

The Fourth National Mars Science Seminar

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*What terrestrial very small impact craters
can tell us about similar features on Mars*

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Asteroids are constantly colliding with Earth and Mars regularly forming new impact craters. On Earth a new crater is formed up to a couple times per millennium (e.g., Carancas in 2007 in Peru, or Sikhote Alin craters in 1947 in Peru). Based on the extrapolation of the currently measured impact rate of small bodies at the top of the atmosphere, we expect >20 craters ~100 m in diameter in Holocene alone. On Mars impact crater formation rate is higher due to the proximity to the asteroid belt, and a thinner atmosphere that decelerates impactors less. As a results, more than 700 sites at which new impact craters formed were discovered within the last few decades (since orbiting spacecraft first began imaging Mars). The environment around very small impact craters on Earth is modified by the impact, including local and short-term heating of the selected section of the sediments. Similar process is likely to happen on Mars leading to modification of its surface.



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