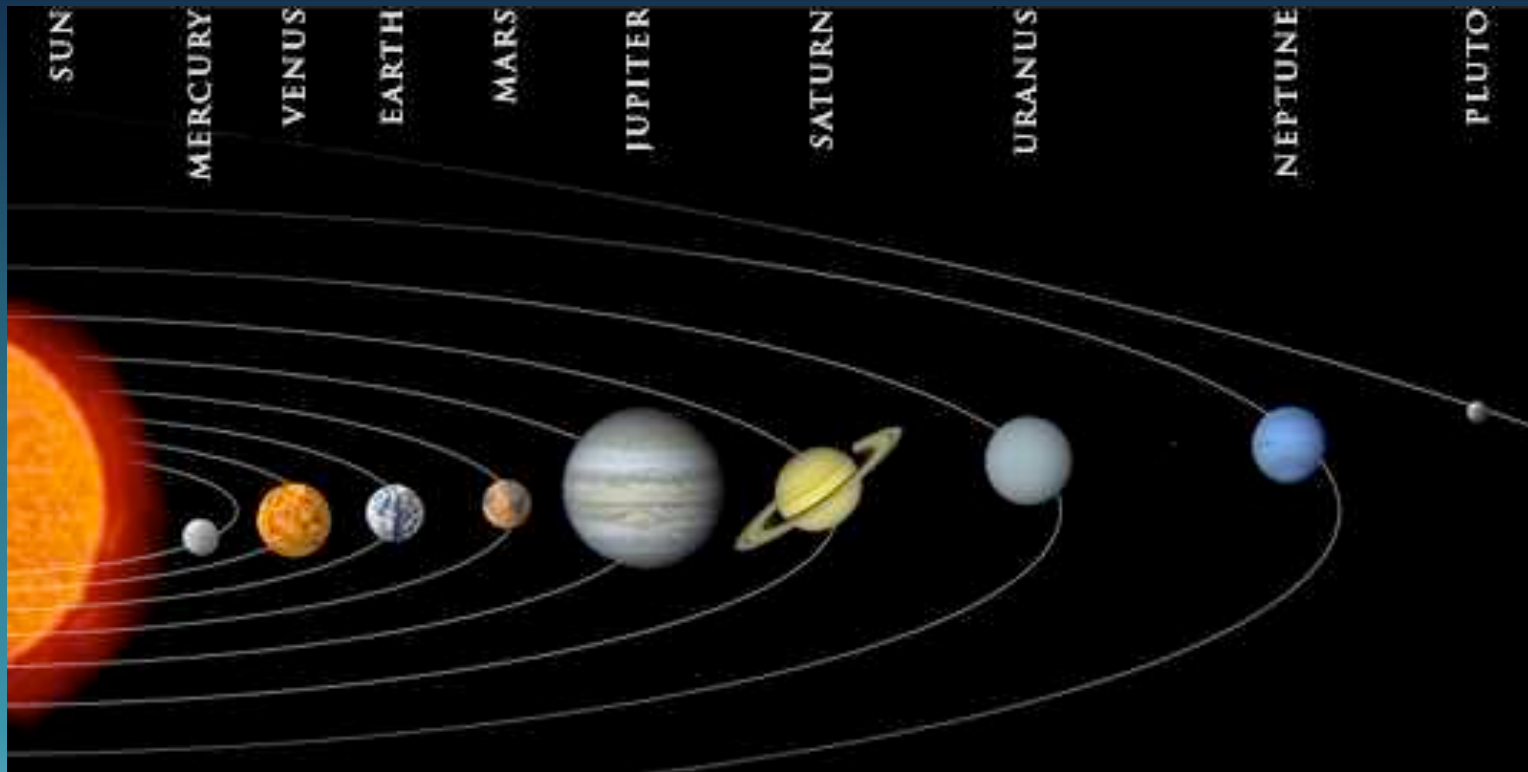


The image features a dark blue gradient background. In the upper half, there is a network of white and yellow dots connected by thin white lines, resembling a constellation or a network diagram. The dots vary in size and brightness, with some being larger and more prominent. The lines form a complex web across the upper portion of the frame. At the bottom of the image, the curved horizon of a globe is visible, showing a blue and white pattern that suggests continents and oceans. The overall aesthetic is clean and modern, with a focus on geometric and celestial themes.

