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# A WEEKLY REVIEW OF CANADIAN CLIMATE

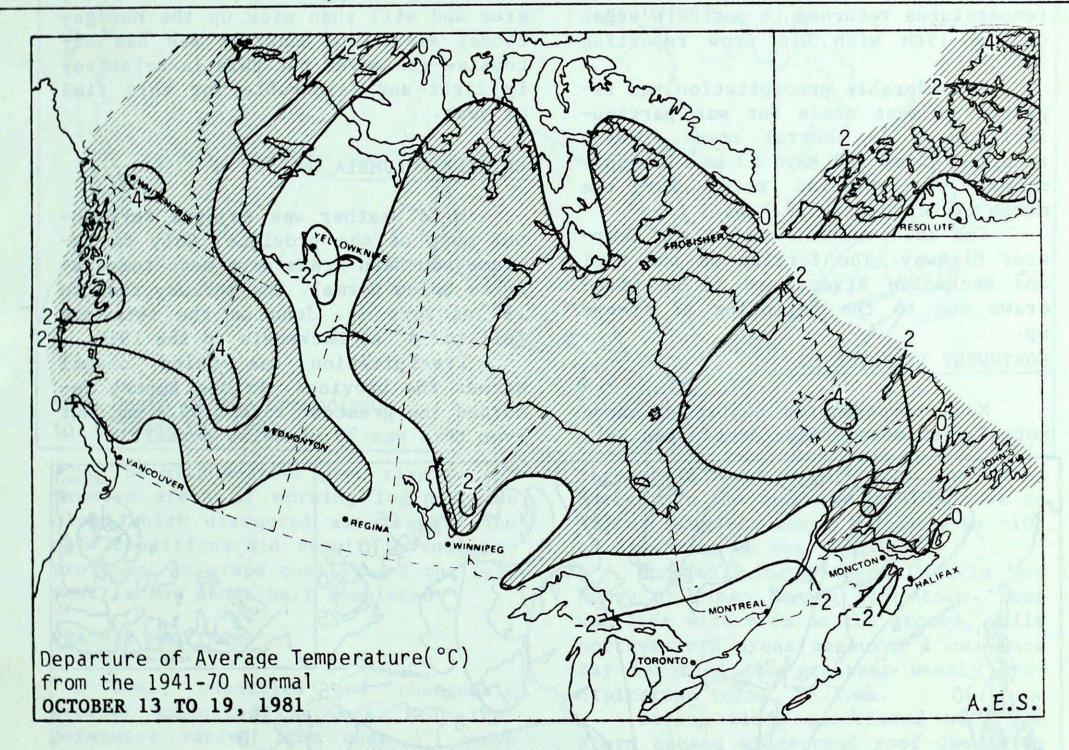
# CLIMATICS. LIBRATION DERSPECTIVES

THE CANADIAN CLIMATE CENTRE,
ATMOSPHERIC ENVIRONMENT SERVICE,
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**OCTOBER 23 1981** 

(Aussi disponible en français)

VOL.3 NO.42



WEATHER HIGHLIGHTS FOR THE PERIOD - OCTOBER 13 TO 19, 1981

Heavy rains fall on Newfoundland for second week

Newfoundland experienced the second consecutive week of heavy rain. Many areas recorded close to 100 mm during the week. Argentia measured the highest total in Canada, 110.1 mm. St. John's and Gander have broken their monthly precipitation records. St. John's recorded 272 mm and Gander 179 mm. The old records were 227 mm in 1942 and 164 mm in 1976 respectively.

Freeze up in the Arctic is about 2 to 3 weeks slower than normal due to containing above normal temperatures throughout most of the Arctic. The Beaufort Sea has extensive ice cover but this is relatively light.

Temperatures across the country varied from a maximum of 21° at many Prairie stations to a minimum of -30° at Eureka, Northwest Territories.

NOTE: The data shown in this publication are based on unverified reports from approximately 225 Canadian and 115 northern United States Synoptic stations.

Unusually warm weather occurred over the southern Yukon early in the week. Whitehorse reached 13.3° on the 13th (previous record 11.7° in 1944). On October 14th Whitehorse reached 13.9° (previous record 11.7° in 1972) and Watson Lake 16° (previous record 13° in 1945). Temperatures returned to near normal values by week's end. Cold temperatures returned to northern areas on the 19th with Old Crow reporting -21°.

Considerable precipitation was reported in most areas but was particularly heavy in central areas. Dawson recorded 42 mm and Mayo 23 mm. Dawson's normal precipitation total for the month of October is 26.7 mm.

The cold weather closed the Dempster Highway. The ferries on the Peel and Mackenzie Rivers are to be withdrawn due to the beginning of freeze up.

# NORTHWEST TERRITORIES

Mean temperatures continued above normal over most of the Arctic and as a

result the fall freeze up is 2 to 3 weeks slower than normal. The mercury rose to approach the freezing point at many Arctic stations. Eureka fell to -30° on the 19th.

