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An Introduction to Exoplanets and the Kepler Mission

A quarter century ago, the only planets known to humanity were the familiar objects that orbit our Sun. But improved observational techniques allowed astronomers to begin detecting planets around other stars in the 1990s. The first extrasolar planets (often referred to as exoplanets) to be discovered were quite exotic and unfamiliar objects. Most were giant objects that are hundreds of times as massive as the Earth and orbit so close to their star that they are hotter than pizza ovens. But as observational capabilities improved, smaller and cooler planets were found. The most capable planet-hunting tool developed to date is NASA's Kepler telescope, which was launched in 2009. Kepler has found that planets similar in size to our Earth are quite abundant within our galaxy. Results of Kepler's research will be summarized and placed into context within the new and growing discipline of exoplanet studies.