

Photo: Department of Communications

Above: Hermes with its arrays extended accordion style.

weighed 674 kilograms at launch. Its two channels each covered a ground area approximately 965 kilometres wide.

### Hermes Experiments

Canada and the United States began their original program of forty-six experiments in April 1976, using the satellite on alternating days. In Canada, twenty organisations have conducted twelve technical and fourteen social experiments. Universities, industries, broadcasters, native associations and federal and provincial governments have worked in such areas as telemedicine, tele-education, community interaction and administrative services.

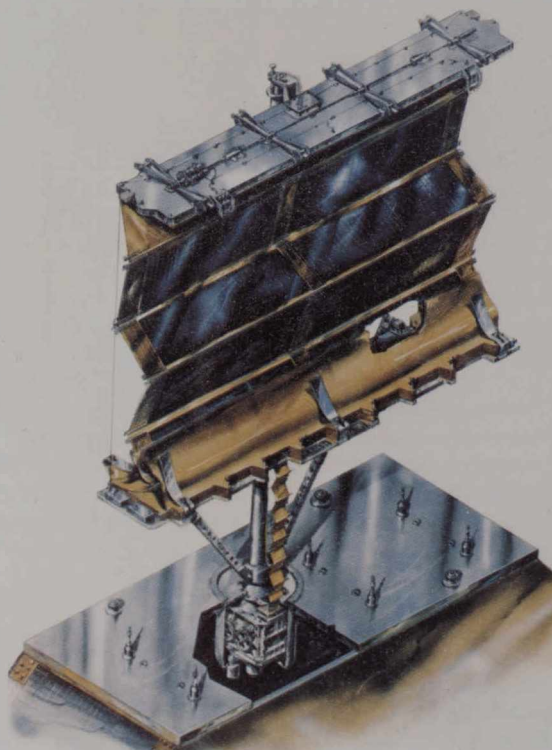
The goal of the Hermes telemedicine pilot projects was to improve the efficiency and capability of the overall Canadian health care system, particularly in remote locations. The Moose factory telemedicine project was but one example of the use of the new technology in medicine.

Medical staff from Queens University and the University of Western Ontario make consulting visits to the general hospital in the isolated Northern Ontario community of Moose Factory, but specialists; such as neurologists, rarely go. A University of Western

Ontario Hermes experiment made instant consultation possible by linking the London, Ontario Health Science Centre to the Moose Factory hospital, as well as to the Kashechewan Nursing Station on James Bay. Experiments with transmitting x-ray images allowed doctors in London, Ontario to diagnose a gastric ulcer using television fluoroscopy. Dr Lewis S Carey, a professor at the University of Western Ontario, reported, 'It was the first time, to my knowledge, that such a diagnosis has been made by satellite.' In another instance, a neurologist in London, Ontario diagnosed and prescribed treatment for a public health nurse in Moose Factory, 1,125 kilometres away. The nurse had been reluctant to take time to go south to see a specialist. The remote diagnosis determined that the problem was not neurological, and minor surgery at Moose Factory corrected it.

On 17 January 1978, on the second anniversary of the Hermes launch, Hermes had met its design-lifetime objective of two years and was still operating well. Accordingly, the government approved plans for a 'bonus' third year of communications and technology experiments, including a series of experiments conducted with Australia. A year later, Hermes was still operating satisfactorily, and a further extension of the experimental program until August 1979 was authorized. The Hermes experiments came to an end on 24 November 1979, when all radio contact with the satellite was lost. By that time the project had more than fulfilled all expectations.

Right: Artist's conception of beginning of solar array deployment of Hermes. The arrays carried some 27,000 individual solar cells.



Right opposite: Remote Manipulator System (RMS) — Canadarm in action on the Columbia space shuttle

### Telesat Canada

Canada's extensive territory, harsh climate and thinly scattered northern and western settlements have created special communications needs, and space technology has helped meet them. The achievements of Alouette and the ISIS scientific satellites, along with Canada's early participation in the experimental and commercial development of the international commercial communications network, Intelsat, pointed to the value of satellites for enhancing domestic communications in remote locations. In 1968 the federal government decided to develop a domestic satellite communications system in order to further Canada's growth, prosperity and unity.

Telesat Canada was incorporated by an Act of Parliament on 1 September 1969. Telesat is a unique commercial venture. It is neither a Crown corporation nor an agent of government, but an enterprise whose ownership is shared by the Canadian telecommunications carriers and the federal government.

Telesat's purpose is to establish and operate a commercial system of satellite communications to serve all points in Canada, both in the northern regions and in

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