

PHYSICS AT WORK

Linda M. Godwin, Ph.D.

NASA ASTRONAUT

It was while working on her Doctorate in physics at the University of Missouri in the late 1970s that Linda first thought about becoming a NASA Astronaut. Prior to that time, there had been only male Astronauts. When NASA began putting the word out that they were interested in breaking down the gender barriers for their scientific mission specialists, Linda responded.

Now she is a veteran of three space flights and has logged over 633 hours in space, including a six-hour space walk. Her six-hour space walk has been one of her greatest and most thrilling challenges. During a space walk she leaves the shuttle attached only by a tether, and goes out into space wearing and depending solely on the pressurized life-support space suit. Dr. Godwin went up on Atlantis with the third docking mission to the Russian space station Mir. She performed the space walk in order to mount experimental packages on the Mir docking module to detect and assess debris and contamination in a space station environment. Setting up equipment under the microgravity environment, while wearing the life support apparatus, was very difficult. “The suit is over 500 pounds, and even though you really don’t weigh anything, you still have all the properties of mass. So, in terms of starting or stopping it’s like you’re moving 500 pounds—all the inertia is still there. You just have to learn to move a little differently. For example, it’s harder to stay in one place, because you can get this motion buildup.”

“Seeing the earth go by while up in space is just an incredible experience,” says Linda. “Earth is so beautiful and peaceful. In the space craft we are orbiting her every 90 minutes, so we see a sunrise and a sunset every 45 minutes. At nighttime you see all the city lights and during daylight you see the oceans, clouds, land masses and weather-like storms and lightning flashes. You get a sense of how we’re all tied together. You can look down and see that little surface of air that we have shining through the horizon during a sunrise or sunset and you realize there isn’t much of that either. It really makes you think about how fragile and vulnerable our planet is.”

