

Environment CANADA Environnement  
1005959D VOL 8 ISS 1 851231  
REF # 001



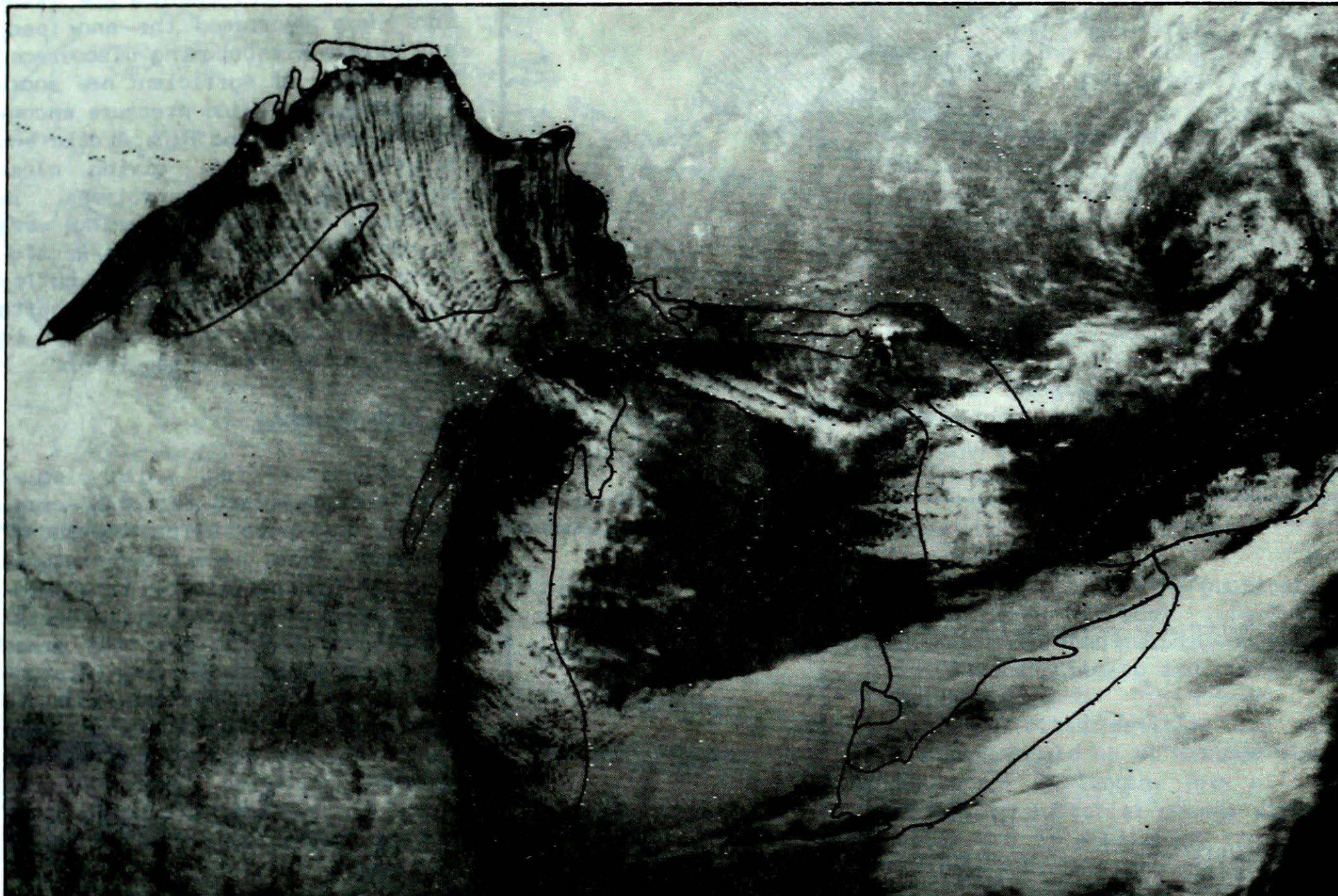
CLIMATIC PERSPECTIVES 0

OTM

A weekly review of Canadian climate

Dec 31, 1985 to Jan 6, 1986

Vol.8 No.1



This NOAA 9 infrared satellite picture enlargement taken on January 6, 1986 shows the effect the relatively warm open waters of the Great Lakes have in controlling local weather patterns. Lines of cloud, some several hundred kilometres long and frequently associated with heavy snow squalls, can be seen streaming across the lee shorelines. A smaller scale photo and additional information inside.

## **Major winter storms bury parts of Atlantic Canada**

- hurricane force winds batter Coastal Regions
- many rural communities paralyzed by huge drifts
- transportation brought to a standstill - communications cut

# NON-CIRCULATING

# TEMPERATURE

## ACROSS THE COUNTRY...

### Yukon and Northwest Territories

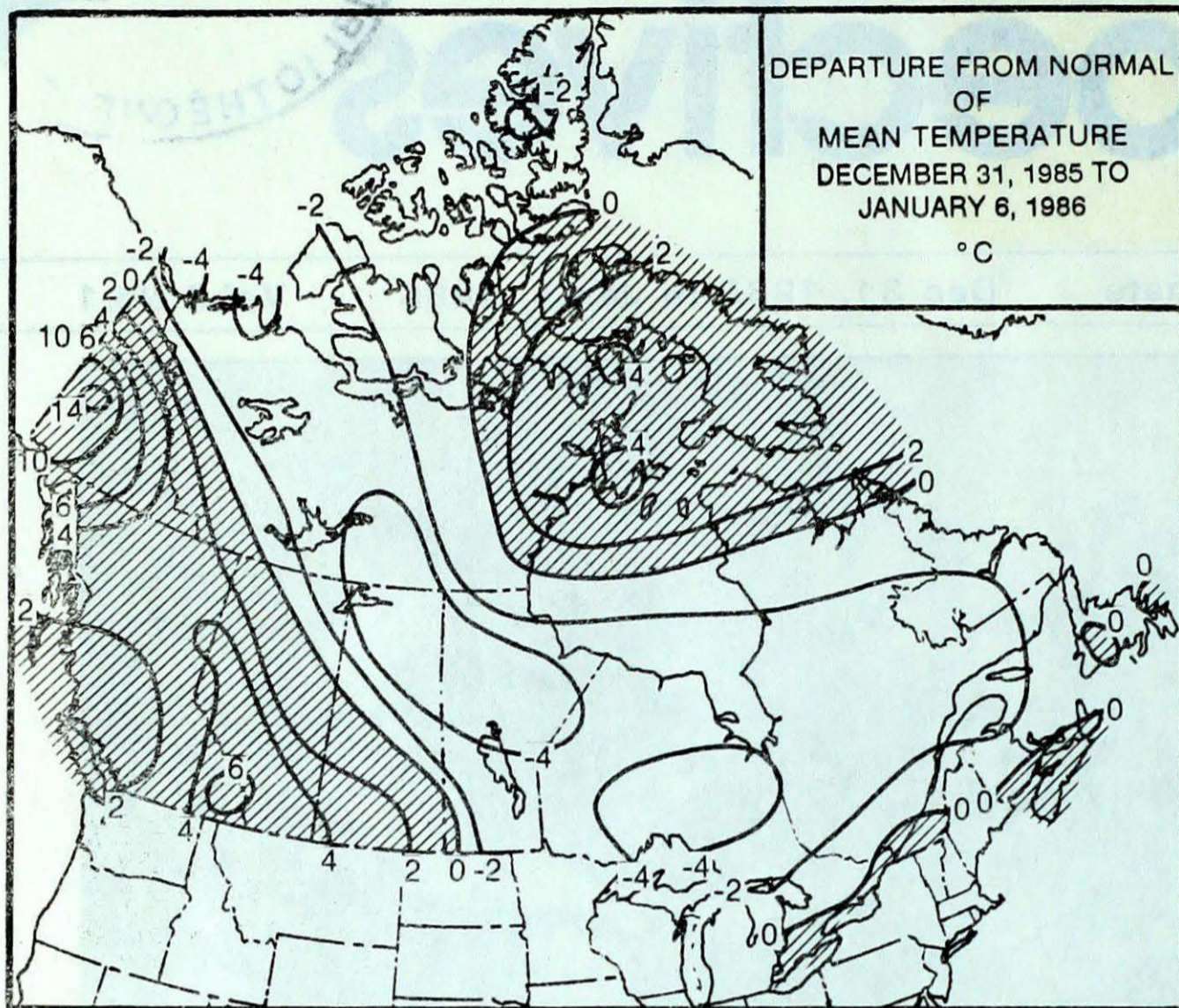
In the Yukon, the first week of the new year continued to be unusually mild. Except for central portions of the Territory, snowfalls were light. Mild temperature readings have decreased the snow pack and skiers are becoming discouraged by the lack of sufficient new snow. A cold dome of high pressure encompassed much of the high Arctic and Mackenzie District, giving clear skies and cold temperatures. In contrast, above normal readings were in evidence in the eastern Arctic. Overall snowfalls were light, but up to 10 cm of snow fell across parts of Baffin Island. Most roads are in normal winter driving condition.

### British Columbia

Widespread fog, which plagued the lower mainland for many days, finally dissipated before the end of the year. Above normal temperatures and rain have contributed to a dwindling snow cover at higher coastal elevations, forcing some ski areas to close. Rapidly moving disturbances brought fresh snowfalls to the interior, delighting many skiers. In the north, cold weather returned, allowing logging operations to resume; previously the hauling of logs was curtailed due to soft roads.

### Prairie Provinces

Unusually warm weather conditions were still evident across the western half of the prairies, but not nearly as pronounced as the week before. Daytime temperatures in southern Alberta still managed to climb above freezing. In Manitoba, temperatures did not moderate to any great extent, and in fact an Arctic cold front brought an reinforcing surge of Arctic air southward over the province during the weekend. Passing weather systems produced only light snowfalls, and overall skies were changeably sunny. Depth of snow on the ground ranged from only a trace in extreme southern Alberta to more than 50 cm in central Manitoba.



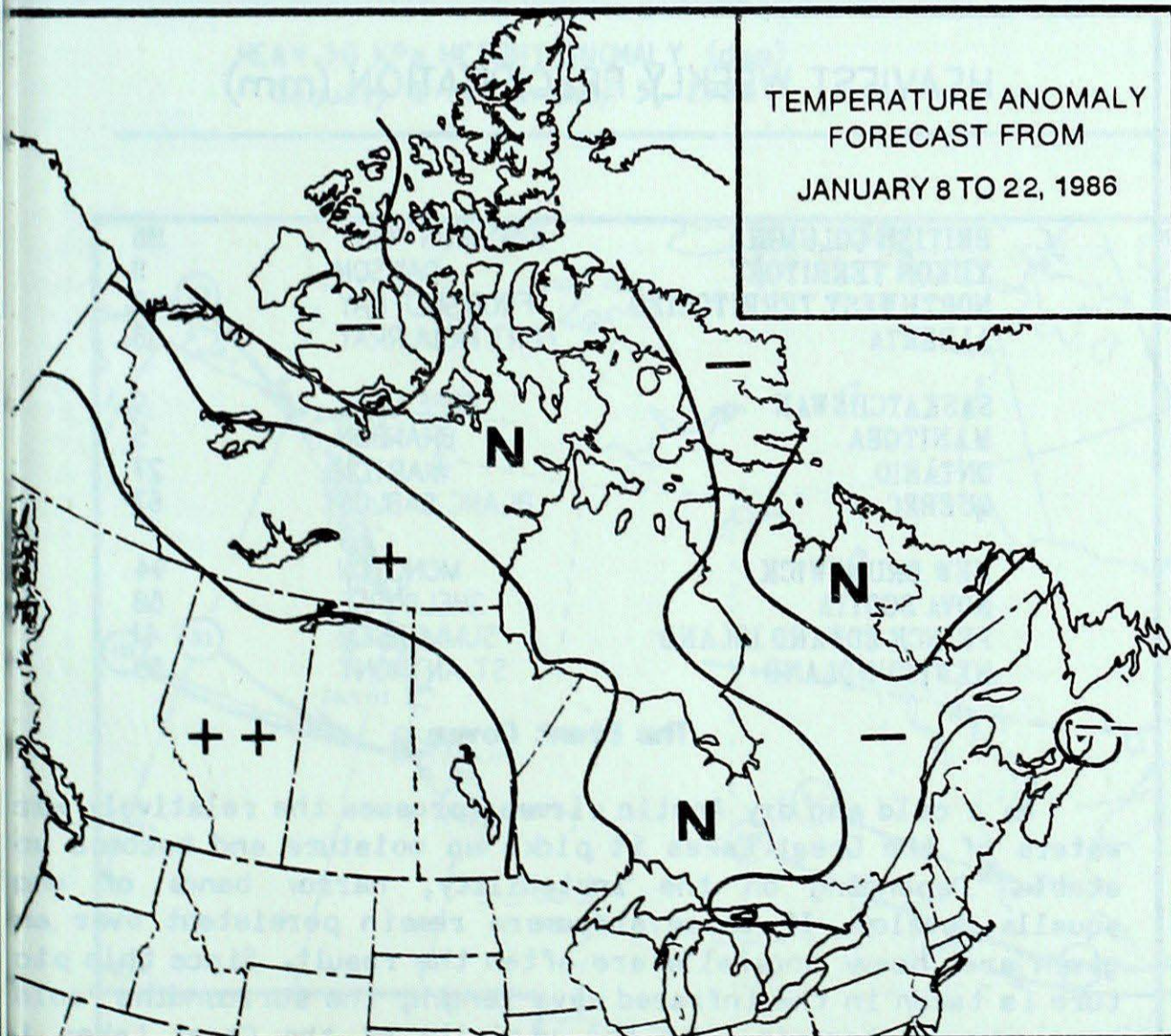
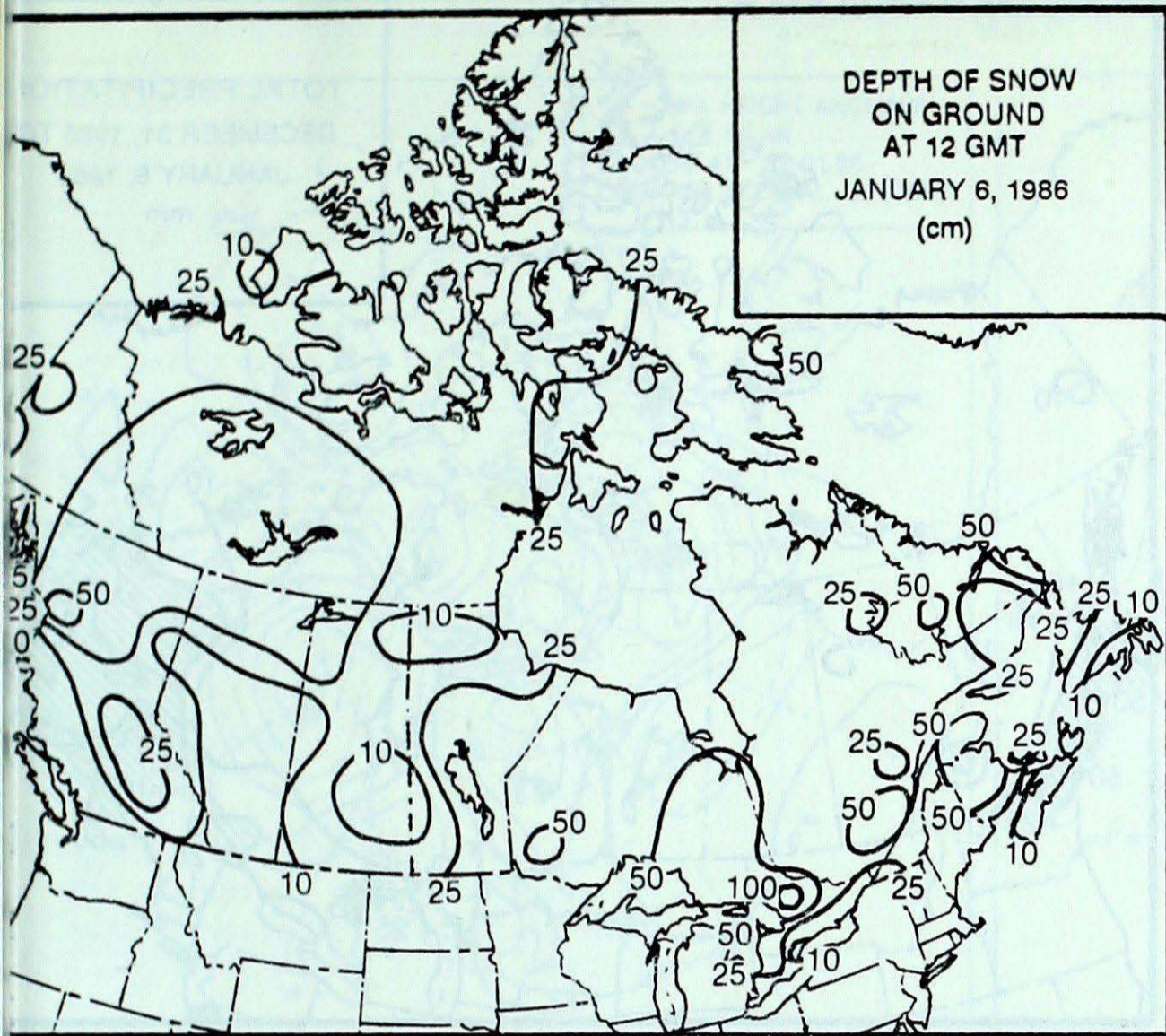
## WEEKLY TEMPERATURE EXTREME (C)

	MAXIMUM		MINIMUM
BRITISH COLUMBIA	ESTEVAN POINT 11	FORT NELSON	-28
YUKON TERRITORY	BURWASH 1	KOMAKUK BEACH A	-40
NORTHWEST TERRITORIES	FROBISHER BAY -7	EUREKA	-43
ALBERTA	CALGARY INT'L 6	FORT CHIPEWYAN	-40
SASKATCHEWAN	ROCKGLEN -1	CREE LAKE	-40
MANITOBA	DAUPHIN -6	LYNN LAKE	-39
ONTARIO	TRENTON 4	NAGAGAMI	-37
QUEBEC	MONTREAL INT'L 4	CHIBOUGAMAU	-38
NEW BRUNSWICK	SAINT JOHN 6	CHARLO	-25
NOVA SCOTIA	SABLE ISLAND 9	GREENWOOD	-16
PRINCE EDWARD ISLAND	CHARLOTTETOWN 5	SUMMERSIDE	-17
NEWFOUNDLAND	ARGENTIA 8	WABUSH LAKE	-34

## ACROSS THE NATION

WARMEST MEAN TEMPERATURE	6	LAWN POINT	BC
COOLEST MEAN TEMPERATURE	-40	EUREKA	NWT

# FORECAST



### Temperature Anomaly Forecast

This forecast is prepared by searching historical weather maps to find cases similar to the present. The historical outcome during the 15 days subsequent to the chosen analogues is assumed to be a forecast for the next 15 days from now.

