A Humanoid in Space Gets Its Legs

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The latest shipment to the International Space Station blasted off from Cape Canaveral, Florida late last month. On it was the usual cargo: repair parts, basic supplies, and a bunch of cool new experiments. But it also included something a little bit out of the ordinary—a pair of legs.

Don't worry. They aren't human legs. But they are *humanoid* legs. They are for a human-like robot named Robonaut 2, or R2. Since 2011, R2 has been busy in the International Space Station learning how to operate in space. Because there is so much to learn, both for the human astronauts and for R2 itself, it began this process with only a torso. But R2 has made great progress since it arrived at the space station. The time has come for it to try out some legs!

With only a torso and some arms, R2 has already made quite an impression on the human astronauts in the space station. The idea with R2 was to create a robot that is so human-like that it can use any human tool, and react to it its environment and the people around it. To be a worthy companion up in space, it has to be strong, but it also has to be able to perform very delicate tasks. R2 has to be aware of its own strength and it has to know when to be careful not to use too much of that strength.

The ultimate goal is to have humans and robots working side by side. NASA would like robots to perform some of the more mundane repetitive jobs in the space station, to free up astronauts for other scientific tasks. In the three years R2 has spent in space, it has proven to be an able helper, taking care of boring jobs like measuring airflow around the station and learning how to vacuum.

But with a brand new pair of legs, tested on other R2s down here on Earth, NASA hopes that it could one day perform complex and dangerous repairs outside the space station. NASA even envisions a future for humanoid robots further away in the Solar System. These robots wouldn't replace humans, but they could be used to help astronauts set up and prepare for missions on other places like Mars or the Moon.

But before any of that happens, of course, this Robonaut is going to have to learn how to walk.

Learn about other space robot projects while putting together a fun puzzle at the Space Place: http://spaceplace.nasa.gov/space-robots.

Robonaut 2 at work on the International Space Station. Credit: NASA.

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