

## Media Release

### Space Junk Endangers the Final Frontier

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The world's top space environment researchers will meet in Canberra from **21-23 March 2018** to discuss ways to better manage the multitudes of space debris orbiting earth.



The Space Environment Research Centre (SERC) hosts an annual International Research Colloquium, the premier event for the international research collaboration organisation based in Canberra.

The Research Colloquium brings together researchers, industry groups and space organisations to collaborate and share research as they develop methods to track and manage the estimated 170 million pieces of man-made space debris endangering access to space and space-based services.

Around USD\$700 billion worth of global space infrastructure is currently at risk from collisions with an ever increasing amount of space debris. Globally, space infrastructure delivers essential and highly efficient services including communications, navigation, resource management and climate change monitoring. This infrastructure is at risk from space debris ranging in size from spent rocket stages as large as buses, to flakes of paint measuring only 5mm. This debris can travel at speeds in excess of 27,000km/h, so even very small objects can badly damage or destroy satellites.

SERC Chief Executive Officer, David Ball believes international collaboration is essential for a global problem like space debris. The space industry is rapidly changing with many more launches scheduled or taking place. These launches range in scope from dozens of small CubeSats launched from the International Space Station through to mega-constellations of low earth orbit. The mega-constellations alone could see more than 17,000 new satellites launched in the coming years; ten times more satellites than currently in operation. This significant increase in the population of operational satellites necessitates urgent action by industry to improve space situational awareness (SSA) and establish an international space traffic management (STM) system.



The scientific advances made by SERC contribute significantly to SSA and STM by improving the accuracy of tracking objects in space, predicting their orbits and improving space object management capabilities.

“SERC’s research is advancing the scientific understanding of the behaviour of objects in space so that the forecasting of orbit changes over time can be done with greater accuracy. This will in turn result in improved SSA for satellite operators and provide warnings of potential collisions between operational satellites or between operational satellites and space debris.” Mr Ball said.

Working at SERC’s \$20 million research facility, SERC researchers are tackling the problem by enhancing capability in tracking, characterising and identifying objects in orbit, orbit determination and predicting behaviours of space objects. Light from lasers can be used to move debris objects in space. SERC’s aim is to reduce the rate of debris proliferation caused by new collisions, and to subsequently demonstrate the potential of ground-based lasers to be used for the cost effective manoeuvre of space debris objects so that collisions can be prevented.

### **About SERC**

Funded by the Australian Government’s Cooperative Research Centre Programme and Participants, SERC is a partnership between Canberra-based Company EOS Space Systems, the ANU, RMIT University, Optus Satellite Systems, Lockheed Martin and the Japanese National Institute of Information and Communications Technology (NICT).

SERC brings together leading debris mitigation programs from around the world to create a team with the required critical mass of researchers, technology, funding and equipment to address the problem of space debris.

### **SERC subject matter experts:**

1. Australian expertise and world leading technology in SSA, debris mitigation and SERC research programs – Dr Ben Greene (Chair, Research Management Committee)
2. Space Environment Research Centre, international collaboration on space debris mitigation and SERC research programs – David Ball (Chief Executive Officer)
3. Adaptive optics, early career research– Dr Doris Grosse , Australian National University
4. Astrodynamics, space situational awareness (SSA), international collaboration on space debris mitigation – Dr James Bennett

**To arrange a media interview with any of our research team, please contact:**

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