Joint ESA PPWG / NASA PPS Meeting – Oct 28-29, 2015

Summary Briefing for

PPS Meeting – Dec 8-9, 2015

PPS/PPWG Joint Meetings - Background

First joint meeting was hosted by NASA at Kennedy Space Center on Nov 28-29, 2011

- Discussed joint NASA/ESA Mars exploration activities including Joint Science Working Group studies, Mars landing site selection process, joint engineering studies for Mars sample return, and PP technology investments
- Agreed on value of joint meetings
- Set goal of conducting joint meetings once every two years

PPWG Invitation received in Feb 2015 to attend April 29-30, 2015 PPWG meeting

- Insufficient time to coordinate subcommittee participation with NASA; chair was able to attend as a guest

Planetary Protection Subcommittee

Effort Shifted to planning a joint meeting in Spain on Oct 28-29, 2015

- FACA rules precluded conducting the meeting as a formal PPS meeting
- Alternative was to have some PPS members attend the PPWG meeting as guests, under the FACA rules involving fact-finding activities
- PPS members attending included Lindberg, Rummel, Imperiale, Wadhwa, and Onstott

Planetary Protection Subcommittee

Agenda included briefings on:

- Curiosity Rover Environmental Monitoring Station (REMS)
- Habitability, Brine Irradiation and Temperature (HABIT) – proposal for ExoMars 2018
- United Arab Emirates Mars Mission
- COSPAR Colloquium Reports – Mars and Icy Bodies
- ExoMars Landing Site Selection Process
- European Cooperation for Space Standardization and ECSS Planetary Protection Standards
- Update on ESA sample return R&D
- NASA and ESA biodiversity assessments
- Status of ESA and NASA missions

INTA REMS instrument and HABIT proposal

- Briefings provided by co-investigators Maria-Paz Zorzano and Javier Martin-Torres of LTU (Sweden)
- REMS is a weather station on Curiosity that measures atmospheric pressure, humidity, UV radiation, wind speed and direction, air temperature and ground temperature
- HABIT is a proposed instrument for the ExoMars 2018 lander
- HABIT will be the first instrument designed to study the process of brine formation, investigating habitability of the landing site and exchange of water between the atmosphere and the regolith

[subsequent to the meeting, it was announced in November that HABIT had been selected for flight]

Emirates Mars Mission

- Omran Anwar Sharaf, Program Manager for the Emirates Mars Mission provided a briefing on plans to develop a Mars orbiter
- Scientific objectives focused on atmospheric weather and climate processes
- Mission team understands and is committed to complying with international planetary protection standards

European Cooperation for Space Standardization (ECSS) and Planetary Protection Standards

- ECSS has been developed through a partnership between ESA, European national space agencies, and the European space industry
- ECSS is in the process of capturing the ESA ESSB Planetary Protection Standard within the ECSS system
- PP-related ECSS standards include:
  - Bioburden Control of Cleanrooms
  - Material Compatibility with Sterilization
  - Dry Heat Sterilization Standard
  - Vapor Phase Bioburden Reduction (H_2O_2)
  - Microbial Examination (Assays)

Planetary Protection Subcommittee

PPWG Recommendations

- Move to Next Generation Sequencing to satisfy the biodiversity assessment on flight hardware
- Endorse the Sept 2015 COSPAR Colloquium results on Mars Special Regions and Icy Moons, and recommend their use on an interim basis until adopted by COSPAR

ESA mission updates included JUICE, ExoMars 16 and ExoMars 18

NASA mission updates included MESSENGER, Dawn, New Horizons, JUNO, OSIRIS-REX, Europa Multi-Flyby