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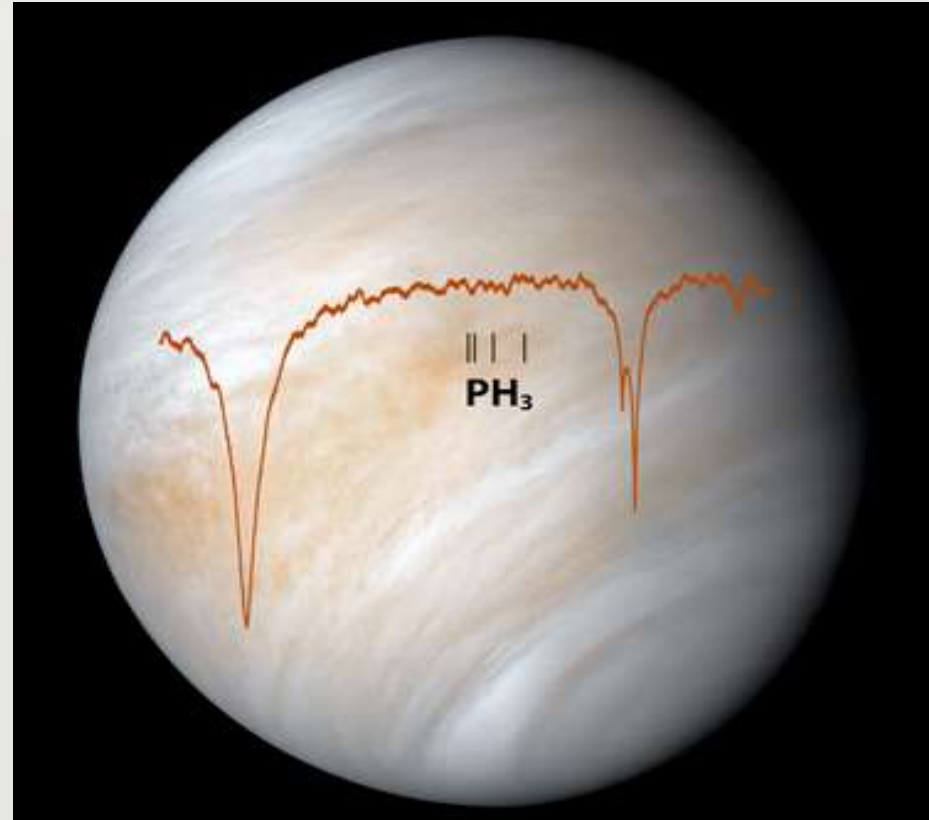
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