- ++ much above normal
- + above normal
- N normal
- below normal
- much below normal

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ISSN 0225-5707 UDC 551.506.1(71)

**Climatic Perspectives** is a weekly bilingual publication of the Canadian Climate Centre, Atmospheric Environment Service, 4905 Dufferin St., Downsview, Ont. Canada M3H 5T4. Phone (416)667-4906/4711.

The purpose of the publication is to make topical information available to the public concerning the Canadian Climate and its socio-economic impact.

Unsolicited articles are welcome but should be at maximum about 1500 words in length. They will be subject to editorial change without notice due to publishing time constraints. Black and white photographs can be used, but not colour. The contents may be reprinted freely with proper credit.

The data shown in this publication are based on unverified reports from approximately 225 Canadian synoptic weather stations. Information concerning climatic impacts is gathered from AES contacts with the public and from the media. Articles do not necessarily reflect the views of the Atmospheric Environment Service.

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Weekly issue including  
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 Monthly issue only: \$10.00

Subscription enquiries: Supply and Services Canada, Publishing Centre, Ottawa, Ontario, Canada, K1A 0S9. Phone (613)994-1495

**Ontario**

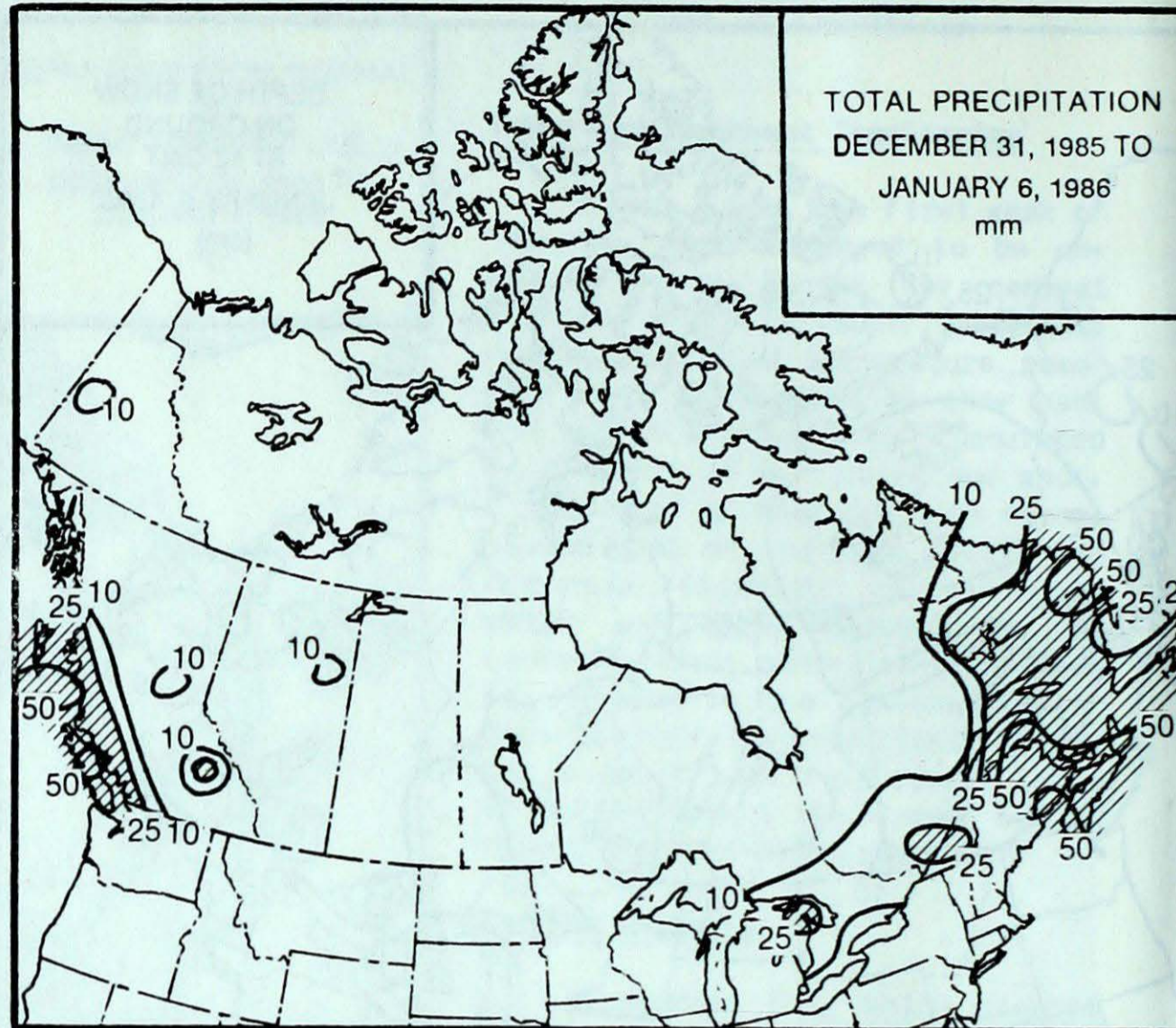
Winter became well established during the Christmas period. Many new daily low temperature records were set. Wintery weather conditions continued through most of this week, especially in the ski areas of southern and central Ontario. Cold winds, sweeping across the open waters of the Great Lakes, caused heavy snow squalls and whiteouts. Since mid-December, substantial snowfalls have occurred each day in the snow belt. Some communities have accumulated more than 200 cm of fresh snow. On several occasions, heavy blowing snow, resulted in highway closures.

**Quebec**

Two snow storms hit southern Quebec, leaving up to 30 cm of snow in the St. Lawrence Valley and the Eastern Townships. Gaspé received 70 cm of snow during the latter half of the week. Strong winds, gusting over 100 km/h, caused blowing snow and whiteouts. The storms were attributed to many traffic accidents, including several fatalities. Needless to say, skiing conditions are excellent. In the north, the weather was predominantly clear and cold.

**Atlantic**

Two major storms hit Atlantic Canada during the latter half of the week. The first storm on January 3 and 4 dumped 30 to 70 centimetres of snow on New Brunswick and 30 to 40 centimetres of snow across northern Newfoundland, and Labrador. Moncton received 67 cm of snow in a 24-hour period, almost breaking the record of 71 cm set in February 1941. In Nova Scotia and southern Newfoundland, the snow changed to freezing rain and rain. At East Point, P.E.I., winds reached 122 km/h, with gusts to 160 km/h. On January 5, a second storm pounded the coast with strong winds. An additional 25 cm of snow fell in New Brunswick, with a mixture of rain and snow falling elsewhere. Moncton received a combined total of 91 cm of snow from these two storms.

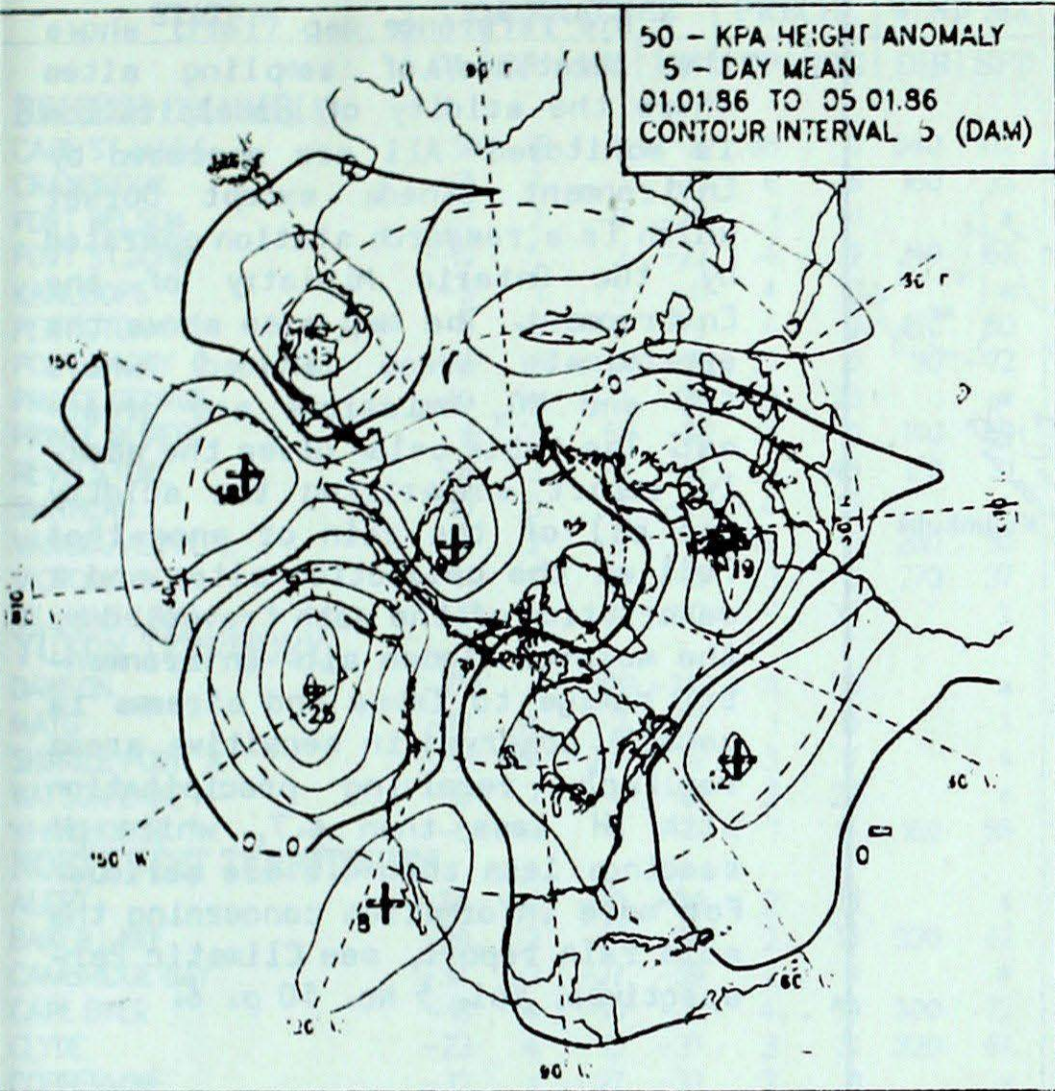
**HEAVIEST WEEKLY PRECIPITATION (mm)**

BRITISH COLUMBIA	KINDAKUN POINT	86
YUKON TERRITORY	DAWSON	11
NORTHWEST TERRITORIES	FROBISHER BAY	7
ALBERTA	FORT MCMURRAY	18
SASKATCHEWAN	CREE LAKE	9
MANITOBA	BRANDON	5
ONTARIO	WIARTON	27
QUEBEC	BLANC SABLON	67
NEW BRUNSWICK	MONCTON	94
NOVA SCOTIA	SHELburnE	68
PRINCE EDWARD ISLAND	SUMMERSIDE	41
NEWFOUNDLAND	ST ANTHONY	55

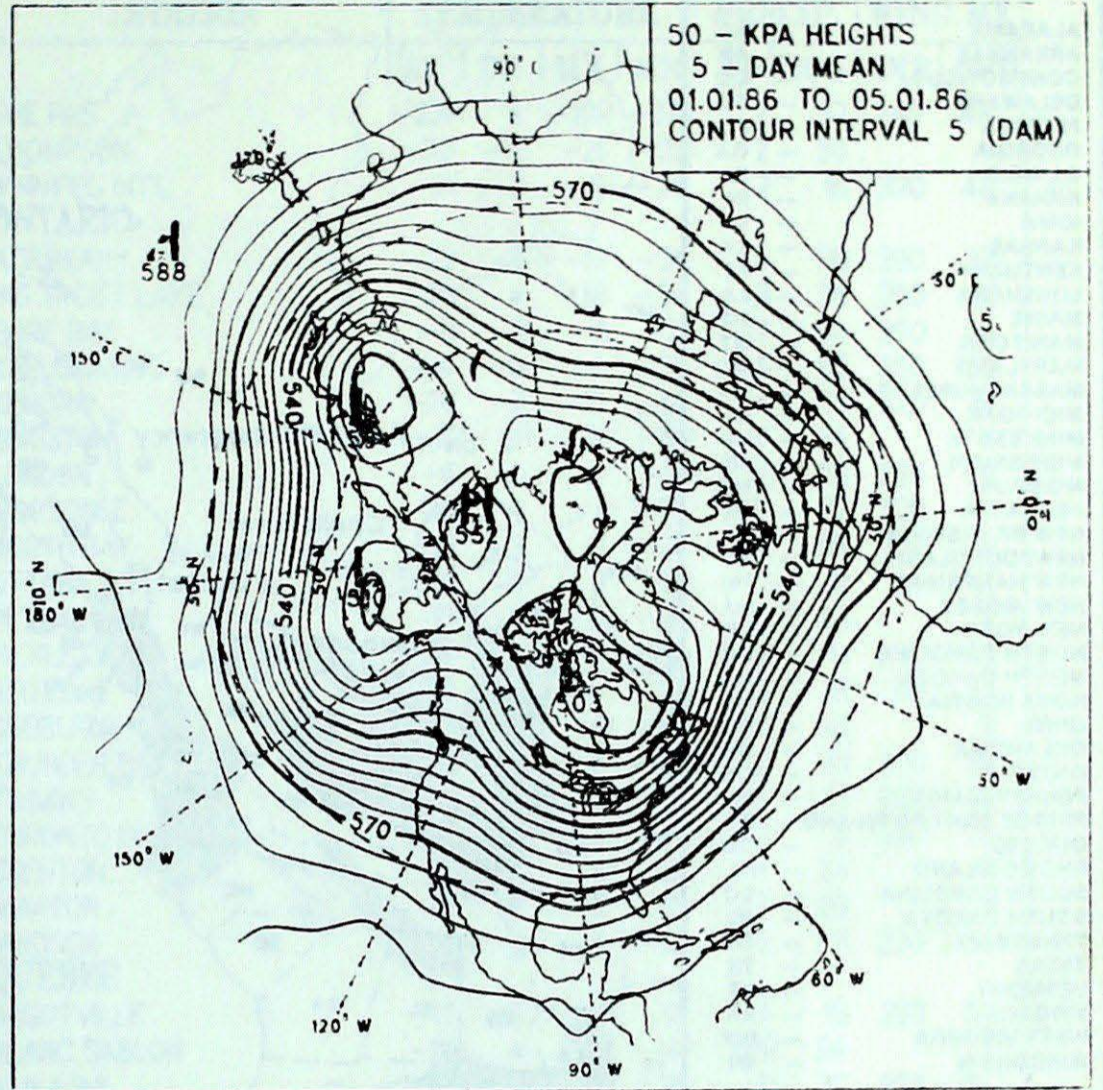
**The Front Cover**

As a cold and dry Arctic airmass crosses the relatively warm waters of the Great Lakes it picks up moisture and becomes unstable. Depending on the instability, narrow bands of snow squalls develop. If these streamers remain persistent over any given area heavy snowfalls are often the result. Since this picture is taken in the infrared wave length, the surrounding "cold" snow covered terrain near the vicinity of the Great Lakes is depicted in a much lighter shading. On the other hand, the balmy areas of the American south show up much darker due to warmer temperatures. In the same way, we can differentiate between the different cloud elevations. Clouds at lower altitudes are relatively warmer than at higher elevations, and therefore the shading on an infrared image will show the difference.

