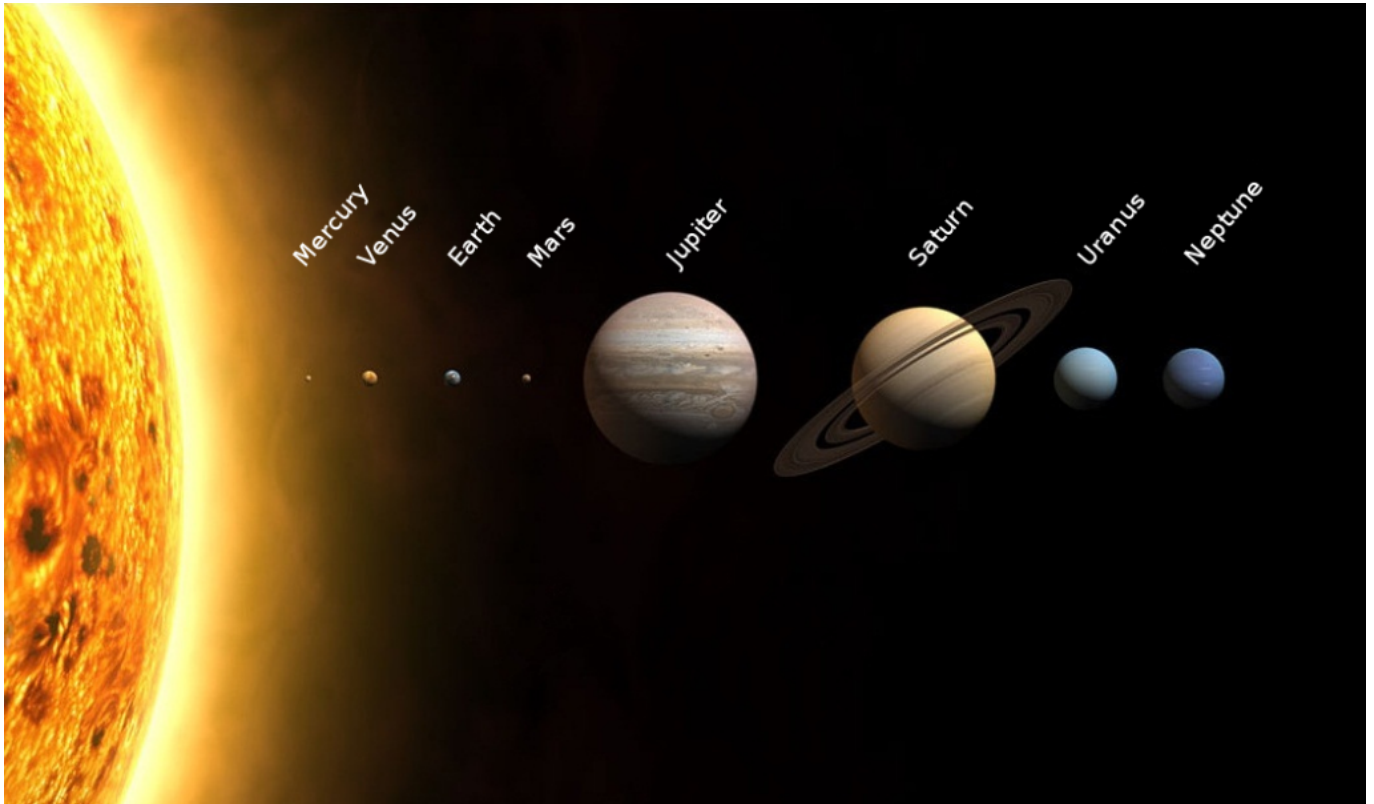


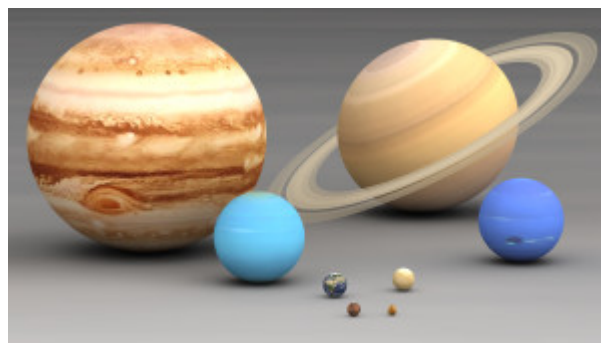
# The Solar System (to scale)



*Sun and planets, to scale. But the distances between them are not.*

We've all seen the numbers that describe the solar system, and we can understand them with graphics like the two in this post. Earth has a diameter of about 8,000 miles, but the moon is only about 2,000 miles across. Jupiter, on the other hand, is about 84,000 miles across; and the sun is a whopping 836,000 miles in diameter.

