

CGD SEMINAR



DATE: Tuesday, 3 October 2017

TIME: 11 a.m.

LOCATION: NCAR, 1850 Table Mesa Drive
Mesa Lab, Main Seminar Room

TITLE: Using CESM to investigate cataclysmic events: Asteroids to Nuclear Winter

SPEAKER: Charles Bardeen, NCAR

ABSTRACT:

Very large injections of aerosols and trace gases from asteroid impacts or nuclear war can cause extreme short-term climate change with potentially catastrophic consequences. Using the Community Earth System Model (CESM), we have modeled the climatic consequences of such events ranging from regional nuclear war to the Chicxulub asteroid impact 66 mya that injected an estimated 56,000 Tg of soot into the atmosphere and is thought to be the proximal cause for the most recent of the “Big Five” mass extinctions. The extreme nature of these perturbations, over 200 K heating in the stratosphere and 15 C cooling at the surface for the K-Pg impact, can be challenging to model. We will present results from recent simulations of asteroid impacts and nuclear war using CESM, highlight the challenges encountered, and discuss future plans including a new 3-year study to revisit the consequences of regional to global scale nuclear war using CESM.

Live webcast: <http://www.fin.ucar.edu/it/mms/ml-live.htm>

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