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Title: Venuses in the Habitable Zone: The Case of Kepler-69
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Abstract: Transiting planets have greatly expanded and diversified the exoplanet field. These planets provide greater access to characterization of exoplanet atmospheres and structure. The Kepler mission has been particularly successful in expanding the exoplanet inventory, even to planets similar in size to the Earth. The orbital period sensitivity of the Kepler data is now extending into the Habitable Zones of their host stars, and several planets larger than the Earth have been found to lie therein. Here we examine one such proposed planet, Kepler-69c. We provide new orbital parameters for this planet and an in-depth analysis of the Habitable Zone. We find that, even under optimistic conditions, this 1.7 Earth radius planet is unlikely to be within the Habitable Zone of Kepler-69. Furthermore, the planet receives an incident flux of 1.91 times the solar constant, which is similar to that received by Venus. We thus suggest that this planet is likely a super-Venus rather than a super-Earth in terms of atmospheric properties and habitability, and we propose follow-up observations to disentangle the ambiguity.