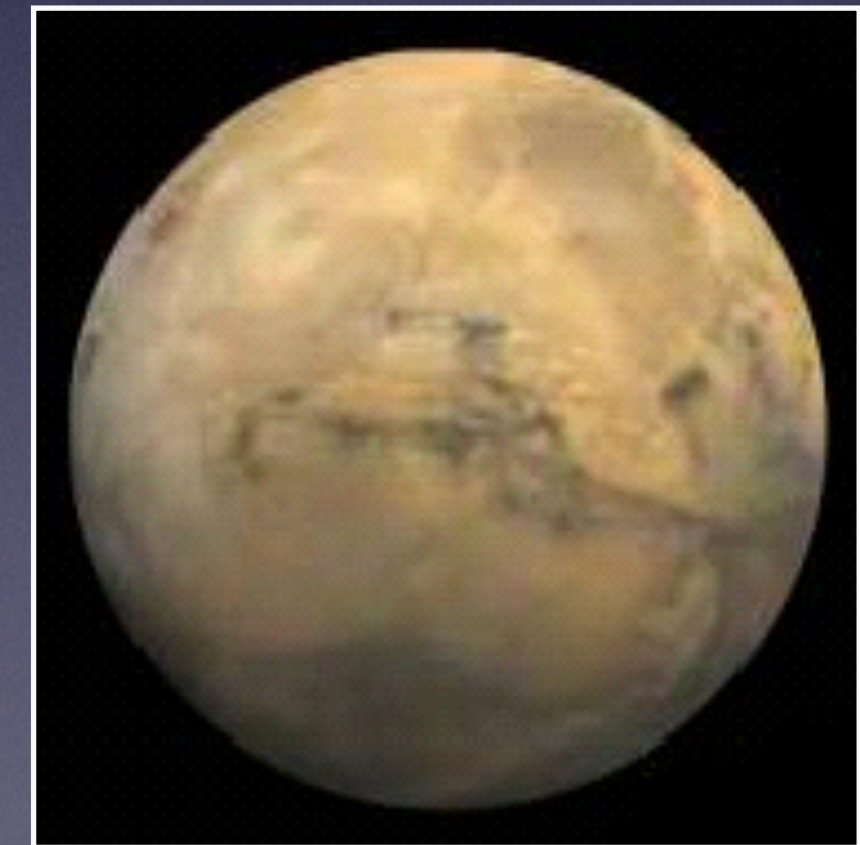
Venus



Earth



Mars





Impacts



The Solar System

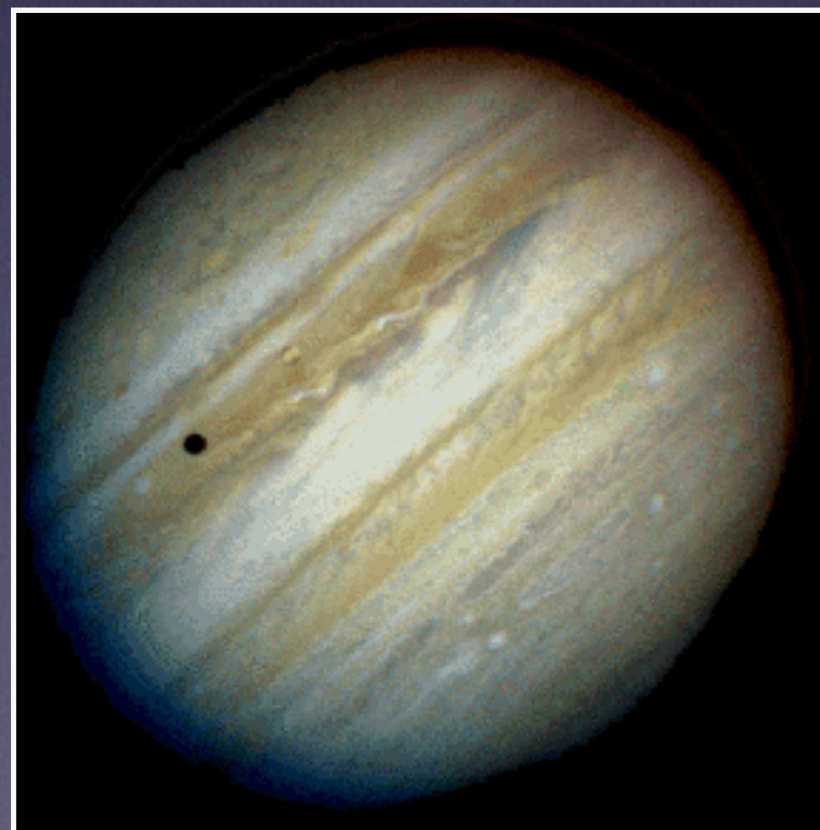
- Asteroids - solid rocky or metallic bodies that independently orbit the Sun
- A large percentage of the known asteroids are between Mars and Jupiter



