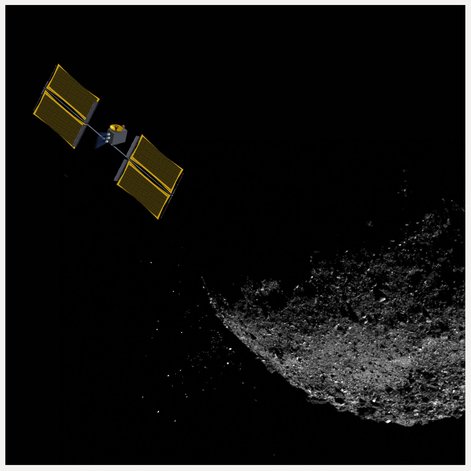
karman

Launching the Regolith Age

Starting with Mining ->

Our first mission, High Frontier, launches in February 2027 to excavate C-type asteroids at kilogram scale.

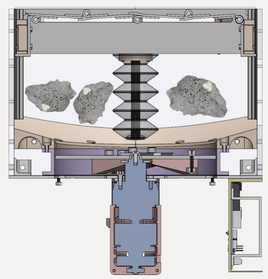


To Conveying ->

Our excavator consolidates and compresses the regolith we grab during our TAG rendezvous.

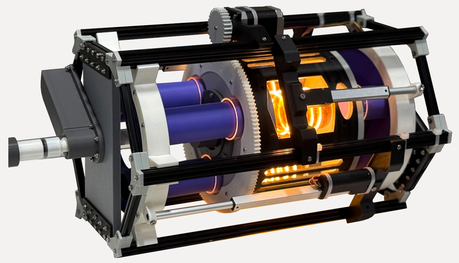
To Grinding ->

Our compacted regolith is ground to ensure a consistent grain size and distribution, as preparation for further processing.



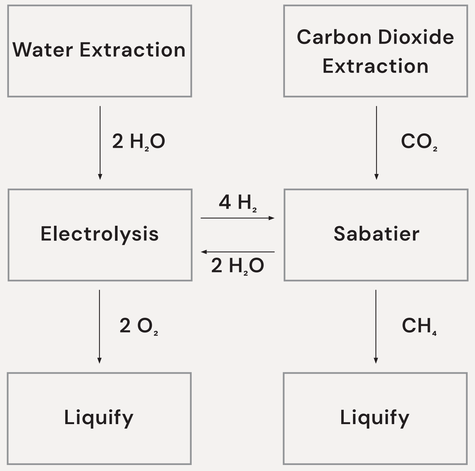
To Water Extraction ->

Water is extracted from the regolith through heating and pressure, in a cycle that is designed to operate in a continuous flow.



To Propellant Production

Water is purified and split to create pure oxygen as well as hydrogen, with research in progress to create methane.

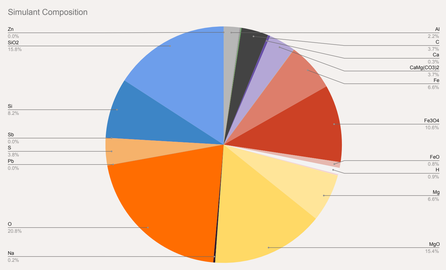


High Fidelity Regolith Simulants

With just ~126 grams of regolith available globally, we designed a simulant modeled on Ryugu in partnership with TU Berlin.

Ryugu Simulant Composition

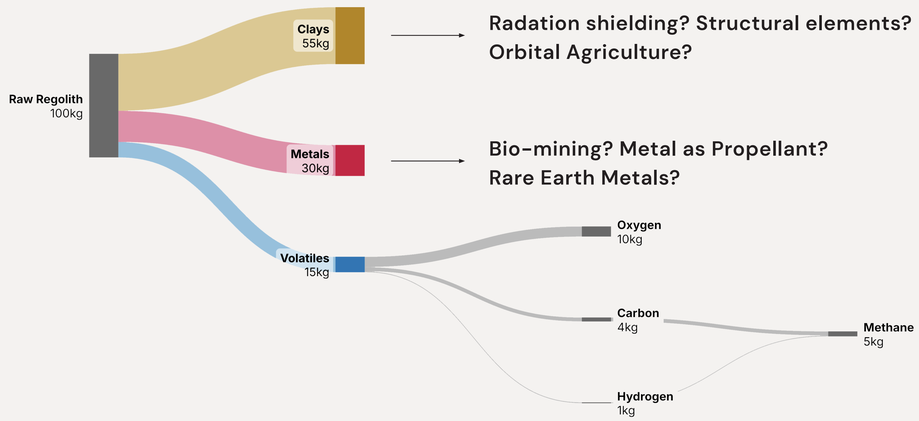
Mineral composition as found on Ryugu allows us to calibrate and test our designs. Future work will include a Bennu version.

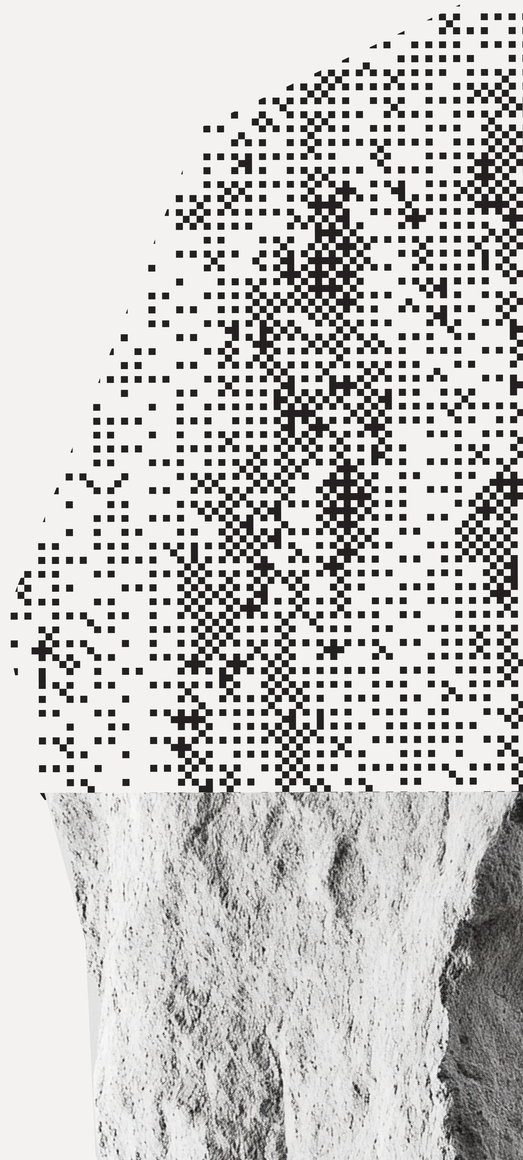


Our process includes mineral blending, agglomeration, and mechanical fracturing to mimic realistic porosity and particle distribution.

Using the Whole Buffalo

We want to use everything: fuel synthesis, shielding, structural mass, and more.





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Call to Action:

Join us in the Regolith Age!
We love collaborating globally with researchers and companies.