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A PERSISTENTLY WARM AND WET SOLUTION FOR EARLY
MARS AND THE CHALLENGES WITH TRANSIENT WARMING

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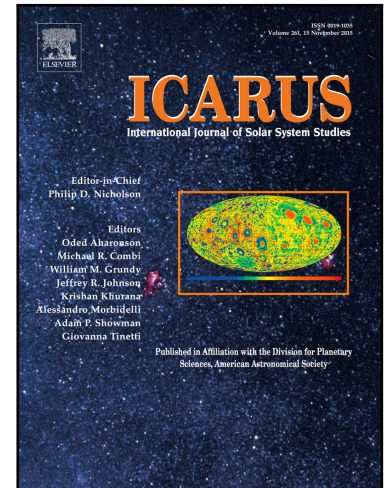
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Highlights

- A single-column radiative-convective climate model is used to warm CO₂-H₂ early Mars atmospheres
- It is significantly easier to warm early Mars if it had started warm, requiring only >1% hydrogen
- Atmospheric constraints for a warm planet are satisfied with hydrogen concentrations >~3%
- Warming an initially cold Mars often requires atmospheric pressures that exceed constraints
- The evidence is most consistent with a warm and semi-arid early climate

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