



Hunting for habitable worlds



Some of our SciBar participants prepared this glossary, independently of Eamonn Kerins. Your feedback on the level of information and usefulness of the SciBar glossaries is most welcome.

<p>Doppler shift A change in wavelength (colour) of light coming from a moving light source, such as a star. An unseen planet can cause small wobbles in the parent star’s apparent movement toward or away from Earth, due to the planet’s gravitational pull on the star. How a star’s Doppler shift changes over time can give clues about the mass and orbital radius of the planet.</p> <p>Exomoon Moon that orbits a planet in another solar system, like the Pandora world in the movie Avatar.</p> <p>Exoplanet (Extra-solar planet) Planet that orbits another star, not the Sun; outside our own solar system.</p> <p>Gravitational microlensing A method of detecting exoplanets by the temporary brightening (magnification) of a distant star as the planet passes in the foreground. The gravitational field of the planet bends light around itself, so more light from the distant star reaches the Earth. This only happens if the planet lines up exactly between the observer and the distant star.</p> <p>Habitable zone (sometimes called Goldilocks zone) A region round a star where conditions on planets and moons could be just right (“not too hot and not too cold”) for the existence of liquid water and conceivably life.</p> <p>Hot Jupiters Massive gas planets like Jupiter, which orbit much nearer than Jupiter to their parent stars. Most of the 700 exoplanets so far discovered are of this type. Such planets</p>	<p>are outside the habitable zone and so not likely to be suitable for life.</p> <p>Kepler telescope A space telescope that is surveying Sun-like stars in a small area of one arm of the Milky Way. The mission hopes to detect Earth-mass planets in or near the habitable zone, using the transit method.</p> <p>Photometry Measuring the brightness of an object, such as a star. A light curve is a plot of the variation of brightness with time.</p> <p>Spectrograph/spectrometer An instrument connected to a telescope, used to record the light from a star or galaxy by splitting it into a spectrum (range of wavelengths).</p> <p>Super-Earth Rocky planets like the Earth, only much larger.</p> <p>Transit method A method of detecting exoplanets by the tiny flicker in a star’s brightness when a planet passes in front of it (as in the recent transit of the Sun by Venus). Very large planets block more light and are more likely to be detected than smaller planets.</p> <p>Twinkle Stars twinkle or scintillate (appear to change in brightness) because turbulent air in the Earth’s atmosphere constantly distorts their light by bending rays of light from each star into different directions. This distortion limits imaging methods for ground-based telescopes.</p>
--	---

Useful weblinks:

Exoplanet research at Jodrell Bank www.jb.man.ac.uk/research/exoplanets/
NASA’s Kepler telescope <http://kepler.nasa.gov/>

Next SciBar: topic to be announced. Lindow Man coming soon!