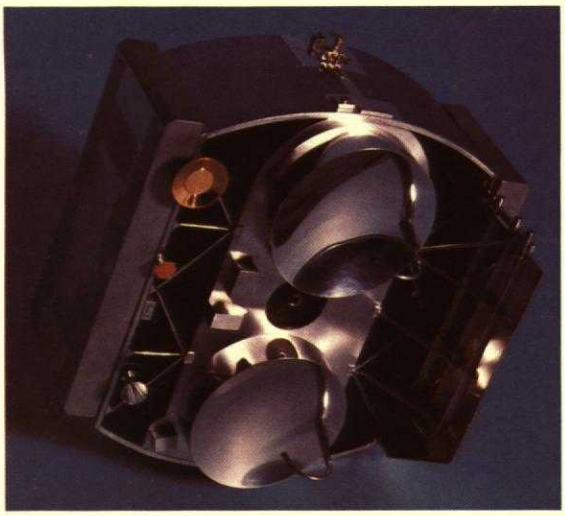
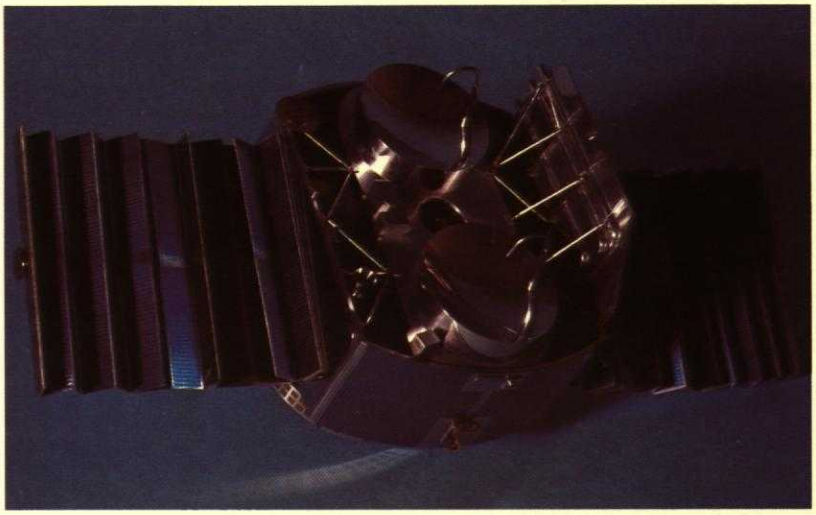
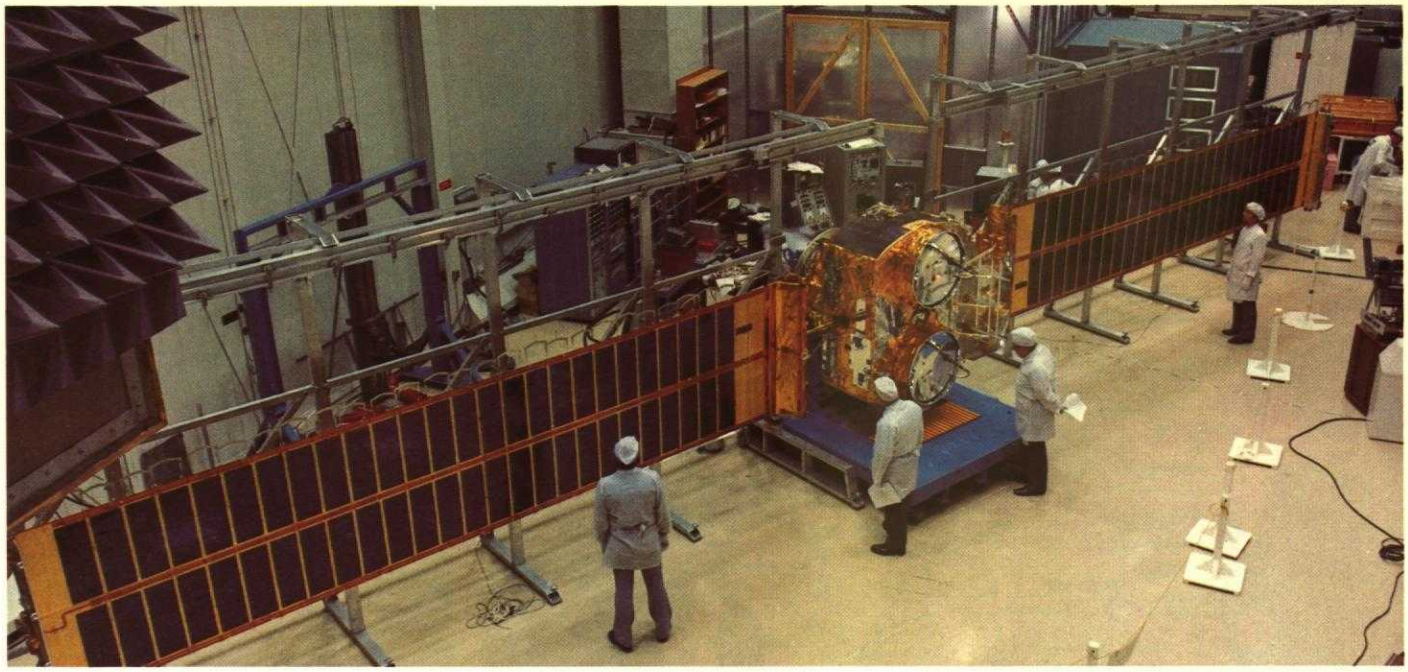
Department of Communications, Canada



Department of Communications, Canada



Department of Communications, Canada



HERMES was a compact bundle (top left) when it was launched in 1976. Once in space, its arrays or sails unfolded accordion-style (top right). The arrays (bottom) have 27,000 solar power cells, which provide 1.2 kilowatts of power. The two large discs on the body are antennas.

HERMES

Hermes was the son of Zeus. He appeared in the Odyssey *as the messenger of the gods. In Greek mythology he wore winged boots and carried the caduceus, the herald's staff, which was his messenger's symbol. Hermes is also the name of a minor planet that orbited within 780,000 kilometres of earth in 1937.*

HERMES is the world's most powerful communications satellite. In April 1971, Canada's Department of Communications (DOC) and NASA agreed to develop it in order to conduct a variety of technical and social experiments in such fields as telemedicine. It was originally called the Communications Technology Satellite (CTS) and was to have a two-year mission life. Launched from the Kennedy Space Center on January 17, 1976, it is now expected to remain operational well into 1979.

DOC was responsible for the overall management of the project. It designed and built the spacecraft at the Communications Research Centre (CRC) near Ottawa. The cost to Canada was about $60 million, and 80 per cent of the industrial contracts, by value, went to Canadian industry. NASA provided an experimental, high-powered (200-watt) transmitting tube, conducted pre-launch testing and launched the vehicle. Its costs were $11.4 million for the HERMES program and $10.8 million for the launch vehicle. The European Space Agency also provided several components.

The overall objective of the HERMES program is to advance the technology for space and ground components of satellite systems that use high-radiated radio frequency power. Toward this aim, HERMES uses the new 14/12-GH_z frequency bands, which are reserved for broadcast satellites. An added Canadian objective was to develop advanced component and subsystem capacity in Canadian industry, both for Canadian use and for export.

A Delta model 2914 vehicle launched HERMES into a geostationary orbit at 116° west longitude, just west of South America. The experimental spacecraft is 188 centimetres high and 183 centimetres in diameter. It weighed 674 kilograms at