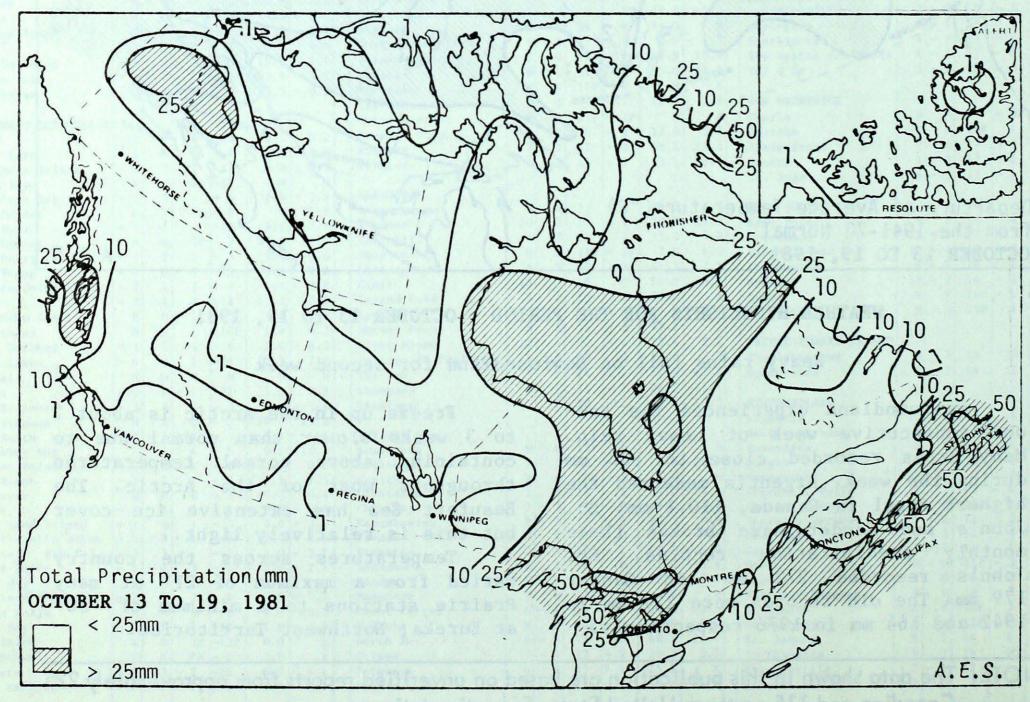
Most precipitation was along the northern coast of Baffin Island and along the Mackenzie Valley. Cape Dyer measured 86.6 mm.

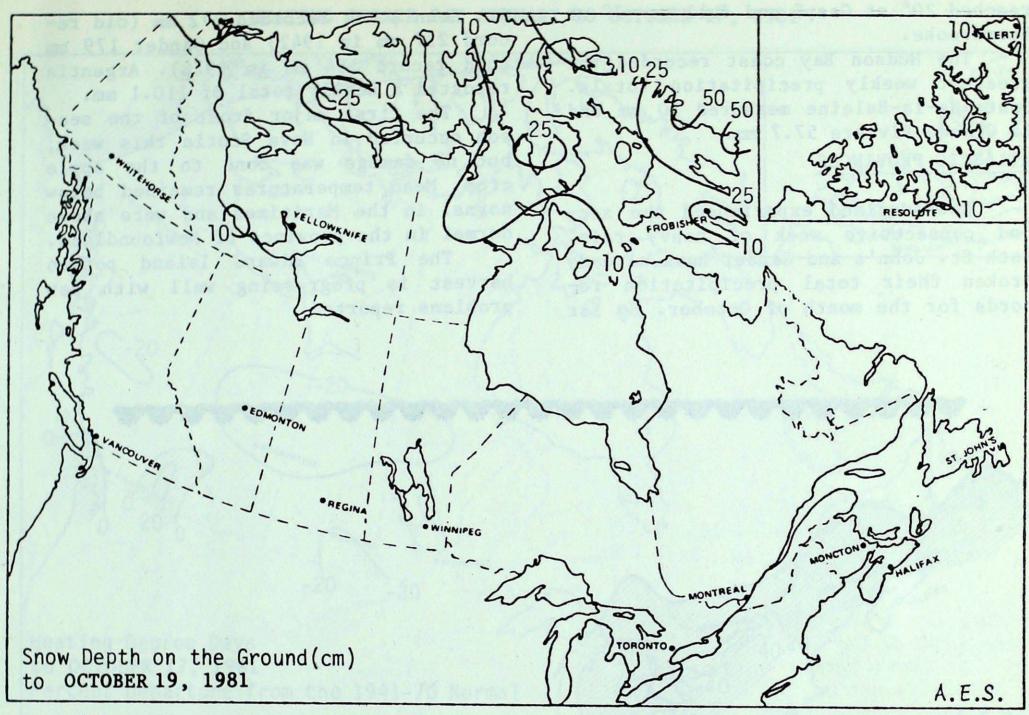
One ice breaker in Hudson Strait is waiting for grain ships to clear the area and will then pick up the navigational aids. The Beaufort Sea has extensive ice cover but this is relatively light and favourable for this time of year.

## BRITISH COLUMBIA

Mild weather was enjoyed throughout most of the province. Only in extreme southern areas were mean temperatures below normal. The mercury rose to 19° at Fort St. John on the 14th and fell to -6° at Mackenzie on the 19th.

Precipitation was below normal across the province. Prince Rupert recorded the greatest total, 59.6 mm, but even this was 30 mm below normal.





The mild weather gave rise to extensive areas of morning fog and low cloud which disrupted air travel. The mild conditions did result in some improvement in grape quality and the harvest is now about half completed.

### PRAIRIE PROVINCES

Cool, unsettled and changeable weather dominated the week. Mean temperatures varied from over 4° above normal in west-central Alberta to 1° below normal in southern Saskatchewan. The mercury reached 21° at many stations early in the week, but fell to -16° at Cree Lake on the last day of the week.

Precipitation amounts varied greatly throughout the Prairies. Snow fell over many areas and 1 cm to 4 cm of snow was left on the ground in many northern regions.

