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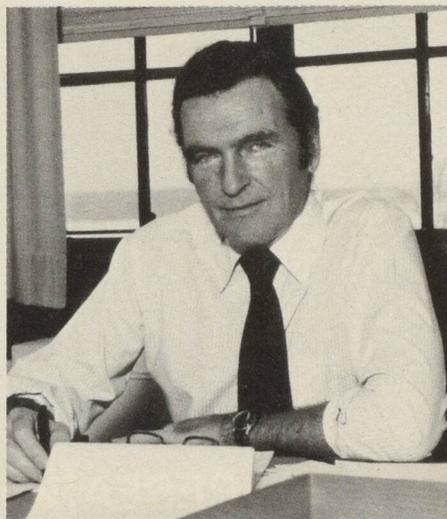
Partnership in space

Several months of negotiation have recently resulted in a dual program arrangement between the U.S. National Aeronautics and Space Administration (NASA) and a new NRC organization, the Canada Centre for Space Science (CCSS). Dr. Ian McDiarmid, Director of the Centre, stresses the impact it will have on Canadian science and industry. "Although it will focus primarily on space science," he says, "the spinoff to industry is obvious. Fortunately, earlier work by NRC, the Departments of Communications, Energy, Mines and Resources, and National Defence have provided a solid base of experience throughout Canadian industry. The new Centre will help build and expand on that base by furthering industrial development in space engineering. Funding for space science has been doubled under a new program and ultimately this will improve not only the science but also industrial capability in a high technology area."

The program will place new demands on Canadian industrial capabilities. "When the Space Shuttle was conceived," notes McDiarmid, "it was assumed that the payloads would have less stringent design requirements than rocket-launched packages. But, as the Shuttle design evolved, equipment re-

Ian McDiarmid: "Canadian space science is building a world-wide reputation, especially in research of high latitude phenomena." (Photo: Stephen A. Haines)

Selon Ian McDiarmid: "La science spatiale canadienne se bâtit présentement une réputation mondiale dans le domaine de la recherche sur les phénomènes observés aux latitudes élevées." (Photo: Stephen A. Haines)



quirements are back up to the more rigorous standards. Most of this upgrading is due to crew safety considerations and the new program will give Canadian industry an early opportunity to gain experience in Shuttle technology."

Canada's space program will concentrate initially on investigating the processes responsible for transferring energy from the sun to the earth's immediate environment and later may expand to include space astronomy. These studies will be accomplished by Canadian designed and built instruments carried into orbit by NASA's Space Shuttle. The Centre will draw on scientific and engineering expertise that exists in the universities, NRC's Herzberg Institute of Astrophysics and Canadian industry. "NRC's science programs have always emphasized interaction with the universities," says McDiarmid, "a relationship that has loosened somewhat over the past few years, particularly with the removal from Council of the responsibility for funding university research. The CCSS can help rebuild NRC-university liaison."

CCSS will administer a well-defined space science program over the next six years. When NASA orbits its Spacelab in 1985, the facility will contain three major instruments from Canada: a sophisticated optical measuring device called the Wide Angle Michelson Doppler Imaging Interferometer (WAMDI); an instrument that evolved from the earlier Alouette-ISIS satellite program to measure variations in space plasmas; and a third device to examine some of the properties of high energy particle streams encountered by the Space Shuttle at its expected operating altitude.

Canada's future in space has thus become entwined with the success of NASA's Space Shuttle. Although plagued with delays, McDiarmid reminds us that "the concept and design appear sound, and with the decline of rocket-borne experiments, the Shuttle has become 'the only game in town'. Just because there have been failures to meet deadlines doesn't mean the ultimate success of the Shuttle is threatened, nor the space programs of our two countries."

Stephen A. Haines