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Extrasolar Planets with the CoRoT Satellite

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Up to now more than 400 planets orbiting stars other than the sun have been discovered. About 60 of them are transiting the host stars. Observations of such transiting extra-solar planets are of key importance for understanding planets because their mass, diameter, and density can be determined. While it is possible to detect transiting planets also with ground-based telescopes, only space-telescopes like CoRoT allow us to study the properties of the planets in detail. It turns out that even many gas-giants are strikingly different from the gas giants in our solar system, indicating that our ideas of how planets form have to be revised.

While the detection of transiting gas giants is interesting, the ultimate goal clearly is to detect rocky planets like the Earth. Very recently, the CoRoT satellite has detected a solar-like star which shows transits that are only 0.03% deep. In this talk it is demonstrated that this planet is in fact the first planet found outside our solar system from which we can firmly say that it is a rocky planet.