#### ONTARIO

Temperatures fell to well below seasonal values by the last day of the week after a vigorous storm crossed through Ontario on the 17th and 18th. Earlier in the week the mercury rose to 18° at many stations, but fell to -10° at Armstrong on the 19th.

Snowfall in northern Ontario was heavy at times during the storm. Wawa was left with 6 cm on the ground, while northwestern areas measured 4 cm. Gore Bay recorded the greatest weekly precipitation total, 77.3 mm.

Strong winds associated with the storm caused widespread roof damage in the Toronto area.

Most apple growers in the Toronto-Hamilton area are reporting a 30% decline in the harvest compared to 1980. A similar decline was noted in the figures for the tomato and cauliflower crops received from the Ontario Agriculture Ministry.

# QUÉBEC

The southwest of the province registered mean temperatures more than 3° below normal while the remainder of the province enjoyed above normal mean temperatures. On October 14th the mercury

reached 20° at Gaspé and fell to -7° at Sherbrooke.

The Hudson Bay coast recorded the greatest weekly precipitation totals. Poste-de-la-Baleine measured 50 mm and La Grande Riviere 57.7 mm.

## ATLANTIC PROVINCES

Newfoundland experienced the second consecutive week of heavy rain. Both St. John's and Gander have already broken their total precipitation records for the month of October. So far St. John's has recorded 272 mm (old record 227 mm in 1942) and Gander 179 mm (old record 164 mm in 1976). Argentia reported a weekly total of 110.1 mm.

The first major frost of the season occurred in Nova Scotia this week, but no damage was done to the apple crop. Mean temperatures remained below normal in the Maritimes and were above normal in the province of Newfoundland.

The Prince Edward Island potato harvest is progressing well with few problems reported.



#### CLIMATIC PERSPECTIVES

#### Staff

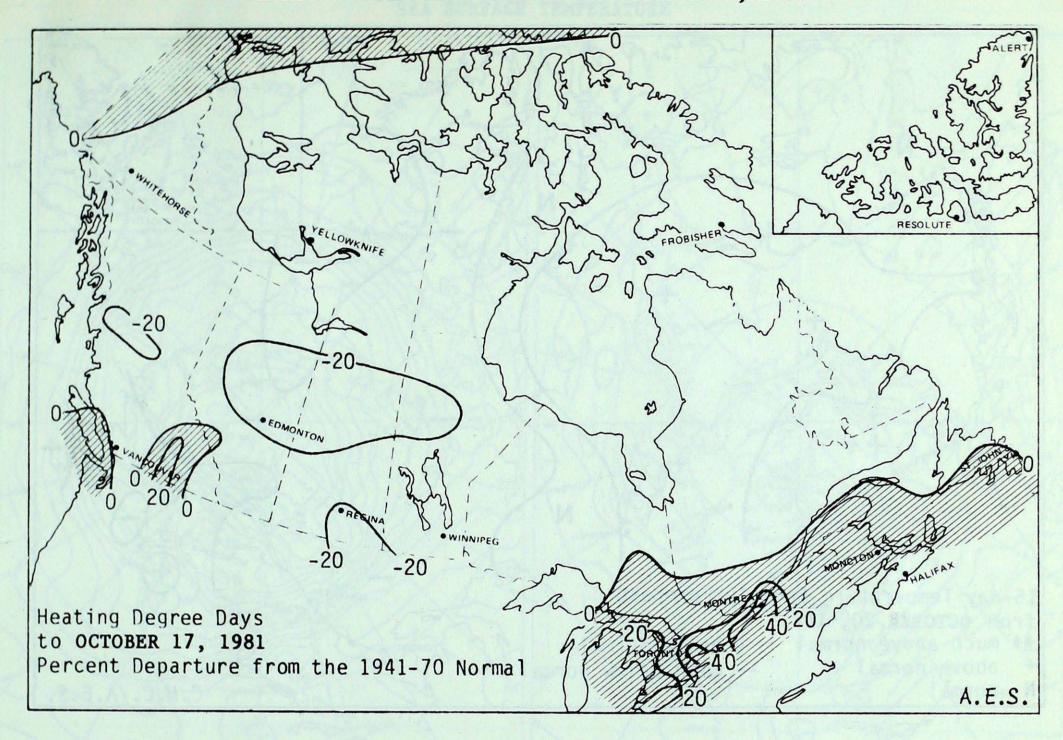
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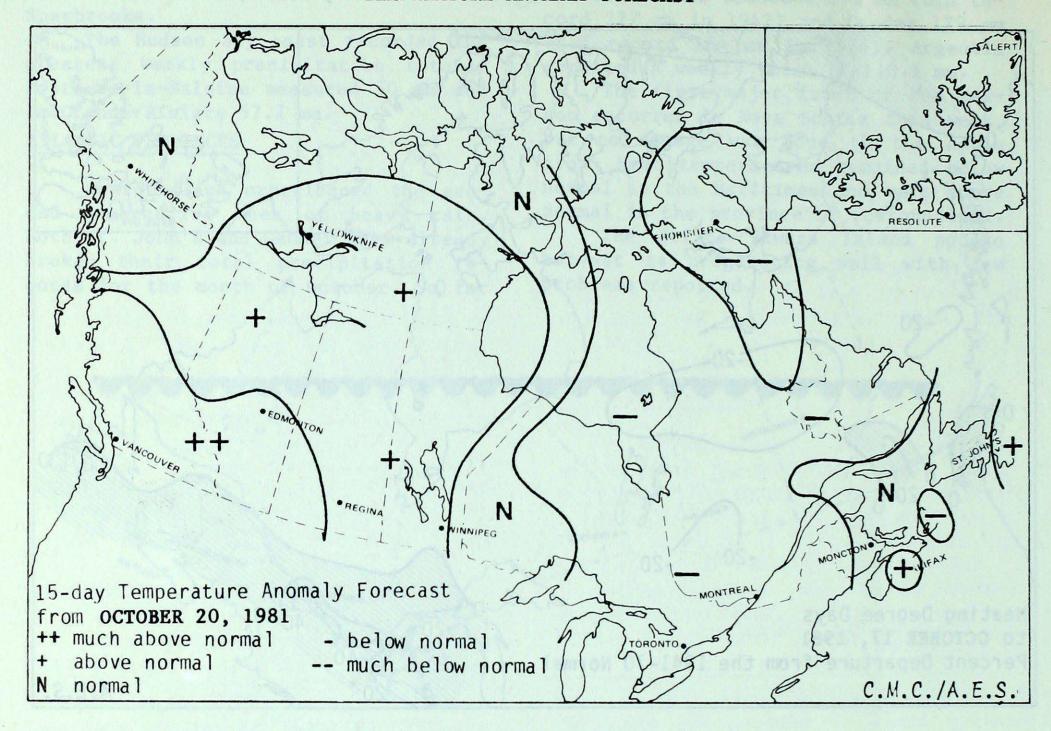
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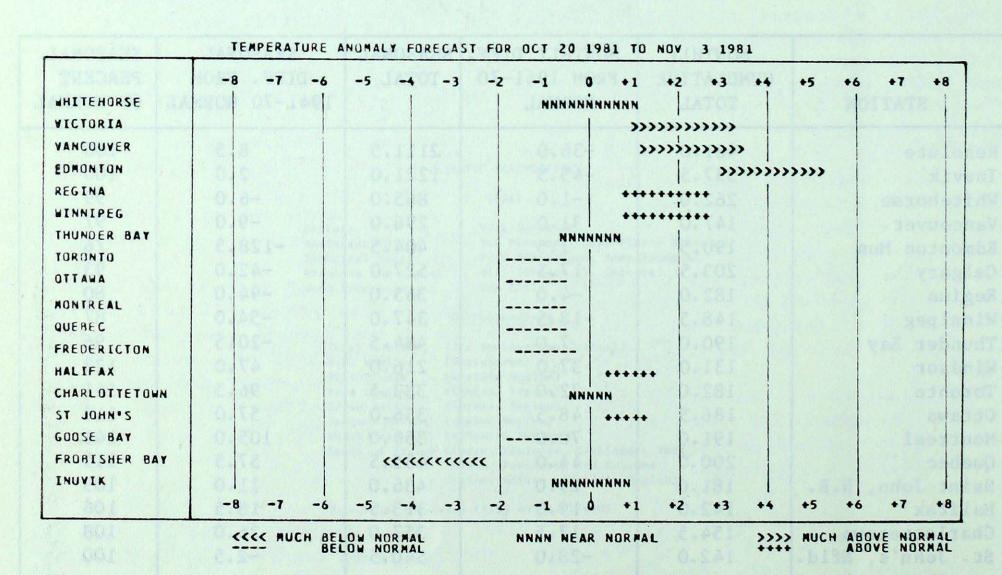
# HEATING DEGREE-DAY SUMMARY TO OCTOBER 17, 1981



