

Terrestrial Planet Finder

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The Terrestrial Planet Finder will be a multiple beam infrared interferometer operated at 1AU from the Sun. Its current planned start is 2007 with launch in 2011. TPF will study all aspects of planets beyond our own solar system: from their formation and evolution in the disks of newly forming stars to the presence and properties of those planets orbiting the nearest stars; from their number, sizes, and locations to their suitability as abodes for life. By combining the sensitivity of space-borne telescopes with the high spatial resolution of an interferometer, TPF will be able to reduce the glare of parent stars by a factor of more than 100,000 to reveal planetary systems as far away as 15 parsec (50 light years). In addition to determining the size, temperature, and orbital location of planets as small as the Earth in the habitable zones of distant solar systems, TPF's low resolution spectroscopy will allow atmospheric chemists and biologists to use the relative proportions of gasses like CO₂, H₂O, O₃ and CH₄ to assess whether a planet someday could, or even presently does, support life.