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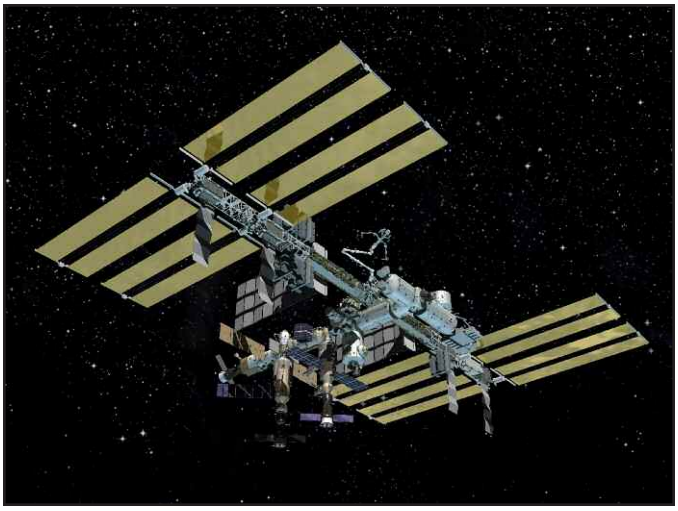
International Space Station



Clearly visible with the naked eye in the night sky, the expansive International Space Station is a working laboratory orbiting 240 statute miles (386.24 kilometers) above the Earth traveling at 17,500 miles per hour (32,410 kilometers per hour) and is home to an international crew.

It is the most complex scientific and technological endeavor ever undertaken, involving support from five space agencies representing 16 nations. Once completed, this research outpost in space will include contributions from the U.S., Canada, Japan, Russia, Brazil, Belgium, Denmark, France, Germany, Italy, the Netherlands, Norway, Spain, Sweden, Switzerland, and the United Kingdom.

As a research outpost, the station is a test bed for future technologies and a research laboratory for new, advanced industrial materials, communications technology, medical research, and much more.

On-orbit assembly began in 1998 with the launch of Zarya, and once completed will provide crew members with more than 33,000 cubic feet (935 cubic meters) of habitable volume – almost equal to one and a half Boeing 747 jetliners – and will weigh 925,000 pounds (419,600 kilograms). It will measure 361 feet (110.03 meters) end to end, which is equivalent to a U.S. football field, including the end zones. The station's solar panels exceed the wingspan of a Boeing 777 jetliner and harness enough energy from the sun to provide electrical power to all station components and scientific experiments.

The station now includes the Russian-built Zarya Module and the Zvezda Service Module, which contain the station's living quarters and life-support systems; the U.S.-built Unity Connecting Module, providing docking ports for several station components; the U.S.-built Destiny Laboratory, which expands the station's scientific capabilities with experiment compartments that allow nearly continuous scientific research and provide additional life-support and robotic capabilities; the U.S.-built Quest Airlock, a doorway to space that supports station-based spacewalks; the European-built Columbus Module with its capacity to support up to 10 interior experiment racks as well as four exterior payload platforms; the Japanese-built Kibo Experiment Module consisting of 23 experiment racks and a storage module; the Italian-built Harmony Node 2 that increases crew living and working space, provides a passageway between the U.S. Destiny Laboratory, the Japanese Experiment Module, and the European Columbus Module and also provides connecting ports for supply vehicles and the space shuttle; the Canadian-built Mobile

