

# BACK TO EARTH WITH A BUMP!

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**Following an arduous, six-month expedition on the International Space Station (ISS), astronauts Tim Peake, Yuri Malenchenko and Timothy Kopra have finally returned safely home to Earth.**

Last week, British astronaut Tim Peake returned home from an incredible six month stay aboard the ISS, alongside his crewmates Yuri Malenchenko and Timothy Kopra. Peake has broken a record and is the first British astronaut to have lived on the ISS.

Orbiting the Earth once every 90 minutes, the International Space Station serves as a home for astronauts when in space. It is also used as a unique science laboratory where astronauts and scientists can carry out invaluable experiments. Several nations worked together to build and use the space station and work began back in 1998 when the Russians launched the first piece; the Russian Zarya control module. Over time, more and more pieces of the space station were added until its completion in 2011. The space station can hold a crew of six people and on Earth, would weigh almost a million pounds. The space station has made it possible for people to have an ongoing presence in space and to continue to carry out research that could not be done anywhere else.

The men were launched into space on 15<sup>th</sup> December 2015 and in the months before take-off, they trained intensively for their trip. Training involved learning to speak Russian, spending 12 days under the sea, physically demanding fitness training and a winter survival expedition.

During their space mission, the astronauts conducted experiments, tested out new technology and inspired the next generation of



*Landing with a bump! Tim Peake lands safely in Kazakhstan.*

space travellers. Peake told reporters that the highlight of his trip was a spacewalk where he had to make a repair on the space station. While he was 400km away from his home, Tim also ran the equivalent of the London Marathon on his treadmill.

Having circled the planet nearly 3,000 times in 186 days, the crew returned home to Earth via a Soyuz capsule, which reached speeds of up to 28,000 kilometres per hour (25 times the speed of sound). The touchdown was bumpy due to high winds, however the astronauts landed safely near the town of Zhezkazgan in Kazakhstan. They all returned in good health. Having arrived back on solid ground, the astronauts were pulled out of the capsule and carried as their leg muscles were too weak to walk. While sitting in their space suits, the men were checked over by medical staff. During these checks, Peake was asked how it felt to be home. 'The smells of Earth are so strong and it's wonderful to be back in the fresh air'.

Tim later flew from Kazakhstan to the headquarters of the European Space Agency in Cologne, Germany where he is recovering and

adjusting to life back on Earth. Scientists and medical staff are carrying out tests to see how his body has been affected by his time in space. Living in microgravity (the condition of being weightless) can have a devastating impact on the human body. NASA have learned that without gravity working on your body, bones begin to lose density and thin. Another concern is that the fluid in an astronaut's body shifts upwards to their heads (as it is not pulled down by gravity) which can put pressure on their eyes and subsequently cause problems with their vision. Because it does not take much effort to float around in space, astronauts can also lose muscle and cardiovascular strength during their time in space. These and other possible dangers related to space travel are all reasons why astronauts have to be carefully monitored for a period of time after their excursion, to ensure that they are fit and well enough to function on Earth again.

In a recent press conference, Peake commented on how he'd missed family and friends, and even the rain. Tim expressed how much he was now looking forward to spending some quality time with his family. When asked if he'd return to space in the future, he replied, '...in a heartbeat'.

His service to science has earned him an honour from the Queen. Peake was made a CMG, or Companion of the Order of St Michael and St George. In response, Tim said, 'I am only one privileged person in a complex team of technicians, scientists, engineers, educators, trainers and flight directors, all working in pursuit of one of the greatest scientific and technical challenges of our time – exploring our solar system for the benefit of people on Earth. This award is for them.'