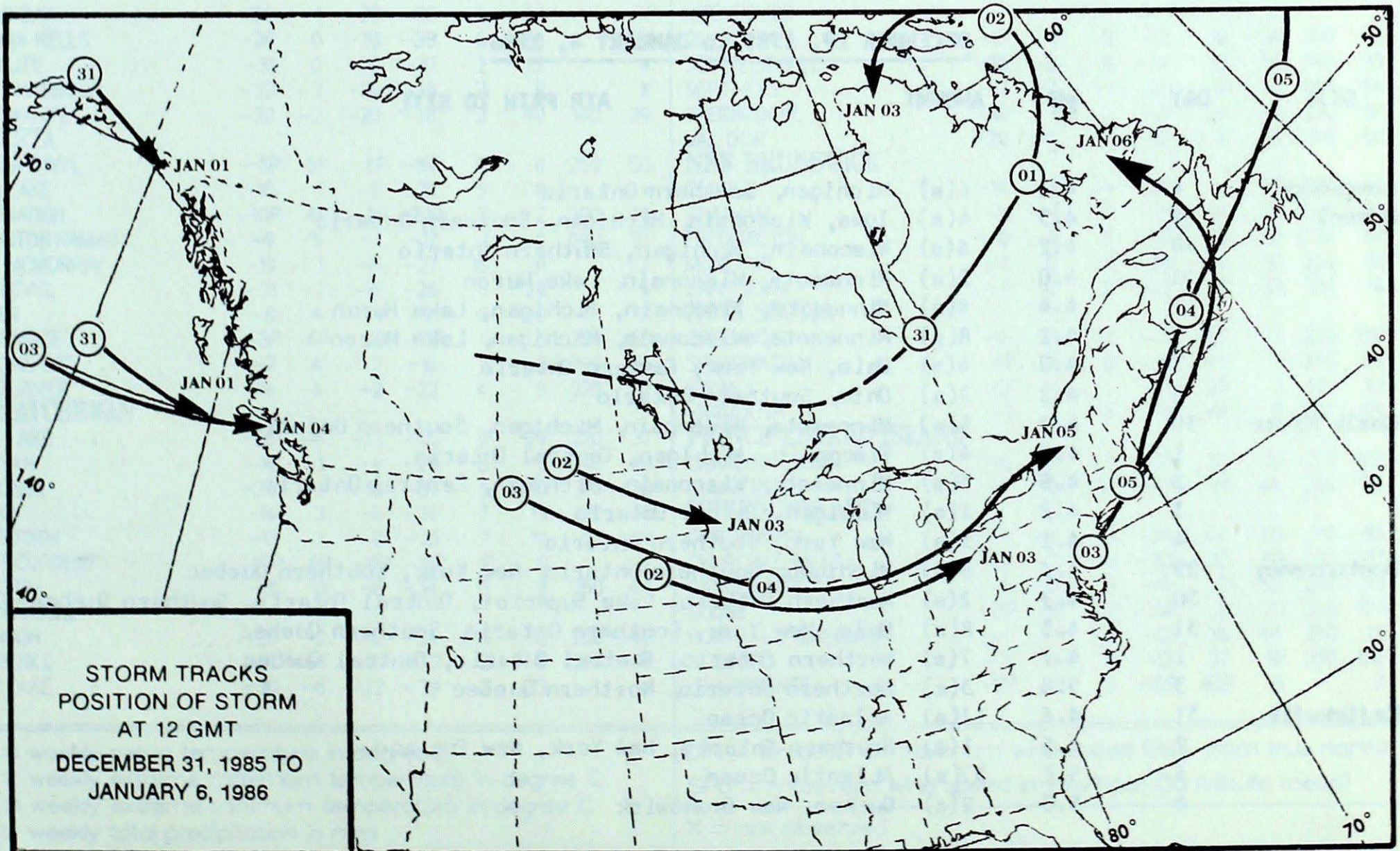
50 KPa ATMOSPHERIC CIRCULATION



MEAN 50 KPa HEIGHT ANOMALY (dam)  
January 1 to January 5, 1986

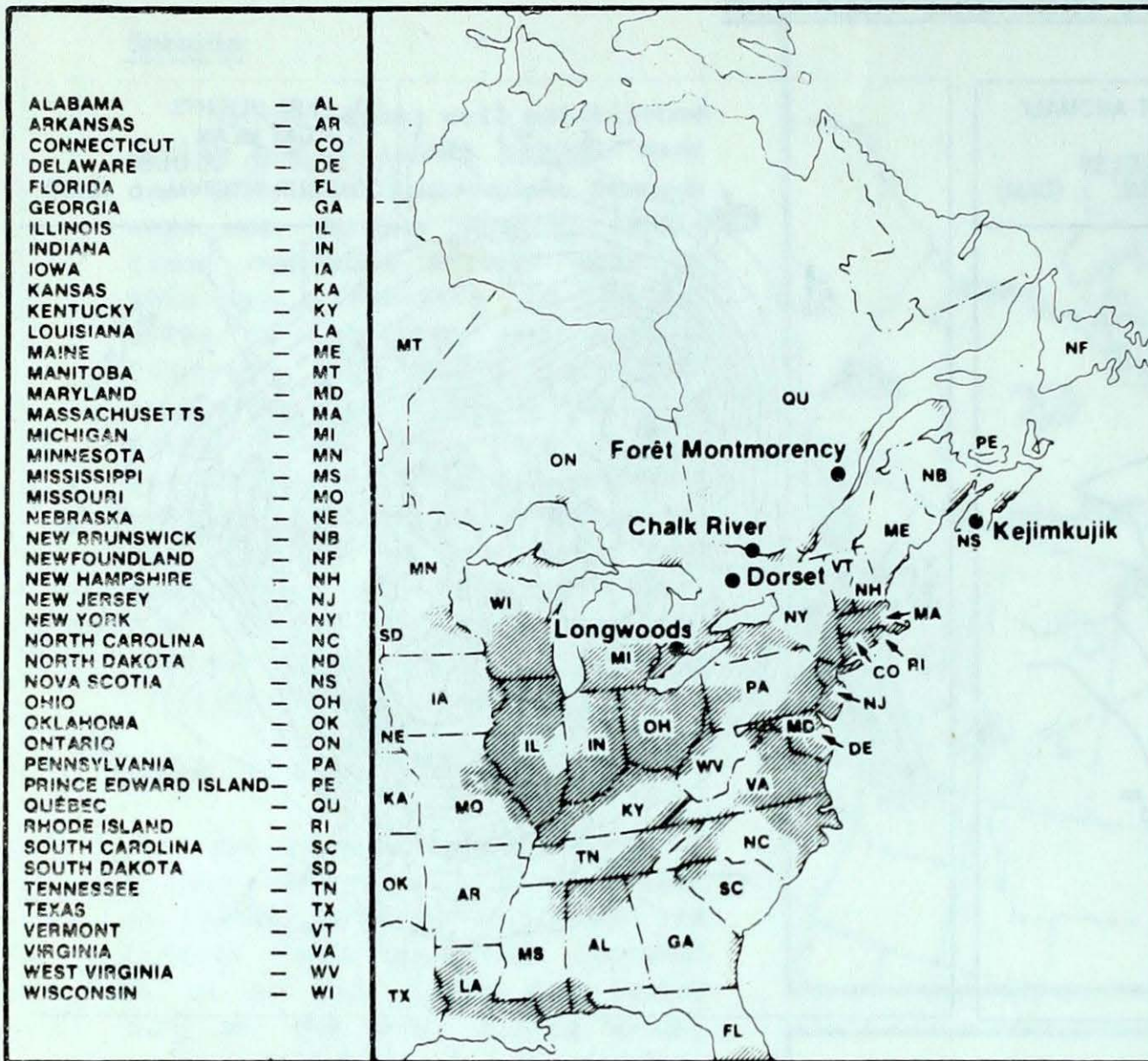


MEAN 50 KPa HEIGHTS (dam)  
January 1 to January 5, 1986



# ACID RAIN

## ACID RAIN REPORT



The reference map (left) shows the locations of sampling sites where the acidity of precipitation is monitored. All are operated by Environment Canada except Dorset which is a research station operated by the Ontario Ministry of the Environment. The map also shows the approximate areas (shaded) where  $\text{SO}_2$  and  $\text{NO}_x$  emissions are greatest. The table below gives the weekly report summarizing the acidity (or pH) of the rain or snow that fell at the collection sites and a description of the path travelled by the moisture laden air. Environmental damage to lakes and streams is usually observed in sensitive areas regularly receiving precipitation with pH less than 4.7, while pH readings less than 4.0 are serious. For more information concerning the acid rain report, see Climatic Perspectives, Vol. 5 No. 50 p. 6.

**DECEMBER 29, 1985 to JANUARY 4, 1986**

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
<b>Longwoods</b>	4	4.1	6(s)	Michigan, Southern Ontario
<b>Dorset</b>	29	4.5	4(s)	Iowa, Wisconsin, Michigan, Southern Ontario
	30	4.2	6(s)	Wisconsin, Michigan, Southern Ontario
	31	4.0	2(s)	Minnesota, Wisconsin, Lake Huron
	1	4.4	4(s)	Minnesota, Wisconsin, Michigan, Lake Huron
	2	4.2	8(s)	Minnesota, Wisconsin, Michigan, Lake Huron
	3	4.0	4(s)	Ohio, New York, Eastern Ontario
	4	4.2	3(s)	Ohio, Southern Ontario
<b>Chalk River</b>	30	4.3	1(s)	Minnesota, Wisconsin, Michigan, Southern Ontario
	1	4.6	4(s)	Wisconsin, Michigan, Central Ontario
	2	4.8	3(s)	Minnesota, Wisconsin, Michigan, Central Ontario
	3	4.2	1(s)	Michigan, Central Ontario
	4	4.1	3(s)	New York, Southern Ontario
<b>Montmorency</b>	29	4.6	6(s)	Michigan, Southern Ontario, New York, Southern Quebec
	30	4.3	2(s)	Northern Ontario, Lake Superior, Central Ontario, Southern Quebec
	31	4.3	8(s)	Ohio, New York, Southern Ontario, Southern Quebec
	1	4.7	7(s)	Northern Ontario, Central Ontario, Central Quebec
	3	5.6	3(s)	Northern Ontario, Northern Quebec
<b>Kejimikujik</b>	31	4.6	11(s)	Atlantic Ocean
	2	4.5	1(s)	Southern Ontario, New York, New England
	3	5.1	37(s)	Atlantic Ocean
	4	5.0	2(s)	Quebec, New Brunswick

r = rain (mm), s = snow (cm), m = mixed rain and snow (mm).

## TEMPERATURE, PRECIPITATION AND MAXIMUM WIND DATA FOR THE WEEK ENDING 0600 GMT JANUARY 7, 1986

STATION	TEMPERATURE				PRECIP.		WIND MX		STATION	TEMPERATURE				PRECIP.		WIND MX	
	AV	DP	MX	MN	TP	SOG	DIR	SPD		AV	DP	MX	MN	TP	SOG	DIR	SPD
<b>BRITISH COLUMBIA</b>									THE PAS	-23P	*	-10P	-37P	2	32	340	48
CAPE ST. JAMES	5P	1P	8	2P	68	0	040	102	THOMPSON	-30	-4	-21	-37	2	30		*
CRANBROOK	-7	7	1	-15	6	18	160	35	WINNIPEG INT'L	-21	-3	-9	-34	2	16	320	46
FORT NELSON	-20	2	-9	-28	3	41		*	<b>ONTARIO</b>								
FORT ST. JOHN	-10	5	2	-22	4	9	240	67	ATIKOKAN	-22	-3	-10	-36	5	39	290	37
KAMLOOPS	-5	1	2	-11	4	10		*	BIG TROUT LAKE	-26	*	-18	-34	3	35	290	31
PENTICTON	-4	0	3	-9	6	7	180	50	GORE BAY	-11	-3	1	-21	17	94	290	56
PORT HARDY	4P	1P	7P	-3P	25	0	110	72	KAPUSKASING	-24	-6	-4	-36	6	65	280	52
PRINCE GEORGE	-10	*	-1	-20	15	23		*	KENORA	-20	-2	-12	-34	4	55	320	61
PRINCE RUPERT	1P	3P	6P	-5P	21	0	140	69	KINGSTON	-7P	0P	3P	-18P	0	24		X
REVELSTOKE	-6	3	-1	-15	25	48	170	31	LONDON	-6	0	2	-13	13	28	230	69
SMITHERS	-10	0	-1	-21	4	13		*	MOOSONEE	-24	-4	-7	-36	7	77	320	41
VANCOUVER INT'L	3	2	8	-2	49	0	260	56	NORTH BAY	-15	-3	-1	-25	14	55	200	46
VICTORIA INT'L	4P	1P	9P	-2P	23	0	270	37	OTTAWA INT'L	-10	0	2	-21	12	31		X
WILLIAMS LAKE	-8	*	0	-22	7	36		X	PETAWAWA	-13	-1	3	-28	15	33		X
<b>YUKON TERRITORY</b>									PICKLE LAKE	-24	-4	-15	-34	2	41	340	43
DAWSON	-7P	*	-10P	-24P	11	39		*	RED LAKE	-23	-3	-14	-37	5	41	310	43
MAYO	-13	14	-2	-27	1	16		X	SUDBURY	-16	-3	-1	-24	11	68		X
SHINGLE POINT A	-29P	-6P	-20P	-39	3	17		*	THUNDER BAY	-18	-4	-8	-31	2	30	300	59
WATSON LAKE	-18	7	-4	-31	3	28		*	TIMMINS	-21	-5	-2	-34	6	61	280	46
WHITEHORSE	-5	13	0	-17	1	14	160	56	TORONTO INT'L	-5	0	3	-15	3	8	240	70
<b>NORTHWEST TERRITORIES</b>									TRENTON	-7	-1	4	-21	7	24		X
ALERT	-34	-2	-30	-39	2	18		*	WIARTON	-6	0	2	-15	27	69		X
BAKER LAKE	-29	2	-21	-38	2	18	320	67	WINDSOR	-3	1	3	-12	6	8	230	56
CAMBRIDGE BAY	-34	-2	-27	-39	2	11		*	<b>QUEBEC</b>								
CAPE DYER	-18	4	-10	-31	4	59	300	72	BAGOTVILLE	-17	-2	1	-30	7	18	270	59
CLYDE	-23	4	-15	-37	3	31	320	67	BLANC SABLON	-11P	*	0P	-24P	67P	24		X
COPPERMINE	-32	*	-27	-37	2	0		*	INUKJUAK	-23	-1	-16	-30	2	37	050	56
CORAL HARBOUR	-24	4	-14	-35	2	37		X	KUUJUAQ	-24	-1	-12	-35	5	46	030	63
EUREKA	-40	-4	-38	-43	2	13		*	KUUJUARAPIK	-23	-2	-16	-29	4	27	290	37
FORT SMITH	-27	-2	-16	-39	1	30		X	MANIWAKI	-14	-1	1	-25	16	36	180	41
FROBISHER BAY	-21	3	-7	-33	7	27	330	72	MONT JOLI	-12	-1	1	-20	25	28	260	80
HALL BEACH	-28	1	-13	-39	2	22	310	56	MONTREAL INT'L	-9	1	4	-19	20	14	030	56
INUVIK	-31	-2	-10	-41	4	19		X	NATASHQUAN	-14P	-3P	0P	-24P	36P	21		*
MOULD BAY	-34	-1	-29	-38	2	20		X	NITCHEQUON								*
NORMAN WELLS	-28	0	-20	-38	6	28		X	QUEBEC	-13	-1	2	-21	18	58	070	76
RESOLUTE	-31	0	-20	-37	2	27		*	SCHIEFFERVILLE	-25	-2	-9	-34	10	14	340	83
SACHS HARBOUR	-32	-3	-24	-38	2	8		X	SEPT-ILES	-17	-3	-1	-29	17	43	340	54
YELLOWKNIFE	-30	-2	-20	-38	2	40	140	39	SHERBROOKE	-10	1	2	-21	28	40	270	57
<b>ALBERTA</b>									VAL D'OR	-20	-4	-1	-32	8	48	310	50
CALGARY INT'L	-5P	5P	6P	-16P	0	0	260	50	<b>NEW BRUNSWICK</b>								
COLD LAKE	-16	1	-8	-25	5	11		*	CHARLO	-14	-2	-3	-25	51	67	270	63
CORONATION	-10P	4P	-2P	-20P	3	2	290	46	CHATHAM	-11	-1	4	-21	54	66	010	80
EDMONTON NAMAO	-9	5	-1	-17	1	9	090	37	FREDERICTON	-10	-1	5	-21	63	67	030	67
FORT MCMURRAY	-19	1	-8	-27	18	31		X	MONCTON	-8	0	6	-20	94	91	250	81
HIGH LEVEL	-21	1	-16	-26	3	29		*	SAINT JOHN	-7	0	6	-22	45	23	210	76
JASPER	-8	4	1	-21	0	20		X	<b>NOVA SCOTIA</b>								
LETHBRIDGE	-3P	6P	4P	-17P	1	1	260	80	GREENWOOD	-4	1	7	-16	55	7	280	104
MEDICINE HAT	-7	4	2	-16	1	3	290	44	SHEARWATER	-1	2	8	-11	44	1	240	80
PEACE RIVER	-14	4	-2	-22	4	9	270	37	SYDNEY	-3	1	5	-11	30	2	140	93
<b>SASKATCHEWAN</b>									YARMOUTH	-1	2	8	-9	47	3	250	89
CREE LAKE	-26	-4	-13	-40	9	26	220	37	<b>PRINCE EDWARD ISLAND</b>								
ESTEVAN	-14	1	-4	-26	8	10	240	48	CHARLOTTETOWN	-6	1	5	-15	32	12	310	102
LA RONGE	-24	-1	-10	-37	5	13	310	35	SUMMERSIDE	-7	0	4	-17	41	44	260	94
REGINA	-14	3	-6	-24	7	13	120	56	<b>NEWFOUNDLAND</b>								
SASKATOON	-15	3	-8	-25	7	10	110	37	CARTWRIGHT	-13	-2	-1	-24	44	50	310	65
SWIFT CURRENT	-10P	4P	-4P	-16P	1P	0		X	CHURCHILL FALLS	-22	-3	-5	-33	32	60	030	87
YORKTON	-19	0	-8	-34	3	8	250	44	GANDER INT'L	-6	0	5	-15	22	22	280	93
<b>MANITOBA</b>									GOOSE	-17P	-1P	-2P	-26P	21	20	320	100
BRANDON	-20	-2	-12	-34	5	13	250	48	PORT-AUX-BASQUES	-4	-1	3	-12	36	44	230	111
CHURCHILL	-27	-1	-21	-32	2	9	290	46	ST JOHN'S	-3	0	8	-12	37	10	250	100
LYNN LAKE	-30	-6	-22	-39	2	22		*	ST LAWRENCE	-2P	0P	5	-10P	46P	6		X

