

## Probability of extrasolar terrestrial planets

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<http://www.geo.titech.ac.jp/lab/ida/ida/main.html>

Recent development of research on extrasolar planets are reviewed. About 120 extrasolar Jupiter-mass planets have been discovered

through the observation of Doppler shift in the light of their host stars that is caused by acceleration due to planet orbital motions.

Although the extrasolar planets so far observed may be limited to gas giant planets and their orbits differ from those of giant planets in our Solar system (Jupiter and Saturn), the theoretically predicted probability of existence of extrasolar terrestrial planets that can have liquid water ocean on their surface is comparable to that of detectable gas giant planets. Based on the number of extrasolar gas giants detected so far, about 100 life-sustainable planets may exist within a range of 200 light years. Indirect observation of extrasolar terrestrial planets would be done with space telescopes within several years and direct one may be done within 20 years. The latter can detect biomarkers on these planets as well.