

## **A path to the detection of Earth-type planets (Jean Dominique Cassini Medal Lecture)**

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"How many planets in the Milky Way?", "How many planets similar to our Earth?"

On the last twenty years, significant results have been obtained in the domain of extrasolar planets. More than two thousand planets have characterized orbits, for several hundred of them their radii are known. We have discovered an amazing diversity of planetary systems. These observations have revealed the importance of new physical process to be taken into account for the formation and evolution of planetary systems. The synergy between ground-based radial velocity measurements and the detection of transiting planets have permitted exciting possibilities to characterize planets. Already we have the possibility to get clues on the internal composition of exoplanets and their atmosphere.

Do we have the instrumental capabilities to detect and study planets as Earth analogues? What are the instruments in development and their scientific goals.