

# Exploring the Cosmos

The universe is a vast expanse filled with billions of galaxies, each containing countless stars and planets. Our solar system orbits within the Milky Way galaxy, a spiral galaxy approximately 100,000 light-years in diameter. The Sun, our nearest star, provides the energy necessary for life on Earth. Space exploration has revealed incredible phenomena such as black holes, neutron stars, and distant exoplanets that may harbor life. The International Space Station orbits Earth at an altitude of about 400 kilometers, serving as a laboratory for scientific research in microgravity. Future missions aim to establish human presence on Mars and explore the icy moons of Jupiter and Saturn, where subsurface oceans might exist. The James Webb Space Telescope continues to unveil the mysteries of the early universe, capturing light from galaxies that formed billions of years ago.