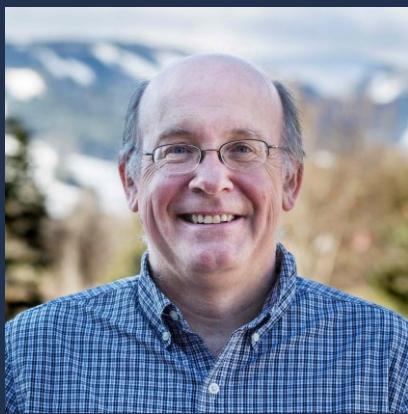




Heiland Lecture Series

Daniel Scheeres

University of Colorado-Boulder

The Geophysics of Rubble Pile Asteroids

12:00-12:50 pm * Wednesday, November 29 * CTLM 102

<https://mines.zoom.us/j/95432461641>

Abstract

Several missions have explored small, rubble pile asteroids. The scientific exploration of these bodies is driven by their primitive compositions, which can contain materials that are largely unchanged from the formational epoch of the solar system. The study of these bodies has exposed many interesting aspects of, and questions about, their unique geophysical properties. In fact, the study of the geophysics of rubble pile bodies is of fundamental interest for understanding key aspects of solar system evolution, including the formation of planetesimals across all regimes in the solar system, the unique and dynamic structures seen in planetary rings, and the formation of rubble pile asteroids following catastrophic collisions. In this talk the fundamental geophysical processes of small rubble pile asteroids will be presented, and several key exploration missions to these bodies will be reviewed and their results discussed. Finally, some future ideas for the continued exploration of rubble pile asteroid geophysics will be presented.

Speaker Bio

University of Colorado-Boulder Distinguished Professor Dr. Dan Scheeres is the A. Richard Seebass Endowed Chair Professor in the Smead Department of Aerospace Engineering Sciences. Scheeres is a member of the National Academy of Engineering, a member of the International Academy of Astronautics, and a Fellow of both the American Institute of Aeronautics and Astronautics and the American Astronautical Society. He has studied the dynamics of the asteroid environment from a scientific, engineering and navigation perspective since 1992 and has been involved with NASA's NEAR mission to asteroid Eros, the Japanese Hayabusa missions to asteroids Itokawa and Ryugu. He was a co-investigator on NASA's OSIRIS-REx mission to asteroid Bennu where he led the Radio Science team, and is the PI for Janus, a NASA SIMPLEX mission. Asteroid 8887 is named "Scheeres" in recognition of his contributions to the scientific understanding of the dynamical environment about asteroids.