

less than one metre wide (not even one-quarter the size of ones then in use) right in the centre of town.

The Hermes design had other technical innovations used on later spacecraft. It was powered by solar cells attached to retractable 'sails'. The delicate sails, with 27 000 solar cells, folded like an accordion inside the satellite during launch and were unfurled only when in orbit. For maximum efficiency an advanced tracking mechanism maintained the sails at right angles to the sun's rays. Hermes also had an improved stabilization system that kept the satellite fixed with its antennas pointing earthward within a minuscule margin of error.

Hermes had a design life of two years, but Canada and the United States were able to conduct experiments for almost twice that time—from April 1976 to November 1979, when the satellite finally stopped functioning. (US experiments ceased in June 1979.) Important technical experiments included digital TV transmission and a technique to send satellites separate bursts of information timed so accurately that they arrive within a few billionths of a second from one another. This permits maximum efficiency in the satellite since it can be accessed from multiple points in lightning-quick succession. Furthermore, different kinds of telecommunications information—voice, data and image—can be integrated within a single burst.

Social experiments explored potential uses of the 14/12 GHz technology to better serve residents of rural and remote areas in the fields of health, education, broadcasting and inter-community communications. Some of the ground-breaking experiments in telehealth, tele-education and DBS are discussed in individual sections on those topics.

During its lifetime, Hermes was the most powerful non-military communications satellite ever put into space. To date, none more powerful has been launched.

