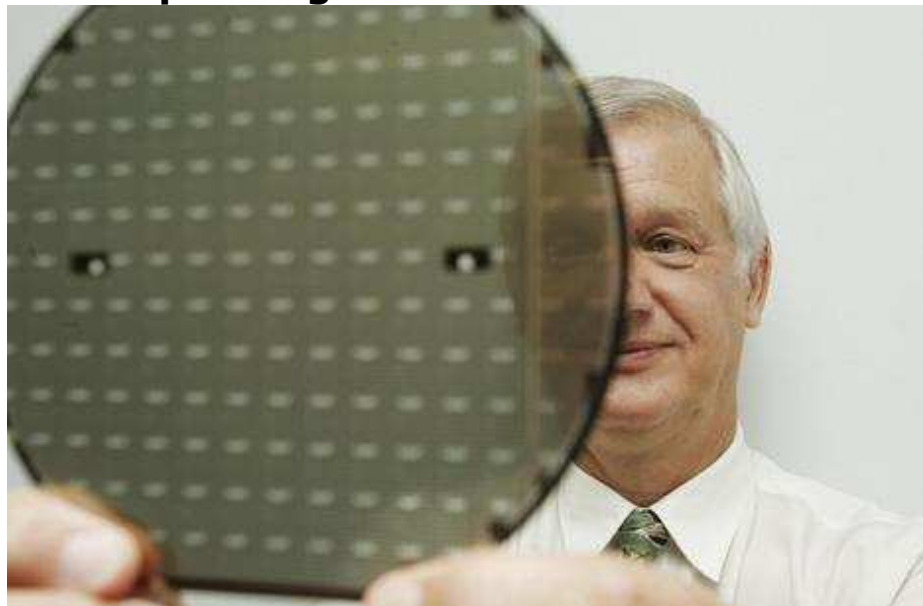# Our chips firing Mars rovers

Four years on … the Mars rover is still going.
Photo: *James Brickwood*

Frank Walker
January 13, 2008

TINY electronic microchips made in western Sydney have been keeping the two Mars rover robots rolling across the planet for four years.

Now the chips, each just one millimetre square, could help solve the mystery of the origin of the universe.

Made from artificial sapphire, they are in great demand for satellite technology and mobile phones because they can't be affected by radiation.

Australian scientists are world leaders in mass producing the superchips and it's all done in a factory at Homebush Bay.

Peregrine Semiconductor Australia, based in the former Olympic Games precinct, makes a million microchips a week to meet world demand.

"The chips were developed out of the US military and space programs," company executive director Andrew Brawley said. "But it was Australian know-how that got it into mass production so we could all benefit from the technology.

"These chips have enabled us to go from the brick-sized mobile phones of 10 years ago to the complex multi-function mobiles we have today." Special chips made at the plant were used in NASA's Mars project. The two machines have lasted four years on the planet's surface, way beyond their expected three-month lifespan.

The chips are also being used in a super computer being developed for US security agencies to search for terrorist activity on global phone and computer message networks.

They will also be integral to a $1.8-billion international radio telescope project linking 100,000 antennas in a 3500-square kilometre network around Australia and overseas. It will listen to radio signals from deep space, such as remnants of the Big Bang, pulsars, magnetic fields and black holes. The project could discover the origin of the universe and scan for signals sent by intelligent beings from outer space.

Jack Singh of La Trobe University, who is developing the radio telescope chip with the CSIRO and Peregrine, says it will make Australia a leader in micro-electronics technology. Peregrine has just won a State Government Western Sydney industry award.

Minister for Western Sydney Barbara Perry said the remarkable achievements of the company were representative of a region that continues to grow as an economic powerhouse and hub for innovation.