The Search for Planets

Gaia could also play a role in the search for habitable worlds, not by directly detecting terrestrial planets, but by finding systems with giant planet orbiting far from a solar-type star, a condition that would increase the possibility of finding an inner terrestrial planet harbouring life.

Increasingly more powerful computers will allow numerical simulations of planetary formation and evolution to develop rapidly, providing an invaluable tool for theoretical studies in this field.

Detection Methods

There are a number of different methods through which planets are being searched for:

- **Gravitational Lensing:** A planetcan produce a temporary gravitational amplification of the light of background stars. This is due to the peculiar propagation of light in curved space-time. One planet detection has been claimed to date with this method.

- **Imaging:** Planets generally emit no light, but they reflect that of their parent star. This method aims at detecting this reflected light. It is a very difficult task because the nearby star is so bright that it overpowers the image and hides the much fainter planet. Planned satellites like the ESA/NASA Darwin/Terrestrial Planet Finder mission will use imaging techniques to look for terrestrial planets in the habitable zone.

We are living in an exciting age, where discovering other worlds similar to our own, understanding how our Solar System formed, and even observing planets where life may be present, is now within our reach.

 ESA’s COROT planet-hunting space telescope is already at work. From its polar orbit, it is looking for rocky planets several times larger than Earth around nearby stars.

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**The Little Books of Gaia**

[http://sci.esa.int/Gaia](http://sci.esa.int/Gaia)

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