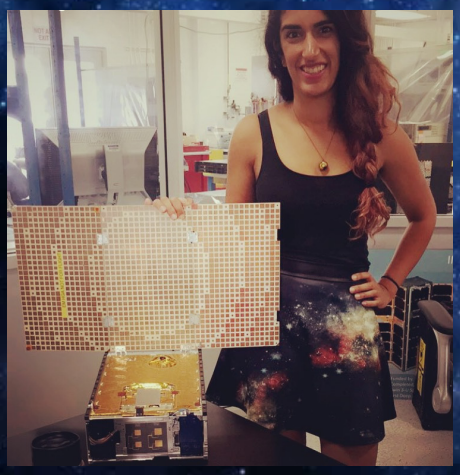
AES Seminar



Farah Alibay

Systems Engineer, Jet Propulsion Laboratory

CubeSats as Technology Demonstrators and Science Groundbreakers

Friday, April 6, 2018 | DLC | 12:00 P.M.

Abstract: CubeSats have grown significantly in popularity since their emergence around a decade ago. First used as educational tools to introduce young engineers to the design lifecycle early in their career, they are now being more broadly used around the aerospace industry as a way to reduce mission costs or to demonstrate new technologies in space. Over the past five years, JPL has studied and developed over a dozen CubeSat concepts, each with unique goals. In her talk, Dr. Alibay will present an overview of the CubeSat development work at JPL. She will then focus on two missions she personally has worked on: MarCO and SunRISE. MarCO is a pair of CubeSats what will be co-launching with the Mars lander InSight in May 2018. The CubeSats will navigate individually to Mars, with the goal of providing Entry, Descent, and Landing (EDL) telecommunication relay for the InSight mission. SunRISE is a Step-2 heliophysics SMEX mission of opportunity which aims at studying particle acceleration in coronal mass ejections. The mission would comprise of 6 CubeSats forming a space-based interferometer, which would be placed in a GEO graveyard orbit. The talk will conclude with an overview of how these types of missions would more broadly fit within JPL and NASA's exploration goals.

Bio: Dr. Farah Alibay is a Systems Engineer at NASA's Jet Propulsion Laboratory. Prior to joining JPL, she obtained a bachelor's and master's degree in Aerospace and Aerothermal Engineering at the University of Cambridge, and a PhD in Space Systems Engineering at the Massachusetts Institute of Technology. Her primary research focused on spatially and temporally distributed multi-vehicle architectures for planetary exploration. Since then, she has worked on a number of early mission concepts for both small and larger missions. During the 2014-16 development campaign, she was the Systems Engineer for MarCO. She was also the Mission Planner for the Asteroid Redirect Robotic Mission (ARRM) and the Lead Systems Engineer for the SunRISE proposal. Farah is now a Payload Systems Engineer on the InSight mission, which will launch to Mars in May 2018.

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