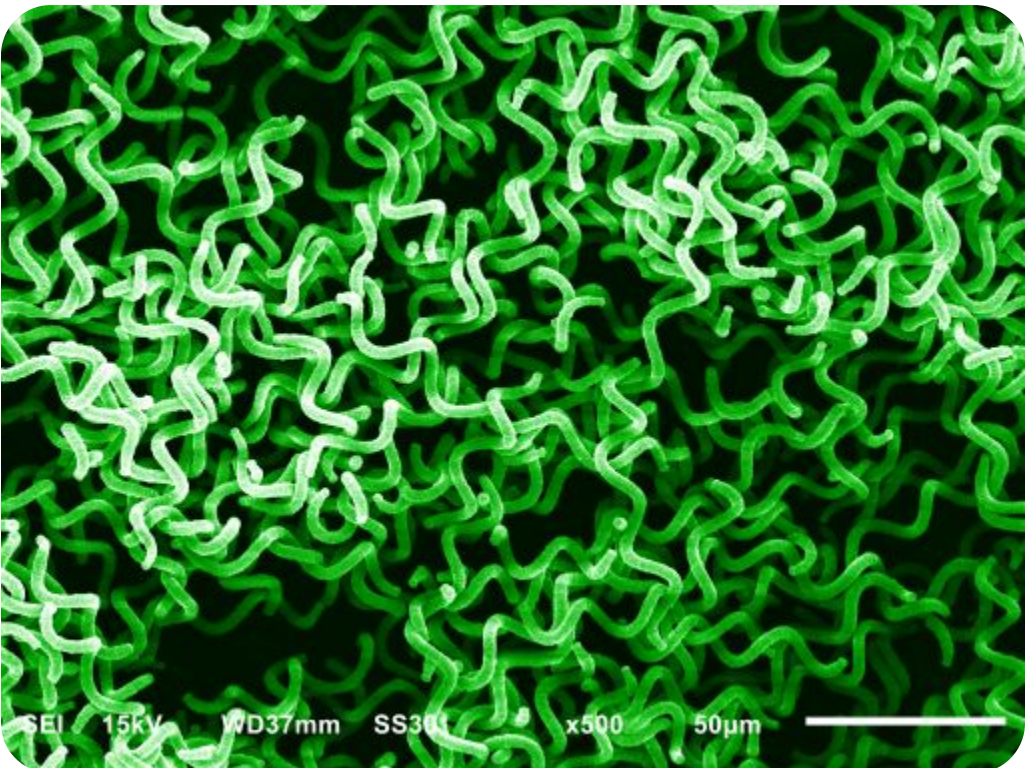


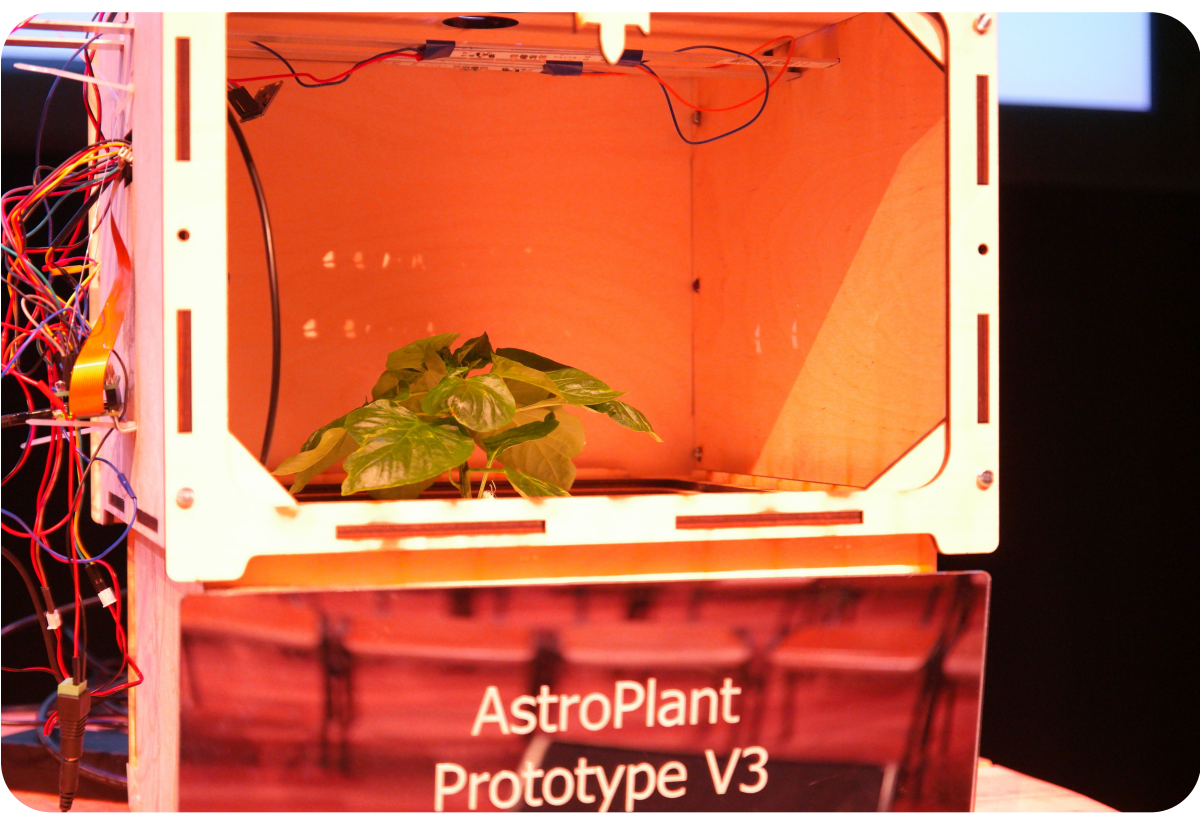
Astronauts get a breath of fresh air



Arthrospira looks like this through a microscope
[Access the image](#)

20 March 2018

Astronauts living on-board the International Space Station need the same things that we do to survive: food to eat, water to drink, and oxygen to breathe. These supplies are delivered from Earth using cargo ships. But imagine you are an astronaut on a future spaceship, travelling to a distant planet. You will be too far from Earth to receive any supplies. How will you get what you need to survive? To help solve this challenge, scientists are currently running an experiment to create oxygen on the International Space Station.



Learning how plants photosynthesise will help future astronauts
[Access the image](#)

Did you know that when humans breathe we take in oxygen, and release carbon dioxide? Plants do the opposite: by converting light into energy (a process called photosynthesis), they take in carbon dioxide, and give out oxygen. So, having plants in space could be a great way of recycling air for astronauts. The scientists' experiment is to discover if photosynthesis works in the weightless conditions of space the same as it does on Earth.



Arthrospira can be turned into spirulina, which is very nutritious. Would you eat some?
[Access the image](#)

A special type of bacteria called Arthrospira, which photosynthesises like a plant, was taken to ESA's Columbus laboratory on the International Space Station. It was then placed into a device called a photobioreactor, which is a cylinder with lots of light. The Arthrospira is taking in carbon dioxide breathed out by the astronauts and turning it into oxygen. As a bonus, the Arthrospira can easily be turned into something called spirulina, which is very nutritious and can be eaten by the astronauts!

The big question now is whether being in space changes how effective plants are at producing oxygen. Does being weightless help them to be more efficient, or does it cause strange side-effects? Does radiation from space help or harm the process? Soon will we find out the answer.

Perhaps in the future you will be an astronaut travelling to another world, breathing air recycled by plants!

Cool fact: scientists hope to make machines that will recycle astronauts' urine into water that they can then drink!