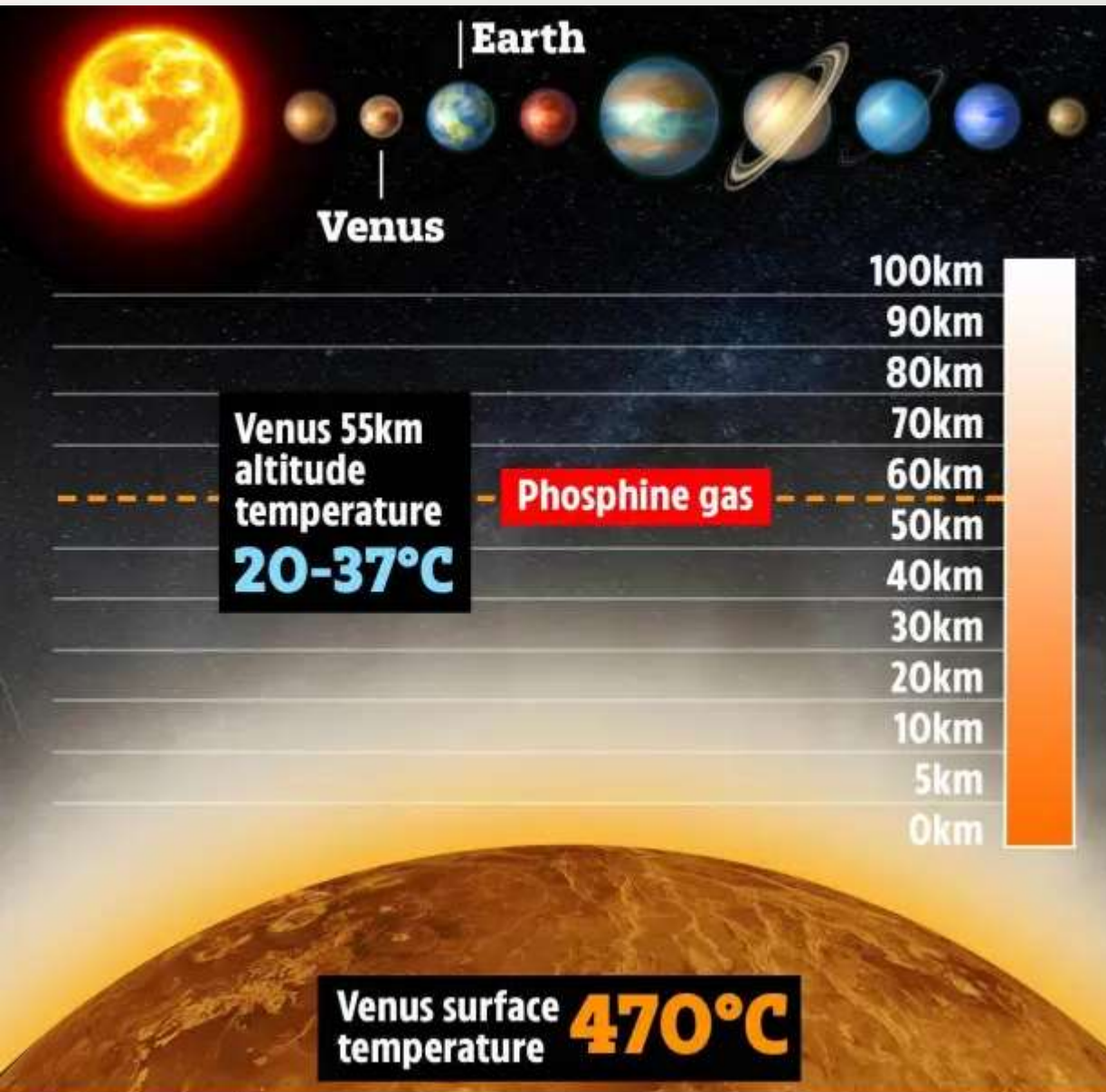
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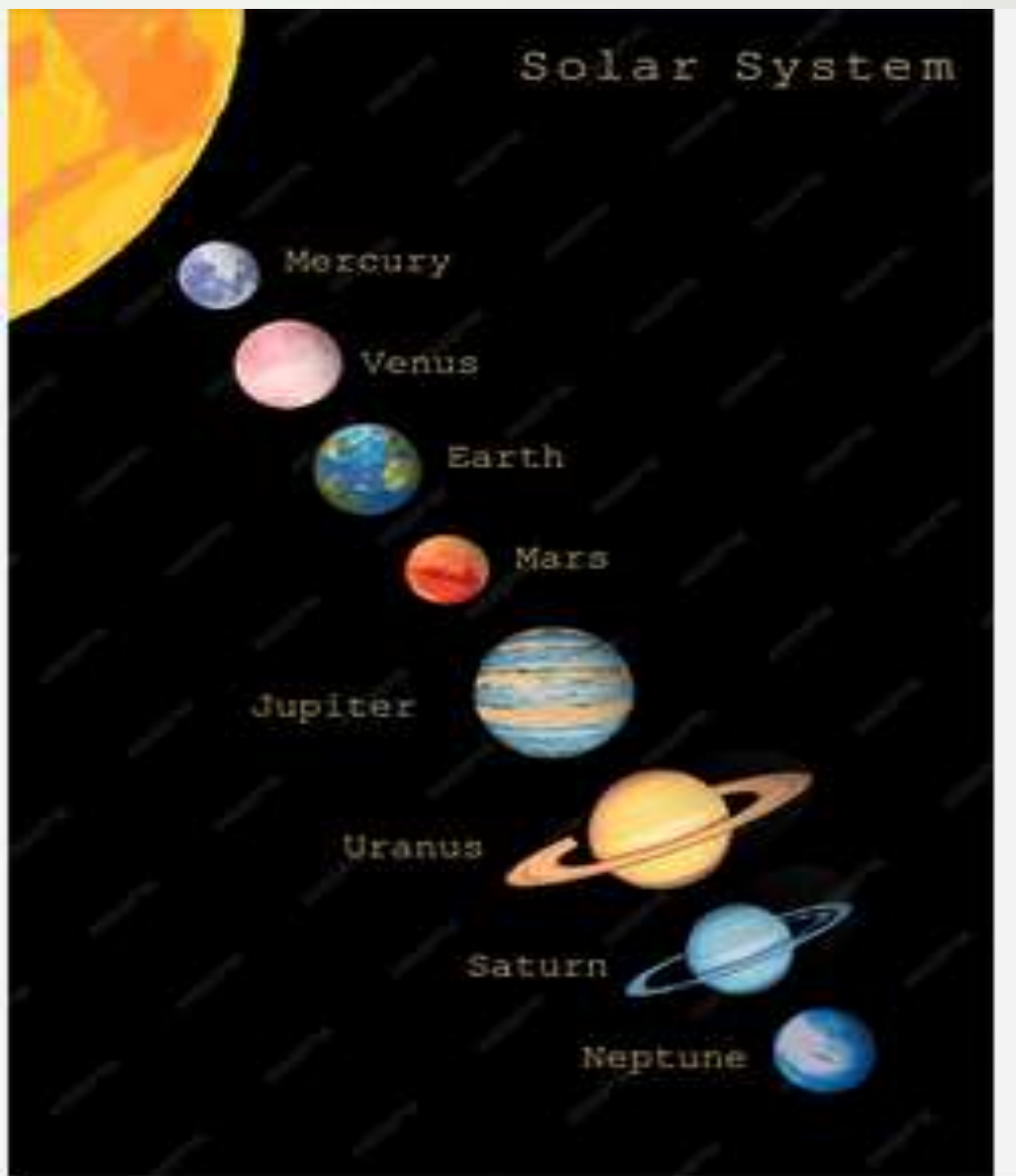


