

Wednesday, September 23, 2015
THE IMPACT RECORD AND PLANETARY PERSPECTIVE
3:45 p.m. Pathology and Anatomy Lecture Hall

Chairs: Nadine Barlow
Livio Tornabene

- 15:45 Spray J. G. *
[*The Difficulties of Studying Planetary Versus Terrestrial Craters*](#) [#1094]
Terrestrial and extraterrestrial impact structures each provide advantages and disadvantages with respect to furthering our understanding of the cratering process within our solar system. These pros and cons are explored.
- 16:15 Hergarten S. * Kenkmann T.
[*The Terrestrial Impact Crater Inventory and Its Impact Beyond Impact Research*](#) [#1057]
A study taking into account erosion reveals no evidence for an incompleteness in the inventory of the craters being at least 6 km wide exposed at Earth's surface. The results also allow for the estimation of long-term, large-scale erosion rates.
- 16:30 Ferrière L. * Alwmark C. Holm-Alwmark S.
[*Why to Search for New Impact Craters on Earth? Example of the Recently Confirmed Hummeln Impact Structure \(Sweden\)*](#) [#1008]
The confirmation of the impact origin of the Hummeln structure strengthens the hypothesis of an increased cratering rate during the Middle Ordovician and shows that the search should continue to better understand Earth's bombardment history.
- 16:45 Bron K. *
[*The Tookoonooka-Talundilly Tsunami Sequence: Constraining Marine Impact Stratigraphy*](#) [#1089]
A detailed study of the Tookoonooka-Talundilly impact tsunamiite sequence was completed over a vast area of Australia. Results provide an important model for depositional processes and sediment distribution following shallow marine impacts.
- 17:00 Wulf G. * Hergarten S. Kenkmann T.
[*The Potential of Crater Size Frequency Distributions for Deriving Erosion Histories: A Case Study on Mars*](#) [#1079]
A recently developed software tool allows for the prediction of the impact crater record based on a given history of erosion and deposition. A first application to pedestal craters in the Medusae Fossae formation on Mars yields promising results.
- 17:15 Trowbridge A. J. * Melosh H. J. Freed A. M.
[*Impacts into Pluto: The Effect of a Nitrogen Ice Surface Layer*](#) [#1091]
We conducted a survey of hydrocode simulations of impacts into Pluto by varying surface nitrogen ice thicknesses. Crater-scaling laws were determined for each thickness. In doing so, we investigated the effect nitrogen ice has on crater-scaling laws.

- 17:30 Prieur N. C. * Luther R. Wünnemann K. Werner S. C.
[*The Effects of Target Properties on Small-Diameter Crater Size-Frequency Distribution — Numerical Experiments*](#) [#1096]
We have used numerical experiments to assess the effect of target properties for small size craters (<500 meters) on the Moon and investigate their influences on the shape of the crater-size frequency distribution.
- 17:45 Xiao Z. * Werner S. C.
[*Hokusai Crater on Mercury and Its Impact Rays*](#) [#1064]
Size-frequency distribution, spatial distribution, and morphology of secondaries in impact rays reveal details about the early cratering process.