

Monday, June 16, 2014

LRS APPLICATIONS IN THE FIELD OF PLANETARY SCIENCES AND SPACE EXPLORATION I
8:30 a.m. Umrath Lounge

Chairs: Howell Edwards
Steve Y. Liu

- 8:30 a.m. Rull F. *
[Development Status of the Raman Instrument \(RLS\) for Exomars 2018 Mission and Scientific Operation Mode on Mars](#) [#5056]
In this work a description of the current status of the instrument will be presented including the main issues related with the Raman operation and analysis of powdered samples in both terrestrial and martian conditions.
- 8:45 a.m. Ingley R. * Hutchinson I. Harris L. V. McHugh M. Edwards H. G. M. Waltham N. R. Brown P. Pool P.
[Competitive and Mature CCD Imaging Systems for Planetary Raman Spectrometers](#) [#5066]
Progress on the design of a CCD-based imaging system is presented. The camera system, provided by the UK, uses space-qualified and mature technology and is included in the ExoMars RLS instrument due for launch 2018.
- 9:00 a.m. Foucher F. * Lopez-Reyes G. Bost N. Rull-Pérez F. P. Rüßmann P. Westall F. Vago J. Viso M.
[Strategy for the Geological Exploration of Mars During the Exomars Mission: Effect of Sample Preparation on Raman Spectroscopy Measurements and Payload Calibration](#). [#5003]
We studied the consequences of the sample crushing process on the ExoMars Raman spectrometer. We showed that the characteristics of the system permits to limit the negative effects and that the complementary payload can compensate for them.
- 9:15 a.m. Harris L. V. * Hutchinson I. B. Ingley R. Marshall C. P. Olcott Marshall A. Edwards H. G. M.
[Planetary Exploration with a Raman Spectrometer: A Study of Carbonaceous Material Using Portable Instrumentation \(532 and 785 nm\)](#) [#5060]
Deposits of carbonaceous material (CM) in rock could indicate former habitats of living organisms. Here we present a Raman spectroscopy (532 and 785 nm) study of CM in Archaean chert and discuss implications for planetary exploration missions.
- 9:30 a.m. Wang A. * Connor K. C.
[Understanding the Nature of Inter-Bedded Sulfate Stratigraphy on Mars](#) [#5006]
A new understanding based on thermodynamic and kinetic properties of hydrous sulfates suggest that starkeyite to contribute the spectral feature of polyhydrated sulfates, and the dehydration to be the origin of majority Martian kieserite.
- 9:45 a.m. Liu Y. * Wang A.
[Dehydration of Mars Relevant Ferric Sulfates at High Temperatures Studied by Laser Raman Spectroscopy](#) [#5036]
We explored the dehydration of Mars relevant ferric sulfates using laser Raman spectroscopy, which provides important clue to uncover the mystery of relatively rarely detected ferric sulfates on martian surface by orbital remote sensing.
- 10:00 a.m. COFFEE BREAK