

Nancy J. Chanover, David A. Glenar, David G. Voelz, Xifeng Xiao, Rula Tawalbeh, Kyle Uckert, Penelope Boston, William Brinckerhoff, Stephanie Getty, and Paul Mahaffy, "Rapid Assessment of High Values Samples: A Miniature AOTF-LDTOF Spectrometer Suite for Cave Environments", First International Planetary Cave Research Workshop (2011).

We discuss the development of a miniature near infrared point spectrometer, operating between 1.6–3.5 μm region, and based on acousto-optic tunable filter (AOTF) technology. This instrument may be used to screen and corroborate analyses of samples containing organic biomarkers or mineralogical signatures suggestive of extant or extinct organic material collected in situ from cave environments. The AOTF point spectrometer will be paired with a laser desorption time-of-flight (LDTOF) mass spectrometer and will prescreen samples for evidence of volatile or refractory organics before the laser desorption and subsequent mass spectrometer measurement. We present laboratory analysis of geological samples of known astrobiological importance, with and without organic biomarkers.