# New Evidence of Phosphine in Clouds of Venus





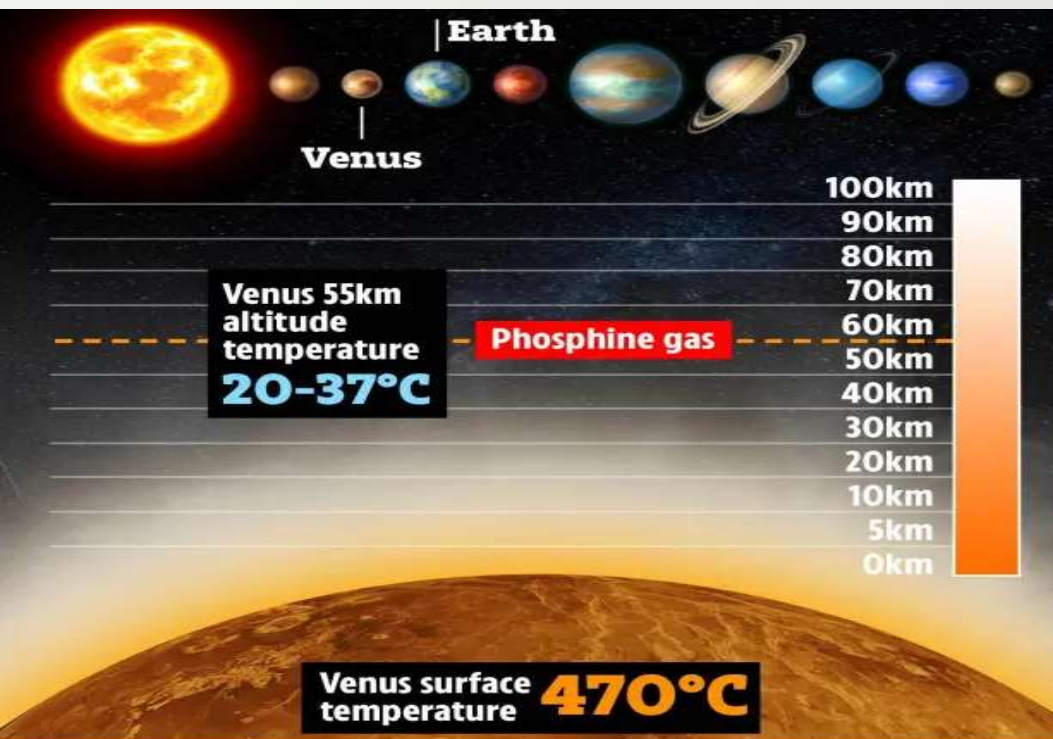
- Scientists detected phosphine at deeper level in Venus' atmosphere than before using the James Clark Maxwell Telescope (JCMT)
- phosphine was detected around 60km above the surface – in the cloudy atmosphere.
- Scientists in 2020 detected the presence of phosphine gas in the clouds of Venus.
- That discovery led to much debate and excitement about the presence of life on Venus given that phosphine is a molecule associated with biological activity on Earth



