



University
of Glasgow

News Release

Students in a spin after ESA commission space-web

It is not often that students see the final results of their projects launched into orbit but that's exactly what will happen for seven students from Glasgow University & two students from KTH in Sweden.

They are aiming for the stars after being commissioned by the European Space Agency (ESA) to construct a space-web to be launched onboard a rocket in March 2010.

The space-web is a flexible structure made from a high performance polymer – an ultra-light, ultra-strong fibre used in a variety of applications including fishing lines – which will be deployed once the rocket reaches orbit.

The space web is deployed and kept rigid by exploiting the centrifugal forces experienced by spinning the web structure: the same force experienced when a car goes round a sharp bend or on some fairground attractions.

The webs can act as lightweight platforms for the construction of large structures in space without the huge costs of launching heavy materials from Earth. Using miniature robots to build as they crawl along the web: huge satellites to harness the Sun's energy or antennas for further exploration of the universe may be constructed.

The team of Ph.D. students that will construct the space-web is an international group: Christopher Murray, from Scotland, specialising in mathematics & physics; Yi Chen, from China, control engineering; Norilmi Ismail, Malaysia, mechanical engineering; Christie Maddock, Canada, telecommunications; Chris Unsworth, England, software programming; Malcolm McRobb & Andrew Mathieson, Scotland, mechanical engineering – and they have just one year to prepare for its launch from Esrange in northern Sweden.

The project is part of an ESA programme of experiments for university students conducted on rockets and balloons. The team had to present their proposal to a panel of experts from the ESA, Swedish National Space Board, Swedish Space Corporation and German Aerospace Centre.

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Chris Murray commented: “This is certainly a great opportunity for all of us. We will have 30 seconds to deploy & stabilise the web so we need to make sure it works first time as there can be no second chance. If we are successful it will give us the greenlight to develop our work further. We are confident that we can make this work and meet the tight deadline and I think we put that across to the panel when the selections were made. We’re giving it everything we’ve got.”

The team will be able to call on Matthew Cartmell, James Watt Professor of Mechanical Engineering at the University of Glasgow and the UK’s leading authority on space tethers; and Dr Max Vasile, also at the University of Glasgow, a highly experienced space systems engineer.

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