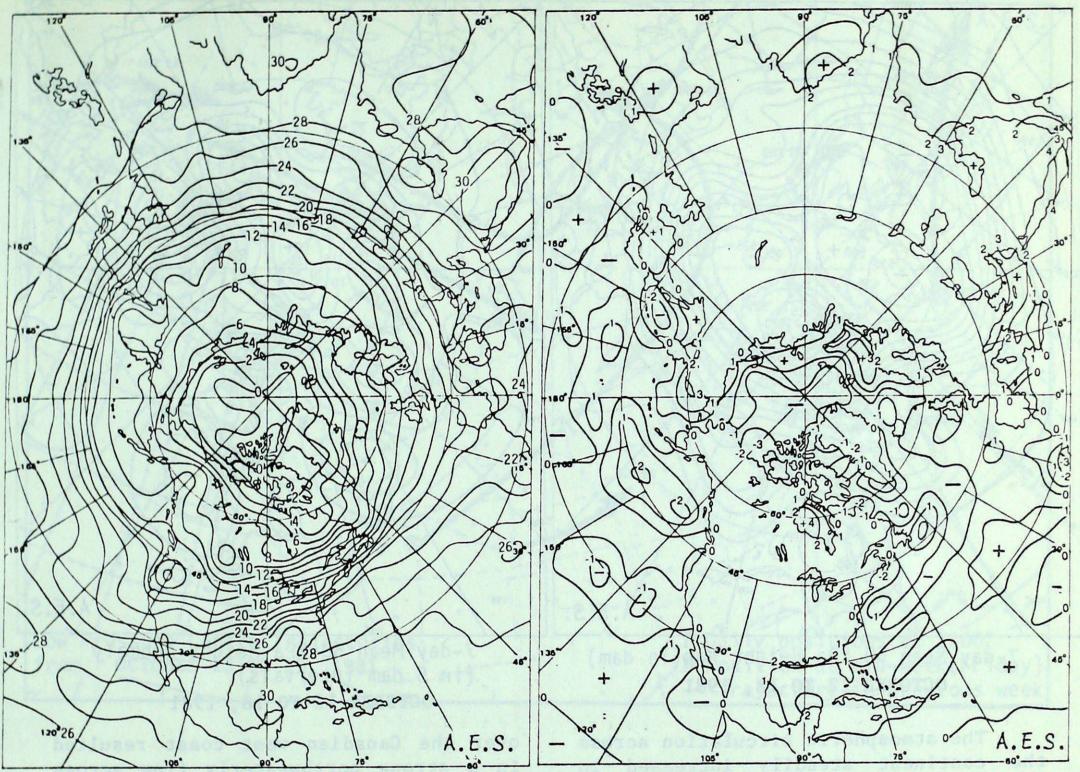
STATION	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL	
Resolute	481.0	-36.0	2111.5	8.5	100	
Inuvik	337.5	-45.5	1221.0	2.0	100	
Whitehorse	262.0	-1.0	865.0	-6.0	99	
Vancouver	147.0	31.0	296.0	-9.0	97	
Edmonton Mun	190.5	1.5	404.5	-128.5	76	
Calgary	203.5	17.5	527.0	-42.0	93	
Regina	182.0	-4.0	365.0	-94.0	80	
Winnipeg	148.5	-18.5	347.0	-54.0	87	
Thunder Bay	190.0	7.0	484.5	-20.5	96	
Windsor	131.0	37.0	216.0	47.0	128	
Toronto	182.0	72.0	333.5	96.5	141	
Ottawa	186.5	48.5	356.0	57.0	119	
Montreal	191.0	70.0	359.0	105.0	141	
Quebec	200.0	44.0	435.5	57.5	115	
Saint John, N.B.	181.0	29.0	436.0	11.0	103	
Halifax	142.0	19.0	313.5	18.5	106	
Charlottetown	154.5	17.5	357.0	26.0	108	
St. John's, Nfld.	142.0	-28.0	540.5	-2.5	100	

