Tuesday, October 25, 2016
LIFE DETECTION INSTRUMENTATION AND
RELATED TECHNOLOGIES FOR MARS AND OCEAN WORLDS: I
1:30 p.m. International West

Chair: Kurt Retherford

1:30 p.m. Kehl F. * Wu D. Mora M. F. Creamer J. S. Willis P. A.
In-Situ Liquid Extraction and Analysis Platform for Mars and Ocean Worlds **[#4070]**
We present a compact sample extractor and analysis unit, based on subcritical water extraction and flow injection analysis, that could be used to support robotic missions seeking chemical signatures of life on Mars, Europa, Enceladus or Titan.

1:45 p.m. Mojarro A. * Hachey J. Tani J. Smith A. Bhattaru S. A. Pontefract A. Doebler R. Brown M. Ruvkun G. Zuber M. T. Carr C. E.
SETG: Nucleic Acid Extraction and Sequencing for In Situ Life Detection on Mars **[#4095]**
We are developing an integrated nucleic acid extraction and sequencing instrument: the Search for Extra-Terrestrial Genomes (SETG) for in situ life detection on Mars. Our goals are to identify related or unrelated nucleic acid-based life on Mars.

2:00 p.m. Butterworth A. L. * Kim J. Stockton A. M. Turin P. Ludlam M. Mathies R. A.
Instrument for Capturing and Analyzing Trace Organic Molecules from Plumes for Ocean Worlds Missions **[#4100]**
Enceladus Organic Analyzer (EOA) is an innovative miniaturized microfluidic organic chemical and biochemical analysis instrument that will capture plume ice and determine trace organic content.

2:15 p.m. Babu Mannam N. P. * Krishnankutty P.
Biomimetic Planetary Rovers for Ocean Exploration in Space **[#4056]**
Conventional planetary rover designs are wheel operated on firm ground surfaces and proved successful in the exploration of Mars environment. In order to explore liquid medium on Jupiter's Europa, biomimetic planetary rovers are discussed in the current research.

2:30 p.m. Stockton A. M. * Duca Z. Cato M. Cantrell T. Foreman S. Kim J. Putman P. Schmidt B.
An Organic Analyzer Instrument for Highly Sensitive In Situ Organic Detection on an Ice Shell Impact Penetrator Descent Probe **[#4093]**
This work shows the development of LIF and microfluidic subsystems for planetary impact penetrator missions. With structural optimization, EOA can survive a 50,000 g impact, making it the only current optical instrument with this capability.

2:45 p.m. *Coffee Break*