Tuesday, February 28, 2017
WORKINGS
8:30 a.m. Auditorium

Provide the 2050 prospect of key topics related to the workings of stellar systems at a time thousands of exoplanets have been detected and first terrestrial exoplanets have been imaged.

Chairs: Christophe Sotin
Carrie Anderson

8:30 a.m. Zuber M. T. * Smith D. E. Mazarico E. Lunine J. I. Neumann G. A. Lemoine F. G. Genova A. Goossens S. J. Sun X. From Copernicus to Newton to Einstein: Toward a Dynamical Understanding of the Solar System [8074] oral presentation
Fusion of hydrogen to helium in sun combined with solar wind are major contributors to slow decrease of the sun’s mass over time. This decrease should cause solar system to expand at rate that is conceivably measurable using laser ranging techniques.

8:45 a.m. Simon A. A. * Science and Exploration in the Outer Solar System in 2050 [8007] oral presentation
Our knowledge of the outer solar system has changed vastly in 35 years and will continue to do so, but complete understanding of the giant planet systems is critical to informing exoplanet, solar system formation, and atmospheric dynamic studies.

9:00 a.m. Horst S. M. * Titan’s Atmosphere and Climate: Unanswered Questions [8204] oral presentation
By 2050 / We must unravel Titan’s / Complex chemistry.

9:15 a.m. Cutts J. A. * Grimm R. E. Gilmore M. Venus Exploration to 2050 [8015] oral presentation
Venus should be an Earth-like planet due to its similar size and position in the solar system, but it has developed very differently. The Venus Exploration Assessment Group (VEXAG) has formulated long-range plans to explore our puzzling sister planet.

By 2050 we need to be working on fundamental scientific problems in an integrated fashion to provide insights into early planetary processes by exploring and characterizing the crust of the Moon.

We describe an approach to Mars exploration in 2050 and the decades leading in that couples fundamental science on the workings of planets and the search for life with collection of information on resources and hazards essential for human exploration.

10:00 a.m. Neal C. R. * Lawrence S. J. A Multi-Decadal Sample Return Campaign will Advance Lunar and Solar System Science and Exploration by 2050 [8142] oral presentation
Given the global datasets now available for the Moon, a targeted sample return (robotic and human) campaign is the next logical step in advancing lunar and solar system science.
In the next 40 years, we advocate constructing a common framework of geologic time across our solar system, linking major geologic events during planetary formation, evolution, and surface environments to solar system history.

10:06 a.m. Bauer J. M. * Sonnett S. Kramer E. A. Mainzer A. K. Masiero J. R. Grav T. Surveys of Sizes and Basic Compositions of Outer Solar System Populations from Infrared Space-Based Platforms [#8067]
Statistically meaningful samples of hundreds of thousands of asteroid diameters have been measured. Several future infrared missions have the potential to sample more distant populations. We will discuss some of these and their potential surveys.

10:09 a.m. Crary F. * Bagenal F. Clark G. Delamere P. A. Ebert R. Rymer A. M. Vought M. 26 Other Planetary Magnetospheres Scientists Exploring Outer Planet Magnetospheres with Small Focused Missions [#8099]
The exploration of planetary magnetospheres can be accomplished using small, focused missions. As stand-alone missions or as secondary payloads, this will provide an efficient, flexible framework for magnetospheric science in the outer solar system.

10:12 a.m. Harris W. M. * Schmidt B. E. Villanueva G. L. Solar System Exploration with the Large Ultraviolet Optical and Infrared Surveyor (LUVOIR) [#8247]
This abstract talks about the exoplanet habitability and biosignatures science that would be enabled by LUVOIR.

10:15 a.m. DISCUSSION

10:30 a.m. BREAK