## TEMPERATURE ANOMALY FORECAST



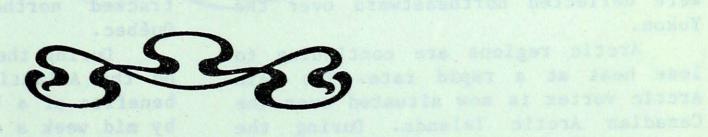


#### SEA SURFACE TEMPERATURE

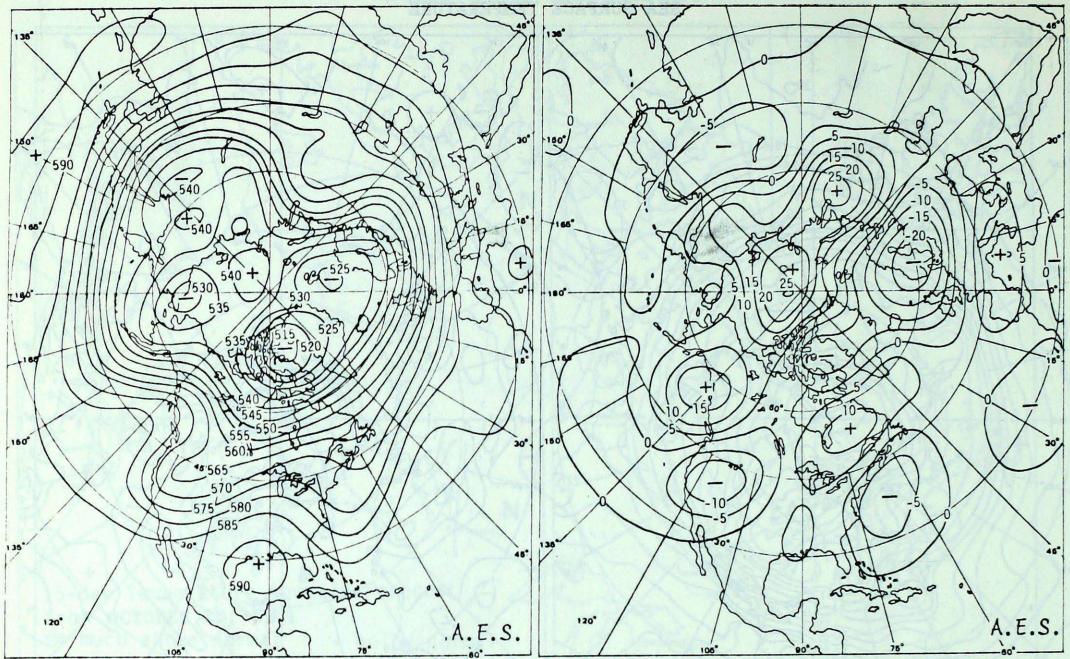


Mean Sea Temperature for MID SEPTEMBER TO MID OCTOBER, 1981

Sea Surface Temperature Anomalies for MID SEPTEMBER TO MID OCTOBER, 1981



#### ATMOSPHEREIC CIRCULATION



7-day Mean 50 kPa Height Map(in dam)
OCTOBER 12 TO 18, 1981

7-day Mean 50 kPa Height Anomaly (in 5 dam intervals)
OCTOBER 12 TO 18, 1981

The atmospheric circulation across the continent steadily increased in strength. Wave amplitudes remained relatively strong. The 50 kPa wave pattern shifted eastward during the period. The upper trough previously affecting British Columbia moved further inland. This was replaced by a fair weather blocking ridge over the west coast. As a result low pressure disturbances approaching from the Pacific were deflected northeastward over the Yukon.

