

Characterizing Exoplanets – towards Earth 2.0

Dr. Lisa Kaltenegger

A decade of exoplanet search has led to surprising discoveries, from hot giant planets orbiting their star within a few days, to planets orbiting two Suns, extremely hot worlds with potentially permanent lava on their surfaces due to the star's proximity all the way to the first potential rocky worlds in the Habitable Zone of their stars.

Observation techniques have now reached the sensitivity to explore the chemical composition of the atmospheres as well as physical structure of some detected planets.

Over a thousand planets have already been detected around other Suns. Their characteristics shows a wide diverse set of different objects. The spectral fingerprint of planets gives us the key to explore exoplanets over light years away and characterize their environments. And it should allow us to find the first habitable new worlds in the sky in the near future.