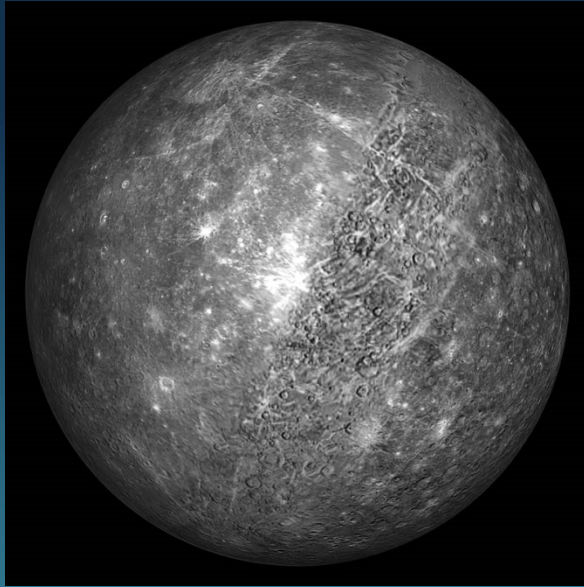
Space

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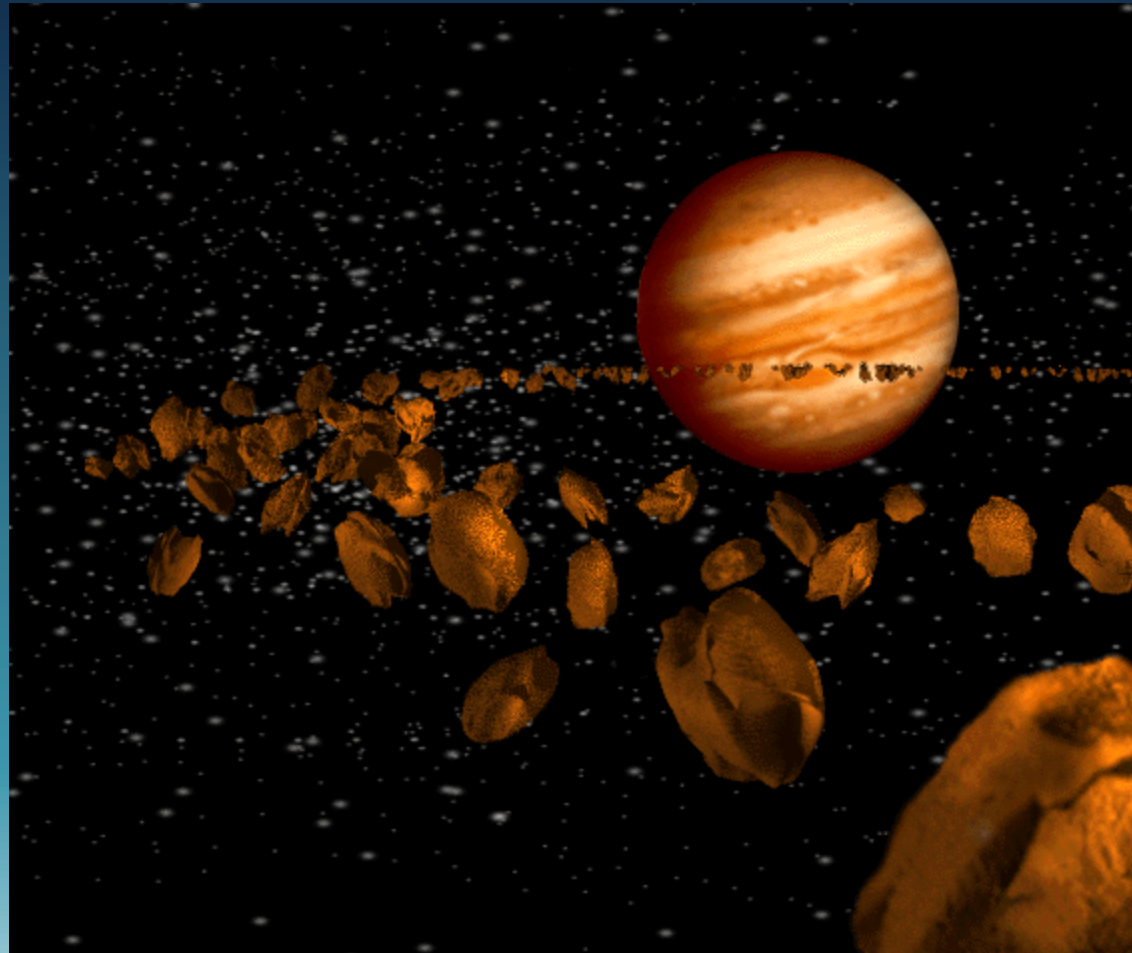
The Solar System



