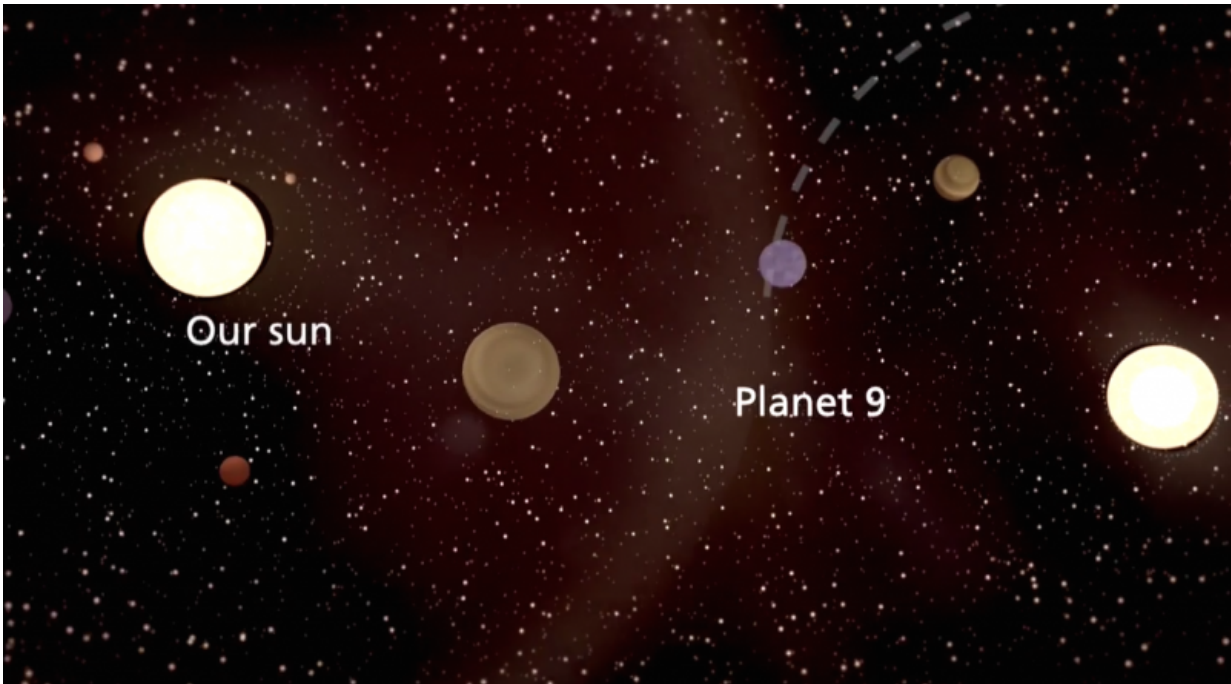


Theft behind Planet 9 in our solar system

May 31 2016, by Cecilia Schubert



Credit: Lund University

Through a computer-simulated study, astronomers at Lund University in Sweden show that it is highly likely that the so-called Planet 9 is an exoplanet. This would make it the first exoplanet to be discovered inside our own solar system. The theory is that our sun, in its youth some 4.5 billion years ago, stole Planet 9 from its original star.

An extrasolar planet, or exoplanet, is by definition a planet located

outside our solar system. Now it appears that this definition is no longer viable. According to astronomers in Lund, there is a lot to indicate that Planet 9 was captured by the young [sun](#) and has been a part of our solar system completely undetected ever since.

"It is almost ironic that while astronomers often find exoplanets hundreds of light years away in other solar systems, there's probably one hiding in our own backyard", says Alexander Mustill, astronomer at Lund University.

Stars are born in clusters and often pass by one another. It is during these encounters that a star can "steal" one or more planets in orbit around another star. This is probably what happened when our own sun captured Planet 9.

In a computer-simulated model, Alexander together with [astronomers](#) in Lund and Bordeaux has shown that Planet 9 was probably captured by the sun when coming in close contact while orbiting another star.

"Planet 9 may very well have been 'shoved' by other [planets](#), and when it ended up in an orbit that was too wide around its own star, our sun may have taken the opportunity to steal and capture Planet 9 from its original star. When the sun later departed from the [stellar cluster](#) in which it was born, Planet 9 was stuck in an orbit around the sun", says Alexander Mustill.

"There is still no image of Planet 9, not even a point of light. We don't know if it is made up of rock, ice, or gas. All we know is that its mass is probably around ten times the mass of earth."

It requires a lot more research before it can be ascertained that Planet 9 is the first exoplanet in our solar system. If the theory is correct, Alexander Mustill believes that the study of space and the understanding

of the sun and the Earth will take a giant leap forward.

"This is the only [exoplanet](#) that we, realistically, would be able to reach using a space probe", he says.

The article is published in *Monthly Notices of the Royal Astronomical Society Letters*, (*MNRAS Letters*).

More information: Alexander J. Mustill et al. Is there an exoplanet in the Solar system?, *Monthly Notices of the Royal Astronomical Society: Letters* (2016). [DOI: 10.1093/mnrasl/slw075](https://doi.org/10.1093/mnrasl/slw075)

Provided by Lund University

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