

## **Don't Believe Your Eyes When It Comes to Size in the Skies**

When you look up at the sky, you may be fooled by what you see. Planets in the night sky look pretty similar to each other. And yet, in our solar system, the planets and their moons come in different textures, colors, and sizes. Spacecraft have shown us what they look like up close. The variety is amazing.

Have you ever seen the moon and sun in the sky at the same time? They look like they're about the same size. But the sun's diameter is more than 400 times greater than that of our moon! Why do they appear to be the same? It's because the sun is almost 150,000,000 kilometers (93,000,000 miles) away from the Earth, and the moon is only 384,467 kilometers (238,000 miles) away.

Try this experiment to see how distance makes things seem smaller. Hold up your thumb in front of your face. Now find a building or tree in the distance. Close one eye and move your thumb closer or further until it covers the object you're looking at. You know your thumb is smaller than the other object, but it seems bigger because it's closer to you. The moon is so much closer to us than the sun, it looks like it's the same size (or even bigger, sometimes).

Play the "Solar System Switch-a-Roo" game on the Space Place Web site. Go to [spaceplace.nasa.gov](http://spaceplace.nasa.gov) and click on "Do spacey things." You can see how the planets and moons in our solar system differ in texture and color. You'll see stormy surfaces, volcanoes, and craters. You'll notice shades of blue, white, and even orange. You'll also learn how the planets and their moons are all different sizes. It's a fun way to learn about our solar system.

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*Image caption:*

*The planets of our solar system look very different from each other.*

