

Search for New Planets

The recent discovery of numerous extrasolar planets confirms that our solar system is not unique. Indeed, other worlds appear to be common in our galactic neighborhood.

The extrasolar planets we have discovered thus far are giants, like Jupiter and Saturn. They are unlikely to support life as we know it. But some of these systems might also contain smaller, terrestrial planets like Mars and Earth.

Over the next 15 years, NASA is embarking on a bold series of missions to find and characterize new worlds. These will be the most sensitive instruments ever built, capable of reaching beyond the bounds of our own solar system.

The Keck Interferometer will combine the light of the world's largest optical telescopes, extending our vision by a quantum leap.

Using a technique known as interferometry, the Keck will study dust clouds around stars where planets may be forming. It may also provide the first direct images of giant planets outside our solar system.

The Kepler mission, scheduled to launch in 2007, will search for evidence of Earthlike planets by simultaneously monitoring the brightness of thousands of stars.

The Space Interferometry Mission will measure the distances and positions of stars with unprecedented accuracy. SIM's precision will allow us to detect evidence of planets just slightly larger than Earth.

Finally, the Terrestrial Planet Finder will build upon the legacy of all that have gone before it. With an imaging power 100 times greater than the Hubble Space Telescope, Terrestrial Planet Finder will send back the first photographs of nearby planetary systems. At last we will begin to see what these new worlds look like.

We will analyze their atmospheres, looking for carbon dioxide, water and ozone. The substantial presence of all three gasses would indicate that life is present.

Such a discovery would at last provide convincing evidence that we are not alone. We will have found another Earth.