Thursday, April 26, 2018
CONCEPT FOR A MARS SAMPLE RETURN ARCHITECTURE, FLIGHT MISSION ELEMENTS, AND SUBSYSTEMS
11:25 a.m. Forum

This session provides an introduction to the overall flight architecture of the Mars Sample Return campaign, and then analysis of each of the primary flight elements.

Chairs: Paul Fulford (MDA Robotics and Automation, Canada) Gianfranco Visentin (ESA)

11:25 a.m. Edwards C. D. Jr ¹* Vijendran S. ²*
¹*Mars Program Office, Jet Propulsion Laboratory, California Institute of Technology, USA
²*European Space Agency
Mars Sample Return Architecture Overview [#6058]
NASA and ESA are exploring potential concepts for a Sample Retrieval Lander and Earth Return Orbiter that could return samples planned to be collected and cached by the Mars 2020 rover mission. We provide an overview of the Mars Sample Return architecture.

11:40 a.m. Muirhead B. K. *
*Mars Program Office, Jet Propulsion Laboratory, California Institute of Technology, USA
Mars Sample Return Lander Mission Concept [#6119]
This talk will provide information on the current concepts and options for the architecture and design of the Mars Sample Return Lander.

12:00 p.m. Duvet L. * Beyer F. Delfa J. Zekri E.
*European Space Agency
ESA Sample Fetch Rover: Heritage and Way Forward [#6122]
The Sample Fetch Rover (SFR) is one of the key elements of the Mars Sample Return (MSR) campaign architecture. We will present the SFR heritage as well as a way forward identified to address this engineering challenge.

12:15 p.m. Picard M. Hipkin V. * Gingras D. Allard P. Lamarche T. Rocheleau S. G. Gemme S.
*Canadian Space Agency, Canada
MSR Fetch Rover Capability Development at the Canadian Space Agency [#6123]
Describes Fetch Rover technology testing during CSA’s 2016 Mars Sample Return Analogue Deployment which demonstrated autonomous navigation to “cache depots” of M-2020-like sample tubes, acquisition of six such tubes, and transfer to a MAV mock up.

12:30 p.m. LUNCH

1:30 p.m. Vijendran S. * Huesing J. Beyer F. McSweeney A.
*European Space Agency
Mars Sample Return — Earth Return Orbiter Mission Overview [#6124]
An overview of the Earth Return Orbiter mission concept.

1:50 p.m. Parrish J. C. * Gershman R. Hendry M. Younse P. J.
*Mars Program Office, Jet Propulsion Laboratory, California Institute of Technology, USA
Mars Orbiting Sample (OS) Capture and Containment Technology Development [#6125]
A presentation of one potential approach to orbiting sample (OS) capture and bio-containment for Mars Sample Return.

2:05 p.m. DISCUSSION
2:15 p.m. Break to watch live stream of the ILA Berlin Air Show Mars Event

3:00 p.m. Perino S. V. *  Lobbia M.  Parrish J.
*Mars Program Office, Jet Propulsion Laboratory, California Institute of Technology, USA
*A Maturing Earth Entry Vehicle Concept for Potential Mars Sample Return [#6127]
This presentation describes the most recent efforts by JPL’s Mars Formulation Office to mature an Earth Entry Vehicle concept that could be used on a potential Mars Sample Return campaign.

3:15 p.m. Kminek G. *
*European Space Agency
Planetary Protection Associated with Mars Sample Return [#6075]
This presentation will cover the various planetary protection aspects related to a Mars Sample Return campaign, in terms of requirements, independent oversight, and sample analysis protocol.

3:35 p.m. DISCUSSION

3:50 p.m. BREAK