

# NASA GETS INEXPLICABLE NEW DATA SHOWING UNEXPECTED OXYGEN FLUCTUATIONS ON MARS

'The first time we saw that, it was just mind boggling,' says one researcher

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**Nasa** has spotted unexpected and inexplicable changes in the oxygen on **Mars**.

The discovery comes after the space agency used the **Curiosity** rover to measure the seasonal changes in the gas that fills the air above the Gale Crater on Mars, for the first time ever.

But the data sent back from the planet has left the scientists who received it stumped. They say there is no known explanation for the unusual fluctuations in the oxygen on the planet.

"The first time we saw that, it was just mind boggling," said Sushil Atreya, professor of climate and space sciences at the University of Michigan in Ann Arbor

It comes as researchers continue to grapple with the mystery of methane on the red planet. As has now been revealed of oxygen too, the amount of the gas soars and plunges in a way that appears random and for which scientists have no cause.

During the study, which used an instrument to analyse the air on Mars over the course of three Martian years or just under six Earth years, scientist found that gases like nitrogen and argon behave predictably through the year. The proportion of the gas rises and falls relative to the amount of carbon dioxide, which makes up 95 per cent of Martian air.

They thought that oxygen would see the same changes. But they were shocked to find that it in fact rose through the spring and summer, with a varying amount of oxygen in the atmosphere, which suggests that it is being produced and then removed from the air.

Researchers were so shocked by the findings that their first course of action was to check the accuracy of the instrument used to find the data, but found it was working fine. Other possible explanations based on what we know about the Martian atmosphere were also considered, but rejected.

"We're struggling to explain this," said Melissa Trainer, a planetary scientist at NASA's Goddard Space Flight Center in Greenbelt, Maryland who led the research. "The fact that the oxygen behavior isn't perfectly repeatable every season makes us think that it's not an issue that has to do with atmospheric dynamics. It has to be some chemical source and sink that we can't yet account for."

The similarities between the mystery of Martian methane and Martian oxygen could be more than a coincidence, scientists speculate. It might be possible that they both have the same as yet unidentified cause.

"We're beginning to see this tantalizing correlation between methane and oxygen for a good part of the Mars year," Atreya said. "I think there's something to it. I just don't have the answers yet. Nobody does."

Scientists now hope to keep measuring the atmosphere to try and solve the mystery of the oxygen.

"This is the first time where we're seeing this interesting behaviour over multiple years. We don't totally understand it," Trainer said.

"For me, this is an open call to all the smart people out there who are interested in this: See what you can come up with."