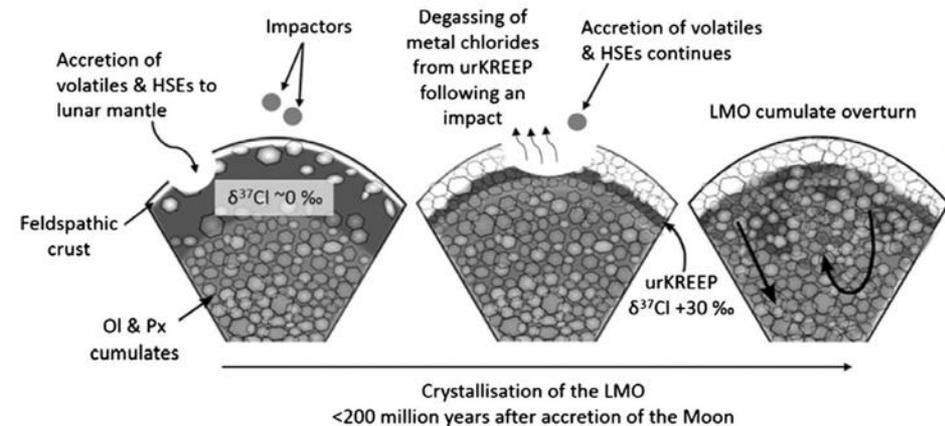
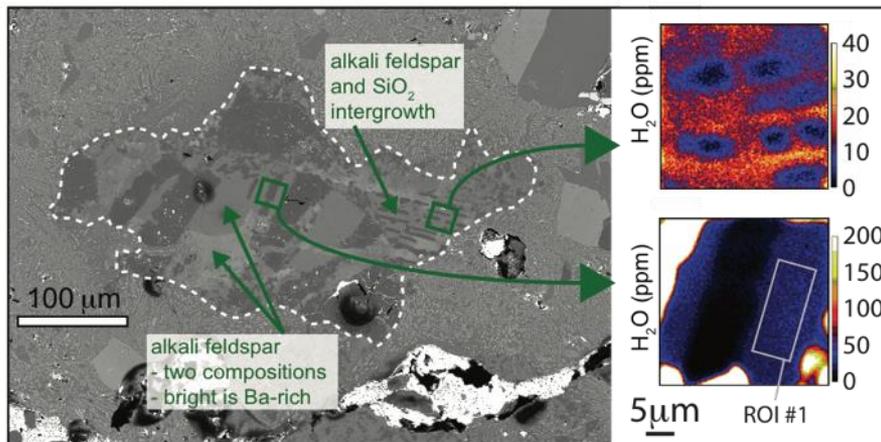


# Ancient Apollo samples used to quantify “dryness” of Early Moon

Although the long-held paradigm of a completely dry Moon has been overturned, two new studies of ancient rocks collected by Apollo astronauts show that even lunar rocks with the highest concentrations of water are still relatively dry.



~4.3 billion year old granitoid rock clast from Mills et al. (2017)

Procellerum KREEP Terrane model from Barnes et al. (2016)

- Two new studies, afforded by novel analytical approaches, confirm the likelihood of low (<100 ppm) water abundance of the bulk Moon, and these findings are consistent with the Moon being depleted in water relative to Earth.
- Based on this research, the “wettest” lunar materials are expected to be chemically evolved rocks, such as granites (above, left) and “KREEPY” basalts (above, right), that reflect the concentration of alkali and other incompatible elements during differentiation of the Moon.
- The presence of water plays a critical role in the formation of planetary crusts and its presence at the surface and near subsurface on the Moon, and may be a critical in situ resource for future human exploration.