

Shannon Lucid

# A SOONER IN SPACE

by Ben Fenwick



Astronaut Shannon Lucid at work aboard the space shuttle Atlantis.

**She wanted to be an explorer,  
but the only uncharted territory  
she could find was straight up.**

**W**hen she was in the eighth grade, Shannon Lucid was asked to write an essay about what she wanted to do when she grew up. This presented a dilemma. “I wanted to grow up to be an explorer. That type of literature really appealed to me,” Lucid says. “Then it dawned on me that the earth was pretty much explored.”

The year was 1955; the Cold War had launched massive efforts by the Soviet Union and the United States to develop rocket technology sufficient to launch weapons each against the other. American innovation was on the rise, riding high on new jet planes, evident in nuclear-

powered submarines that could circumnavigate the globe underwater and accented by the frightening flash of atomic bomb tests in the Nevada desert. Eyes turned toward the skies—and beyond—in search of answers.

“About the same time I started reading science fiction,” Lucid says. “I also read a lot about Robert H. Goddard (the inventor of the liquid-fuel rocket) launching his rockets out in the New Mexico desert. It just seemed logical to aspire to do something like that.”

So she wrote her essay stating that when *she* grew up, she wanted to fly in space to other planets.

Her teachers were not amused, Lucid recalls. Even if something as unlikely as space flight should ever happen, little girls would not be involved.

“In those days, America didn’t even have a space program,” Lucid says. “But I still wanted to do it. I can’t remember ever wanting to do something else.

“Then, when I was in the 10th grade, the Russians launched Sputnik.” The space race had begun. *Continued*





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By 1978, with a successful moon program accomplished and a working, reusable spacecraft on the way, NASA began recruiting women.

Today, at 49, Shannon Lucid has logged more than 500 hours in space as a NASA mission specialist on three different space shuttle missions, and her space career is still on the rise. Lucid stands poised to fly in space again next summer.

"I've enjoyed every mission I've been on," Lucid says. "I'd be hard-pressed to say which one I enjoyed the most. The pluses outweighed the minuses on all of them. I've had great people to work with, and that's very important."

Lucid's life has been interesting from the beginning. She was born in 1943 in Shanghai, China, the daughter of missionaries, the Rev. and Mrs. Joseph O. Wells. In the tumult accompanying the end of World War II and the Communist Revolution, Lucid got her first glimpse of her future.

She was about five years old when she and her family flew from Shanghai up into the mountains in an old Army transport plane.

"I can still remember looking out the window and seeing the gravel landing strip rushing beneath us as we landed," Lucid says. "I thought it was the most wonderful thing in the entire universe, that human beings could be up there flying like that." The enthusiasm endured; the next time she boarded an airplane was to take her first flying lesson at OU.

Lucid first enrolled in a small college in Illinois after her graduation in 1963 from Bethany High School. After a semester, she came to OU to study chemistry and received her bachelor of science degree in 1963. Lucid also earned her first pilot's license at the same time from OU's flight school at Max Westheimer Field on north campus.

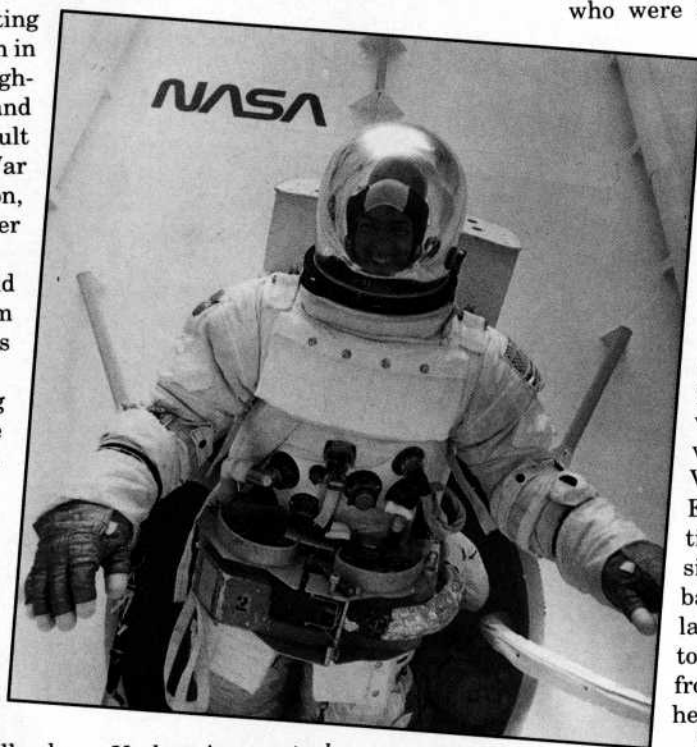
"Oklahoma is a great place to fly," Lucid insists. "You can fly on the weekend for a couple of hours and land at one of the state parks, several of which have airstrips. You can have a picnic and go back home."