AV = weekly mean temperature in degree C  
 MX = weekly extreme maximum temperature in degree C  
 MN = weekly extreme minimum temperature in degree C  
 TP = weekly total precipitation in mm  
 DP = departure of mean temperature from normal in degree C  
 SOG = snow depth on ground in cm, last day of the period

DIR = direction of maximum wind speed (deg. from true north)  
 SPD = maximum wind speed in km/hour (10 minute mean)

X = not observed  
 P = value based on less than 7 days  
 \* = missing





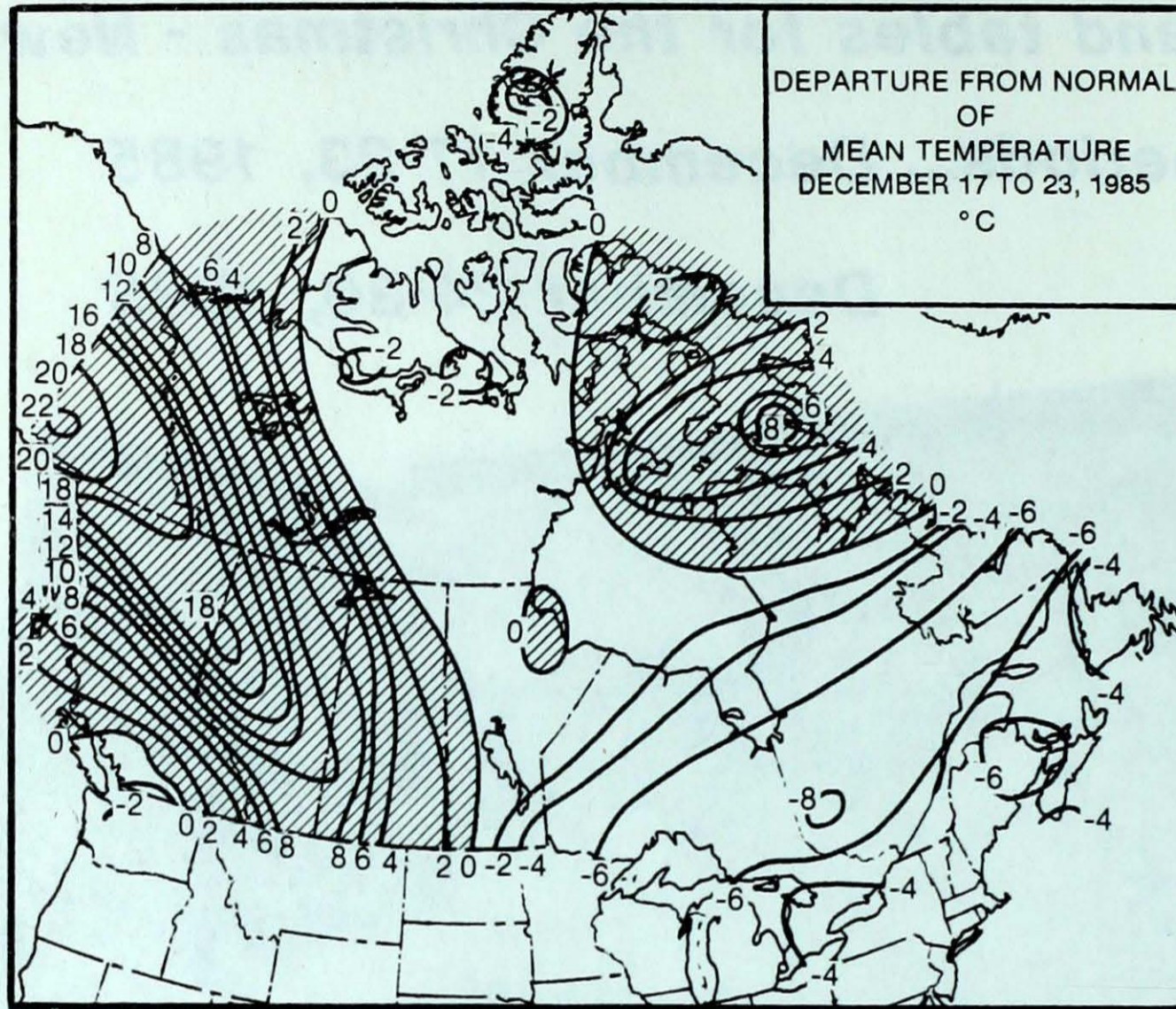
**Maps and tables for the Christmas - New Year  
periods... December 17-23, 1985**

**December 24-30, 1985**



This photograph, taken at the same time as the picture on the front cover, shows the large cloud shield associated with the fierce winter storm, which hit Atlantic Canada with snow and rain during the weekend, still covering much of Newfoundland and Labrador.

# TEMPERATURE

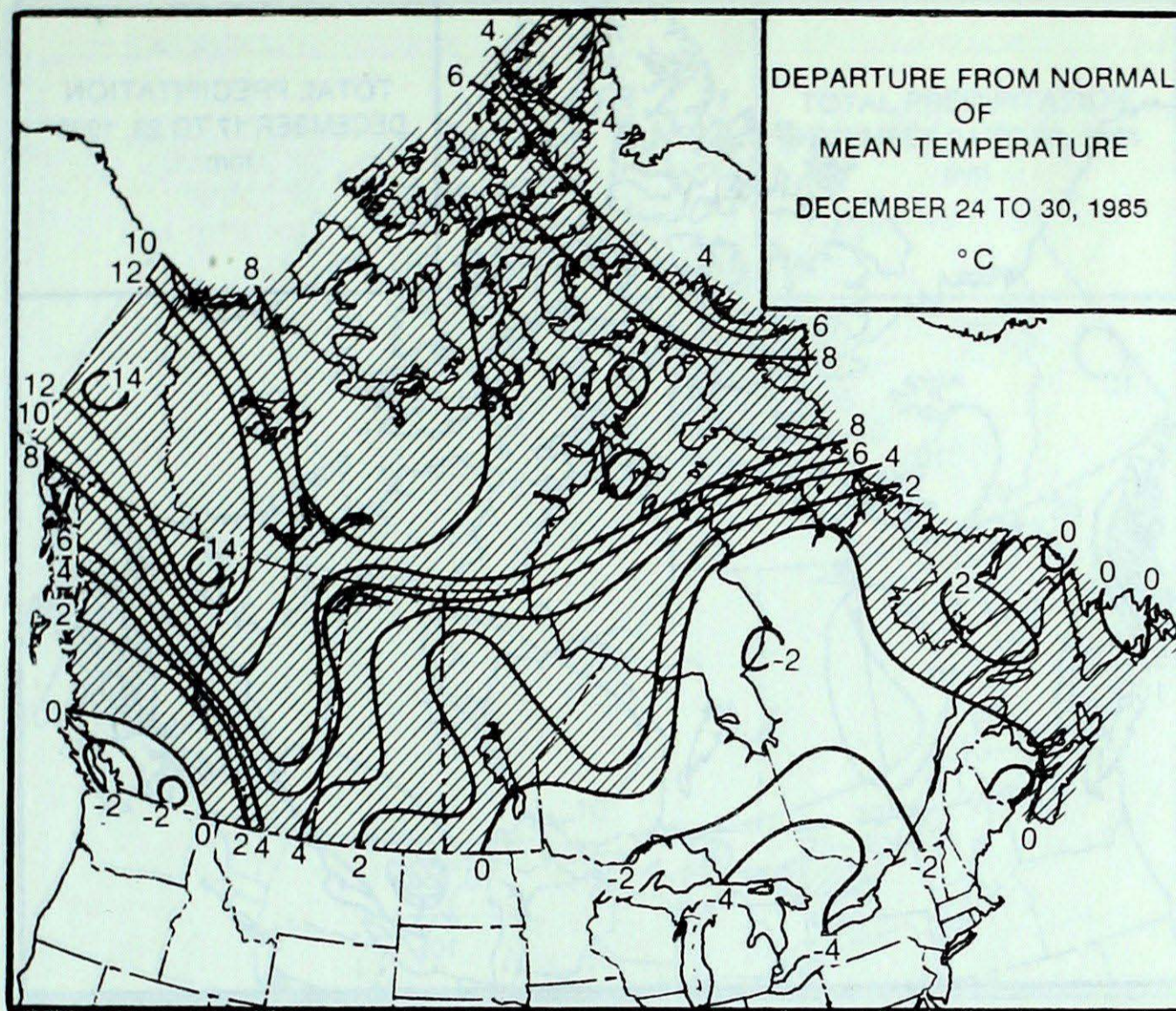


## WEEKLY TEMPERATURE EXTREME (C)

	MAXIMUM	MINIMUM
<b>BRITISH COLUMBIA</b>	PRINCE RUPERT 14	FORT NELSON -16
<b>YUKON TERRITORY</b>	FARO 8	PUNTZI MOUNTAIN -28
<b>NORTHWEST TERRITORIES</b>	FORT SMITH 2	EUREKA -44
<b>ALBERTA</b>	CALGARY INT'L 12	FORT CHIPEWYAN -27
<b>SASKATCHEWAN</b>	NORTH BATTLEFORD 7	CREE LAKE -37
<b>MANITOBA</b>	DAUPHIN 5	LYNN LAKE -35
<b>ONTARIO</b>	POINT PETRE 3	GERALDTON -41
<b>QUEBEC</b>	TRENTON 0	LA GRANDE RIVIERE -40
<b>NEW BRUNSWICK</b>	SANT JOHN 1	FREDERICTON -28
<b>NOVA SCOTIA</b>	SABLE ISLAND 7	AMHERST -21
<b>PRINCE EDWARD ISLAND</b>	EAST POINT 2	CHARLOTTETOWN -19
<b>NEWFOUNDLAND</b>	ARGENTIA 3	WABUSH LAKE -37

