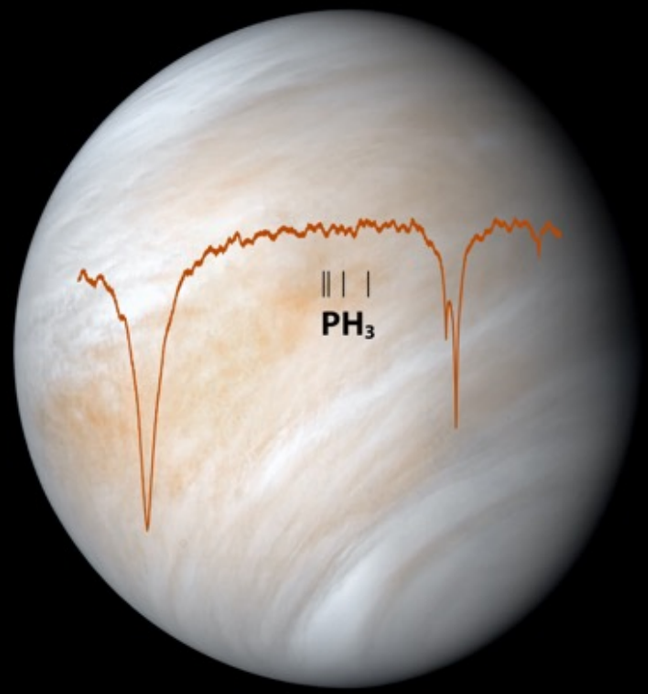
No Phosphine on Venus, According to SOFIA

An announcement that phosphine (the molecule PH_3) was discovered above Venus's clouds made headlines in 2020 because of its potential as an indicator of life. On Earth, phosphine is associated with biology.

Following the 2020 study, a number of different telescopes conducted follow-up observations to confirm or refute the finding. Scientists at Goddard followed suit, using NASA's airborne observatory SOFIA in their search.

The researchers didn't see any sign of phosphine, and if there is any phosphine present in Venus's atmosphere at all, it's a maximum of about 0.8 parts phosphine per billion parts everything else, much smaller than the initial estimate in 2020.

Despite the fact the group did not find phosphine after the intensive observations, the study was a success. Along with complementary data from other observatories that vary in the depths they probe within Venus's atmosphere, the SOFIA results help build the body of evidence against phosphine above 75 km altitude in Venus's atmosphere, from its equator to its poles.



Data from SOFIA overlay an image of Venus from NASA's Mariner 10 spacecraft. If a significant amount of phosphine were present in Venus's atmosphere, there would be dips in the graph at the four locations labeled "PH_3." Credit: Venus: NASA/JPL-Caltech; Spectra: Cordiner et al.

Press release: https://blogs.nasa.gov/sofia/2022/11/29/no-phosphine-on-venus-according-to-sofia/

Article: M. A. Cordiner et al. 2022, Geophysical Research Letters, 49(22). https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2022GL101055