## Key Facts About Venus

- Venus is Earth's closest planet, also known as earth's twin.
- Similar in structure but slightly smaller than Earth
- Venus' solid surface is a volcanic landscape covered with extensive plains featuring high volcanic mountains

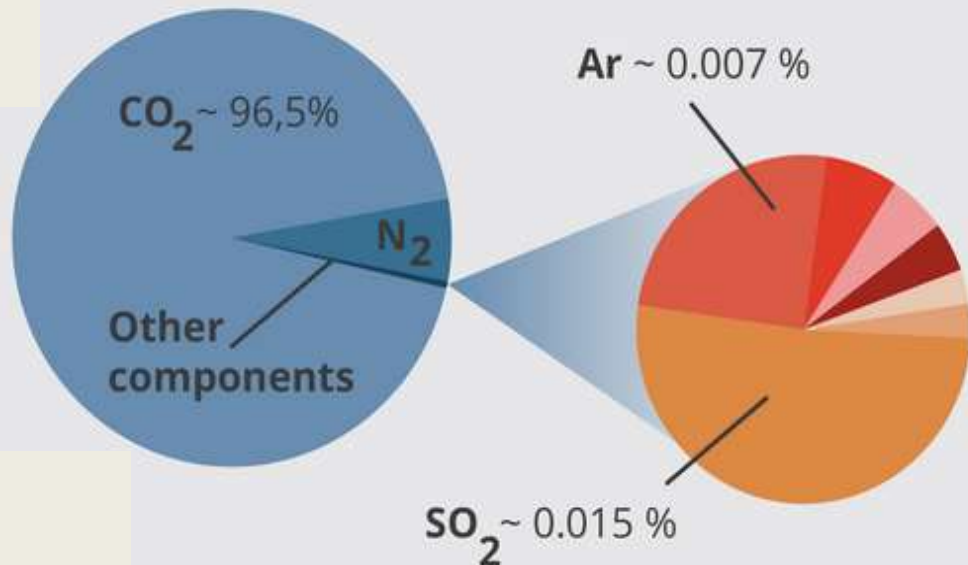




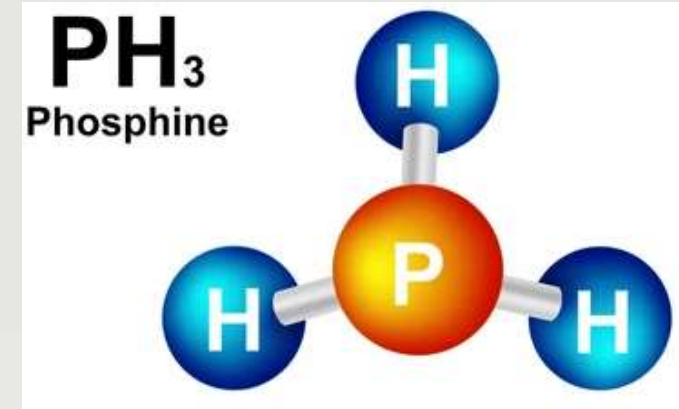
Surface temperatures reach a scorching 471 degrees Celsius, It is the hottest planet in the solar system.

the Venus planet's atmosphere is primarily suffocating carbon dioxide and sulphuric acid clouds. high carbon dioxide content at about 95%

The temperature of Venus is too high, and its atmosphere is highly acidic, just two of the things that would make life impossible.



