



RADARSAT- I and II A Great Engineering Achievement in Canada

RADARSAT-1 and 2 are the culmination of a Canadian commitment to Earth observation by space-based synthetic aperture radar (SAR) systems that began in the late 1970's with Canada's participation in NASA's Seasat program and production of the world's first digitally processed SAR image from Seasat data by MacDonald Dettwiler and Associates (MDA). From the outset, it was recognized that adequate coverage on the scale required for Canada's vast area could only be obtained through satellite-based systems and that an imaging radar satellite system was the only technology that could provide reliably and timely information in the Arctic and regions that experience persistent cloud cover. In the years that followed, MDA and other Canadian firms have developed a world leading reputation for their skill and expertise in SAR technology and for their contributions to the development of various civilian and military SAR platforms around the world.

Since their launch in November 1995 and December 2007, respectively, RADARSAT-1 and 2 have provided both Canada and the world with an operational space-based SAR system that can acquire detailed images of the Earth's surface during the day or night, in all weather and through cloud cover, smoke and haze. Technical challenges in the original RADARSAT design include calibration, rapid data processing, the phased array antenna to provide controlled beam steering, and the first satellite implementation of a special radar technique known as ScanSAR. RADARSAT images are useful in many fields, including agriculture, cartography, hydrology, forestry, oceanography, geology, ice and ocean monitoring, arctic surveillance, and detection of ocean oil slicks. Their success has assured Canada's continuing commitment to developing and deploying future generations of RADARSATs.

One Liner: *RADARSAT - Canada's First Earth Observation Satellite*

