

## **The SEARFE High-School Radio-Science and Astronomy Awareness Project: Students Exploring Australia's Radio Frequency Environment**

**George B. Warr<sup>1</sup>, Duncan Campbell-Wilson<sup>2</sup>, Anne J. Green<sup>2</sup>, Aeolyn Gwynne<sup>1</sup> Peter J. Hall<sup>1</sup>, Betty J. Jacobs<sup>3</sup>, Oliver H. Mather<sup>2</sup>, Owen L. Shepherd<sup>2</sup> and Michelle C. Storey<sup>1</sup>.**

<sup>1</sup>Australia Telescope National Facility, Commonwealth Scientific and Industrial Research Organisation, P.O. Box 76, Epping, NSW 1710, Australia

E-mail: [George.Warr@csiro.au](mailto:George.Warr@csiro.au), [Aeolyn.Gwynne@csiro.au](mailto:Aeolyn.Gwynne@csiro.au), [Peter.Hall@csiro.au](mailto:Peter.Hall@csiro.au), [Michelle.Storey@csiro.au](mailto:Michelle.Storey@csiro.au)

<sup>2</sup>School of Physics (A28), University of Sydney, NSW 2006, Australia

Email: [dcw@physics.usyd.edu.au](mailto:dcw@physics.usyd.edu.au), [agreen@physics.usyd.edu.au](mailto:agreen@physics.usyd.edu.au), [omather@tpg.com.au](mailto:omather@tpg.com.au), [shepherd@physics.usyd.edu.au](mailto:shepherd@physics.usyd.edu.au)

<sup>3</sup>Faculty of Engineering, University of Technology Sydney, P.O. Box 123, Broadway, NSW 2007, Australia

Email: [Betty.Jacobs@uts.edu.au](mailto:Betty.Jacobs@uts.edu.au)

### **Abstract**

A pilot hands-on project to raise students' awareness of radio-science, radio astronomy and the importance of the radio-frequency spectrum is being run in several Australian high schools. Students from city and country high schools are using computer controlled radio-frequency scanners connected to wideband discone antennas to measure radio-frequency signal levels up to 1.5 GHz in their local area and are comparing their results via the internet. Through this the students gain an increased understanding of the value and use of the radio spectrum for communication and astronomy, practical experience in radio-science and an appreciation of the requirements of a "radio-quiet" site for the next generation radio telescopes, the Low Frequency Array (LOFAR) and the Square Kilometre Array (SKA), that Australia is bidding to host. Details on the project can be found at the SEARFE website at [www.searfe.atnf.csiro.au](http://www.searfe.atnf.csiro.au).