Presentation on Friday February 11, 2022, 8:00pm PT

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VIPER – A Next Great Leap in Mapping Water on the Moon

Free and open to the public.   Via Zoom video conference.
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NASA is sending a mobile robot to the surface of the South Pole of the Moon to get a close-up view of the location and concentration of ice and other resources. The Volatiles Investigating Polar Exploration Rover, or VIPER, is the first resource-mapping mission on another celestial body. VIPER will give us surface-level detail of where the water is and how much is available for us to use to support future human space exploration. Scientifically, ground-truthing the water presence at rover/human scales can tackle open questions on the origin of the water, hydroxyl, and other volatiles, how much is there today, how did it get there, and equally important, why is it still there? This talk summarizes the motivations for, the design of, the challenges at lunar poles, and the significance of this mission.

Dr. Kimberly Ennico-Smith is a research astrophysicist and planetary scientist at NASA Ames Research Center in Silicon Valley. She is multidisciplinary in her approach to space instruments, telescopes, and mission concepts. She has designed and built infrared airborne and space telescope cameras and spectrometers, tested detectors in laboratories and particle accelerators, designed low-cost suborbital

instruments, and built lunar payloads. She has served as Project Scientist for the flying infrared observatory SOFIA and deputy Project Scientist on the New Horizons Pluto fly-by mission. She has been a member of the Science and Technology Definition Team for the Origins Space Telescope. Asteroid 154587 Ennico is named for her. Since 2020, she is a deputy Project Scientist for NASA's VIPER lunar volatiles rover.