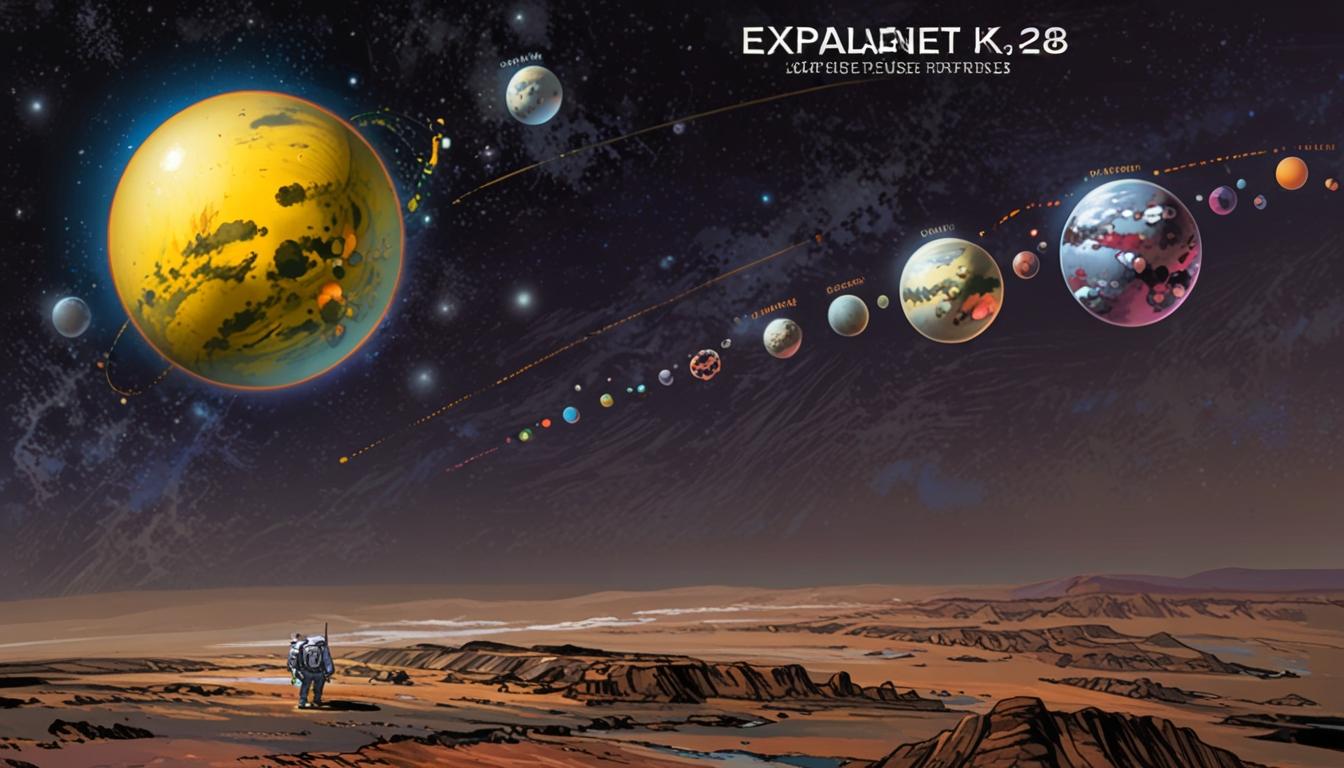
# Scientists question claims of alien life detection on distant exoplanet



Scientists have raised questions over recent claims suggesting the detection of signs of alien life on a distant exoplanet, highlighting ongoing debate within the astrobiology community about the interpretation of atmospheric data from worlds beyond our Solar System.

Last week, researchers from the University of Cambridge announced the potential discovery of dimethyl sulfide (DMS) on K2-18b, a planet located approximately 124 light years away from Earth. DMS is a gas known on Earth chiefly as a by-product of biological activity, often associated with the distinctive smell of certain natural processes. Because of its strong link to living organisms on our planet, astronomers consider DMS a promising "biosignature"—a chemical indicator that could suggest the presence of life.

The Cambridge team reported a three-sigma statistical significance in their detection of DMS on K2-18b, indicating a 0.3% chance that the finding is due to random fluctuation. This level of confidence led them to claim they were "99.7%" certain the exoplanet's atmosphere contains DMS, and by extension, that the planet may be "teeming" with life—albeit potentially microbial in nature.

However, experts not involved in the study have voiced significant reservations about these claims. A primary concern is that the three-sigma confidence level falls short of the more stringent five-sigma standard typically required in scientific discovery, which corresponds to an error probability of only 0.00003%. This higher threshold is generally observed to minimise false positive findings.

Critics have also questioned the reliability of the data itself, noting that the research pushed the capabilities of the James Webb Space Telescope—the instrument used to detect the planetary gases—to their limits. Some have suggested that the analytical model employed by the Cambridge team may have introduced bias, artificially boosting the perceived significance of DMS signals.

Manasvi Lingam, an astrobiologist at the Florida Institute of Technology in the United States who was not part of the original research, commented to the Daily Star that "Concluding that DMS has been detected appears to be premature." While acknowledging that the study incorporated new data, he cautioned that independent analysis by other researchers was necessary before claims about K2-18b’s habitability or the existence of extraterrestrial life could be substantiated.

Eddie Schwieterman, assistant professor of astrobiology at the University of California, Riverside, also expressed scepticism, highlighting an inconsistency with existing atmospheric chemistry models. He noted that the ultraviolet radiation emitted by K2-18b’s host star should theoretically break down DMS and produce ethane as a by-product. However, ethane was notably absent from the spectroscopic data, which he described as "not align[ing] with scientists' understanding of planetary atmospheres."

"Either our models are in error or the DMS might not exist," Schwieterman said. "Finding life outside the Solar System won't be a 'one and done' detection. Along the way we should expect some false alarms and this may be one."

Christopher Glein, a planetary scientist at the Southwest Research Institute in Texas, urged caution and measured enthusiasm about the findings. Speaking to Space.com, he remarked, "We need to resist the temptation to find a smoking gun. The search for life is hard. For a convincing case to be made multiple self-consistent lines of evidence will need to be assembled. Did they find a needle in the haystack, or just a sharp piece of hay?"

The discussions reflect the complexity and early stage of detecting biosignatures on exoplanets. While the claim of detecting DMS on K2-18b has sparked excitement, the scientific community is debating whether this represents a definitive discovery or an intriguing but inconclusive hint pending further investigation.

The Daily Star is reporting that this story remains under active scientific scrutiny as researchers continue to analyse data from K2-18b and other exoplanets in the quest to identify signs of life beyond Earth.

Source: [Noah Wire Services](https://www.noahwire.com)

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