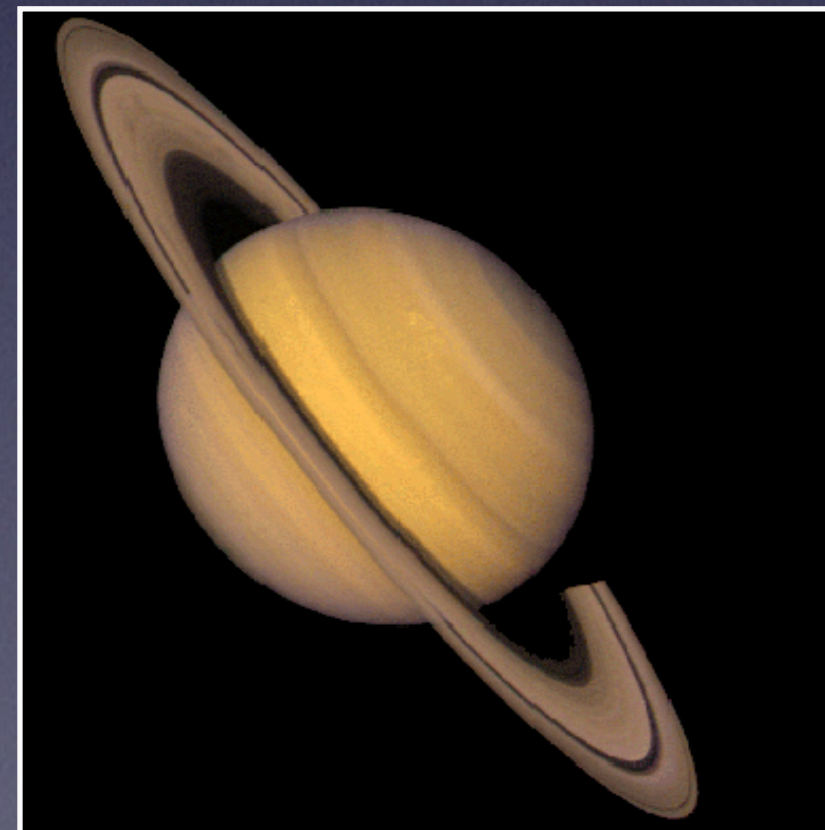
The Solar System

- Jovian Planets - gaseous planets with larger diameters and lower densities that are farther from the Sun

