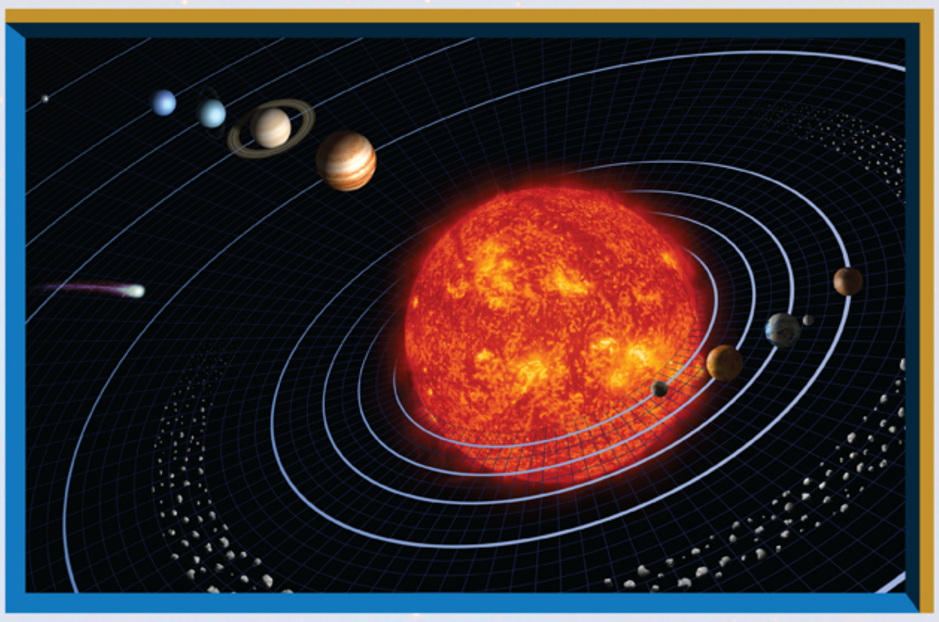
Our Place in Space

Looking at the night sky, you can sense how small Earth is in the vastness of space. A million Earths could fit inside the Sun. The Sun is just one of over 100 billion stars in a spiral galaxy we call the Milky Way. And the Milky Way is just one of over 100 billion galaxies in the universe.

Credit: NASA/NOAA

Earth

Earth is the 3rd planet from the Sun. It formed 4.5 billion years ago. Earth is often called the "Blue Planet" because about 70% of its surface is covered by water. Earth's thin atmosphere is about 20 kilometers high. Earth is located in the Solar System's Habitable Zone, where liquid water can exist at the surface. It's the only planet in our Solar System where we know for certain that life has evolved.



Credit: NASA

Our Solar System

Our home system has one medium-sized star at the center, four small inner rocky worlds, and four large gaseous outer worlds. It also contains at least 140 moons and millions of comets and asteroids. All of these were created inside a disk of gas and dust about 5 billion years ago.

The Milky Way Galaxy

Light travels about 10 trillion kilometers in a year, a distance called a "light-year." The nearest star outside our Solar System is roughly 4 light-years away. Our galaxy is about 100,000 light-years across, a distance that would take our fastest space probe about 2 billion years to travel! A supermassive black hole lurks at the center of the Milky Way. It's about 4 million solar masses.

Credit: Omikron/Photo Researchers, Inc.

Credit: NASA/ESA

Galaxies Galore

Individual galaxies form into clusters. Galaxy clusters form into superclusters. Scientists estimate that there are more than 100 billion galaxies in the universe. This deep field view of the universe was taken by the Hubble Space Telescope. The image covers an area of the sky about as large as the head of a pin held at arm's length. All but 4 specks in this "Hubble Deep Field" image are entire galaxies, each of them with 100 billion stars.