High-speed space travel in magnetic ‘bubble’

By FRANCIS TEMMAN

ON FIRST glance, the idea of travelling at almost the speed of light seems straight out of a science fiction novel, but Robert Winglee thinks it’s possible with his magnetic propulsion system.

The invention by the professor from the University of Washington in Seattle is now only a prototype, but if he succeeds in perfecting it, the length of interplanetary space travel could be reduced by a factor of 10, making space exploration possible beyond the reaches of the solar system.

The project is no joking matter to the United States National Aeronautics and Space Administration, which has partially funded the research.

The next experimental tests will be conducted at the NASA Marshall Space Centre in Huntsville, Alabama.

“The computer simulations already have proved that my theory works,” Professor Winglee said during a presentation of his project at Goddard Space Centre in Greenbelt, Maryland.

“If it is validated by the tests that NASA will conduct later this year, then we might see it become reality in the next 10 years, he said.

He left more than one scientist stunned by the simplicity of his idea, which consists of enveloping an engine in a magnetic bubble.

The bubble would deflect the solar wind and accelerate a vessel to speeds of 80km per second, or 288,000km/h.

At this amazing speed, it would only take three or four years to reach the edge of the solar system, compared to 42 years with current technology.

US space shuttles with chemical propulsion systems now travel at speeds of 27,700km/h, or 7.7km per second.

The ionic engine of the Deep Space 1 probe travelled at only 13,000km/h.

Professor Winglee’s inspiration came as he studied the frequent eruptions on the surface of the sun.

He noticed that a magnetic field formed around spurts of plasma, or ionised gas, that were violently ejected into space.

He also noted that the Earth itself is protected from solar wind by the magnetosphere, which is essentially an enormous bubble surrounding the planet.

This bubble deflects the gaseous winds travelling at speeds up to 3.6 million kilometres per hour from the sun.

The wind exerts a force, but it is not powerful enough to displace the Earth because of the planet's immense mass.

However, the force could be enough to move the smaller mass of a space ship, Professor Winglee said.

His idea is to reproduce this bubble around a space ship.

The injection of plasma, helium for example, around the vessel would cause the bubble to swell and help propel the ship.

"What we're proposing to do is create a magnetic bubble to deflect the solar wind," he said.

Other than its simplicity, the most remarkable aspect of the invention, dubbed Mini-Magnetosphere Plasma Propulsion, M2P2, is that it rests on physical principles that have long been known.

With the system, the immense Mylar sails envisioned by some to "surf" the solar wind will no longer be needed.

"We have been stuck with chemical propulsion since the day of the V-2 rocket," NASA associate administrator Ed Weiler said.

"If humans are ever to reach the stars, we need a lot more of this innovative thinking," he said.

— AFP