

## **TRACKING THE MARS ROVERS**

**Glen Nagle**

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Each day (or Mars 'sol') the Mars Exploration Rovers – Spirit and Opportunity – collect valuable data from the surface of the red planet.

Tens of thousands of images, spectral data, rock, soil, and atmospheric analysis that will keep scientists busy for decades to come. But how does all that data get back to Earth and those scientists?

The Canberra Deep Space Communication Complex (CDSCC), as part of NASA's Deep Space Network helps maintain two-way radio contact with the Rovers. When discussing space communication, you are dealing with vast distances, minute signal strengths, and above all timing. Literally due to the limits of the speed of light and the time it takes a signal travel between Earth and Mars, a millionth of a second out here on Earth, can mean missing a signal by a million kilometres out there in the depths of space.

Glen Nagle will illustrate and discuss the incredible task performed every day by a the dedicated team of Australian engineers, technicians, and communications personnel at Australia's tracking station, and how a signal with the power of a mobile phone can be heard all the way from Mars.

### **NOTES**