

Red Rocks from Utah to Mars: Stories of Science, Crime, Art

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Mars is an exciting frontier, with opportunities to discover what might exist within its sedimentary layers and surface landforms. Comparative studies of red rocks on Earth have provided important clues for interpreting the geology on Mars. Small terrestrial concretions, considered as analogs to “blueberries” found on the red planet, have helped scientists understand past waters on Mars. Other terrestrial examples of soft-sediment deformation and weathering show remarkable similarities to recent satellite and rover imagery from Mars. Studies of sedimentary context on Earth are critical because terrestrial analogs help us interpret depositional and diagenetic processes, as well as determine where habitable environments for life might exist. In addition, we will learn how the crime “Case of the Missing Marbles” involving red rock concretions was resolved, and how an art installation of concretions gives a different perspective of our geoh heritage.

Biography: Dr. Marjorie Chan is Distinguished Professor Emeritus of Geology & Geophysics at the University of Utah. Her research program emphasizes sedimentary geology and terrestrial analogs to Mars, extending from sedimentology and diagenesis to geoconservation, geoh heritage, and ethics. She has led major initiatives for women and diversity, including GSA's "On to the Future" program and AAPG's Professional Women in Earth Sciences (now AAPG Women's Network). Currently, she is chair of the U.S. National Committee for Geological Sciences, and is a leader in AGU and GSA efforts to articulate geologic sampling ethics. As part of her work to engage the public, she has appeared in National Geographic and Discovery Channel documentaries, and as the 2014 GSA Distinguished International Lecturer, she gave 53 lectures in India, New Zealand, Australia, China, Japan, and South Korea. During her tenure as department chair, Dr. Chan oversaw the departmental programming for the new Frederick Albert Sutton Building, hailed by many as the most spectacular Earth science building in the country.