

The Keck Institute for Space Studies
presents an open lecture:

Automaton Rover for Extreme Environments: Steampunk Meets Spacecraft

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Monday, November 6, 2017


4:30 PM Refreshments
5:00 PM Lecture

Lees-Kubota Lecture Hall
Guggenheim Building
California Institute of Technology

With its sulfuric acid clouds, temperatures over 450°C, and 92 times the surface pressure of Earth, Venus is one of the most hostile planetary environments in the solar system. Only a handful of Soviet Venera and Vega landers and a Pioneer probe have successfully reached the surface. Even the most robust of these landers survived for only 127 minutes before the electronics failed in the hostile environment. A potential solution to comes from a 16th century technology. The automaton is a mechanical device capable of performing a series of complex actions to achieve a specific result, or a mechanical robot.

The Automaton Rover for Extreme Environments, would replace vulnerable electronic systems with a mechanical design. By utilizing high temperature alloys, the rover would survive for months, allowing it to collect and return valuable long-term science data from the surface of Venus. This science data would be critical for informing and improving models of dynamic planetary systems. To implement AREE, "steampunk" science fiction meets spacecraft technology, in a unique rover that must be robust and able to operate during its entire mission without human intervention.

Seating is limited and is available on a first come, first served basis.



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