

## In a Takeout Container, a Trek to the Stratosphere



Luke Geissbuhler

**A 100,000-FOOT VOYAGE** Luke Geissbuhler tethered a video camera to a weather balloon and launched it in August from Newburgh, N.Y. The trip took 90 minutes, and a seven-minute video became a viral success.

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[Luke Geissbühler](#) has raised the bar in the cool-dad competition.



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In August, Mr. Geissbühler, a 40-year-old director and cinematographer, tethered a video camera to a weather balloon and sent both more than 100,000 feet into the stratosphere. The camera safely returned to the ground with the help of a small parachute.

The entire trip took about 90 minutes, but a [seven-minute account](#) of the voyage, posted on the video-sharing site Vimeo, has become a viral success, garnering more than one million views since it was first uploaded on Sept. 19. The breathtaking video, with its [NASA](#)-like views of the [Earth](#)'s curves, has made

Mr. Geissbühler the latest in a long line of scrappy, do-it-yourself geek heroes. (It can be seen at [www.brooklyn.spaceprogram.org/BSP/Space\\_Balloon.html](http://www.brooklyn.spaceprogram.org/BSP/Space_Balloon.html).)

The instigator for this particular space program was Mr. Geissbühler's 7-year-old son, Max, who had made more than a few requests for a handmade spacecraft.

"Our creative process works this way: he asks for the impossible," Mr. Geissbühler said, "and then I have to tell him why it's impossible. And then I start to question that. And then I start to investigate that."

Mr. Geissbühler had already been exposed to the world of weather-balloon enthusiasts who record their flights, thanks to research he had done for a feature film. Intrigued by the possibilities afforded by a growing array of inexpensive personal technology devices, he set out to make his own aircraft, the beginning of an eight-month research and development program in the Geissbühlers' apartment in Park Slope, Brooklyn.

While being a cinematographer does bring with it a degree of technical skill, Mr. Geissbühler also had help from his brother, Phillip, who is a physicist in Boston.

"I'd ask him questions," Mr. Geissbühler said, "and he'd come back with more complicated answers to my questions."

The two worked out issues regarding wind, temperature and the predicted behavior of their aircraft.

The materials used to make the capsule were decidedly off-the-shelf. A Thai-food takeout container served as the fuselage. Spray-on insulation was applied inside the container, and chemical hand-warming packets were inserted to protect the camera and tracking device from sub-zero temperatures.

The recording device used was a GoPro Hero, a small digital video camera that costs less than \$300 and is often used in sporting and outdoor pursuits. Also included was a friend's [iPhone](#), loaded with the free GPS-tracking app InstaMapper, which served as a homing beacon so the capsule could be retrieved after landing.

Building something designed to climb above the cruising altitudes of commercial aircraft, which generally fly between 30,000 and 40,000 feet, also meant that the Geissbühlers' craft had to adhere to Federal Aviation Administration standards for weather balloons. That meant a payload of less than 4 pounds (in this case, it was a pound and a half), specific density restrictions and an extremely high degree of breakability in case the balloon or capsule came into contact with an aircraft.

Mr. Geissbühler also wanted to launch the balloon far from densely populated areas and heavy air traffic. The town of Newburgh, N.Y., seemed to fit the bill. (Mr. Geissbühler realized only after the fact that Newburgh is home to Stewart International Airport and an Air National Guard base.) Newburgh also had an added benefit.

“There was a party store in town that had a lot of helium,” Mr. Geissbühler said.

With the help of some friends, the Geissbühlers released the balloon in a park in Newburgh at 3 p.m. on a cloudy August day. It climbed at a rate of 25 feet per second, or 17 miles per hour. After 70 minutes, the balloon reached an altitude of around 100,000 feet, at which height the camera was capturing the curvature of the earth and the darkness of the upper atmosphere. Because of the reduced air pressure, the balloon expanded to its maximum diameter of 19 feet and then burst. The camera fell back to Earth at speeds that at times exceeded 150 miles per hour, even with the parachute extended.

The capsule landed in a tree 30 miles north of where it started. It was recovered by the Geissbühlers, who found everything intact.

Mr. Geissbühler said he was surprised by the tremendous response his video has generated.

“I guess people feel really empowered if they can send a takeout container to space,” he said.

Not only has he been praised for his ingenuity, but several commenters on the video site have commended him as a model parent.

“My son and I have always been tinkering, building things,” Mr. Geissbühler said. “He doesn’t know that’s not normal.”

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