## ACROSS THE NATION

<b>WARMEST MEAN TEMPERATURE</b>	8	LANGARA	BC
<b>COOLEST MEAN TEMPERATURE</b>	-41	EUREKA	NWT



**WEEKLY TEMPERATURE EXTREME (C)**

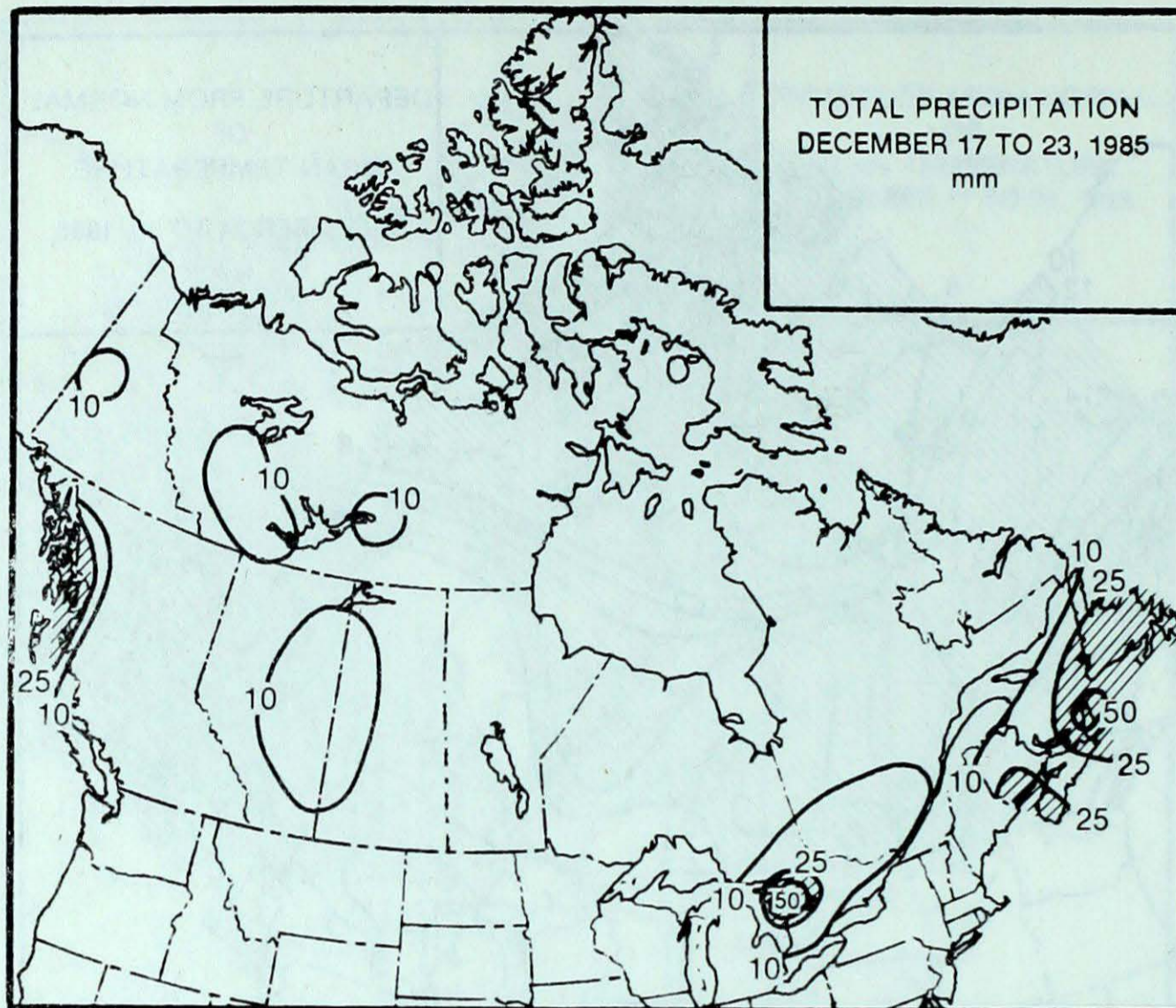
**MAXIMUM**

**MINIMUM**

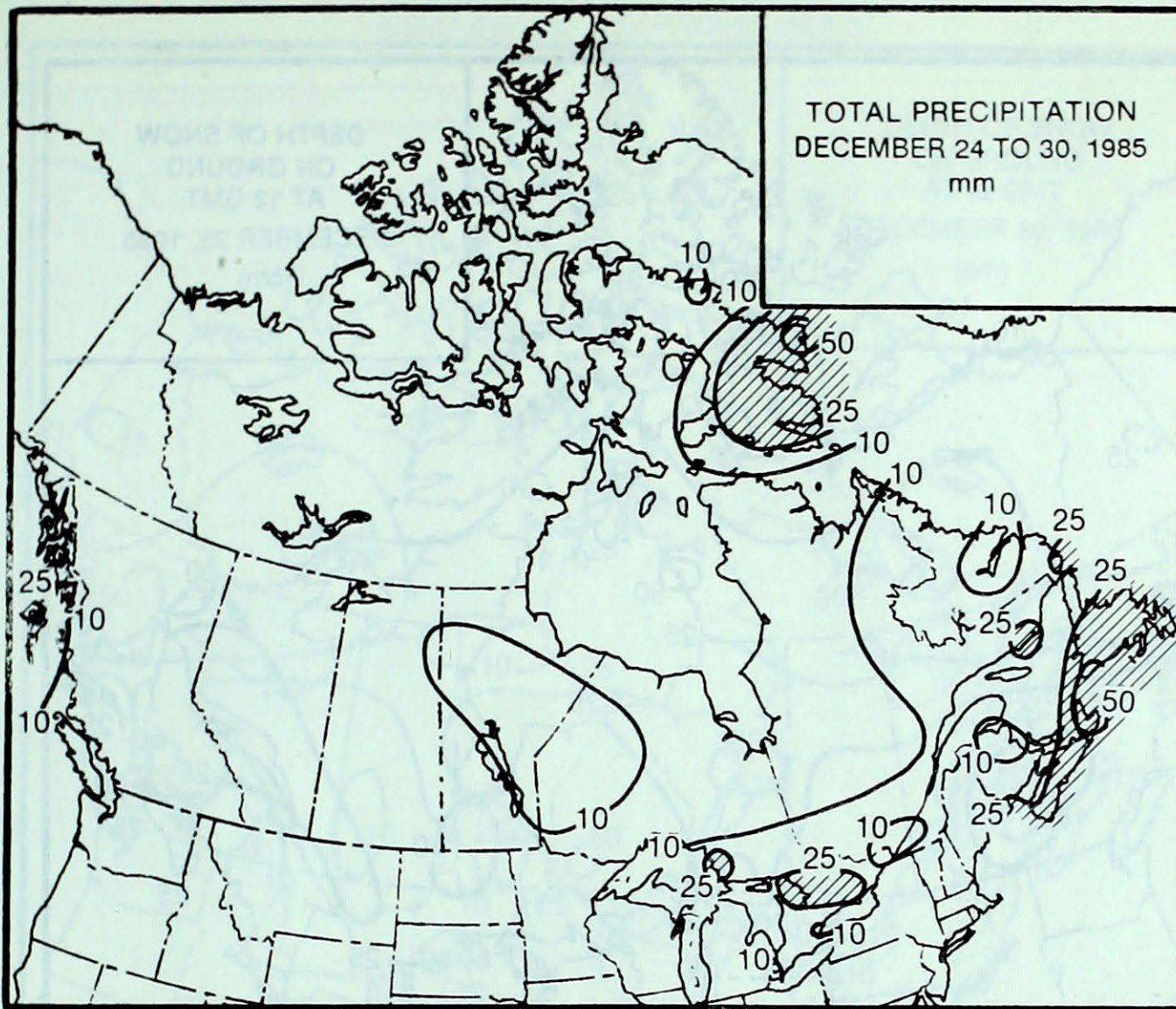
	MAXIMUM	MINIMUM
<b>BRITISH COLUMBIA</b>	FORT NELSON 11	DEASE LAKE -25
<b>YUKON TERRITORY</b>	BURWASH 11	KOMAKUK BEACH A -34
<b>NORTHWEST TERRITORIES</b>	HAY RIVER 8	EUREKA -39
<b>ALBERTA</b>	CALGARY INT'L 15	FORT CHIPEWYAN -32
<b>SASKATCHEWAN</b>	MEADOW LAKE 6	LA RONGE -33
<b>MANITOBA</b>	BRANDON 3	THOMPSON -35
<b>ONTARIO</b>	POINT PETRE 4	PETAWAWA -37
<b>QUEBEC</b>	TRENTON	KUUJUARAPIK -37
	CHEVERY 4	
<b>NEW BRUNSWICK</b>	MONCTON 9	CHARLO -27
<b>NOVA SCOTIA</b>	SYDNEY 12	SHELBURNE -14
<b>PRINCE EDWARD ISLAND</b>	CHARLOTTETOWN 8	CHARLOTTETOWN -16
<b>NEWFOUNDLAND</b>	ARGENTIA 14	CHURCHILL FALLS -30

**ACROSS THE NATION**

<b>WARMEST MEAN TEMPERATURE</b>	5	CAPE ST. JAMES BC
<b>COOLEST MEAN TEMPERATURE</b>	-33	MOULD BAY NWT

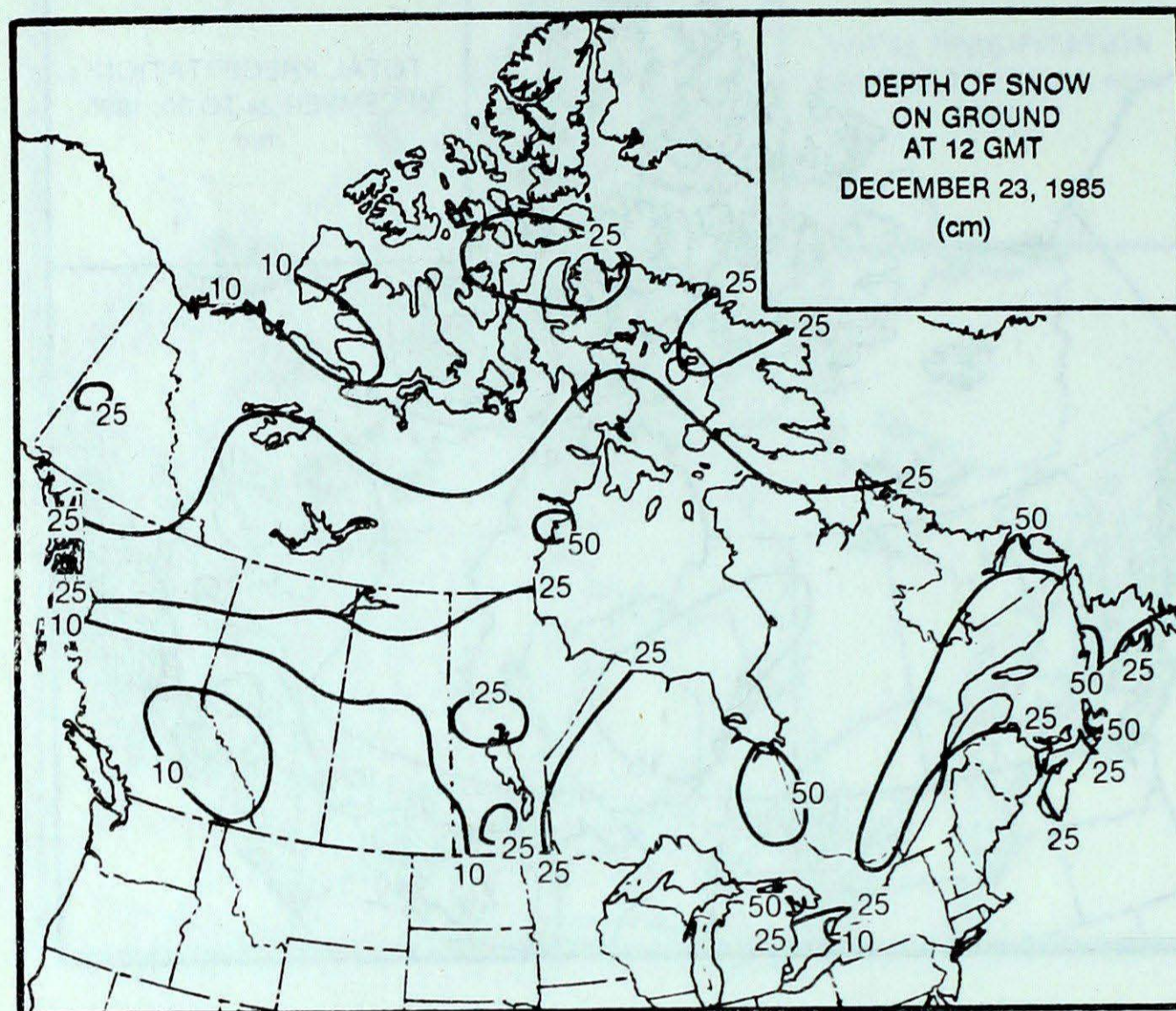
**PRECIPITATION****HEAVIEST WEEKLY PRECIPITATION (mm)**

<b>BRITISH COLUMBIA</b>	PRINCE RUPERT	30
	AMPHITRITE POINT	
<b>YUKON TERRITORY</b>	DAWSON	12
<b>NORTHWEST TERRITORIES</b>	NORMAN WELLS	14
<b>ALBERTA</b>	FORT MCMURRAY	16
<b>SASKATCHEWAN</b>	KINDERSLEY	11
<b>MANITOBA</b>	DAUPHIN	9
<b>ONTARIO</b>	WIARTON	60
<b>QUEBEC</b>	KUUJJUAQ	27
<b>NEW BRUNSWICK</b>	SAINT JOHN	29
<b>NOVA SCOTIA</b>	SYDNEY	54
<b>PRINCE EDWARD ISLAND</b>	CHARLOTTETOWN	26
<b>NEWFOUNDLAND</b>	STEPHENVILLE	36



**HEAVIEST WEEKLY PRECIPITATION (mm)**

<b>BRITISH COLUMBIA</b>	LANGARA	30
<b>YUKON TERRITORY</b>	KOMAKUK BEACH A	7
<b>NORTHWEST TERRITORIES</b>	CAPE DYER	68
<b>ALBERTA</b>	FORT CHIPEWYAN	8
<b>SASKATCHEWAN</b>	MEADOW LAKE	7
<b>MANITOBA</b>	NORWAY HOUSE	20
<b>ONTARIO</b>	WIARTON	38
<b>QUEBEC</b>	NATASHQUAN	31
<b>NEW BRUNSWICK</b>	SAINT JOHN	37
<b>NOVA SCOTIA</b>	SYDNEY	52
<b>PRINCE EDWARD ISLAND</b>	CHARLOTTETOWN	19
<b>NEWFOUNDLAND</b>	PORT-AUX-BASQUES	57

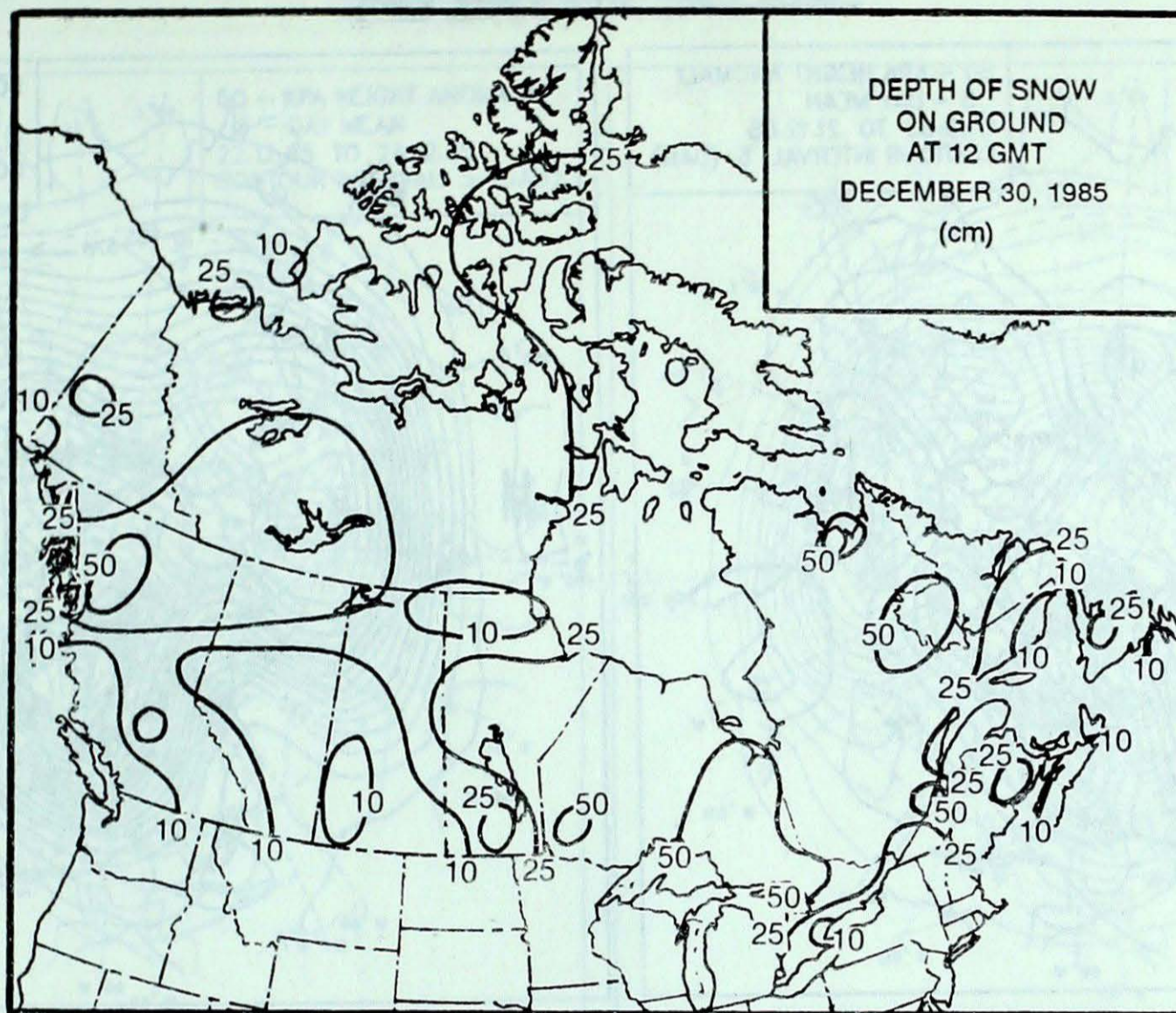


**ACID RAIN REPORT**

DECEMBER 15 to DECEMBER 21, 1985

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	16	4.6	5(s)	Illinois, Indiana, Michigan, Southern Ontario
	21	4.7	4(s)	Illinois, Indiana, Ohio
Dorset	15	4.7	9(s)	Illinois, Indiana, Michigan
	16	5.0	5(s)	Wisconsin, Michigan
	17	4.4	2(s)	Wisconsin, Michigan
	18	4.6	1(s)	Northern Ontario, Lake Superior, Lake Huron
Chalk River	16	4.9	1(s)	Wisconsin, Michigan, Central Ontario
	20	4.0	1(s)	Southern Ontario, Central Ontario
Montmorency	15	4.5	3(s)	Wisconsin, Michigan, Southern Ontario, Southern Quebec
	16	5.3	2(s)	New York, Southern Quebec
	17	4.5	7(s)	Southern Ontario, New York, Southern Quebec
	18	4.5	3(s)	Southern Quebec, Central Quebec
Kejinkujik	15	4.5	2(s)	Southern Ontario, New England
	16	4.1	4(s)	Ohio, Pennsylvania, New Jersey, Atlantic Ocean
	17	4.1	7(s)	Ohio, Pennsylvania, New England
	18	4.3	12(s)	Pennsylvania, New England, Atlantic Ocean
	20	4.2	1(s)	Southern Quebec, Maine

r = rain (mm), s = snow (cm), m = mixed rain and snow (mm).



