Birth of Tatooine
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Tatooine is the beautiful fictional home planet of everyone’s favorite Jedi, Luke Skywalker. This iconic desert planet is most popularly known for its two suns that Skywalker gazes upon. Astronomers and Star Wars fans alike have been almost obsessed with finding a real life equivalent of Tatooine in our universe. We have searched high and low for a planet orbiting around two stars called a circumbinary planet. A couple systems have been found such as Kepler 16-b to contain a planet orbiting binary stars but one system in particular, KH 15D, actually provides us with insight in how a Tatooine planet can be born. This system consists of two young T Tauri stars surrounded by a circumbinary disk made of sand grains. It’s located about 2,500 lightyears from the sun and is a promising model for how Tatooine could have been born. The disk is thought to be protoplanetary meaning that it will eventually form planets. These planets will resemble Tatooine in that they would have two suns in their skies.

The Disk

In the KH 15D system, the circumbinary disk is located in the terrestrial zone of its two stars which is out at about 3 times the distance our earth is from the sun. The stars have been observed to be about 3 million years old, which compared to our middle-aged sun at 4.5 billion years old, makes them very young. However, the disk has ample time to evolve and form planets by the time the stars reach the stable point of their life called the main sequence where they can support life like our sun can. Recent research has proved that the disk is likely clumping together already and these clumps have been observed when they come in front of each star. This is promising evidence that the KH 15D system is a fantastic insight into how a planet like Tatooine can be born.

Astronomers have also studied that the disk has a peculiar orientation because it is inclined at about 30 degrees from the orbit of its two host stars. This tells us that the systems around two stars can be unpredictable and hard to model meaning that KH 15D is an invaluable tool in studying the birth of a Tatooine.

Someday far in the future, the disk in KH 15D could form a terrestrial planet like Tatooine. The real life Luke Skywalker could even be living on it!