

# Sense(s) of Scale

## UNIVERSEFORUM

This model was originally produced by the Harvard-Smithsonian Center for Astrophysics using a quarter, and is distributed courtesy of the NASA-Smithsonian Universe Education Forum <http://www.cfa.harvard.edu/seuforum/>.

## Oreo Cookie Solar System...



Imagine if we could reduce the size of our solar system down to the size of an Oreo cookie! Before we do that, we need to review what we think about our solar system.

Questions that are helpful would look like...

- How many stars are in our solar system?
  - ANSWER...ONE!
- What is the overall “shape” of our solar system?
  - ANSWER...Fairly flat or planer (along the ecliptic)
- Are there any other systems in our galaxy similar to ours?
  - ANSWER...“Similar?” What do you mean by similar? Other stars with planets around them? ABSOULUTLEY!

Therefore an Oreo cookie will serve us well if we consider the sun to be but a small point at the center a little smaller than a single grain of sugar and the outer rim of the Oreo would represent the average distance at which Pluto orbits around the grain of sugar (or sun).

If our solar system is the size of an Oreo cookie, then our galaxy, the Milky Way, would be about the size of North America. Our Oreo cookie would be located about 8 miles above Buffalo, NY in the plane of our galaxy.

Our galaxy would contain between 200 – 300 billion Oreo cookies with 2/3 of them distributed in the galactic core – the state of Kansas! The other 1/3 would be scattered fairly evenly throughout the rest of North America with the average distance between Oreos being about 200 yards (183 m).

Quick, down and dirty, and best of all... EDIBLE; this scale model will delight all ages!