### ACID RAIN REPORT

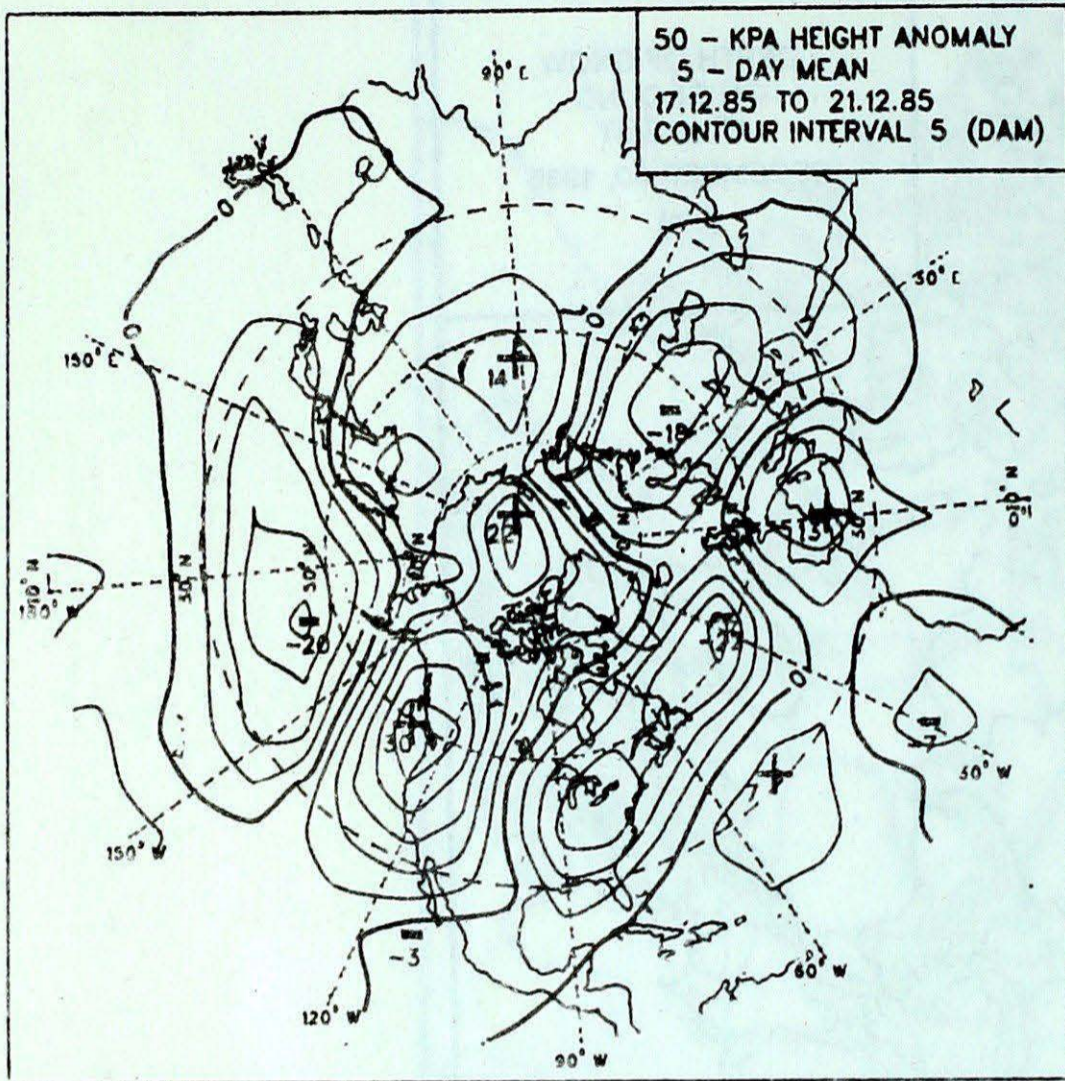
DECEMBER 22 to DECEMBER 28, 1985

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
<b>Longwoods</b>	DATA	NOT	AVAILABLE	
<b>Dorset</b>	DATA	NOT	AVAILABLE	
<b>Chalk River</b>	22	4.2	7(s)	Indiana, Ohio, Southern Ontario
	23	4.4	7(s)	West Virginia, Ohio, Southern Ontario
	24	4.5	2(s)	Ohio, Southern Ontario
	26	4.3	2(s)	Illinois, Indiana, Ohio, Eastern Ontario
	27	4.6	2(s)	Indiana, Ohio, Pennsylvania, New York, Eastern Ontario
<b>Montmorency</b>	22	4.5	5(s)	Southern Ontario, New York, New England
	23	4.6	3(s)	Southern Ontario, Southern Quebec
	24	4.2	10(s)	Pennsylvania, New York, New England, Southern Quebec
	25	4.8	4(s)	Southern and Central Quebec
	27	4.5	6(s)	Pennsylvania, New York, Southern Quebec
	28	4.3	4(s)	Lake Superior, Lake Huron, Eastern Ontario, Southern Quebec
<b>Kejinkujik</b>	22	5.1	2(s)	Southern Ontario, New York, New England, Atlantic Ocean
	23	4.6	4(s)	New York, Atlantic Ocean
	24	4.8	2(r)	Atlantic Ocean
	25	5.3	8(m)	Atlantic Ocean
	27	5.0	3(s)	Atlantic Ocean
	28	4.1	3(s)	Illinois, Indiana, Ohio, Pennsylvania, New England

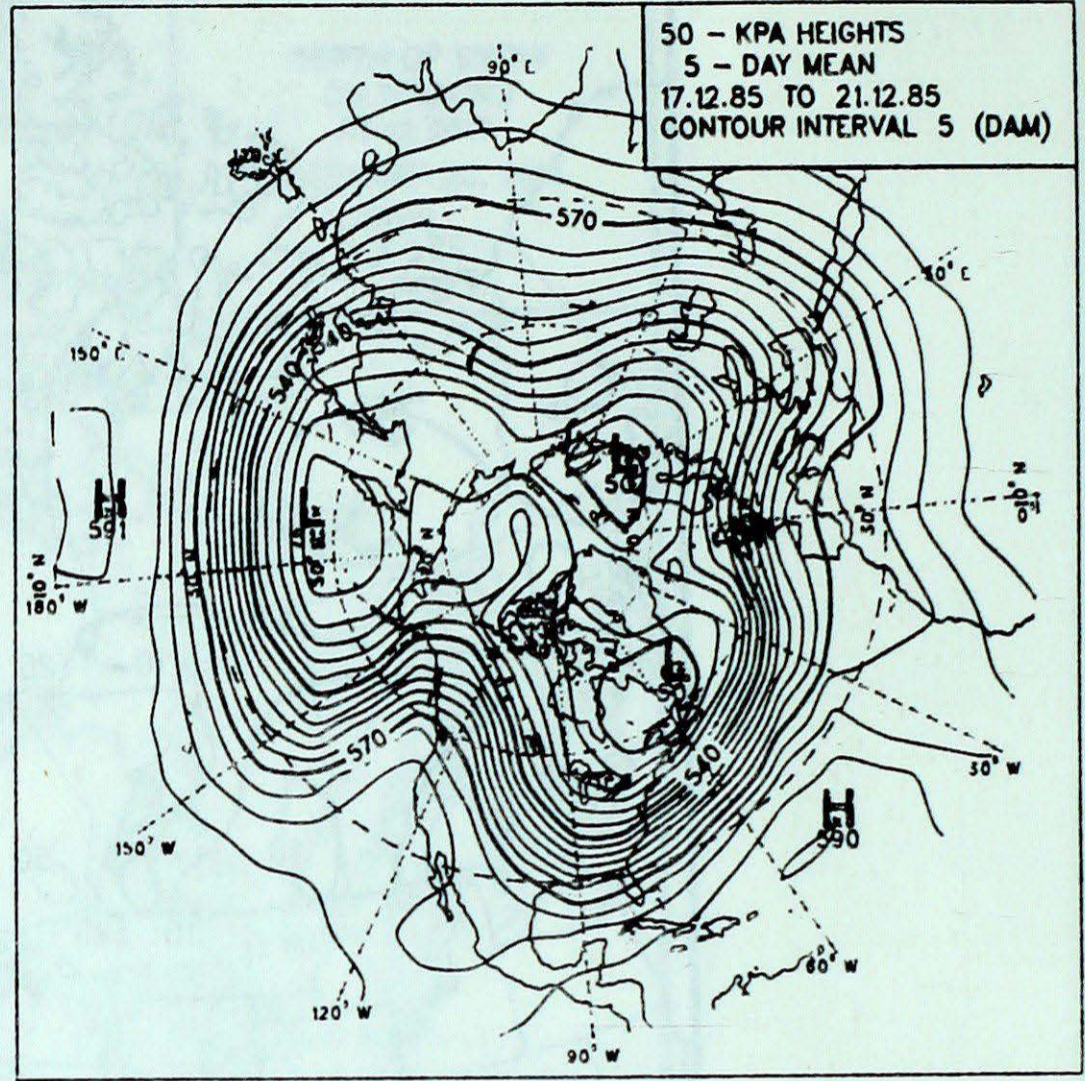
r = rain (mm), s = snow (cm), m = mixed rain and snow (mm).