Lucid says the good flying, ironically, is something she misses about Oklahoma. Even though she works on

spaceflight research every day at the Johnson Space Center, she no longer gets to fly as much as she wants because the Houston area provides little room for leisure flying.

"That's what I'm missing down here," she says. "Oklahoma has been involved in aviation since the beginning, and there are great places to fly."

Lucid continued her education at OU while working as a teaching assistant and completed her master's degree in biochemistry in 1970. She finished her doctorate in biochemistry in 1973 at the OU Health Sciences Center. The subject of her thesis was cholera toxin.



*Undergoing neutral buoyancy training in 1980, Lucid wears an extravehicular mobility unit to get a feel of what to expect on future missions in space in zero gravity.*

While completing her master's, Lucid worked as a chemist at the Kerr-McGee research labs in Oklahoma City. There she met and married Michael F. Lucid; they have two daughters, Kawai Dawn and Shandara Michelle, and a son, Michael Kermit.

During her doctoral study, Lucid was a research associate at Oklahoma Medical Research Foundation from 1974 until 1978, when NASA opened the astronaut corps to women.

"When NASA announced they were

going to accept females, I applied," Lucid says. "I was in the 1978 group; we were the first females to be signed up."

She sees her selection as mostly a matter of timing. "Just being in the right place at the right time was a lot of it," Lucid says. "You have to be ready to take advantage of an opportunity as it comes along. But the opportunity has to present itself. An individual doesn't have control over that."

The introduction of women into spaceflight was an important moment in the development of NASA. The men recruited into the space program prior to 1978 were mostly military pilots who were also athletes. Yet Lucid insists that the change was made with little difficulty.

"NASA really bent over backwards to make sure we were welcome," she says. "They worked hard to make us feel included and to make things work."

Still making the grade was difficult—but not impossible. Her training was very athletic. She underwent survival instruction at Vance Air Force Base in Enid, with classes on ejection and parachuting, designed to teach her how to bail out of an aircraft over land. The sessions in Houston included being plucked from the water to simulate a helicopter rescue at sea.

The training confirmed that an astronaut candidate did not have to be a decathlete to enter the space program. The "right stuff" had taken on a different meaning.

"Now we have a wide variety of people in the program. We try to get diversification," Lucid says of all the mission specialists who make up the flight crews. "There is still a group of mainly-military pilots who have come to NASA up through the ranks. We like to kid them that if you talk to one, you've talked to them all."

NASA confirmed Lucid for the astronaut corps in 1979, designating her a "Mission Specialist Astronaut." With that, her preparation became more intense. Lucid underwent space-walk



Preparing for their 1989 launch aboard *Atlantis*, the STS-34 crew posed in the shuttle mockup at the Johnson Space Center. From left, Michael McCulley, Shannon Lucid, Franklin Chang-Diaz, Ellen S. Baker and Donald E. Williams.

training in Houston, where she wore a pressure suit to work underwater to simulate the weightless environment of space.

Finally, the time came for her first launch. Lucid donned the astronaut-blue uniform as a mission specialist for the high-profile 18th shuttle flight, 51-G, launched on June 17, 1985. That *Discovery* crew was truly international. Commander Daniel C. Brandestein, pilot John Creighton and mission specialists Lucid, Steven R. Nagel and John M. Fabian came from the United States. But also present were payload specialists Sultan Salman Abdelazize Al-Saud, of Saudi Arabia, and Patrick Paudry, of France.

The crew released two communication satellites, the *Arabsat*, serving the Arab League, and the *Morelos*, for Mexico. They also worked on a deep-space x-ray telescope and participated in a defense department experiment in which a small laser was fired at a reflector placed on one of the shuttle's windows. The shuttle touched down at Edwards Air Force Base in California on June 24.