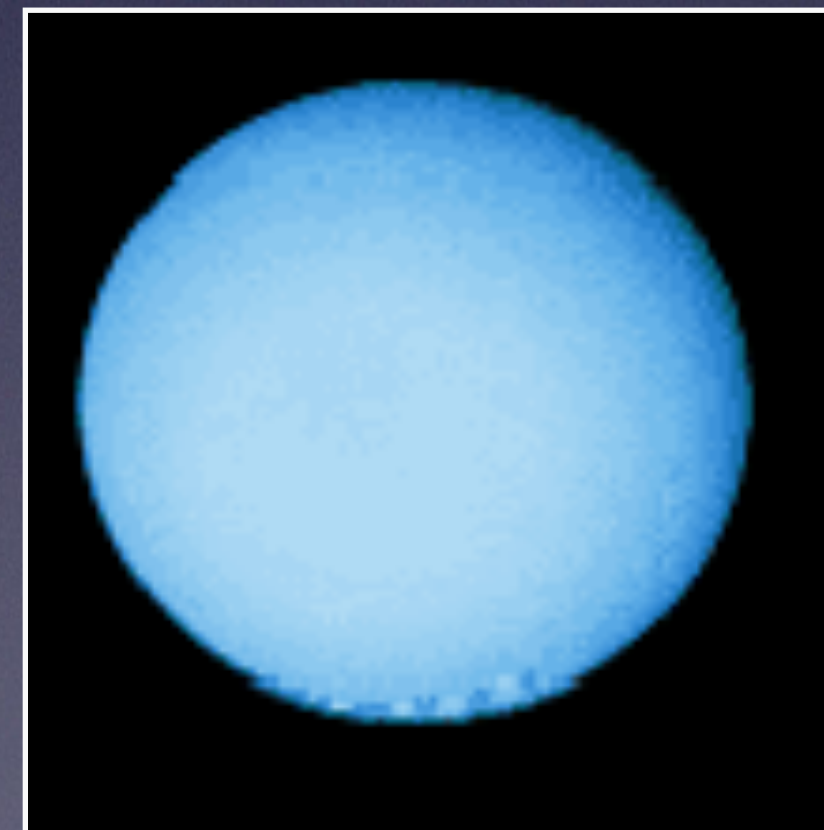
Jupiter



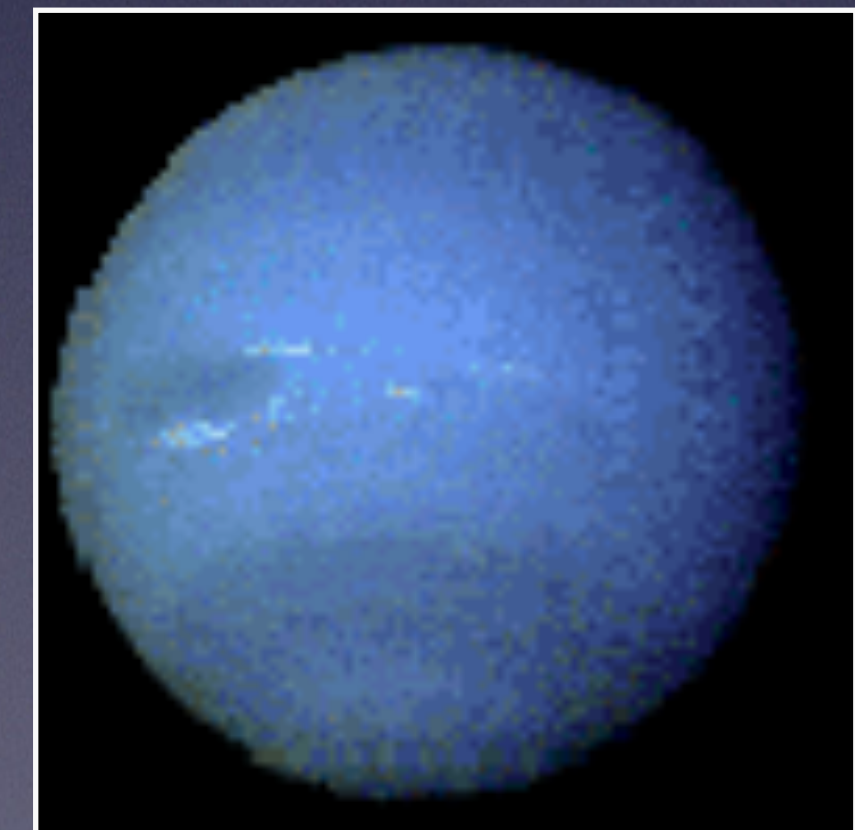
Saturn



Uranus

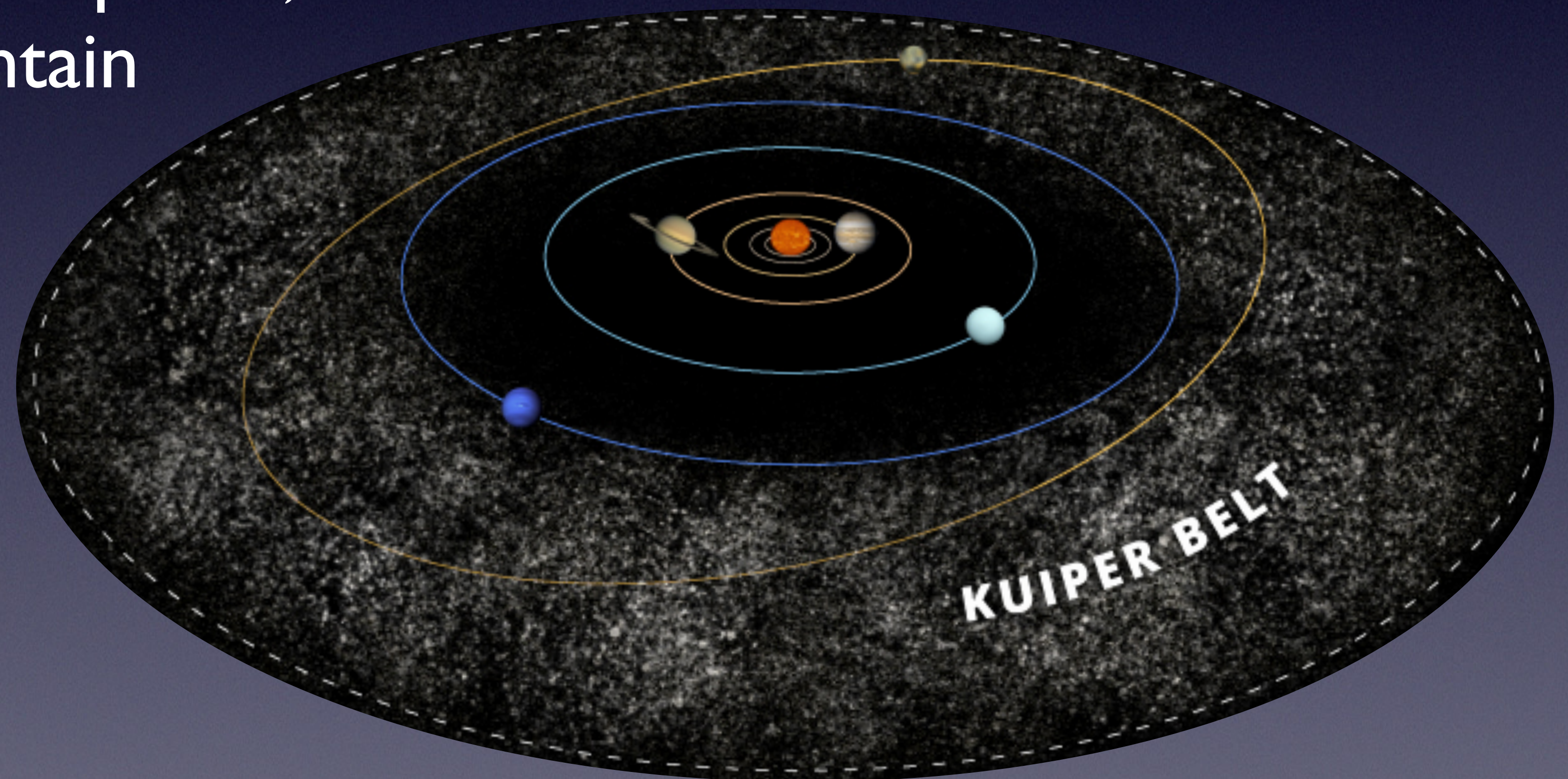


Neptune



The Solar System

- Kuiper Belt - a region extending from just past Neptune, believed to contain many comets, asteroids and other small bodies made largely of ice