# CIRCULATION

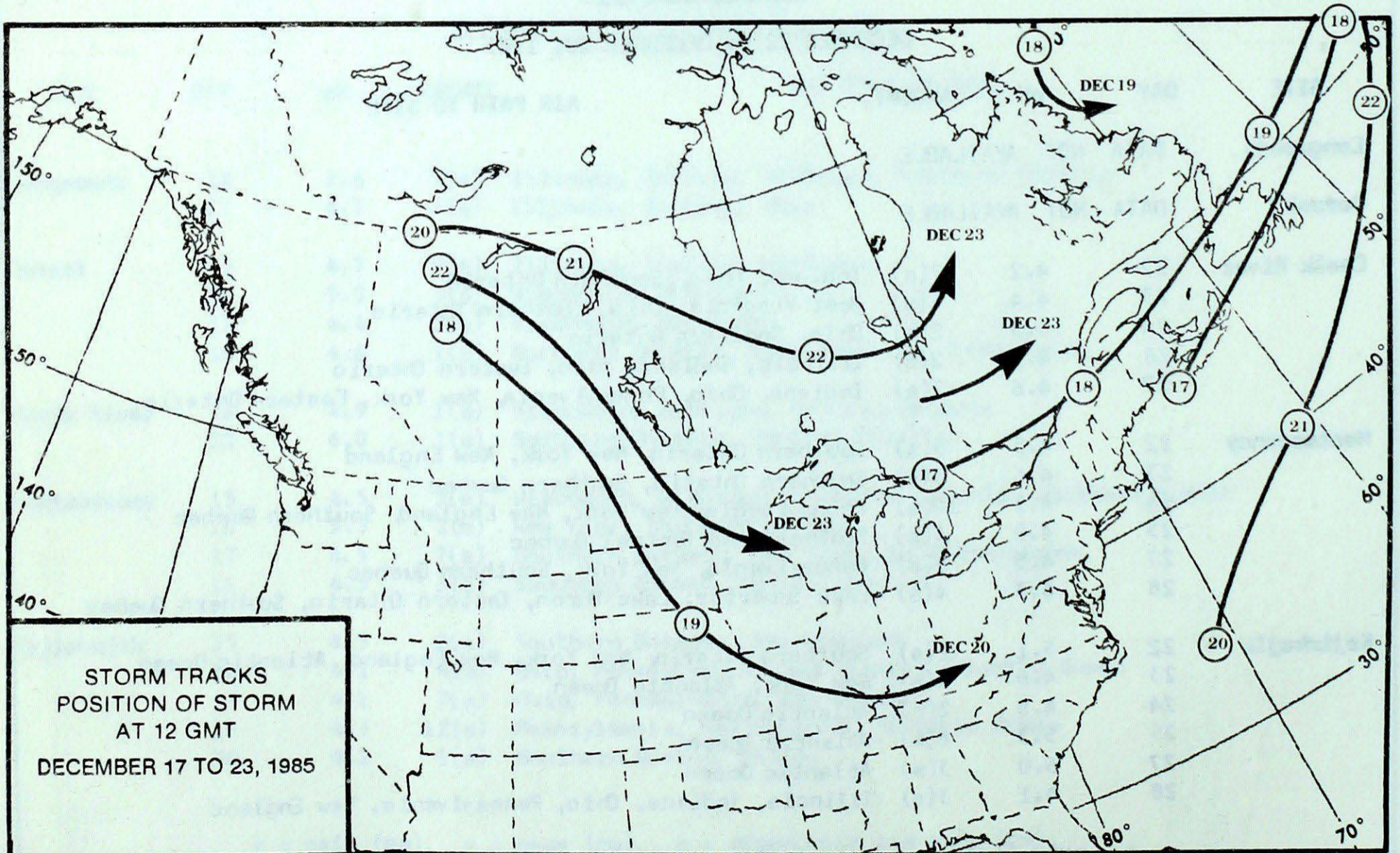
## 50 KPa ATMOSPHERIC CIRCULATION



MEAN 50 KPa HEIGHT ANOMALY (dam)  
December 17 to December 21, 1985



MEAN 50 KPa HEIGHTS (dam)  
December 17 to December 21, 1985

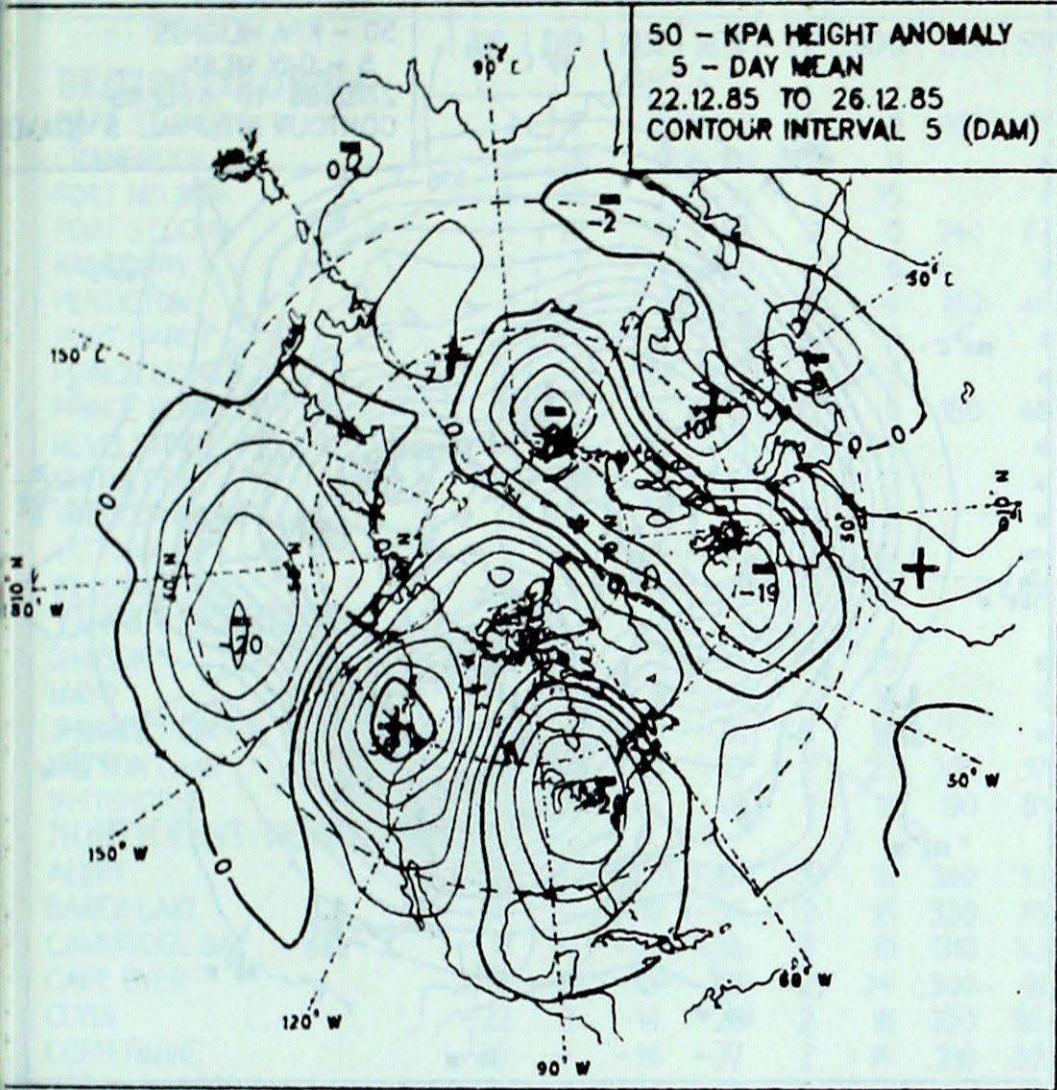


STORM TRACKS  
POSITION OF STORM  
AT 12 GMT  
DECEMBER 17 TO 23, 1985



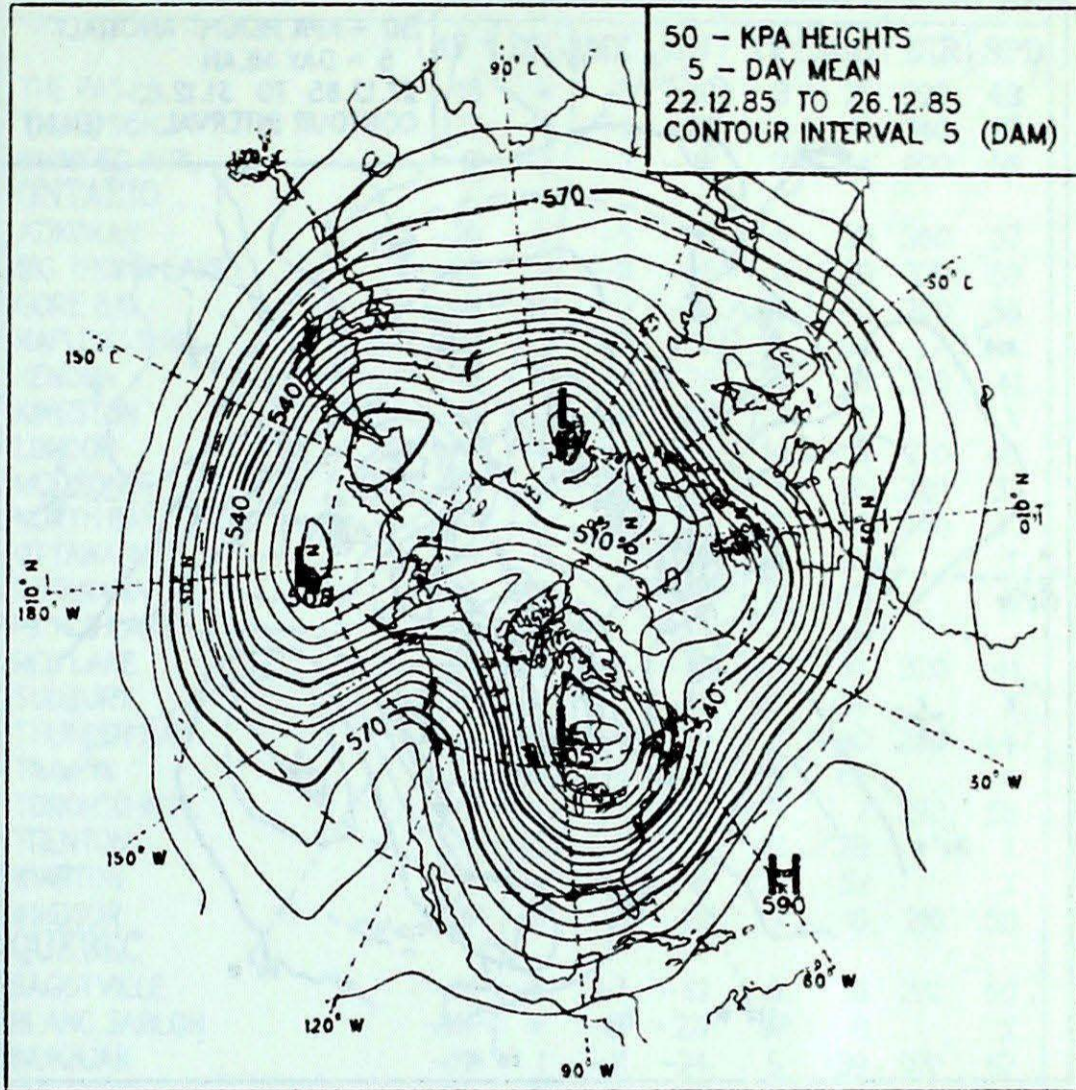
**50 KPa ATMOSPHERIC CIRCULATION**

50 - KPa HEIGHT ANOMALY  
5 - DAY MEAN  
22.12.85 TO 26.12.85  
CONTOUR INTERVAL 5 (DAM)

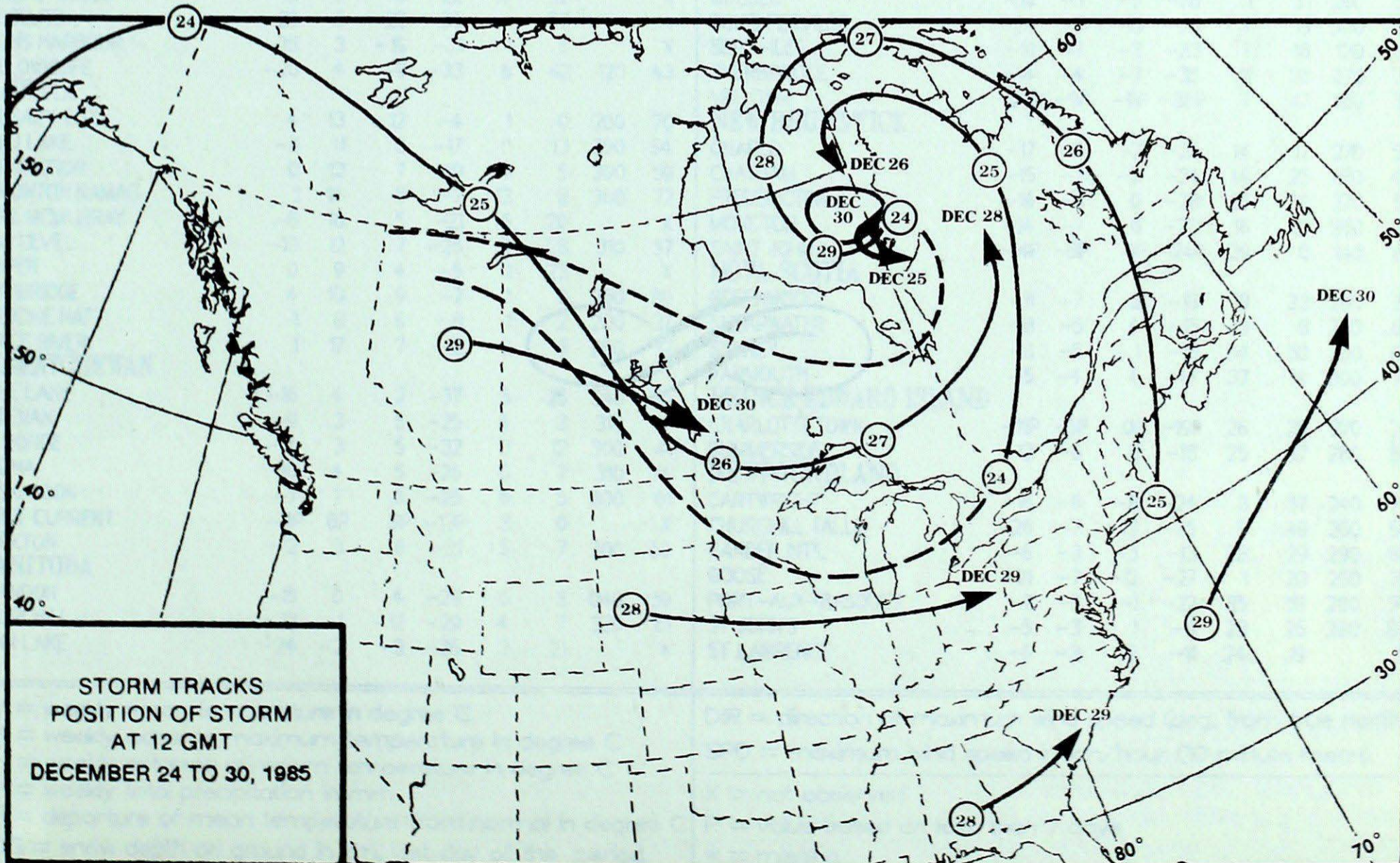


MEAN 50 KPa HEIGHT ANOMALY (dam)  
December 22 to December 26, 1985

50 - KPa HEIGHTS  
5 - DAY MEAN  
22.12.85 TO 26.12.85  
CONTOUR INTERVAL 5 (DAM)



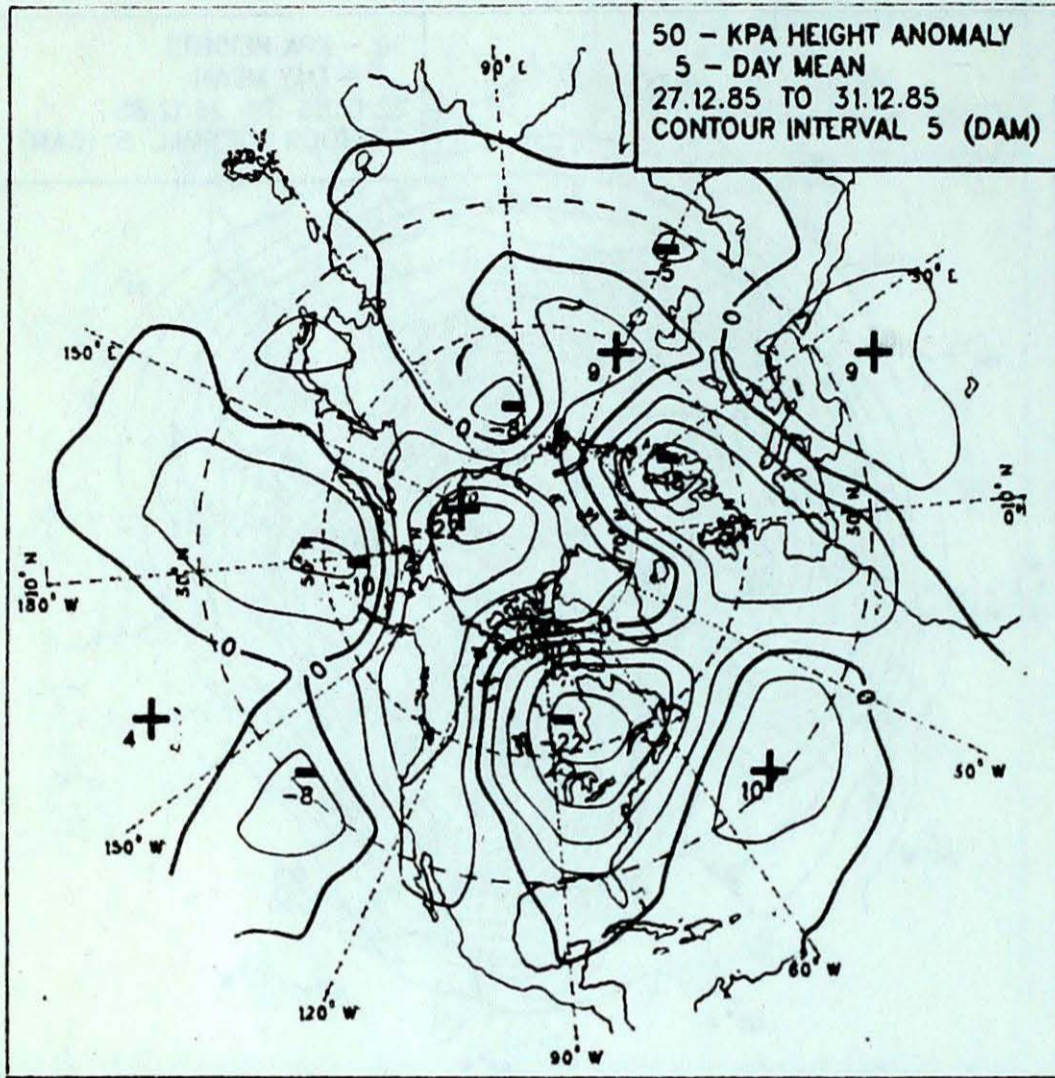
MEAN 50 KPa HEIGHTS (dam)  
December 22 to December 26, 1985



