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# The Polar Environment Atmospheric Research Laboratory at Eureka, Canada

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The Canadian Network for Detection of Atmospheric Change (CANDAC) is a network of university and government researchers in Canada who specialize in atmospheric measurements. Its major focus at the present time is the installation of the Polar Environment Atmospheric Research Laboratory (PEARL) at Eureka, Nunavut (80.00 N, 86.25 W). PEARL will provide a unique capability within Canada to conduct atmospheric research in the High Arctic, to provide data on the Arctic to inform policy-makers, and to train the next generation of researchers.

PEARL is situated 600m above sea level (asl), in a location that provides good "seeing" conditions for remote measurements of the middle atmosphere, such as infra-red spectrometers and lidars. Since it is fed with power from the Eureka weather station 15 km away, it generates no significant particulates or effluent of its own and therefore offers an interesting site for the study of the atmosphere near the surface. A second site, the zero-altitude PEARL auxiliary laboratory (ØPAL), is situated at sea-level by the weather station and provides a second view of the atmosphere. By comparing measurements at ØPAL and PEARL, the lowest 600m of the atmosphere can be differentially probed. Together the two sites form a “whole atmosphere” laboratory containing instrumentation to study the atmosphere from the ground to about 100 km.

This poster will focus on the PEARL laboratory, its instrumentation and planned measurements during International Polar Year (IPY) in 2007-2008.