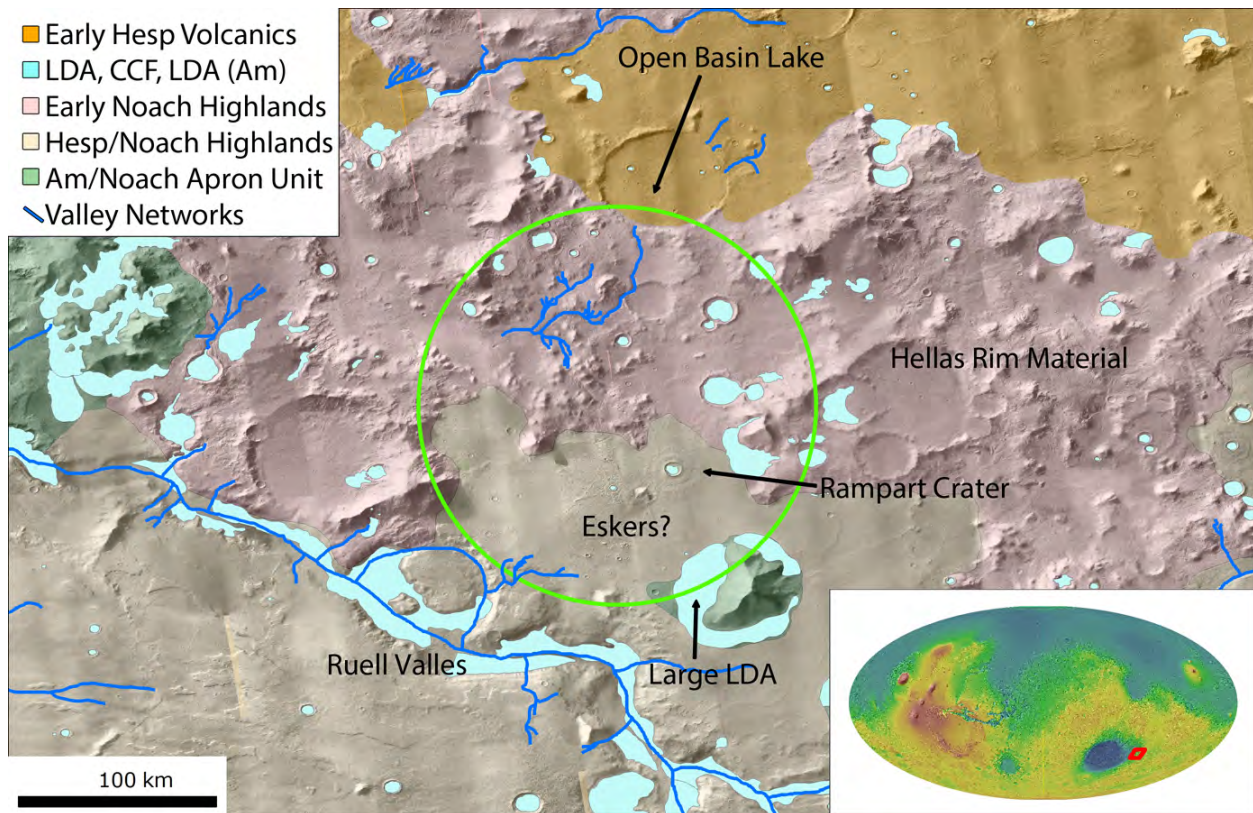


A HUMAN LANDING SITE ON THE HELLAS RIM: ANCIENT CRATERS, FLOWING WATER, AND ABUNDANT ICE. Joseph Levy and John W. Holt, University of Texas
Institute for Geophysics, 10100 Burnet Rd., Austin, TX 78758. joe.levy@utexas.edu



Located at 39.05° S, 101.91° E, the Hellas Rim EZ contains landforms that meet the astrobiology, geology, and climate requirements while providing abundant stores of near-surface water ice and usable ejecta and debris for raw materials. The EZ contains a lava-capped open-basin lake that has been exposed by several impact craters. It contains several large valley networks and provides access to the shores and headwaters of Ruell Valles. It provides access to Noachian highland materials associated with the Hellas impact, and supports two younger units (highlands and volcanics) with clear stratigraphic relationships and large surface areas. Water/rock interactions at the site are indicated by the presence of rampart craters, several valley networks, and possible eskers and supraglacial channels indicative of Amazonian-aged hydrological activity. The numerous LDA in the EZ have a combined mapped volume of >400 km³, most of which is thought to be water ice on the basis of extensive SHARAD imaging of nearby LDA (e.g., Euripus Mons). High-slope LDA margins provide access to debris that has already been piled up, making excavation for transport easier. Together, these attributes constitute an EZ that has the rare combination of ancient volcanic deposits and early martian material with evidence for ~ 3 - 4 Ga of hydrological activity and abundant, proven stores of water ice.