Scientists find a molecule never before found outside our solar system on a planet with glass rain

By Ashley Stricklan, CNN
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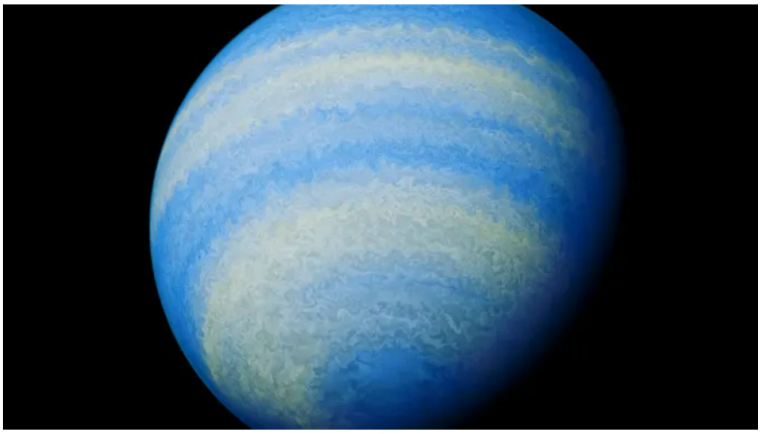

An illustration depicts exoplanet HD 189733b, a gas giant located 64 light-years away. Roberto Molar Candanosa/Johns Hopkins University

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(CNN)— An exoplanet the size of Jupiter has long intrigued astronomers because of its scorching temperatures, screaming winds and sideways rain made of glass. Now, data from the James Webb Space Telescope has revealed another intriguing feature of the planet known as HD 189733b: It smells like rotten eggs.

Researchers studying HD 189733b's atmosphere used Webb's observation to spot trace amounts of hydrogen sulfide — a colorless gas that releases a strong sulfuric stench and has never been spotted beyond our solar system. The discovery advances what's known about the potential composition of exoplanets.

The findings, compiled by a multi-institution team, were published Monday in the journal Nature.

An oddball planet with deadly weather

Scientists first discovered HD 189733b in 2005 and later identified the gas giant as a "hot Jupiter" — a planet that has a similar chemical composition to Jupiter, the biggest planet in our solar system, but with sizzling temperatures. Located only 64 light-years from Earth, HD 189733b is the nearest hot Jupiter that astronomers can study as the planet passes in front of its star. For that reason, it's one of the most well-studied exoplanets.

"HD 189733 b is not only a gas giant planet, but also a 'giant' in the field of exoplanets because it is one of the first transiting exoplanets ever discovered," said lead study author Guangwei Fu, an astrophysicist at Johns Hopkins University, in an email. "It is the anchor point for many of our understanding of exoplanet atmospheric chemistry and physics."

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