

CGD Seminar Series

“The Ancient Climate of Mars: Was the Ambient Climate ‘Warm and Wet’ or ‘Cold and Icy’?”

James Head

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Date: Tuesday 10 November 2020

Time: 11am – 12pm

For Zoom information, please contact

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For live stream information, visit the

CGD Seminar Webpage

ABSTRACT

One of the most fundamental questions in planetary science today is the nature of the ambient climate of early Mars (Noachian-Early Hesperian): Was the ambient climate “warm and wet/arid”, as suggested by widespread phyllosilicates, higher erosion rates, enhanced crater degradation, fluvial valley networks, and open/closed-basin lakes? Or was the ambient climate “cold and icy”, as suggested by recent climate models, with occasional perturbations causing heating and melting of surface snow and ice, and runoff to produce the observed characteristics and features? Using the framework of these two ambient climate options, we will discuss how the NASA Mars 2020 mission to the Jezero Crater open-basin lake, and the CNSA Tianwen-1 mission to Utopia Planitia will help to address these issues.

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