

# Hanging on tightly to their seats

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ASTRONAUTS returning to Earth on Sunday will be taking their seats with them.

Today, Dr Sheikh Muszaphar Shukor Sheikh Mustapha and International Space Station commander Feodor Yuchikin and medical doctor Oleg Kotov will transfer the seats used in their journeys to the ISS into the Soyuz craft which will take them back to Earth.

Each astronaut has a custom-made seat to fit his body to minimise discomfort during the descent and to cushion the



effects of the landing.

Angkasawan programme director Col Dr Zulkeffeli Mat Jusoh said: "The astronauts will be returning not in the same Soyuz which Dr Muszaphar used earlier, but in another spacecraft which docked at the ISS in April.

"Landings are cushioned by



small rockets on the descent module, but the effect will be similar to that of a car crash, so there'll still be considerable

impact. The seats are, therefore, essential to reduce possible injury."

After the seats are installed, other items such as specimens and experiment kits will be transferred gradually.

"From today, activities on the ISS for the returning crew will be less hectic to allow them to rest and prepare for the landing."

Dr Muszaphar's landing in Kazakhstan will mark the end of his nine-day stay on the ISS.

Yuchikin and Kotov, who have been on the ISS for six

months, will be replaced by Dr Muszaphar's former crew members Peggy Whitson and Yuri Malechenko.

Whitson will be the first female ISS commander.

Dr Zulkeffeli said the bulk of the things that Dr Muszaphar would take home were the experiments, followed by symbolic items such as the Malaysian flag.

"Under our contract with the Russians, he is allowed to bring back 5kg but as he is also conducting four experiments for the European Space Agen-

cy, he can bring down an additional 2kg.

"It is important to adhere to the weight limitations. The Soyuz is a dynamic object and must keep its balance during descent, so everything, including the weight of its occupants and the items inside, must be strictly controlled.

Among the tasks he must complete before Sunday include the packing of the experiment kits and specimens and downloading of pictures and videos of his activities on the ISS.

# Great care when handling specimens

GREAT care will be taken to deliver the experiments to scientists when Dr Sheikh Muszaphar Shukor Sheikh Mustapha lands on Sunday.

Everything from the packaging of the experiment kits to their transportation would be handled carefully, said head of the Malaysian scientific delegation Dr A. Rahman A. Jamal.

"When Dr Muszaphar lands, our engineers will be on hand to receive the items at the landing site in Kazakhstan, where they will be transported to Moscow to be given to our scientists."

This step was a crucial stage of the experiments, Rahman

said yesterday.

"The specimens and kits will be marked as 'urgent cargo' because their safe delivery is essential to ensure they are not disturbed.

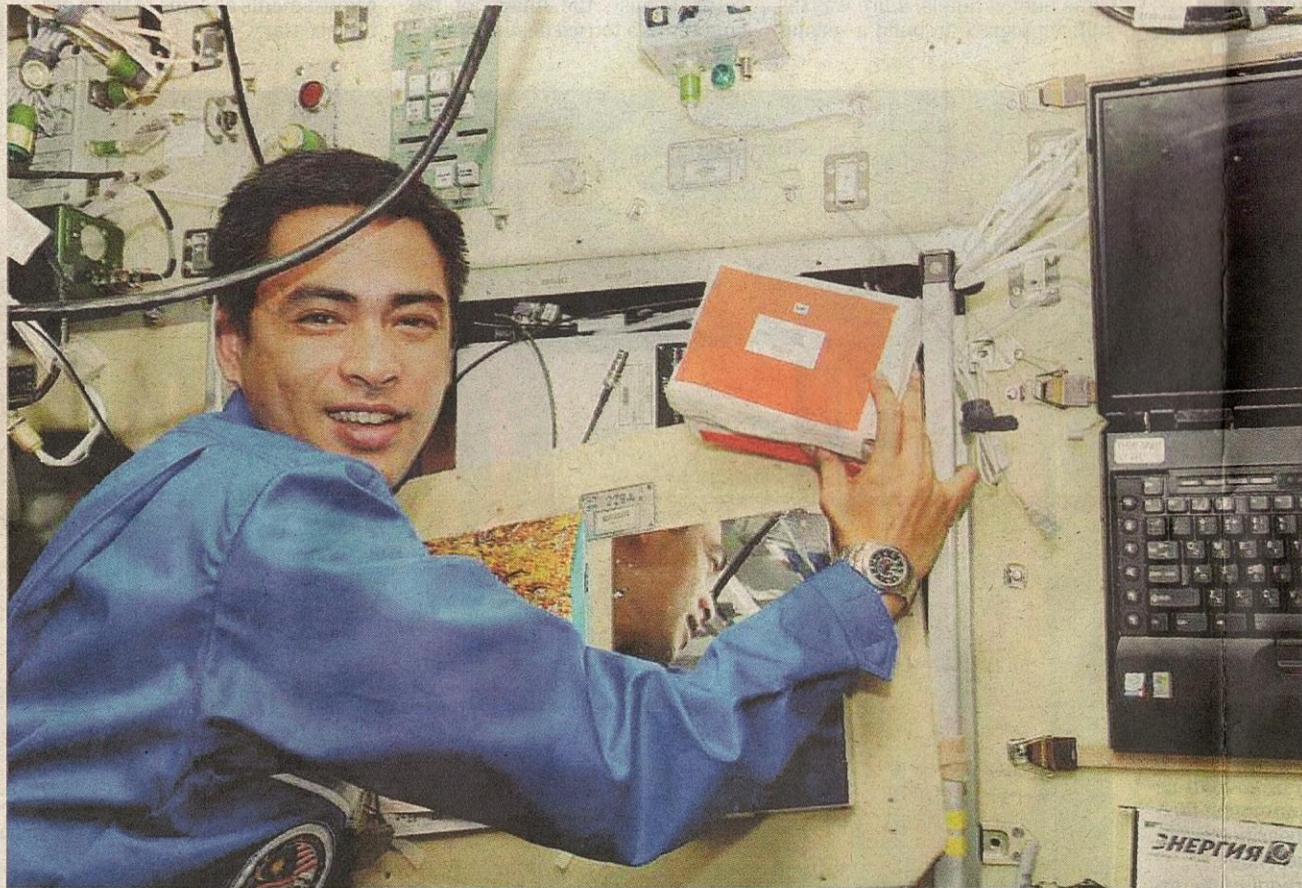
"The crystals in the 'Protein crystallisation in space' experiment, for instance, are brittle and sensitive to changes in temperature and sudden jolts."

Angkasawan programme engineers will help scientists upon retrieval of the experiments.

"The packaging was designed to preserve the contents. Our research has been made easier due to the engineers' help."



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