



National Aeronautics and Space Administration



NASA's Science Mission Directorate

Finding Earth's Place in the Universe

Our Earth is comprised of diverse components that interact in complex ways. We seek to understand Earth's atmosphere, lithosphere, hydrosphere, cryosphere, and biosphere as a single connected system, and to understand how human beings are altering Earth. The NASA Science Mission Directorate's (SMD's) Earth Science Program is engaged in the search for better understanding and for improved predictions of climate, weather, and natural hazards.

As we broaden our perspective, we realize the Earth system is part of several increasingly larger systems, so we explore the stars and planets to better understand the big picture into which the Earth system fits. We live in the extended atmosphere (called the heliosphere) of an active star, and changes to the sun can impact life on Earth. SMD's Heliophysics Research Program seeks to understand the sun, heliosphere, and planetary environments, including Earth's, as a single connected system.

The third of eight planets in the solar system, Earth orbits about 93 million miles from the sun and is uniquely suited to sustain life. Our solar system is a place of beauty and mystery, incredible diversity, extreme environments, and continuous change—a natural laboratory on a grand scale, which we can use to learn much about Earth's past, present, and future. SMD's Planetary Science Program is dedicated to unraveling the mysteries of the solar system.

Earth is but a tiny blue speck in a vast universe. The solar system is but one system of planets in a vast galaxy called the Milky Way, which is but one galaxy in a universe with billions upon billions of stars, some of which may contain worlds not unlike our own. SMD's Astrophysics Program seeks to study the cosmos on its largest scales and understand the strange phenomena that shape it, to better understand Earth's place in the universe.