A year later, the *Challenger* exploded shortly after takeoff, a tragedy that took the lives of seven astronauts, shocked the world and set the space program back several years. The flights resumed in 1988 but under the shadow of doubt cast by the *Challenger* disaster. Lucid's next flight was October 18, 1989, aboard *Atlantis*.

## She believes the benefits of human spaceflight outweigh the risks.

Lucid recognizes and lives with the potential danger but believes the benefits of human spaceflight outweigh the risks.

"Everybody realizes it's very risky," she says. "Everyone hopes that everybody else has done their job, that all the nuts and bolts have been tightened down."

She looks at a launch as a cooperative effort that is only as strong as the weakest link. One bolt or one wire out of place could cause disaster.

"When you see a flight, you see the astronauts and think, 'Wow, they're doing a big job,'" Lucid says. "But the astronauts are just the tip of the iceberg. There are literally thousands and thousands of people behind them who work tremendous hours for every single flight."

The 1989 flight was also high profile, carrying aloft the *Galileo* deep-space probe to Jupiter. The crew successfully launched *Galileo*, which then blasted out of Earth's orbit and now is

speeding its way to the largest planet in the Solar System.

The probe is programmed to show close-ups of Jupiter, even closer than *Voyager* and *Pioneer* provided several years ago. It also will launch two smaller probes that will fall into the atmosphere of the planet to return data and pictures until they are crushed by the giant planet's gravity. The effort will be a feat as amazing as the landing on Mars by the *Viking* probes—that is, if *Galileo* works.

Shortly after launch, the probe malfunctioned. Deep in the cold of space, its antenna locked up and refused to deploy. Scientists plan to shut down the probe so it will grow even colder and then try to shake it, using its on-board engines. Lucid terms the effort "touch-and-go" to get the probe operating again.

"If it doesn't work, they'll still be able to get some of the information, but they'll lose about 90 percent of the data that we would have gotten," Lucid





occurred in the space program. Long-time astronaut and scientist Richard Truly was replaced by Daniel Golden as NASA's administrator. Talk persists that spaceflight may be cut back, that the space station may be eliminated, even that human flight should be curtailed in favor of robotic craft, due largely to the expense and risk.

"There's plenty of room for both the robotic aspect and the human aspect," Lucid contends. "But they've never built a computer that can do all the things a human being can do. Computers aren't as versatile as human beings—and besides, the things break. Human beings can work around a problem."

That point was made in the recent rescue of the stranded communication satellite by an impromptu three-astronaut spacewalk. The \$70 million piece of technology now soars in its proper orbit, thanks to the efforts of a daring seven-person crew aboard Atlantis.

Beyond that, Lucid sees the need for people to keep pushing, to keep finding new things and new ways to look at themselves and the heavens.

"Part of the thrust of this program is to explore." The tone of her voice recalls the would-be explorer whose eighth-grade essay elicited her teacher's disdain. "A lot of people would like to set up colonies on the moon and Mars. We need the experience



*TOP: Astronauts Baker, left, and Lucid prepare pre-deployment exercises involving the launching of Galileo.*

*ABOVE LEFT: Lucid, upper right, monitors astronaut David Low's lower body negative pressure on Atlantis.*

*ABOVE RIGHT: Lucid peers into Atlantis' cargo bay during a space "day" of 50-odd minutes of sunlight.*



says. "It really would be too bad. There are people who spent literally their entire working careers on Galileo."

The Sooner astronaut's most recent mission was August 2-11, 1991. Again onboard Atlantis, the crew deployed a tracking satellite and conducted many life-science experiments, most related to planning for the upcoming construction of Space Station Freedom. The mission concluded with a landing on Runway 15 at the Kennedy Space Center in Florida, riskier than landing at the huge dry lake bed at Edwards.

Since then continuing changes have

of human beings in space, to have insight into how the human body reacts to the environment before we can go on to that kind of activity."

Shannon Lucid realizes how very fortunate she has been. Her fourth flight is scheduled for July 1993, another life sciences mission, STS-58, Spacelab Lifesciences 2. One more time she will be able to gaze out the shuttle window with eyes that once belonged to a dreamy five-year-old watching the ground rushing beneath a battered transport plane in the mountains of China.