

## SPACE BAKERY

by Molly Mandell

Bread may be a staple food here on Earth but can be a life-threatening hazard in space. “Crumbs are a huge issue,” explains Sebastian Marcu, co-founder of Bake in Space—a German company aiming to make bread that can be consumed in the cosmos. “On Earth, crumbs will land in your toaster tray. But in microgravity, they fly around with no way to contain them.” Midway into the flight of Gemini 3 in 1965, American astronaut John Young discovered the potential danger when he pulled out a corned beef sandwich that he had smuggled aboard (perhaps it had seemed more appealing than the rehydratable hot dogs and prepared food cubes that he had been sent to test). Young quickly realized that free-flying crumbs could land in astronauts’ eyes or throats, or make their way into equipment. He never got to eat his sandwich. It was the first—and, until now, last—sandwich to enter space. Imitation sandwiches, with tortillas filling in for sliced bread, have meanwhile become popular alternatives. But imitations don’t cut it in Germany, where there is a bakery on nearly every city corner and around 3,200 varieties of bread. “This is about much more than making a few astronauts happier,” Marcu clarifies. “The project is a stepping stone for human exploration of space.” Bake in Space aims to develop technology that makes the entire process possible aboard spacecraft, from growing grain to actually baking loaves of bread. “Eventually, we hope that space exploration will no longer be reliant on regular food deliveries from Earth.” Crumbs aren’t the only challenge for Bake in Space, however. If heat escapes from the oven, invisible bubbles of hot air can form and pose a risk to those on board. Baking and eating bread may be a tried and tested process on Earth, but whether it will become so simple in other parts of our galaxy is yet to be determined. *Photography by Aaron Tilley & Styling by Lucy-Ruth Hathaway*

