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Paleomagnetic Insights into Impact Cratering Processes

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Time: 12:00 pm, Pacific Time
Host: Tianze Liu (tianzeliu@ucsd.edu)
Zoom link: https://ucsd.zoom.us/j/99060181263?pwd=RUV3Sj10E5RVjFwZGp5WTZIUFEkyUT09
(Meeting ID: 990 6018 1263; Password: impact)
Impact cratering is arguably the most ubiquitous modifier of planetary surfaces across the solar system. Impacts expose rocks to powerful shock waves and heat, and can generate long-lived hydrothermal systems. These three impact effects can produce different forms of remanent magnetization that are preserved within craters. Here we discuss how paleomagnetism is being used to elucidate the formation of impact structures, the origin of magnetic anomalies, the nature and duration of post-impact hydrothermal activity, and the effects of shock and heating on target rocks at the 200-km diameter Chicxulub crater, Mexico.

Sonia Tikoo is an Assistant Professor of Geophysics and, by courtesy, Geological Sciences at Stanford University. Her research interests are in the application of paleomagnetism to problems in the planetary sciences. Tikoo earned a B.S. degree in Geology and History (Minor) from Caltech in 2008 and Ph.D. in Planetary Sciences from MIT in 2014.