A planet is discovered breaking up, creating a giant 'fire tail' like a comet

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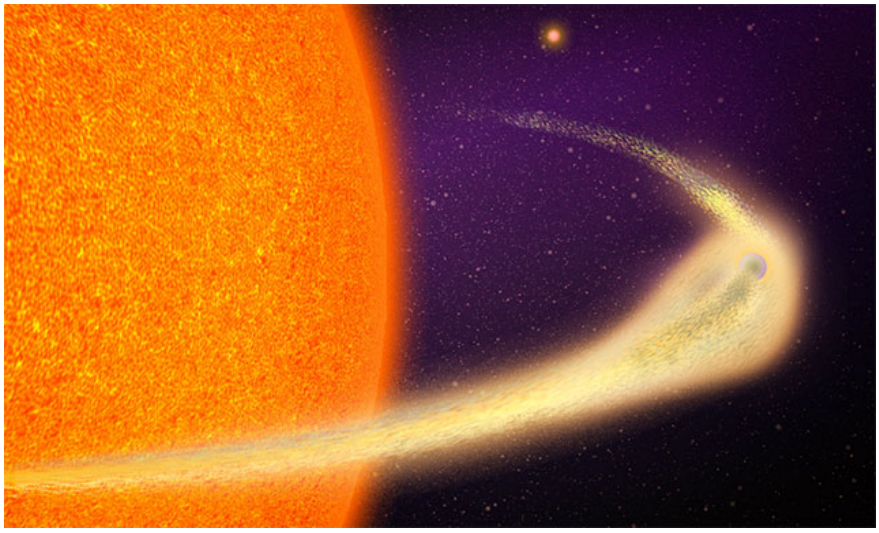
Located 140 light years from Earth, the planet has a mass similar to that of Mercury, but orbits its star in a super-tight orbit, making a year here last just over 30 hours. Such close proximity heats the planet's surface to 3,000°F (about 1,650°C), turning it into a seething mass of magma that steams away into space.

As it moves, material from the planet's surface is stripped away and evaporates, forming a giant debris tail behind it — a similar phenomenon that happens to comets as they approach the Sun.



"This tail is so huge that it spans 9 million kilometers — half the orbit of the planet," said Dr. Marc Hon, lead researcher at MIT. " *We weren't looking for this type of planet initially. When I checked the regular signals, I stumbled upon an anomalous signal* ."

The long tail caught the team's attention when it produced a distinctive signal when the planet passed in front of its host star — a common method of detecting exoplanets based on dips in the star's brightness (called transits). In this case, the transits were unusually long and varied slightly with each cycle, suggesting that the planet's

shape was constantly changing — a clue to the tail's existence.

"This transiting shape is typical of a comet with a long tail," Hon explains. " *However, the tail here is unlikely to contain volatile gas or ice like a real comet — they cannot survive long in the extreme temperatures close to their host star. Instead, mineral particles vaporized from the planet's surface may survive long enough to form this distinctive tail* ."

The reason BD+05 4868 A is losing material is because of its low mass, which results in a weak gravitational pull that cannot hold the surface firmly. It is one of four decaying planets ever discovered and the closest to Earth, prompting scientists to want to study it further with the James Webb Space Telescope (JWST).