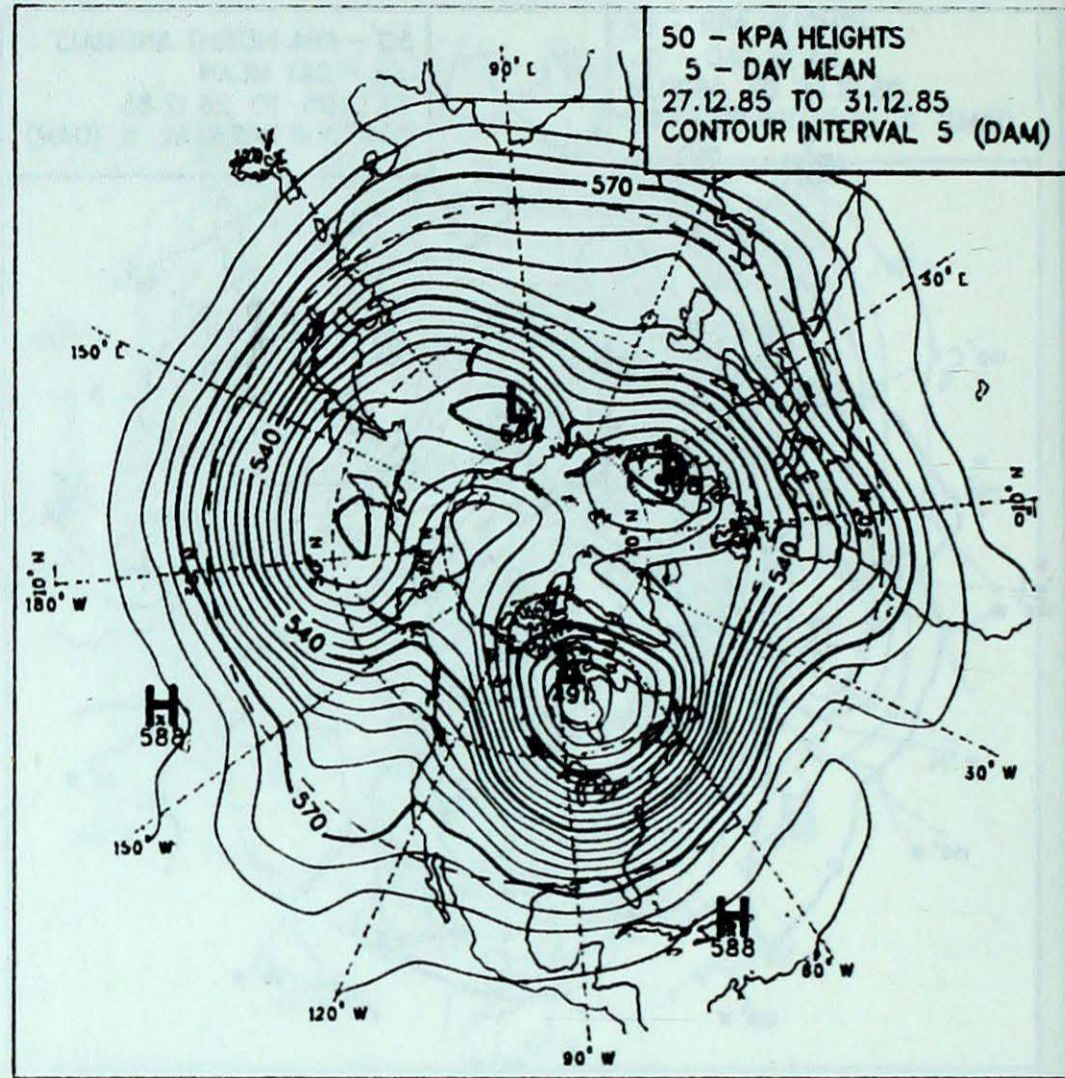
STORM TRACKS  
POSITION OF STORM  
AT 12 GMT  
DECEMBER 24 TO 30, 1985

# CIRCULATION

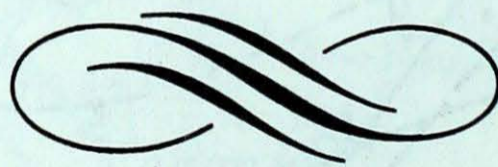
## 50 KPa ATMOSPHERIC CIRCULATION



MEAN 50 KPa HEIGHT ANOMALY (dam)  
December 27 to December 31, 1985



MEAN 50 KPa HEIGHTS (dam)  
December 27 to December 31, 1985



STATION TRACKS  
POSITION AT 0000 UTC  
DATE 27-31 DEC 1985

## TEMPERATURE, PRECIPITATION AND MAXIMUM WIND DATA FOR THE WEEK ENDING 0800 GMT DECEMBER 24, 1985

STATION	TEMPERATURE				PRECIP.		WIND MX		STATION	TEMPERATURE				PRECIP.		WIND MX	
	AV	DP	MX	MN	TP	SOG	DIR	SPD		AV	DP	MX	MN	TP	SOG	DIR	SPD
<b>BRITISH COLUMBIA</b>																	
CAPE ST. JAMES	7	2	8	5	25	0	160	74	THE PAS	-18	*	3	-30	8	25	290	48
CRANBROOK	-3P	2P	0	-10P	0	11		*	THOMPSON	-23	-1	-9	-33	3	16	340	37
FORT NELSON	-5	17	7	-16	3	35		*	WINNIPEG INT'L	-17	-3	3	-30	7	14	020	56
FORT ST. JOHN	5	19	9	-2	2	0	240	67	<b>ONTARIO</b>								
KAMLOOPS	-2	1	2	-8	0	6		*	ATIKOKAN	-20	-6	-5	-33	6	35	300	37
PENTICTON	-3	-3	1	-12	0	4	180	46	BIG TROUT LAKE	-24	*	-11	-35	11	29	320	50
PORT HARDY	4	1	9	-1	4	0		*	GORE BAY	-11	-4	-2	-26	15	48	200	56
PRINCE GEORGE	0P	*	3P	-5P	1	6		*	KAPUSKASING	-23	-7	-7	-37	4	60		*
PRINCE RUPERT	8	7	14	-2	30	0	180	46	KENORA	-18	-4	-1	-28	5	45	350	41
REVELSTOKE	-1	2	1	-5	2	24		*	KINGSTON	-10P	-4P	-1P	-19P	3	32		X
SMITHERS	-1P	8P	4P	-6P	1	7		*	LONDON	-9	-4	1	-15	14	15	220	48
VANCOUVER INT'L	2	-2	7	-1	0	0		*	MOOSONEE	-24	-6	-9	-38	5	65	280	37
VICTORIA INT'L	3	-2	8	0	0	0		*	NORTH BAY	-17	-6	-5	-32	15	30	060	41
WILLIAMS LAKE	-3P	*	2P	-9P	0	20		X	OTTAWA INT'L	-15	-5	-1	-27	11	29		X
<b>YUKON TERRITORY</b>									PETAWAWA	-18	-6	-3	-34	12	23		X
DAWSON	-8	*	1	-24	12	25		*	PICKLE LAKE						44		
MAYO	-5	19	5	-21	6	14		X	RED LAKE	-20	-4	-5	-29	2	34	320	41
SHINGLE POINT A	-17	8	1	-28	5	15		*	SUDBURY	-18	-6	-5	-35	15	34		X
WATSON LAKE	-4	21	5	-12	7	23	200	37	THUNDER BAY	-17	-6	-5	-30	7	30	280	44
WHITEHORSE	2	20	7	-9	1	15	190	81	TIMMINS	-23	-8	-6	-40	5	66		*
<b>NORTHWEST TERRITORIES</b>									TORONTO INT'L	-7	-3	1	-16	3	7	250	56
ALERT	-30P	0P	-25P	-35P	1P	18	340	33	TRENTON	-9	-3	3	-20	17	28		X
BAKER LAKE	-29	0	-19	-35	2	15	330	70	WIARTON	-7	-2	0	-19	60	52		X
CAMBRIDGE BAY	-31	-1	-23	-36	2	10	310	33	WINDSOR	-8P	-5P	2P	-15P	9	10	210	50
CAPE DYER	-18P	2P	-10P	-28P	2	24	300	91	<b>QUEBEC</b>								
CLYDE	-22	3	-14	-28	2	18	320	56	BAGOTVILLE	-21	-6	-7	-32	8	16	270	50
COPPERMINE	-26	*	-14	-37	2	14	210	33	BLANC SABLON	-14P	*	-6P	-22P	9P	8		X
CORAL HARBOUR	-21	5	-7	-31	4	42		X	INUKJUAQ	-19	1	-11	-24	5	39	070	52
EUREKA	-41P	-6P	-38P	-44P	2	13		*	KUUJUAQ	-20	0	-10	-35	27	49	290	87
FORT SMITH	-16	7	2	-28	4	31		X	KUUJUARAPIK	-24	-6	-13	-39	5	26	110	59
FROBISHER BAY	-14	8	-4	-23	2	18	340	43	MANIWAKI	-18	-6	-4	-35	8	20		*
HALL BEACH	-26P	0P	-18P	-33P	2	17	320	50	MONT JOLI	-16	-5	-6	-24	7	14	240	61
INUVIK	-19	9	-2	-31	0	19		X	MONTREAL INT'L	-14	-5	0	-27	8	12	270	63
MOULD BAY	-34	-2	-24	-39	2	20		X	NATASHQUAN	-17	-7	-3	-26	6	2		*
NORMAN WELLS	-13	13	-6	-22	14	32		X	NITCHEQUON						*		
RESOLUTE	-29	0	-22	-35	1	27		*	QUEBEC	-16	-5	-5	-28	11	31	260	57
SACHS HARBOUR	-25	3	-19	-31	1	6		X	SCHEFFERVILLE	-26	-5	-13	-36	7	19	300	63
YELLOWKNIFE	-20	4	-9	-33	6	42	120	43	SEPT-ILES	-19	-7	-3	-33	7	16	120	52
<b>ALBERTA</b>									SHERBROOKE	-14	-4	-3	-35	8	28	270	72
CALGARY INT'L	4	13	12	-4	1	0	260	70	VAL D'OR	-24P	-9P	-9P	-36P	7	47	180	35
COLD LAKE	-3	11	8	-17	11	13	290	54	<b>NEW BRUNSWICK</b>								
CORONATION	0	12	7	-10	14	5	300	59	CHARLO	-17	-6	-7	-25	14	17	270	50
EDMONTON NAMAO	1	14	8	-7	12	8	300	72	CHATHAM	-15	-7	-2	-24	14	25	280	48
FORT MCMURRAY	-8	10	5	-21	16	20		X	FREDERICTON	-16	-8	0	-28	25	30	270	52
HIGH LEVEL	-10	12	7	-25	9	28	310	37	MONCTON	-14	-7	0	-23	16	23	260	59
JASPER	0	9	4	-5	0	23		X	SAINT JOHN	-14P	-8P	1P	-24P	29	0	140	65
LETHBRIDGE	4	10	9	-2	1	0	260	89	<b>NOVA SCOTIA</b>								
MEDICINE HAT	1	8	6	-8	1	2	280	37	GREENWOOD	-11	-7	3	-18	18	33	280	78
PEACE RIVER	1	17	7	-12	0	8	280	52	SHEARWATER	-8	-5	4	-15	19	8	280	69
<b>SASKATCHEWAN</b>									SYDNEY	-8	-5	1	-16	54	50	250	89
CREE LAKE	-16	4	2	-37	5	25	340	56	YARMOUTH	-5	-4	4	-14	37	14	300	76
ESTEVAN	-9	3	5	-25	4	3	310	74	<b>PRINCE EDWARD ISLAND</b>								
LA RONGE	-14	3	5	-32	8	12	300	41	CHARLOTTETOWN	-11P	-5P	0P	-19P	26	25	270	74
REGINA	-10	4	5	-25	6	7	310	74	SUMMERSIDE	-12	-6	0	-18	25	37	280	80
SASKATOON	-7	7	6	-25	6	5	300	61	<b>NEWFOUNDLAND</b>								
SWIFT CURRENT	-3P	8P	3P	-13P	3	0		X	CARTWRIGHT	-16	-6	-8	-24	3	57	240	78
YORKTON	-12	3	6	-31	5	7	300	50	CHURCHILL FALLS	-26	-7	-13	-35	5	49	260	50
<b>MANITOBA</b>									GANDER INT'L	-8	-3	-3	-13	28	29	290	87
BRANDON	-15	0	4	-29	6	8	040	59	GOOSE	-21	-7	-12	-27	1	20	250	70
CHURCHILL	-22	1	-12	-29	4	7	320	61	PORT-AUX-BASQUES	-7	-5	-1	-22	35	59	280	74
LYNN LAKE	-24	-2	-3	-35	3	21		*	ST JOHN'S	-5	-3	1	-9	28	26	280	83
									ST LAWRENCE	-5	-3	2	-11	24	19		X

AV = weekly mean temperature in degree C  
 MX = weekly extreme maximum temperature in degree C  
 MN = weekly extreme minimum temperature in degree C  
 TP = weekly total precipitation in mm  
 DP = departure of mean temperature from normal in degree C  
 SOG = snow depth on ground in cm, last day of the period

DIR = direction of maximum wind speed (deg. from true north)  
 SPD = maximum wind speed in km/hour (10 minute mean)  
 X = not observed  
 P = value based on less than 7 days  
 \* = missing

# STATISTICS

TEMPERATURE, PRECIPITATION AND MAXIMUM WIND DATA FOR THE WEEK ENDING 0600 GMT DECEMBER 31, 1985

STATION	TEMPERATURE				PRECIP.		WIND MX		STATION	TEMPERATURE				PRECIP.		WIND MX	
	AV	DP	MX	MN	TP	SOG	DIR	SPD		AV	DP	MX	MN	TP	SOG	DIR	SPD
<b>BRITISH COLUMBIA</b>									THE PAS	-17P	*	-8P	-31P	5	30	300	69
CAPE ST. JAMES	5	1	9	2	12	0	050	54	THOMPSON	-21	1	-12	-35	13	29	290	59
CRANBROOK	-8	0	-4	-16	1	12		*	WINNIPEG INT'L	-16	0	-4	-27	5	13	170	74
FORT NELSON	-7	14	11	-18	3	31	310	59	<b>ONTARIO</b>								
FORT ST. JOHN	-2	11	9	-10	4	6	250	61	ATIKOKAN	-18	-2	-5	-28	7	35	290	37
KAMLOOPS	-6	-1	-3	-10	1	7		*	BIG TROUT LAKE	-18	*	-12	-25	12	32	320	52
PENTICTON	-4	-2	-1	-6	1	4	170	39	GORE BAY	-11	-3	0	-26	17	90	190	102
PORT HARDY	2	-1	6	-2	6	0		*	KAPUSKASING	-18	-1	-4	-31	6	61	170	43
PRINCE GEORGE	-10	*	-2	-16	2	9	170	33	KENORA	-18	-2	-8	-29	7	52	350	54
PRINCE RUPERT	1	1	7	-6	8	0		*	KINGSTON	-10P	-2P	3P	-19P	2	25		X
REVELSTOKE	-6	-1	-2	-10	2	24		*	LONDON	-10	-5	2	-19	21	22		*
SMITHERS	-9	0	-4	-15	2	9		*	MOOSONEE	-20	-1	-8	-34	5	67	210	37
VANCOUVER INT'L	1	-2	5	-4	2	0		*	NORTH BAY	-16	-4	-5	-30	17	50	260	52
VICTORIA INT'L	2P	-1P	9P	-3P	0	0		*	OTTAWA INT'L	-12P	-3P	3P	-26P	6	23		X
WILLIAMS LAKE	-10	*	-4	-17	5	27		X	PETAWAWA	-16	-4	0	-37	14	26		X
<b>YUKON TERRITORY</b>									PICKLE LAKE	-17P	3P	-13P	-24P	5P	40	270	48
DAWSON	-12	*	3	-22	1	25		*	RED LAKE	-19	-1	-11	-28	9	37	150	43
MAYO	-9	16	11	-19	4	15		X	SUDBURY	-17P	-6P	-7P	-31P	20	60		X
SHINGLE POINT A	-13	12	4	-33	3	17		*	THUNDER BAY	-16	-3	-2	-25	3	33	290	56
WATSON LAKE	-13	11	7	-28	1	21	250	46	TIMMINS	-19	-3	-3	-33	7	67	180	46
WHITEHORSE	-8P	9P	6P	-15P	3	16	190	65	TORONTO INT'L	-9	-4	2	-18	4	8	250	74
<b>NORTHWEST TERRITORIES</b>									TRENTON	-8	-2	4	-21	30	37		X
ALERT	-28	3	-13	-36	1	18	210	56	WIARTON	-9	-4	-1	-25	38	78		X
BAKER LAKE	-22	8	-7	-32	4	17	340	89	WINDSOR	-8	-5	2	-18	8	14	270	63
CAMBRIDGE BAY	-25	7	-16	-34	4	12	350	91	<b>QUEBEC</b>								
CAPE DYER	-13	7	-1	-29	68	49	080	104	BAGOTVILLE	-15	-1	0	-32	7	19	280	43
CLYDE	-19	6	-1	-31	14	32	070	69	BLANC SABLON	-7P	*	3P	-17P	21P	1		X
COPPERMINE	-19	*	-9	-31	2	14	340	59	INUKJUAK	-21	-1	-16	-32	2	39	230	72
CORAL HARBOUR	-16P	10P	-3P	-28P	4	40		X	KUUJUAQ	-20	-1	-2	-32	11	54	240	67
EUREKA	-28	7	-11	-39	1	13	030	50	KUUJUJARAPIK	-22	-3	-14	-37	6	27	220	46
FORT SMITH	-14	9	5	-32	4	29		X	MANIWAKI	-15	-3	1	-33	16	27	220	37
FROBISHER BAY	-13	9	2	-26	29	32	110	85	MONT JOLI	-9	0	1	-19	11	12	250	67
HALL BEACH	-17	10	-3	-33	7	21	080	93	MONTREAL INT'L	-11	-2	3	-26	6	7	240	52
INUVIK	-15	13	2	-38	3	18		X	NATASHQUAN	-7	3	3	-19	31	2		*
MOULD BAY	-33	0	-28	-37	2	20		X	NITCHEQUON								*
NORMAN WELLS	-13	13	6	-32	8	26		X	QUEBEC	-11	-1	1	-26	23	56	250	65
RESOLUTE	-21	9	-9	-35	1	27	030	80	SCHEFFERVILLE	-19	1	-3	-28	16	33	210	65
SACHS HARBOUR	-23P	5P	-13	-36P	3	7		X	SEPT-ILES	-11	1	0	-26	25	40	090	67
YELLOWKNIFE	-18	7	-8	-34	3	42	320	43	SHERBROOKE	-11	-1	3	-28	20	41	250	65
<b>ALBERTA</b>									VAL D'OR	-18P	-2P	0P	-36P	13	50	200	50
CALGARY INT'L	0	7	15	-13	0	0	320	72	<b>NEW BRUNSWICK</b>								
COLD LAKE	-8	7	7	-17	3	11	310	98	CHARLO	-11	-2	1	-27	3P	17	270	43
CORONATION	-6	7	7	-18	2	1	320	85	CHATHAM	-9P	-1P	7P	-21P	8P	11	250	39
EDMONTON NAMA0	-3	8	7	-14	3	8	330	63	FREDERICTON	-10P	-3P	7P	-25P	14	27	280	41
FORT MCMURRAY	-10	8	8	-21	8	19		X	MONCTON	-7	0	9	-18	17	10	240	63
HIGH LEVEL	-10	9	12	-24	1	26	360	74	SAINT JOHN	-8	-3	9	-21	37	16	160	59
JASPER	-10	0	0	-21	0	20		X	<b>NOVA SCOTIA</b>								
LETHBRIDGE	0	6	10	-11	0	0	250	96	GREENWOOD	-3	0	11	-12	10	12	260	70
MEDICINE HAT	-3	5	7	-14	1	2	320	50	SHEARWATER	-1	1	10	-13	25	5	250	76
PEACE RIVER	-4	12	7	-14	3	5	190	54	SYDNEY	-2	1	12	-14	52	19	180	59
<b>SASKATCHEWAN</b>									YARMOUTH	0	1	9	-8	26	1	270	72
CREE LAKE	-16	3	3	-29	3	23	320	89	<b>PRINCE EDWARD ISLAND</b>								
ESTEVAN	-12	0	3	-23	2	4	300	102	CHARLOTTETOWN	-5	0	8	-16	19	13	260	56
LA RONGE	-13	4	4	-33	4	10	320	76	SUMMERSIDE	-5	0	7	-15	13	14	250	72
REGINA	-14	0	3	-24	4	8	320	109	<b>NEWFOUNDLAND</b>								
SASKATOON	-11	4	5	-20	4	3	300	80	CARTWRIGHT	-9	1	8	-18	8	30	150	74
SWIFT CURRENT	-9P	2P	3P	-18P	1	18		X	CHURCHILL FALLS	-16	3	1	-30	10	57	260	48
YORKTON	-14	2	4	-28	3	6	300	89	GANDER INT'L	-4	0	9	-11	35	18	270	67
<b>MANITOBA</b>									GOOSE	-13	1	7	-25	8	7	190	70
BRANDON	-14	2	3	-29	3	8	340	89	PORT-AUX-BASQUES	-2	0	7	-9	57	17	240	89
CHURCHILL	-20	4	-9	-31	8	9	300	102	ST JOHN'S	-1P	1P	13P	-12P	41	12	180	93
LYNN LAKE	-20	1	-12	-33	14	20		*	ST LAWRENCE	-1	0	9	-11	36	12		X

AV = weekly mean temperature in degree C  
 MX = weekly extreme maximum temperature in degree C  
 MN = weekly extreme minimum temperature in degree C  
 TP = weekly total precipitation in mm  
 DP = departure of mean temperature from normal in degree C  
 SOG = snow depth on ground in cm, last day of the period

DIR = direction of maximum wind speed (deg. from true north)  
 SPD = maximum wind speed in km/hour (10 minute mean)  
 X = not observed  
 P = value based on less than 7 days  
 \* = missing