The Lunar Poles, an Ideal Site for Scientific Exploration?

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The Moon is a fundamental location for understanding Solar System science, and just as the Moon unlocks the Solar System, so too do the Moon's Poles enable scientific exploration of the entire Moon. In this talk Dr. Bussey will discuss the variety of science disciplines that can be addressed either by studying the Moon, or using the Moon to explore from. He will also cover how the unique nature of the lunar poles means that they can represent a foothold on the moon from which we can explore further afield.

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Dr. Bussey is a planetary scientist who is currently the chief scientist for Intuitive Machines. He earned a BA in Physics from Oxford University and a Ph.D. in Planetary Geology at University College London before moving to the United States. He gained both science and mission experience during his 20 years at the Johns Hopkins University Applied Physics Laboratory, before recently joining Intuitive Machines. He has also worked at the Lunar and Planetary Institute in Houston, the European Space Agency, Northwestern University and the University of Hawaii.

Dr. Bussey's research concentrates on the remote sensing of the surfaces of planets, particularly the Moon. He has a specific interest in the lunar poles, producing the first quantitative illumination maps of the polar regions. He co-authored the *Clementine Atlas of the Moon*, the first atlas to map both the lunar near side and far side in a systematic manner.

Dr. Bussey spent 5-years at NASA HQ which included roles as the Acting Deputy Associate Administrator of Exploration in NASA's Science Mission Directorate, and as the Chief Exploration Scientist in the Human Exploration and Operations Mission Directorate. During his time at JHU/APL he was Principal Investigator of NASA *VORTICES* SSERVI and NASA Lunar Science Institute research teams that considered the exploration and scientific potential of the lunar poles. He was the Principal Investigator of the Mini-RF radar instrument on NASA's Lunar Reconnaissance Orbiter, and Deputy Principal Investigator of the Mini-RF radar instrument on India's Chandrayaan-1 mission. These instruments acquired the first radar data of the lunar poles and farside.

He enjoys planetary analog field work and has been fortunate to have twice been part of the Antarctic Search for Meteorites expedition to recover meteorites from the Antarctic glaciers.