

Lesson 5 Into the Universe

Astronaut Yujin's Space Log

Day 1 Back to Space!

After blasting off from Earth, we took about 27 hours to reach the International Space Station, where we docked successfully. This is my third journey into space. After ten years, I'm back on this station, the largest artificial space habitat in orbit 400 kilometers away from Earth!

Day 5 The World with No Gravity

Now I'm getting better at remembering where I am when I first wake up, but I'm still often confused about how my body is positioned. In the dark and without gravity, my inner ear just takes a random guess as to my position, and sometimes I wake up convinced that I'm upside down. Of course, it's actually my brain readjusting to an environment where height and weight lose their meaning. I can use any wall equally as if each were a floor. Everything has zero weight. This enables me not only to fly but also to lift huge objects with one finger as if I were a superhero. Unfortunately, zero gravity also makes astronauts lose muscle and bone density really fast. That's why I exercise for 150 minutes a day as my colleagues do.

Day 25 Starting the Day

The station orbits Earth once every 90 minutes, and the sun rises and sets every 45 minutes. However, our schedules are set to Greenwich Mean Time on Earth.

My day starts around 6:00 a.m. in my personal space, which is about the size of a phone booth. Still in my sleeping bag, I click through new emails and brush my teeth. I swallow the toothpaste with a sip of water from a bag with a straw. There's no good way to spit in space because everything floats. Then, I look over the daily schedule sent by the flight control team on Earth. After a meeting with the Earth team at 7:30, I start work.

Every minute of an astronaut's day is planned by the Earth team. My work comprises lots of scientific experiments and maintenance of the station. My favorite experiment is growing basil from seeds as I film its growth every day. Having green plants in space is a delight!

Day 60 Spacewalk!

Today's mission required a spacewalk, one of the riskiest tasks on the ISS. We had to install the bases for some newly developed solar batteries on the outside of the station.

Scott, my colleague, and I went to an airlock, a room connected to the outside of the station, put on our spacesuits, and floated gently into space. The large blue dome of Earth hovered overhead, looking like it was ready to come crashing down upon us. Forcing myself to focus on the task, I secured the hook of my safety cable to a ring just outside the airlock. We moved along the handrail to the edge of the station. The dark void in front of us seemed endless. Despite the safety cable, panic rose in me. I thought, "If my hand misses the handrail, I will fall into the void." The task seemed to take forever, but I finally managed to install the battery bases. When I turned my head, the bright blue Earth was still there. In the middle of darkness, its beauty was beyond description.

Day 99 One Day Left

I'll return to Earth tomorrow. If getting up into space is alarming and uncomfortable, coming back down is one of the most dangerous and physically harsh things an astronaut ever does. Back on Earth, I'll miss lots of things here. I'll miss the satisfaction of successfully finishing an experiment or a challenging task like a spacewalk. I'll especially miss my basil plants, whose leaves have become a dense forest! All the same, I'll never forget how lucky we are to have that wonderful blue planet as our home.

Day 100 The Descent to Earth

Mother Earth didn't exactly welcome us back with open arms. Earth's atmosphere is resistant to objects entering from space. Any object will create enough friction simply to burn up from the heat. This protects the planet from the orbital debris that would otherwise rain down on it. But it also meant we had to survive a fall through the atmosphere that created temperatures up to 1650 degrees Celsius.

After pushing our spaceship away from the station, we eased our way into the upper layers of the atmosphere to start our descent. We felt gravity begin to return. My watch felt a lot heavier on my wrist, and breathing got harder. The capsule heated up, and orange and purple flaming pieces flew by the window, which was scorched black. We were falling faster than the speed of sound.

Once we got inside the atmosphere about eight kilometers above the planet, a parachute caught us with a sudden halt and dragged and swung our capsule wildly through the sky until we hit the ground.

It's hard to describe how heavy everything felt in those first few minutes after landing. My arms felt terribly heavy, and so did my legs. Getting used to gravity, which I missed in space, will take quite a long time. The important thing is I'm home. I can smell the grass and feel the wind and the rain! I'll remember how magical these things are for the rest of my life.

5과 Further Reading

The International Space Station

The International Space Station, or ISS, is the ninth space station to be inhabited by humans. Since 2000, it has been continuously occupied by astronauts. It serves as a research laboratory for many fields, including astronomy, physics, and medicine. It is also used to test spacecraft systems required for possible future missions to the moon, Mars, and asteroids. As big as a football field, it is composed of many different sections, such as experiment modules, habitation modules, solar battery panels, and robotic arms. It is a completely unique structure assembled by spacewalkers flying around Earth at 28,000 kilometers per hour in a vacuum in extremes of temperature of plus and minus 270 degrees Celsius. It is the result of work by 15 different nations over about two decades. The work was carried out by thousands of people speaking different languages and using different engineering methods and standards. Putting the space station into orbit, making it work, and keeping it working are perhaps some of the most difficult things that human beings have ever done. In January 2022, NASA announced a plan to de-orbit the ISS in 2030. Many astronauts believe that it will stand forever as proof that when humans work together, we can do anything from going to Mars to solving our problems here on Earth.