



What Made the Early Atmosphere of Mars Warm?



Why was Early Mars warm and wet? The relatively low energy output of the Faint Young Sun makes it hard to explain.

Recently, hydrogen (H_2) has been proposed as a possible greenhouse gas for early Mars in combination with CO_2 . SEEC scientists used the GISS ROCKE-3D global climate model to test this idea.

They found that atmospheric pressures 1.5-2 times that of Earth's – in combination with H_2 concentrations of 3% or more – can warm early Mars above the freezing point of water.

Additional work is needed to determine if such H_2 amounts were possible in Mars' early history.

This work is important for understanding whether ancient Mars had the conditions necessary for life and has implications for the habitability of exoplanets.

