Thursday, March 23, 2017 **[R503]**
WATER ON MARS I
8:30 a.m. Waterway Ballroom 4

Chairs: **Edwin Kite**
Deanne Rogers

8:30 a.m. Baker V. R. * Maruyama S. Dohm J. M.
The Watery Origin and Evolution of Mars: A Geological Perspective **[#3015]**
Our model for the early evolution of water on Mars explains many unresolved anomalies for that planet's geological history.

8:45 a.m. Luo W. * Cang X. Howard A. D.
New Estimate of Valley Network Volume Consistent with an Ancient Martian Ocean and a Warm and Wet Climate **[#1734]**
Minimum cumulative volume of water needed to carve the valley networks is much larger than previously thought, suggesting warm and wet climate with an ocean.

9:00 a.m. Sholes S. F. * Catling D. C. Montgomery D. R.
Quantified Identification of Paleo-Terraces Along a Proposed Martian Ocean Contact **[#1764]**
Analyses on residual topography provide quantitative means to characterizing hypothesized shoreline features and identification of terraces.

9:15 a.m. Cassanelli J. P. * Head J. W.
Valley Network Formation in a "Cold and Icy" Climate Regime: Theoretical Predictions for Erosion Rates and Channel Morphology **[#1191]**
We assess the influence of cold and icy conditions and the presence of an ice-cemented substrate on the formation of valley networks on Mars.

9:30 a.m. Lapotre M. G. A. * Lamb M. P.
Did Hesperian Amphitheater-Headed Valleys Form by Groundwater Sapping? **[#2860]**
Seeping groundwater / Sculpted canyons and valleys / On Earth yes, but Mars?

9:45 a.m. Matsubara Y. * Irwin R. P. III Craddock R. A. Howard A. D. Bandeira L.
Impact Crater Depth and Diameter Changes on Noachian Mars **[#2818]**
We are creating a "look-up" table for possible initial crater diameter of fluvially degraded craters on Mars using a landform evolution model.

10:00 a.m. Warner N. H. * O'Shea M. Eckes S. Gupta S. Noe Dobrea E.
Geomorphic and Chronostratigraphic Evidence for Early and Late-Stage Groundwater Effusion on Equatorial Terrains, Mars **[#1089]**
We present chronostratigraphic data of fluvial systems at Xanthe Terra. The data suggest groundwater flow persisted from the Late Noachian to Early Amazonian.

10:15 a.m. Mason K. A. * Hurtado J. M. Jr. Whelley P.
Quantitative Analysis of the Fretted Terrain Drainage Network, Arabia Terra, Mars **[#1626]**
Through analysis of regional drainage patterns, we find evidence supporting a tectonic origin of the fretted terrain.

10:30 a.m. Vijayan S. * Sinha R. K.
Reuyl Crater, Mars: Insights from Fluvial Activities **[#1743]**
Reuyl Crater formed at ~3.63 Ga, shows multiple fan deposits with distributaries of dendritic pattern, meandering channels with inverted topography on the floor.

10:45 a.m. Kite E. S. * Sneed J. Mayer D. P. Wilson S.
Mars Alluvial Fan Formation Spanned >10 Myr **[#2699]**
From craters embedded in alluvial-fan deposits, we find that during the Late Hesperian/Amazonian persistent or repeated processes allowed surface habitability.

11:00 a.m. Morgan A. M. * Howard A. D. Moore J. M. Craddock R. A.
Landform Evolution Modeling of Fine-Grained Alluvial Fan Sedimentation on Mars Utilizing an Atacama Desert Analog **[#2819]**
We use a landform evolution model with field work in the Atacama Desert to assess the climatic conditions present during the formation of alluvial fans on Mars.

11:15 a.m. Shover K. R. Goudge T. A. Levy J. S. * Holt J. W. Fassett C. I.
Waning Intensity of Hydrological Activity on Mars Captured by Fan/Valley System Mass Balance **[#1106]**
Analysis of 32 fan/valley systems shows changes in fan preservation with stream order and changes in sediment delivery ratio and sediment bypass with time.

11:30 a.m. Irwin R. P. III * Cawley J. C.
Environmental Implications of the Largest Post-Noachian Craters on Mars **[#2851]**
The largest post-Noachian impacts on Mars did not cause significant fluvial erosion of the craters themselves or cannot explain erosion long after the impact.