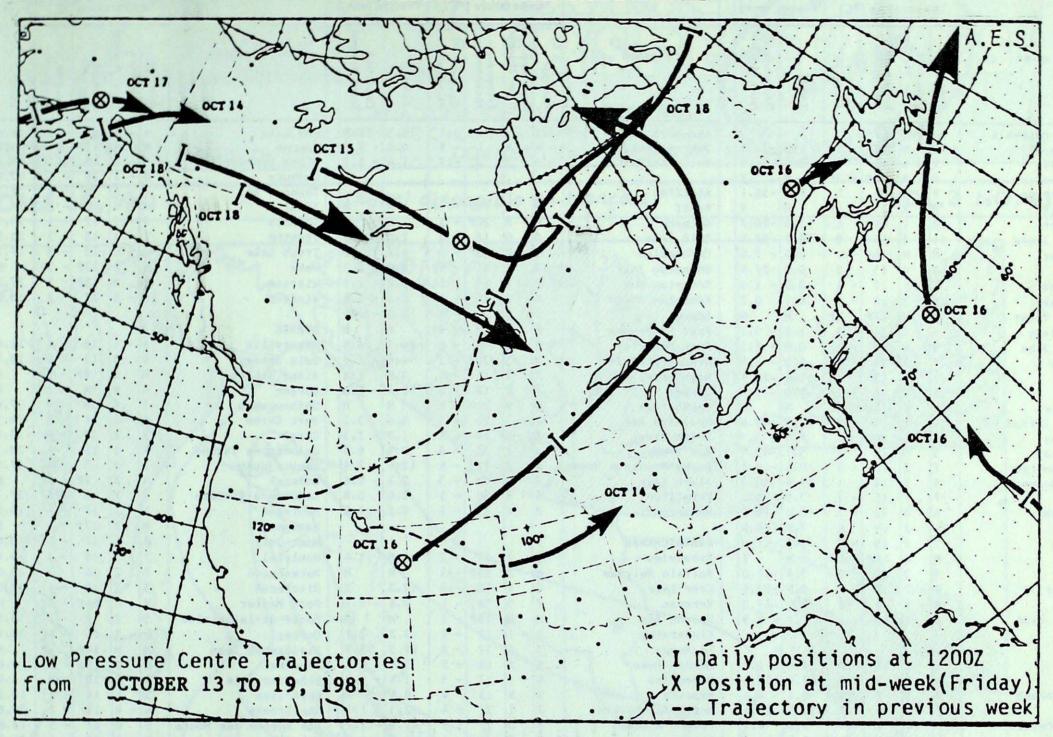
Arctic regions are continuing to lose heat at a rapid rate. The main Arctic vortex is now situated over the Canadian Arctic Islands. During the latter half of the period it deepened significantly. Tropospheric heights in the vicinity of Baffin Island dropped more than 50 dam from last week, and are now 10 dam below normal.

The combination of the closed vortex over the Arctic and the upper ridge

over the Canadian west coast resulted in a strong northwesterly flow across the Canadian Prairies. Surges of very cold Arctic air pushed southeastwards into the United States. The introduction of this very cold airmass well south of its source region resulted in good thermal support for the development of a vigorous cyclonic storm during the weekend, which deepened rapidly west of the upper great Lakes and tracked northeastwards into central Ouébec.

During the first half of the period the Atlantic provinces enjoyed the benefits of a high pressure system but by mid week a disturbance over the Atlantic ocean and a vigorous triggering pulse in the upper atmosphere converged upon the east coast. Newfoundland was hard hit for the second week as the storm moved just south of the island. Communities with a strong on-shore flow received more than 100 mm of rain.