The Solar System

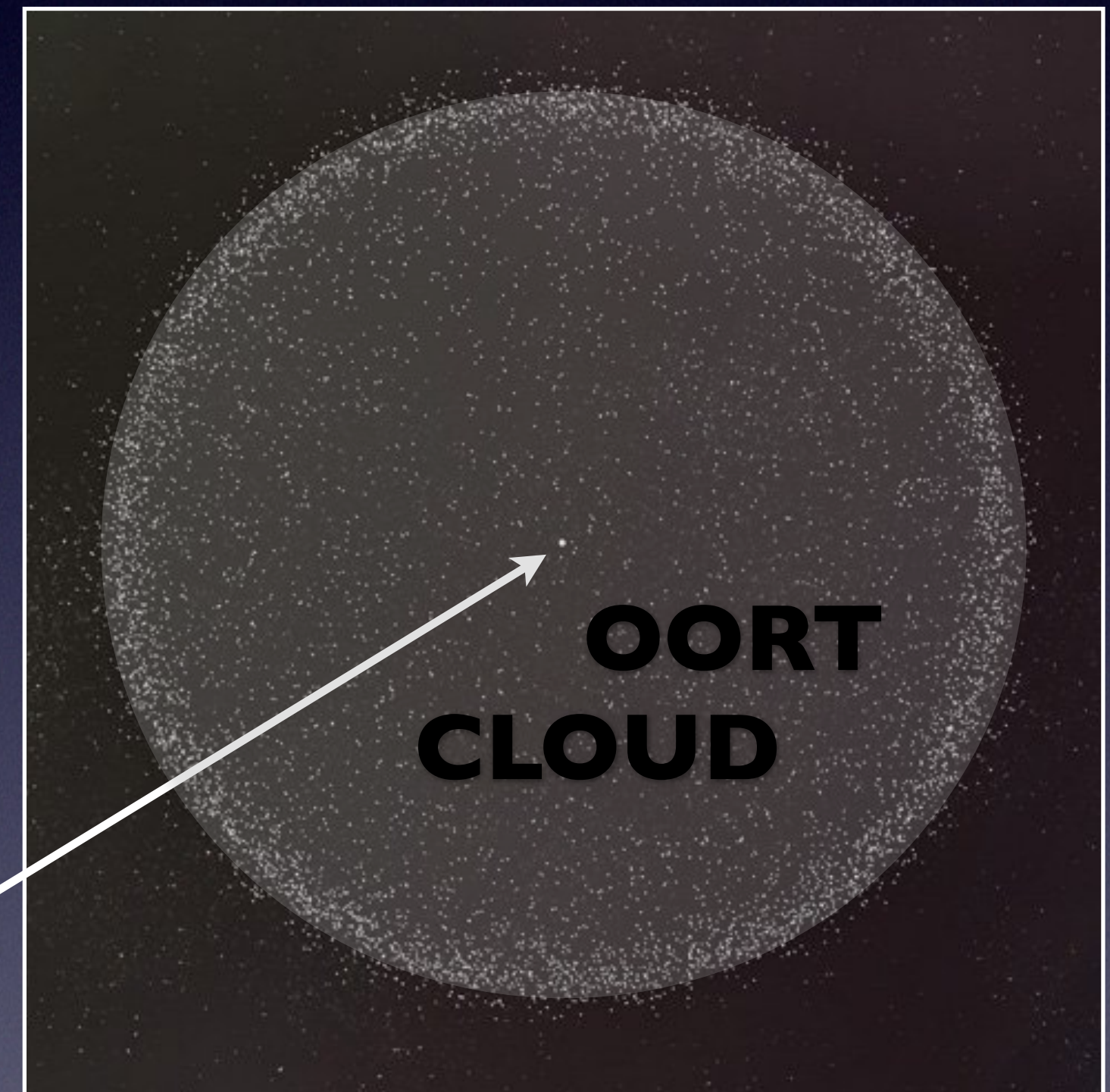
- Comet - “dirty snowball” mainly composed of solids that easily change to a gas when heated
- As the solids melt they leave a trail behind known as a comets tail



The Solar System

- Oort Cloud - spherical shell of icy objects in the outermost reaches of the solar system
 - Thought to be the origin of most long-period comets

The Sun



The Solar System

- Meteorites - a rock that leaves a visible streak as they pass through our atmosphere and strike Earth
 - aka: Shooting Stars

