The NASA curiosity rover has revealed that Mars used to be a much warmer world with larger amounts of water, but lost most of its ancient atmosphere as large amounts of gas went into space, leaving behind just a small remnant.

The scientists came to this conclusion by noticing depletion of a light variant of the gas argon. The finding supports the theory that Mars' atmosphere was once much more robust.

"We found arguably the clearest and most robust signature of atmospheric loss on Mars," SAM (Sample Analysis at Mars) co-investigator at the University of Michigan Sushil Atreya said in a statement.

The researchers made their analysis using the Sample Analysis at Mars (SAM) instrument, with which they sampled Martian air and measured the ratio of two argon isotopes. They found that the lighter argon-36 was about four times as common as argon-38. Based on argon-isotope measurements of Jupiter and the Sun, they saw that the ratio was much lower than that in the solar system at its birth.

"It was still red, but it means that Mars once was a warmer, wetter world," rover team scientist Sushil Atreya of the University of Michigan said. "It was also a more habitable world, essentially four billion years ago."

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The results from the Curiosity rover were presented on Monday April 8 at the 2013 European Geosciences Union General Assembly in Vienna. Scientists at the assembly also described other recent Curiosity rover developments. These included humidity measurements on Mars' surface and insights into Martian dust made using the rover's laser tool, the Chemistry and Camera instrument, or ChemCam. NASA was unable to attend the conference due to travel expense cuts in the federal budget.

The Curiosity rover began its two-year mission on Aug. 5. By using the rover, NASA hopes to gain a clearer understanding of whether microbial life could have lived on the planet.