# LOW PRESSURE CENTRE TRAJECTORIES





# TEMPERATURE AND PRECIPITATION DATA FOR THE WEEK ENDING 06Q0 G.M.T. OCTOBER 20, 1981

	Ter	Temperature (°C) Precip. (mn				
Station	Average	Departure from Normal	Extreme	Extreme Minimum	Total	Departure from Normal
BRITISH COLUMBIA						22.0
Abbotsford	9	0	17	3	3.2	-32.8 -46.4
Alert Bay Blue River	M	X	A STATE OF THE PARTY OF THE PAR	- 3P	М.	X
Bull Harbour	9	0	15	3	8.0	-52.1
Burne Lake	М			- 4P	M	X
Cape Scott	10	1	14	8	13.5	-60.7 -27.1
Cape St James	11 M	2 M	16 16P	- 1	0.0	- 7.0
Castlegar Comox	9	0	15	2	0.0	-27.9
Cranbrook	6	1	17	- 5	0.0	- 1.5
Penne Lake	5		4	- 3	9.1	0.2
Estevan Point	M	1 34		The second second	M	M
Fort Nelson	6		14	- 3 - 2	0.0	
Fort St John Kamloops	7	- 2	The state of the s	- 1	0.0	100 1920
Langara	11	2		7	41.4	The second second
Lytton	11	0		2	0.0	- 7.0
Mackenzle	M	75		All the second second	M	
McInnes Island	10	. 10	14	6	45.2	-43.8 - 3.2
Penticton Port Hardy	9			2	5.1	A CONTRACTOR OF THE PARTY OF TH
Prince George	7	2	16	- 3	0.6	-10.1
Prince Rupert	9	1 69	14	1	59.6	
Quesnel	7 6	1	15	- 3 - 1	0.0	
Revelstoke Sandspit	11	0 2		6	7.9	
Smithers	7	1000		- 3	1.2	-11.0
Stewart	M	1117	100	4P	М	X
Terrace	9	1		2	7.4	
Vancouver [	9		13	3 2	0.8	-22.5 -17.3
Victoria Williams lake	8 6	A. Company	15	- 2	2.7	- 4.9
YUKON						
Burwash	2 0	3		-10 -13	2.0	- 1.7
Dowson Komakuk Beach	- 7	1 1 2	5 - 2	-14	0.4	- 4.6
Mayo		3	5	-11	24.5	20.2
Shingle Point	- 6	1		-14	9.8	
Watson lake Whitchorse	5		16	- 3 - 7	9.5	1.2
NORTHWEST TERRIT						
Alert	-16	4	-11	-26	3.1	- 1.5
Baker Lake	- 7	0	0	-13	10.4	5.1
Broughton Island	- 9	1000	- 2	-14	15.7	2.5
Byron Bay	-13 -11	- 2	- 2 - 3	-21 -16	5.6	2.6 - 3.0
Cambridge Bay Cape Dorset	- 4	X	0	- 8	0.8 M	3.0 X
Cape Dyer	- 9	- 1	- 1	-23	68.6	51.6
Cape Hooper	- 9	- 1	- 2	-14	6.9	- 2.5
Cape Parry	- 4	3	- 1	- 8	4.5	0.1
Cape Young Clinton Point	- 7 - 7	0	- 1 - 2	-21 -12	7.0	3.3
Clyde	м	M	110000	-15	45.4	37.8
Contwoyto Lake	М	М	- 1 P	-15P	м	М
Coppermine	- 7	0	- 1	-17	2.9	- 4.1
Coral Harbour Dewar Lakes	- 8 -12	- 1 - 1	- 2 - 5	-12 -18	3.6	- 5.3 11.8
Ennada i	M			-11P	М	М
Euroka	-23	0	-14	-30	0.3	- 1.5
Fort Reliance	М	М	100	-11P	3.2	- 3.5
Fort Simpson Fort Smith	- 1 - 1	- 1 - 2	7	-12	20.0	9.8
Fort Smith Froblaher Bay	- 1 - 3	- 2	11	-17 - 9	20.0	13.1
Gladman Point	-11	1	- 5	-15	3.4	0.2
Hall Beach	- 9	1	- 2	-14	2.3	- 4.8
Iny River	1	- 1	7	- 5	18.9	11.0
Inuvik Jenny Lind Island	M -10	M	1P - 2	-12 -14	3.5	- 3.4 3.8
ady Franklin Pol		0	0	-14	4.0	- 0.8
ongstaff Bluff	- 9	0	- 3	-14	17.0	11.9
fackar Inlet	-13	- 1	- 6	-16	9.2	4.7
lould Bay	-16	2	-10	-23	3.0	1.2
Micholson Peninsi Morman Wells		4	- 1	- 8	0.0	- 2.1
Porman Wells Pelly Bay	- 2 -13	- 1	5 - 8	-10 -17	36.5	31.7
ond Inlet	-12	X	0	-21	4.5	X
ort Burwell	М	X	6P	- 4P	м	X
Resolute Sachs Harbour	-17	- 2	-12	-22	2.0	- 2.0
and the line to be an even	-10	2	- 3	-18	0.6	- 2.6

ION DATA FOR THE	MEEK	( EN	DING	060	0 G.M	.1.00	IOT.
	Ter	npero	ature (	°C)	Precip	. (mm)	
Station	Average	Departure from Normal	Extreme Maximum	Extreme Minimum	Total	Departure from Normal	
Shepherd Bay Tuktoyaktuk Yellowknife	-11 - 4 - 4	1 4 - 2	- 6 1 3	-17 - 9 -19	16.5 0.0 1.4	12.8 - 2.7 - 5.8	
ALBERTA Banff Calgary Cold Lake Coronation Edmonton Intl Edmonton Mun Edmonton Namao Edson Fort Chipewyan Fort McMurray Grande Prairie High Level Jasper Lethbridge Medicine Hat Peace River Red Deer Rocky Mountain House Slave Lake Vermilion Whitecourt	M M 66 66 77 99 88 77 M 39 44 77 M 66 66 77 66 88	M 0 0 0 1 2 2 2 3 3 M 0 0 5 2 2 2 M M 1 0 0 2 2 2 2 2 2 2 2 2 3 M M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20P 18 20 21 19 20 M 16 20 15 18 21P 21 19 20 21 18 20 21	- 9P - 5 - 2 - 6 - 4 - 2 - 5 - 9P - 6 - 2 - 4 - 2 - 6 - 3 - 5 - 6 - 3 - 5 - 1	M 1.0 4.2 0.9 0.2 0.2 0.0 M 20.2 1.4 3.8 1.4 M 5.6 1.2 9.8 12.4 2.1 2.6 0.2	0.0 1.1 - 0.3 - 1.5 - 1.4 - 2.2 M 16.6 - 1.8 2.8 - 5.6 M 3.3 - 2.3 6.5 7.4 - 0.6	
SASKATCHEWAN Broadview Buffalo Narrows Cree Lake Estevan Hudson Bay Kindersley La Ronge Meadow Lake Moose Jaw Nipawin North Battleford Prince Albert Regina Rockglen Saskatoon Swift Current Uranium City Wynyard Yorkton	5 M 0 7 M 5 3 5 6 5 7 7 5 6 M 6 M 6 M 6	M X 0 0 M M - 1 0 0 X 1 0 0 X 0 0 M M - 3 0 0	15P 10 18 16P 19 12 18 17 15 21 15 13P 17 17P 8 13	- 2 - 3 -16 - 1 - 6 - 5 - 8 - 5 - 3 - 4 - 2P - 4 - 13 - 2 - 1	4.8 M 12.3 2.8 M 2.2 19.5 3.8 1.4 8.6 2.3 1.9 1.4 M 0.2 M 4.0 6.8 4.2	M X 2.1 M 2.1 13.9 X - 1.3 X - 1.1 - 2.2 - 1.7 X - 2.3	
MANITOBA Bissett Brandon Churchill Dauphin Gillam Gimli Island Lake Lynn Lake Norway House Pilot Mound Portage la Prairie The Pas Thompson Winnipeg	5 6 0 6 1 6 M - 1 3 M 7 3 1 7	0 1 0 X 0	15 20 5 20 11 17 12P 8 12 17P 20 14 9	- 4 - 3 - 8 - 5 - 9 - 3 - 5 -10 - 6 - 3 - 1 - 6 - 9 - 2	9.5 3.4 28.4 6.8 24.2 11.7 M 9.5 10.5 M 4.0 16.9 18.5 4.9	1.4 0.2 20.2 1.8 X 3.3 X 1.7 X M - 0.8 13.3 10.7 - 1.2	
ONTARIO Armstrong Atikokan Earlton Geraldton Gore Bay Kapuskasing Kenora Kingston Lansdowne London Moosonee Mount Forest Muskoka North Bay Ottawa Petawawa Pickle Lake	M 5 M 4 7 6 6 M 4 7 M M M 6 7 6 4	M 2 M 2 - 2 O - 1 M O O - 4 M M M - 2 C X - 1	11P 18 16P 13 14 17 16 14P 12 16 18P 15P 18P 15 18 17 13	-10P - 9 - 4 - 8 - 1 - 5 - 3 - 2P - 8 - 3 - 1P - 4 - 2 - 1 - 3 - 9	M 24.8 M 35.4 77.3 46.3 12.3 M 28.0 21.2 M 35.6 27.2 67.0 13.0 17.6 7.8	M 9.2 M 19.6 62.3 28.8 5.5 M 15.0 1.9 M 13.6 4.1 46.8 0.8 X - 4.6	

