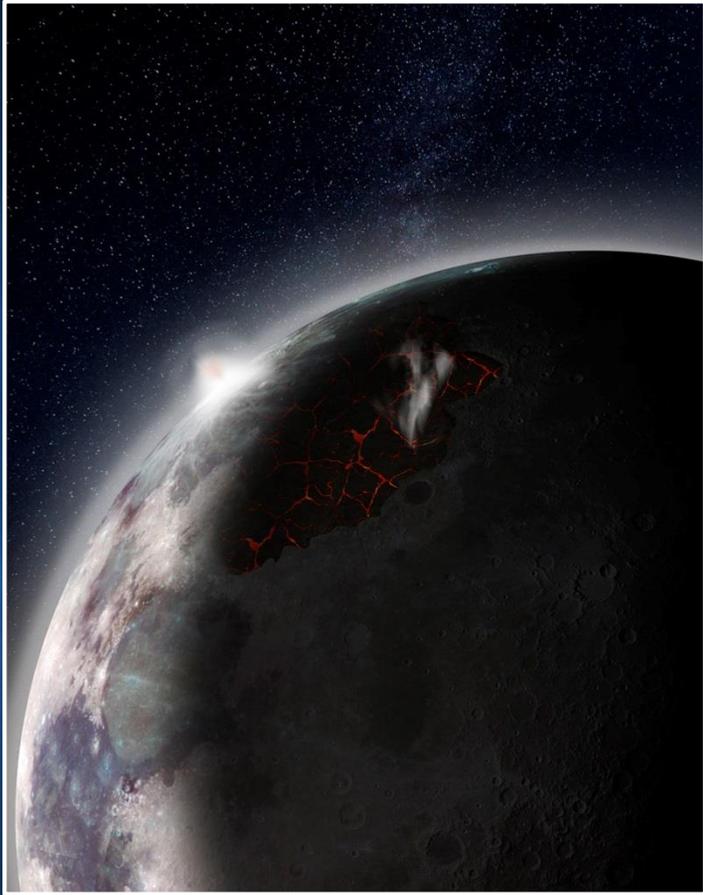
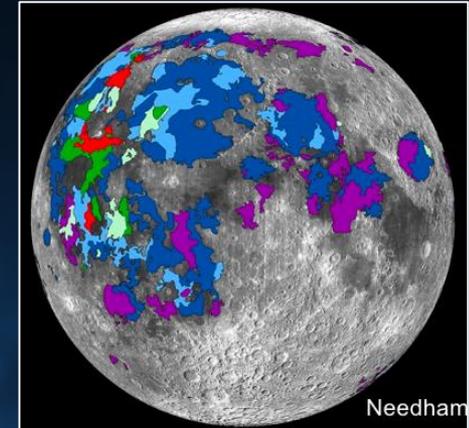


# Ancient Lunar Atmosphere May Have Exited



Needham & Kring, *EPSL* 2017

Analyses of Apollo samples indicate that magmas that breached the lunar surface and flowed for hundreds of kilometers (right), carried gas components, such as carbon monoxide, the ingredients for water, sulfur, and other volatile species.



New calculations show those gases accumulated around the Moon to form a transient atmosphere (left). The atmosphere was thickest during the peak in volcanic activity about 3.5 billion years ago and, when created, would have persisted for about 70 million years before being lost. A portion of the volatiles may have been trapped from the atmosphere into cold, permanently shadowed regions near the lunar poles and, thus, may provide a source of air and fuel for astronauts conducting lunar surface operations and missions beyond the Moon.