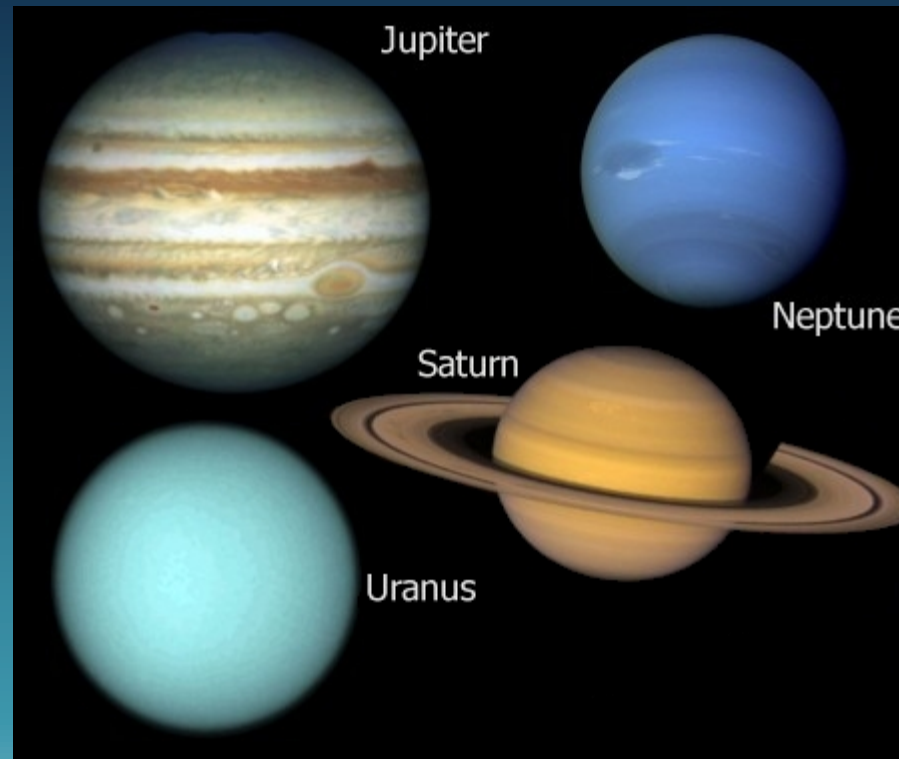
The Inner Planets



The Asteroid Belt



The Outer Planets



Gravity



- This is the formula for gravity, discovered by Newton:

$$F = G \frac{M_1 M_2}{r^2}$$

- G = the gravitational constant
- M_1 = the mass of the first body
- M_2 = the mass of the second body
- r = the distance between the two bodies
- F = force from gravity



Kepler's Laws of Planetary Motion

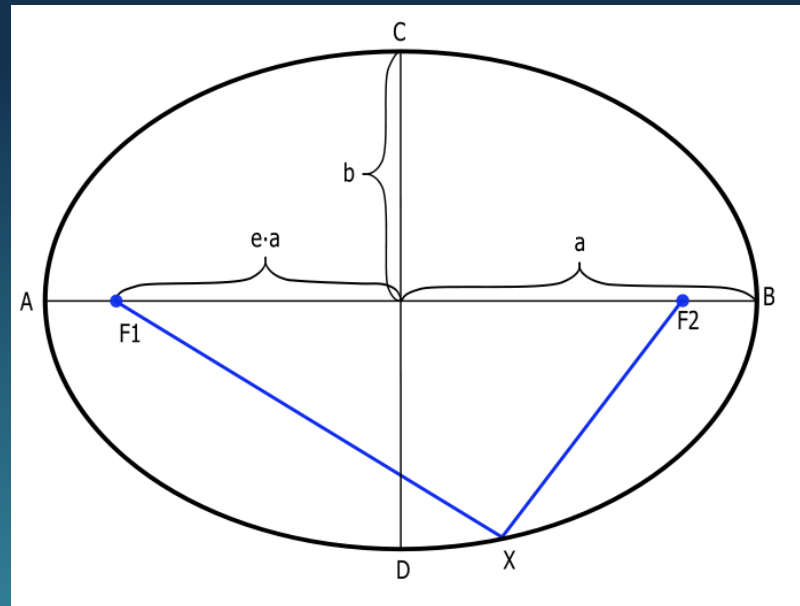


- The orbit of every planet is an ellipse with the sun at one foci.
- A line joining the planet and the sun sweeps out equal areas in equal times
- The square of the orbital period is directly proportional to the cube of the length of the semi-major axis of the orbit



Elliptical Orbits

- This is an ellipse:



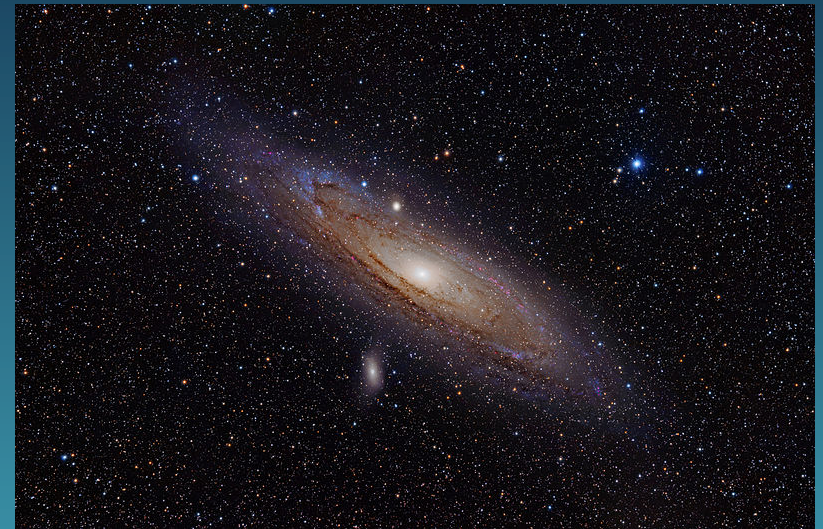
- The eccentricity of an ellipse is:

$$e = \sqrt{1 - \left(\frac{b}{a}\right)^2}$$

- What is the eccentricity for a circle?



Galaxies



Stars