These huge numbers are all rounded to the nearest thousand to make them easier to visualize. We can easily see that Jupiter is more than ten times the diameter of earth; and the sun, more than 100 times. The moon (not shown) is smaller, being only about a quarter of earth's diameter.



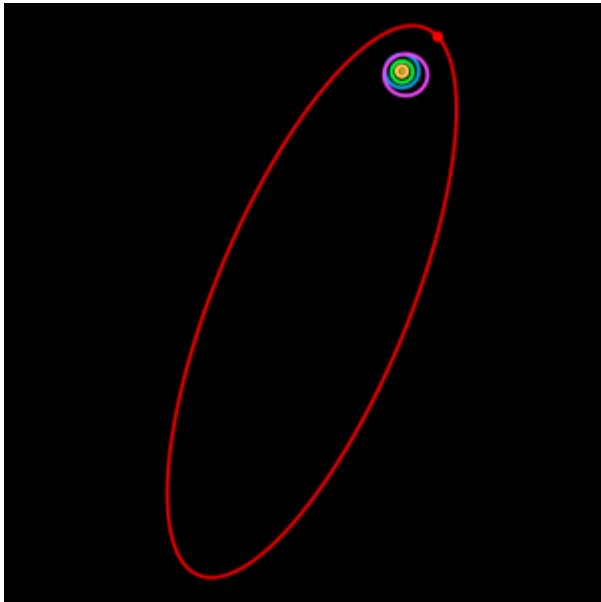
Venus is almost as large as earth, but Mars is smaller, and Mercury is smaller still. At 70,000 miles, Saturn is a little smaller than Jupiter; and Uranus and Neptune are considerably smaller, but still far larger than earth.

Did I get you confused yet? No? Good. It's really not hard. These number are big, but barely of a size range we can visualize.

What's hard is picturing the distances between these objects. We don't usually see them because they are too vast to fit on a screen or page. If we do see the space, the planets will be microscopic. What's worse is that these distances between the objects are so huge it's impossible for us to visualize them.

Consider these approximate distances from the sun:

- Mercury: 36,000,000 (35 million miles)
- Venus: 67,000,000 (67 million miles)
- Earth: 93,000,000 (93 million miles)
- Mars: 142,000,000 (142 million miles)
- Jupiter: 484,000,000 (484 million miles)
- Saturn: 889,000,000 (889 million miles)
- Uranus: 1,800,000,000 (1.8 billion miles)
- Neptune: 2,800,000,000 (2.8 billion miles)
- Pluto: 3,700,000,000 (3.7 billion miles)
- Sedna: 7, 100,000,000 to 87,000,000,000 (7.1 billion mi to 87 billion mi)



Yeah, I know Pluto isn't a planet; but it's still part of our solar system. So is Sedna. It's a minor planet so small and so far away it wasn't even discovered until 2001. It has a highly elliptical orbit way out beyond the orbits of the major solar system bodies. (Sedna has the red orbit in the picture; Pluto has the outer pink one. [Wikipedia calls it purple.] All

the planets are crammed inside.)

Like the diameters of the planets, these numbers are also approximate. Since planetary orbits are not exactly circular, they represent the approximate average orbit of each planet.

At the far end of its orbit, Sedna is so incredibly far away it would take more than 141,000 years to drive that distance at 70 mph non-stop.

The objects in both pictures are drawn to scale, but the spacing obviously is not.

[Here's a video](#) that actually shows the distances between the objects in the solar system TO SCALE. I'm sorry I can't embed it, so you'll have to click the link if you want to see it. Please do! It'll be worth your effort.

This video shows the real size of the solar system by, in effect, placing 1,074 screens side by side. If you could print it out at 300 dpi, the paper would have to be 475 feet wide and earth would be invisible.

You'll find the sun on the left and scroll right to find everything else. The scale is that our moon is one pixel. It's the smallest dot possible on your screen. So earth is about 4 pixels across; still a very small dot. And everything else is

to scale. *Including the empty spaces between objects.*

Get prepared for a LOT of empty space. It'll blow your mind!

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**Sources:**

- [Josh Worth](#)