EN 20) 1501					1	
	Te	mpei	alure			
Station'	Average	from Normal	Extreme	Extreme	Total	Departure from Normal
Red Lake	٨	- 1		- 5	18.6	4.9
Simcoe Sioux Lookout	M 5	M	100000000000000000000000000000000000000	- 1P - 5	19.1	8.8
Sudbury	6	- 2		- 5	42.8	21.8
Thunder Bay Timmins	6	- 1	110000000000000000000000000000000000000	- 8 - 5	28.5	22.9
Toronto	7	- 3	17	- 1	23.7	6.7
Trenton	7 3	- 3		- 3 - 9	22.8	3.4
Trout Lake Wawa	M	100			H H	
Wiarton	M	77.	STATE OF THE STATE		27.2	
Windsor	10	- 3	17	2	19.2	4.5
QUÉBEC						
Bagotville	6			- 4	11.6	- 5.6
Baie Comeau Blanc Sablon	M				M	
Border	M			- 3P		
Chibougamau Fort Chimo	5 4	1 3	16	- 4	27.6	The second second
Gaspé	8	)	20	- 4	13.0	7
Grindstone Island	9		15	5 - 4	28.3	
Inoucd jouac Koartak	M			Maria Commence	A CONTRACTOR OF THE PARTY OF TH	S. 1.200
La Grande Rivière	3	)		- 4	57.7	)
Maniwaki Matagami	5 M	A AND	17	- 4	16.8	
Mont-Joli	8	1	17	- 1	10.4	- 3.3
Montréal	7 7		18	- 3	9.8	
Natashquan Nitchecun	3		10	31	23.0	
Port Menier	М	3 10	- 1	- 2P		
Poste-de-la-Baleine Québec	5			- 2  - 3	30.4	
Rivière du Loup	M		1 14P	1 1 P	М	1
Roberval	6	A	19	- 3	9.6	
Schefferville Sept-Iles	5	100		- 4	18.2	
Sherbrooke	4	- 4	19	- 7	30.6	
Ste Agathe des Monts Val d'Or	5			- 5 - 4	32.2	- 9.1 13.4
NEW BRUNSWICK						
Charlo Chatham	8	250		- 3	9.8	- 9.1 - 8.1
Fredericton	8	322		- 5	13.6	- 1.2
Moncton	8 7	- 1 - 1		- 3 - 2	21.9	
Saint John	'		17	- 2	20.2	0.7
NOVA SCOTIA					20.0	
Eddy Point Greenwood	10	- X		- 4	38.8	
Sable Island	М	M	17P	9	29.5	11.7
Shearwater Sydney	9	- 1 0		0 - 1	37.0	
Truro	M	M	17P	- 3P	M	M
Yarmouth	8	- 2	16	- 1	25.2	7.4
PRINCE EDWARD ISLAND						
Charlottetown Summerside	9	0		3	56.9	
dummerside		Ŭ				
NEWFOUNDLAND	9		16	2	110.1	X
Argentia Battle Harbour	6	X 2		1		-17.7
Bonavista	8	1	15		45.4	
Burgeo Cartwright	9	2 2		- 4	37.7	5.7
hurchill Falls	4	5	11	- 4	9.7	- 9.7
comfort Cove	7	1 0	16	- 1 - 1	47.6	31.0 -19.2
eniel's Harbour eer Lake	6	1	18	- 4	27.2	3.6
ander	7	1	17	0	89.0	74.5
oose opedale	7 6	3	18	- 1 - 1	14.3	- 1.0 -15.7
ort aux Basques	9	2	14	3	27.1	3.5
t Albans t Anthony	M 5	M	16P 12	- 3 - 2	5.0	H X
t John's	8	1	17	0	99.9	75.9
t Lawrence tephenville	8	1 0	16 16	- 1 - 1	81.9	60.2
abush Lake	4	3	12	- 4	14.2	-10.2
				( Cares		