Listen to the lightning storms of Mars and the 'ice volcanoes' of Saturn's moon Titan: Scientists simulate sounds of solar system

- Scientists use atmosphere data to simulate sounds of Mars, Venus and Saturn's moon Titan
- Storms sound radically different due to gases on each planet
- Sounds of weather including lightning on Mars and 'ice volcanoes' on Titan
- Dense gassy atmosphere on Venus would turn voice into a growl - and make people seem smaller

By Rob Waugh

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Mars has lightning storms, avalanches and even dust devils, just like Earth - but its thin atmosphere of carbon dioxide would mean they sounded very different.

A team from the University of Southampton used physics and mathematics to work out what the violent weather of our solar system might sound like - capturing the crashing sounds of lightning on Venus, whirlwinds on Mars and ice volcanoes on Saturn's largest moon, Titan.

Professor Tim Leighton, of the university's Institute for Sound and Vibration Research, said: 'We are confident of our calculations.'

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They have also modelled the effects of different atmospheres, pressures and temperatures on the human voice on Mars, Venus and Titan, and found that on Venus humans would sound like bass Smurfs.

On Venus, the pitch of your voice would become much deeper. That is because the planet's dense atmosphere means that the vocal cords vibrate more slowly through this 'gassy soup'.

This artist's rendition shows a lake of methane on Titan - scientists simulated sounds from Saturn's icy moon.

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This ignores, of course, certain basic facts about Venus - that it's 480 degrees Celsius on the surface, for a start, and that the pressure is 96 times higher than Earth.

A real human would sound like a dead Smurf. But Leighton's team modelled the effects purely in terms of physics, working out the effects on the sound of a human voice.

'We have been rigorous in our use of physics taking into account atmospheres, pressure and fluid dynamics.

'On Venus, the pitch of your voice would become much deeper. That is because the planet's dense atmosphere means that the vocal cords vibrate more slowly through this 'gassy soup'.

'However, the speed of sound in the atmosphere on Venus is much faster than it is on Earth, and this tricks the way our brain interprets the size of a speaker (presumably an evolutionary trait that allowed our ancestors to work out whether an animal call in the night was something that was small enough to eat or so big as to be dangerous).

'When we hear a voice from Venus, we think the speaker is small, but with a deep bass voice. On Venus, humans sound like bass Smurfs.'

Prof Leighton, who has been working on the sounds of space for the last ten years and has previously made the sound of a methane waterfall in space, added: 'I'm interested in what music would sound like in space.

'If astronauts are based on Mars for several months, they might just take musical instruments along, or build one there. What would they sound like?

'As a scientist, I reckon the most exciting thing to work on is a completely new idea, something that's never been done before.'
Despite many years of space exploration, scientists have no evidence of the sound of other planets.

While most planetary probes have focused on imaging with cameras and radar and a couple have carried microphones, none of them successfully listened to the sound of another world.

The sounds will be added to the Flight Through The Universe shows this Easter at the Astrium Planetarium at INTECH near Winchester, Hampshire.

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