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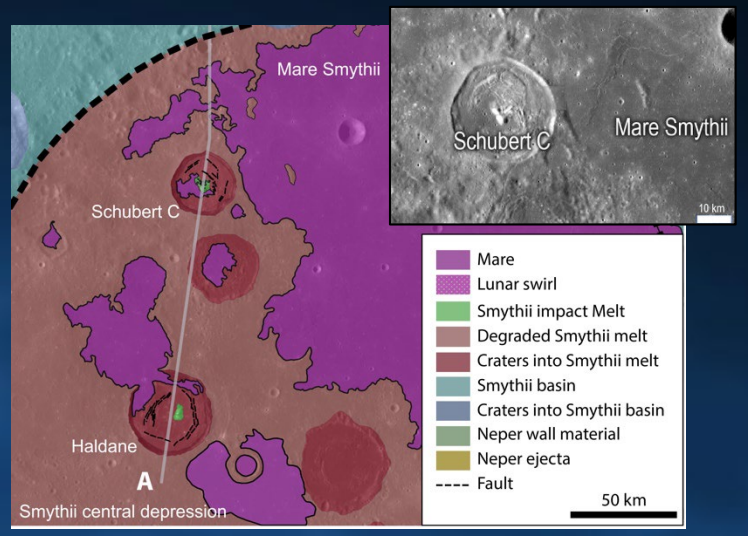
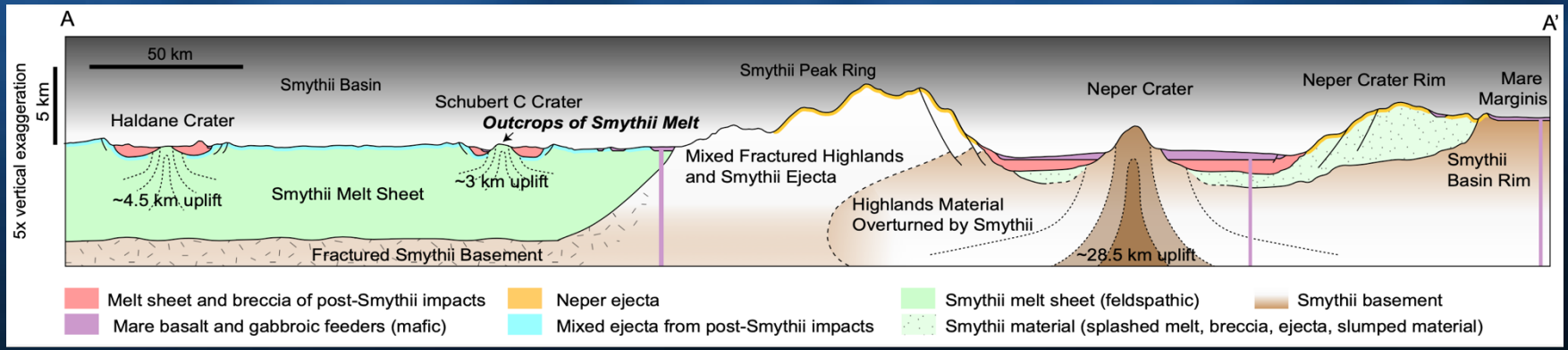
Schubert C Crater Reveals Age of Smythii Basin on the Moon



Geologic map of a portion of Smythii Basin. The transect line runs thru Schubert C Crater.

Smythii basin's age can be discovered from impact melt exposed in the central peak of Schubert C crater, getting us one step closer to discovering the early Moon and Earth impact environment around the time of life's first emergence.

- Earth's impact environment from the time of life's emergence is unknown, but a proxy record is preserved on the Moon in each of the large lunar basins. Radioisotope age determination of lunar rocks uniquely solves this age problem.
- We geologically and compositionally mapped Smythii basin with an interpreted cross section and identified Schubert C crater's central peak as the most likely place to expose cooled impact melt from the Smythii-forming impact.
- A mission to the central peak of Schubert C crater that determines the age *in situ,* or returns the samples to Earth, could constrain Smythii's age.



Interpreted geologic cross section of Smythii Basin

Kirby D. Runyon, Lyle Nelson, & Daniel P. Moriarty III (2022) *Planet. Sci. J.* 3 48