When Construction's Complete

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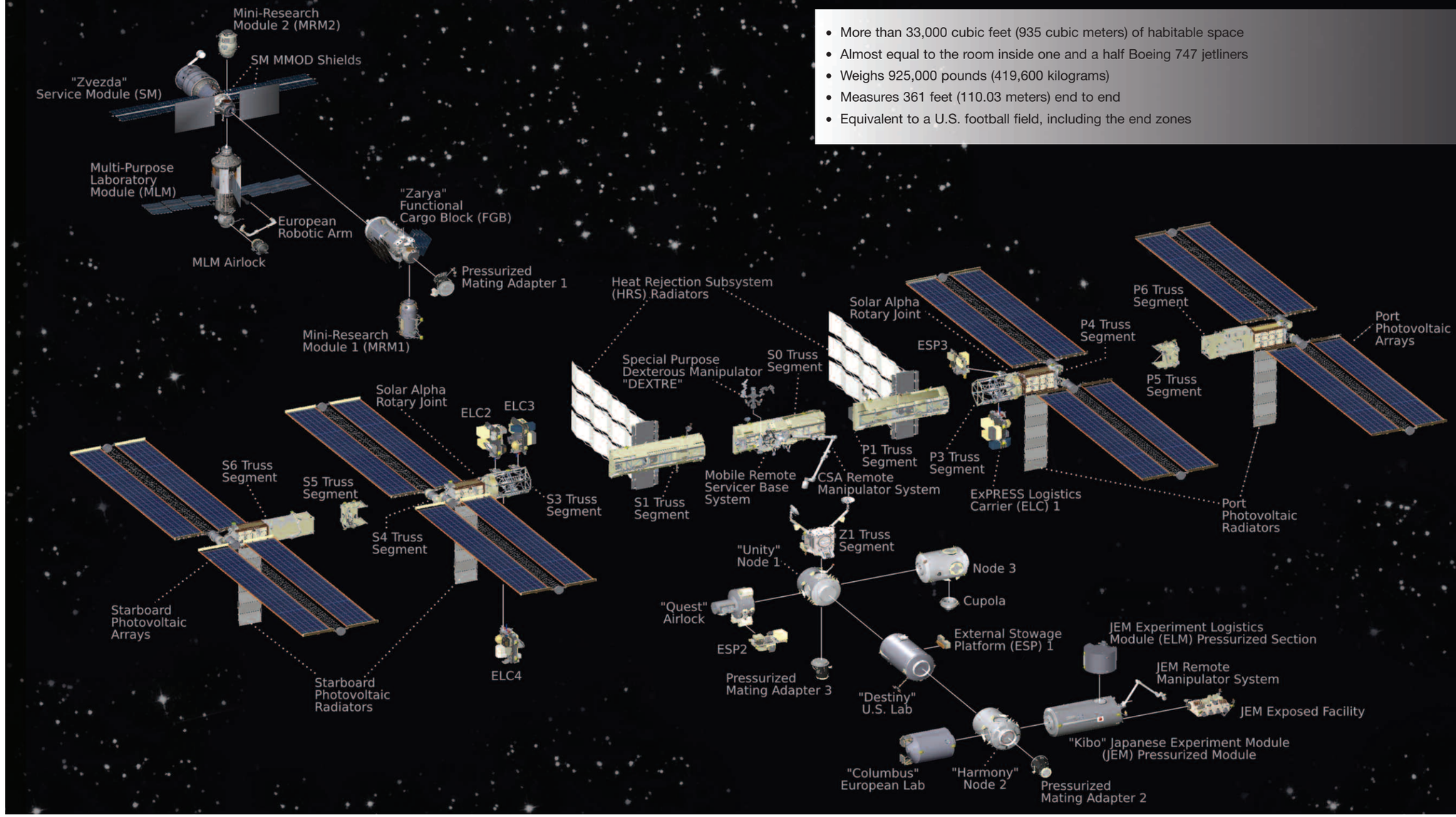
- Equivalent to a U.S. football field, including the end zones



Servicing System that consists of the Canadarm2, a new-generation robotic arm that gives the station a movable space crane, the Special Purpose Dexterous Manipulator, or Dextre, a smaller two-armed robot capable of handling the delicate assembly tasks currently handled by astronauts during spacewalks, and the Mobile Base System, a work platform that moves along rails covering the length of the space station and provides lateral mobility for the Canadarm2 as it traverses the main trusses; the Russian-built Pirs docking compartment, which adds additional spacewalking and docking capabilities to the station; and the Integrated Truss Structure, which is composed of multiple elements and forms the backbone of the station.

The station's first resident crew, Expedition 1, marked the beginning of a permanent international human presence in space, arriving at the station in a Russian Soyuz capsule in November 2000. Currently, station crews stay on orbit for six months at a time. The International Space Station provides the first laboratory complex where gravity, a fundamental force on Earth, is virtually eliminated for extended periods. This ability to control the variable of gravity in experiments opens up unimaginable research possibilities. The International Space Station is vital to human exploration. It's where we're learning how to combat the physiological effects of being in space for long periods. It's our test bed for technologies and our decision-making processes when things go as planned and when they don't. It's important to learn and test these things 240 statute miles (386.24 kilometers) up rather than encountering them 240,000 miles (386,242 kilometers) away while on the way to Mars or beyond.

The International Space Station, an unprecedented, state-of-the-art, orbiting laboratory complex, continues to expand the boundaries of space research. The unique capabilities of its laboratories will lead to discoveries that will benefit missions farther into outer space. These discoveries will also benefit people all over the world, now and for the future.

Completion of the International Space Station is one of the first steps toward NASA's newest exploration goals. Using the station to study human endurance in space and to test new technologies and techniques, NASA will prepare for the longer journeys to the moon, Mars, and beyond.

For more information about NASA, visit:
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The Orion Crew Exploration Vehicle, designed to replace the space shuttle and send humans to the moon, prepares to dock with the International Space Station.

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FS-2009-01-002-JSC