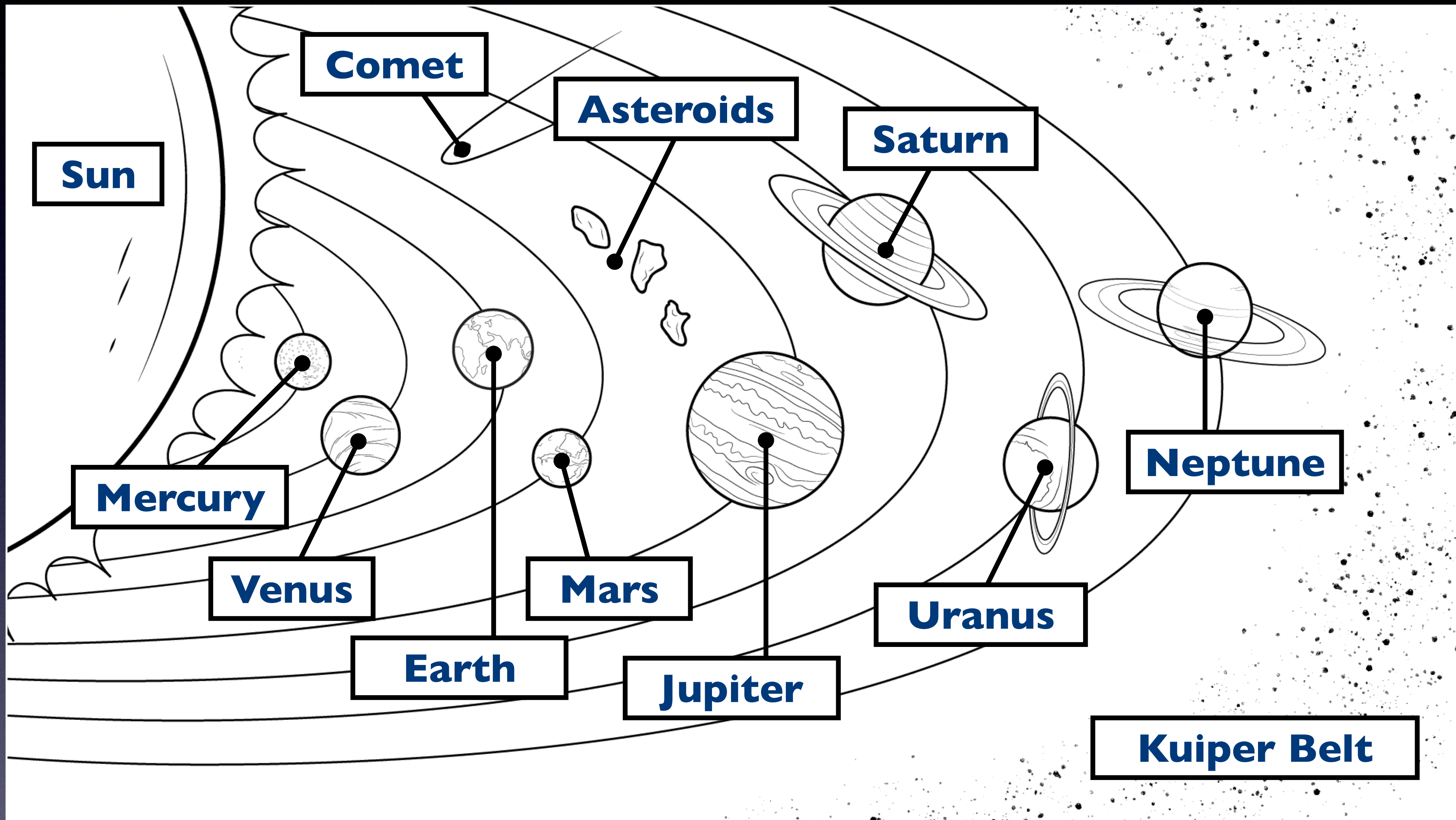


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Meteorite Crash in Russia





The Solar System

The Solar System

Celestial Object	Mean Distance from Sun (million km)	Period of Revolution (d=days) (y=years)	Period of Rotation at Equator	Eccentricity of Orbit	Equatorial Diameter (km)	Mass (Earth = 1)	Density (g/cm ³)
SUN	—	—	27 d	—	1,392,000	333,000.00	1.4
MERCURY	57.9	88 d	59 d	0.206	4,879	0.06	5.4
VENUS	108.2	224.7 d	243 d	0.007	12,104	0.82	5.2
EARTH	149.6	365.26 d	23 h 56 min 4 s	0.017	12,756	1.00	5.5
MARS	227.9	687 d	24 h 37 min 23 s	0.093	6,794	0.11	3.9
JUPITER	778.4	11.9 y	9 h 50 min 30 s	0.048	142,984	317.83	1.3
SATURN	1,426.7	29.5 y	10 h 14 min	0.054	120,536	95.16	0.7
URANUS	2,871.0	84.0 y	17 h 14 min	0.047	51,118	14.54	1.3
NEPTUNE	4,498.3	164.8 y	16 h	0.009	49,528	17.15	1.8
EARTH'S MOON	149.6 (0.386 from Earth)	27.3 d	27.3 d	0.055	3,476	0.01	3.3

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