

Polar Environment Atmospheric Research Laboratory (PEARL)

PEARL has three sites: The PEARL Ridge Laboratory 15km from the Eureka weather station at 610m elevation, the OPAL laboratory next to the weather station and the SAFIRE site which is far from structures for undisturbed measurements. PEARL makes many atmospheric measurements year-round as well as hosting special campaigns. PEARL is a facility of the Canadian Network for the Detection of Atmospheric Change (CANDAC) which is an open consortium of university and government scientists.



PEARL has the most northerly set of geostationary communication antennas on the planet. Photo credit: Jim Drummond

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Owner

The PEARL Ridge Laboratory building is owned and maintained by Environment Canada and the OPAL and SAFIRE buildings owned and maintained by the University of Toronto. Research equipment in the buildings is owned by various university and government organizations.

Membership

Regular Member

Website

www.candac.ca

Latitude

80

Longitude

-86.4

Location

Eureka

Nearest Community

Grise Fiord, Nunavut (450km)

Territory/ Province

Nunavut

Aboriginal Government/ Homeland

None

Facility Type

Year-Round Research Station

Research Hinterland

Atmosphere, Continuous Permafrost, Polar Desert, Terrestrial

Main Research Disciplines

Astrophysics, Atmospheric Chemistry and Physics, Climatology, Environmental Sciences, Geophysics

Research History

Research at the PEARL Ridge Laboratory site began in about 1993 as the Eureka Arctic Stratospheric Ozone Laboratory with observations of ozone and related chemicals in the atmosphere. PEARL was founded in 2005 with a broader mandate encompassing climate, pollution and ozone. The installation of a permanent internet connection has permitted development of remote operation of experiments. Research at the site has broadened to other areas including seismology, geology and astronomy.

Current Projects

The major current project is the 'Probing the Atmosphere of the High Arctic' (PAHA) project that seeks to understand the polar atmosphere with a particular emphasis on the Polar night.

Power

Generator, External Electrical Grid

Communications

Telephone, Internet, Computer, Printer/scanner

Local Transportation

By either PEARL or Environment Canada vehicles by prior arrangement

Equipment Storage

With either PEARL or Environment Canada by prior arrangement

Dormitory/Sleeping Facilities

The Environment Canada weather station provides facilities

Dining/Kitchen Facilities

The Environment Canada weather station provides facilities

Laboratory Facilities

Workshop, office, garage, observation laboratories, roof space, liquid nitrogen

Fuel Availability

By arrangement with Environment Canada weather station or Polar Continental Shelf Program

Research Requirements

Nunavut licensing

Special Rules and Regulations

Access must be agreed with Environment Canada

Local External Resources

PEARL operates in close collaboration with the Environment Canada weather station at Eureka, who provides accommodation, some logistical support and operate the Eureka airport

Nearest Medical Service

Weather station has first-aid capacity. Nearest medical personnel in Resolute Bay

Safety Considerations

General safety precautions for working in remote areas. Most research is performed within the limits of the weather station reserve, which limits the exposure to some hazards.

Cost

Contact PEARL or the Environment Canada weather station at Eureka.

Other Information

Access to the site is only by charter plane. There is an annual sealift that arrives in late August/early September.

Last Updated

15-03-03