

## COLUMNISTS

# What we learned when astronaut Stuart Roosa took tree seeds to space

**Annabelle Moore** Special to the Reporter-News

Published 5:00 p.m. CT June 5, 2022

With a pop like a potato chip bag bursting, the plastic bags holding hundreds of itty-bitty tree seeds exploded like confetti across the vacuum chamber.

It's February 1971, and astronaut Stuart Roosa has just returned from flying the Apollo 14 mission to the moon.

Loblolly Pine, Sycamore and Sweet Gum seeds, all three natives to Texas, traveled 238,900 miles into space tucked neatly into Command Module pilot Roosa's personal items. The U.S. Forest Service chose five North American tree species for the journey.

Roosa had an early connection with nature. At 17, he joined the forest service to prevent wildfires and preserve forests. Overcoming a fear of heights, Roosa successfully became a smoke jumper — an elite group of fire fighters that parachute into otherwise inaccessible wilderness areas. The thrill of flying and mission-oriented work appealed to Roosa, soon set on a life in the air.

Roosa's path from conservation to NASA went by way of becoming a U.S. Air Force pilot. Completing gunnery training at Del Rio AFB in Texas, Roosa earned his wings at Williams AFB in Arizona. In 1966, Roosa joined the Apollo program.

When Edward P. Cliff, 9th Chief of the forest service, heard Roosa was part of the Apollo 14 mission, he dreamed up the Moon Tree project. They collaborated with geneticist Stan Krugman, also of the forest service, who chose seeds from the Institute of Forest Genetics. The project's goal was two-fold: to increase public awareness of smoke jumpers and the forestry service and to explore if time in space impacted a tree's ability to grow on Earth.

In January 1971, Roosa flew the Kitty Hawk module in 34 circles around the moon. Alone with the seeds and the hum of electronics, he completed several research projects while his fellow astronauts, Alan Shepard and Edgar Mitchell, conducted the lunar landing.

Upon returning successfully to earth, the astronauts and their belongings were quarantined for over two weeks and exposed to decontamination in a vacuum chamber. Undaunted when the bags exploded, Stan Krugman and colleagues rescued each delicate seed.

Krugman mailed the seeds to the care of Dr. Charles Walkinshaw, an agricultural scientist at Houston's Johnson Space Center. To their delight, the seeds sprouted. For the bicentennial, many Moon Trees were planted in community parks, universities and government offices across the United States. Citizens who gazed at unreachable stars could now touch a tree that had come closer to galactic heaven than most living beings.

In Texas, it's believed a sycamore was planted around 1976 at the Brazos County Arboretum, which died unexpectedly. A second sycamore was planted in 1978 on private land near Westlake. A third may live near Hockley.

The Moon Tree Foundation, a nonprofit set up by Stuart Roosa's daughter Rosemary, inspires youth involvement in space science and nature conservation by planting trees. These half-moon or second generation moon trees are grown from seeds or cuttings of the original trees. The foundation lists two trees, a Loblolly pine and a Sycamore at Rice University, and Loblolly pines at Texas A&M University, and NASA's Johnson Space Center in Houston.

Today's astronauts still take inspiration from Apollo 14's curiosity for nature in space. This April, Texas master naturalist and NASA astronaut Kjell Lindgren took off with SpaceX's Crew-4 for the International Space Station.

Crew-4 will spend the next six months in space collaborating on over 200 experiments, from plant science to medical studies and sustainable concrete materials. Lindgren was among the first astronauts in 2015 to eat lettuce grown onboard the International Space Station.

The seeds carried over 50 years ago were humanity's first shot at taking a green bit of home into the unknown. The astronauts of today are finding out just how far we might go.

### **Upcoming Big Country Master Naturalist events:**

- ▶ June 18: Cedar Creek Waterway Hike, 100 block of East South 11th Street, 9 a.m.
- ▶ June 18: Star party at Abilene State Park, 8:30-10:30 p.m., weather permitting.

*Annabelle Moore is a member of the Big Country Texas Master Naturalist chapter. Learn more about the Texas Master Naturalist program at [txmn.tamu.edu](http://txmn.tamu.edu) and [facebook.com/BCTXMN](https://facebook.com/BCTXMN).*