



LIFE IN OUTER SPACE

The International Space Station has been orbiting around the Earth at an altitude of between 330 and 435 km since 2000. The Station serves as a microgravity and space environment research laboratory where crew members conduct experiments in biology, physics, astronomy, and meteorology; the station is also used for the testing of equipment required for missions to the Moon and Mars.

Until 2011 astronauts would reach the International Space Station by space shuttle, launched from Cape Canaveral, Florida, as its closeness to the equator enabled the shuttle to make hay of the speed of Earth rotation. The space shuttle **engines**¹ were powered by an external **tank**² filled with liquid oxygen and hydrogen, as well as by two **solid rocket boosters**³. The space shuttle was covered by a **thermal protection system**⁴ keeping it from disintegrating during re-entry operations – when this **coating**⁵ got damaged during liftoff, seven astronauts died aboard of the Columbia in 2003.

Life on the International Space Station is far from being easy. The sun sets and rises 16 times in an astronaut's day because of the station's orbiting speed, which causes it to orbit around the Earth in only 90 minutes. The lack of gravity causes people and things inside of the station to perpetually float – including water, which, of course, does not flow downwards like it does on Earth, but gets scattered into drops that are difficult to drink or use for washing. Astronauts do not sleep horizontally for similar reasons – there's no way to lie horizontally in space, so they attach sleeping bags to a wall or ceiling preventing them from floating or bumping around. Also peeing and pooping aren't easy tasks in space: astronauts pee in a **hose**⁶ that recycles the water in their urine, whereas they poop in a tank disposing of the excrements into outer space. This rubbish floating in space may sometimes make a comeback into the atmosphere, where it is set on fire and becomes **shooting stars**⁷.

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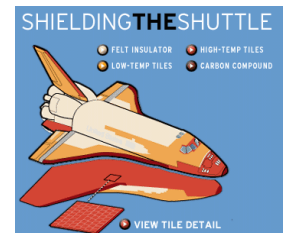
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