SUMMARY OF INSTRUMENTS OPERATING DURING STAR

Meteorological instruments were installed in the last week of September and remained operational throughout the project. (Oct 1-Nov 30)

- Small X-band Doppler Radar
- Sodar
- Microwave Radiometer
- Laser Precipitation Sensor
- Double fence precipitation measurements
- Visibility Sensor
- 5-minute Camera Stills
- Snowflake Camera
- Particle Counters (starting Nov 6)
- Wind profiler
- 11 Automatic Weather Stations located around southern Baffin Island
- In addition to data collected by all permanent instrumentation at the Iqaluit and Pangnirtung Environment Canada weather stations

INTENSIVE OBSERVATION PERIODS DURING STAR

During the STAR project we conducted 11 intensive observation periods (IOPs) between the dates of October 10 – Nov 30. During these observation periods, radiosondes were launched and micro snowflake photography was conducted if there was precipitation. Coincident observations in the community of Pangnirtung were conducted for three of the IOPs, Nov 3-4, 5, 17-19, 2007.

Table 1: Summary of Intensive Observation Periods during Fall STAR campaign (October 10-November 30)

IOP period	Iqaluit, NU	Pangnirtung, NU
October 17-18		
October 26-27		
October 29-30		
November 3-4		
November 5		
November 6		
November 7-8		
November 11-12		
November 17-19		
November 27		
November 28		

During IOPs we released **57** radiosondes in Iqaluit, and **18** radiosondes in Pangnirtung.

NRC RESEARCH AIRCRAFT FLIGHT SUMMARY

The NRC research aircraft arrived in Iqaluit on Nov 1 and left Iqaluit Nov 30, 2007. In total there were 14 flights, with variable mission objectives. Our first flight up in Iqaluit was into the remnants of Hurricane Noel, which was a deadly system in the Caribbean, and caused havoc on the eastern coast of Canada. While in contrast our final flight for the STAR project has a local focus, sampling the cloud system directly over Iqaluit. Additional flights took the research craft into Foxe Basin, Hudson Strait, Ungava Bay, Davis Strait, Cumberland Sound and locally in Frobisher Bay.

In total STAR flew 47 hours in the research aircraft and released 56 drop sondes.

Flight 1
Nov 5, 2007 1355Z-1815Z
Remnants of Hurricane Noel in Davis Strait

Flight 2
Nov 6, 2007 1653Z-1938Z
CloudSat Pass over Iqaluit. Mesoscale Convergence with light precipitation observed in Iqaluit

Flight 3
Nov 7, 2007 0235Z-0622Z
Low pressure system in Hudson Strait. Travel into the Strait and along coastline to sample upslope precipitation.

Flight 4
Nov 9, 2007 2129Z – Nov 10 0125Z
Convection over Hudson Strait between Cape Dorst and Kimmirut, with unexpected snow showers in Iqaluit.

Flight 5
Nov 12, 2007 11:45Z-16:11Z
Pangnirtung precipitation event focus – there was an intersting wind regime in Cumberland Sound and we used the radar to map upslope precipitation along the coastline

Flight 6
Nov 17, 2007 1145Z-1320Z
Flight through the warm front of the rapidly intensifying Low Pressure system. Flight started at Iqaluit, flying to Goose Bay, Nfld. The plane ended up being grounded in Goose Bay overnight because of the storm.

Flight 7
Nov 18, 2007 1300Z-1530Z
Staged out of Goose Bay, Nfld flying back to Iqaluit – CloudSat validation pass, traversed a deep Low Pressure system in Foxe Basin.

Flight 8
Nov 18, 2007 1632Z-2200Z
CloudSat pass east of Cape Dorst and just west of Prince Charles Island. Again this flight was sampling the deep low pressures system (965.4 mb lowest measure during flight)

Flight 9
Nov 20, 2007 1538Z-1903Z
Low pressure system over Baffin Island and Newfoundland there was an area of convergence in Ungava Bay, which also coincided with a CloudSat pass.
Iqaluit (CYFB) to Kuujjuaq (CYVP)

Nov 20, 2007 2015Z-2216Z
Return flight from CYVP to CYFB was back along the CloudSat track to observe the area of convergence from above, no new meteorological features to sample.

Flight 10
Nov 22, 2007 1611Z-1843Z
CloudSat mission to Hudson Strait to sample the cloud and precipitation. Very localized system, shoreline was clear of cloud cover

Flight 11
Nov 23, 2007 1614Z-1942Z
CloudSat mission into Foxe Basin to sample cloud system

Flight 12
Nov 26, 2007 1754Z-1949Z
Local flight – observing cloud features in Frobisher Bay and out along the tip of the Peninsula. CBC north on board for the flight,

Flight 13
Nov 28, 2007 1500Z-1823Z
Flight into Davis Strait to sample a weak Low pressure system tracking from Greenland to the tip of the Cumberland Sound Peninsula. This also local feature with coincided with a CloudSat mission.

Flight 14
Nov 28, 2007 2003Z-2123Z
Local flight – observing cloud features in and around Iqaluit. Porpoising up and down along NW-SE track over the airport. Will use a lot of these measurements for remote sensing validations of instruments around the weather office

SUMMARY OF INSTRUMENTS REMAINING FOR WINTER CAMPAIGN

Now that the Fall campaign is complete, focus now be on the winter blowing snow project. This project will begin February 1 and end on February 28th. Data will continue to be collected from the following instruments:

- Wind profiler
- Particle Counters
- Visibility Sensor
- 5-min Camera Stills
- 11 Automatic Weather Stations located around southern Baffin Island
- In addition to data collected by all permanent instrumentation at the Iqaluit and Pangnirtung Environment Canada weather stations