



# Colorado Scientific Society

## 2020 S.F. Emmons Lecture Announcement

Thursday, October 8, 2020; Online event

Social gathering starts at 6:30 pm; Lecture starts at 7:00 pm

## 21<sup>st</sup> Century Field Geology on the New Frontier

**Dr. Michael E. Zolensky**, Planetary Scientist, Astromaterials Research & Exploration Science, NASA Johnson Space Center, Houston, TX

**Abstract:** Samuel Franklin Emmons' life was dedicated to geological field studies, and the exploration of Colorado and the rest of the American west. We are now living through the golden age of the geological exploration of the Solar System. Just as the 19<sup>th</sup> century geological survey exploration parties would send runners out to nearby mountains to retrieve a few hopefully representative rocks for examination, the space-faring nations are now sending out robotic "runners" to return rocks from asteroids, a comet, the moons of Mars and ultimately the other terrestrial planets. This talk will focus on the current missions to retrieve samples from two primitive asteroids and the largest moon of Mars. The first of these spacecraft, Hayabusa2, will arrive back on Earth just two months from this lecture.



**Michael Zolensky** works on the characterization of the chemical weathering record of asteroids and primitive mineralogy of comets. He is currently leading efforts to locate and characterize aqueous fluid inclusions in astromaterials. He has played critical roles in successful meteorite recovery expeditions on four continents and developed techniques for characterization of meteoroid and space debris impact features on spacecraft. Dr. Zolensky has also led the effort to characterize the impact record of the Long Duration Exposure Facility (LDEF) satellite and developed new techniques for analysis of microparticles. He led sample analysis teams for the

Stardust comet dust return mission, and the Hayabusa asteroid regolith sample return mission. Now he is on the science teams of the Hayabusa2 and Mars Moons Exploration missions, which are developing the next generation of astromaterial sample handling and analysis protocols.

Mike received his Bachelor's of Science degree in Geology from the New Mexico Institute of Mining and Technology in 1977 and his Ph.D. degree in Geochemistry and Mineralogy from the Pennsylvania State University in 1983. <https://ares.jsc.nasa.gov/people/bios/michael-e-zolensky/>