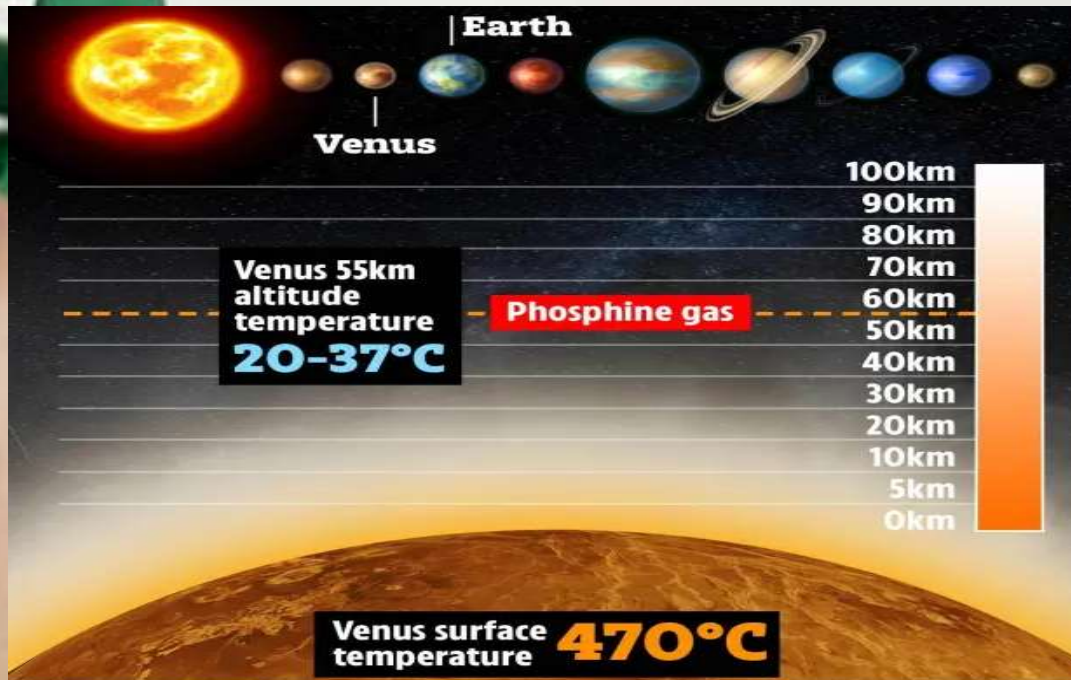
# Phosphine (PH<sub>3</sub>)



- It is **highly toxic** to people.
- **On rocky planets such as Venus and Earth, phosphine can only be made by life whether human or microbe.**
- **Phosphine is formed naturally via the anaerobic bacteria by decay of phosphorus-containing organic matter.**

## Does life exist on Venus?

- Scientists have acknowledged that **while the detection of phosphine could potentially serve as a biosignature**, it could also be attributed to **other mechanisms** that are **currently not completely comprehended**.
- A prevalent perspective suggests that **phosphine could potentially be produced by introducing phosphorus-containing rocks into the upper atmosphere**, subjecting them to **erosion through processes involving water, acid, and other factors**, resulting in the formation of phosphine gas.



## Conclusion

- On Earth, phosphine is produced by bacteria thriving in oxygen-starved environments. It is considered as a marker for life.
- The researchers said that their research provided evidence “for anomalous & unexplained chemistry” on Venus.
- The finding can further ignite interest in space missions to Venus. Missions to Venus are not new.
- In fact, the Indian Space Research Organisation (ISRO) is also planning a mission to Venus, tentatively called Shukrayaan, in the near future.





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