



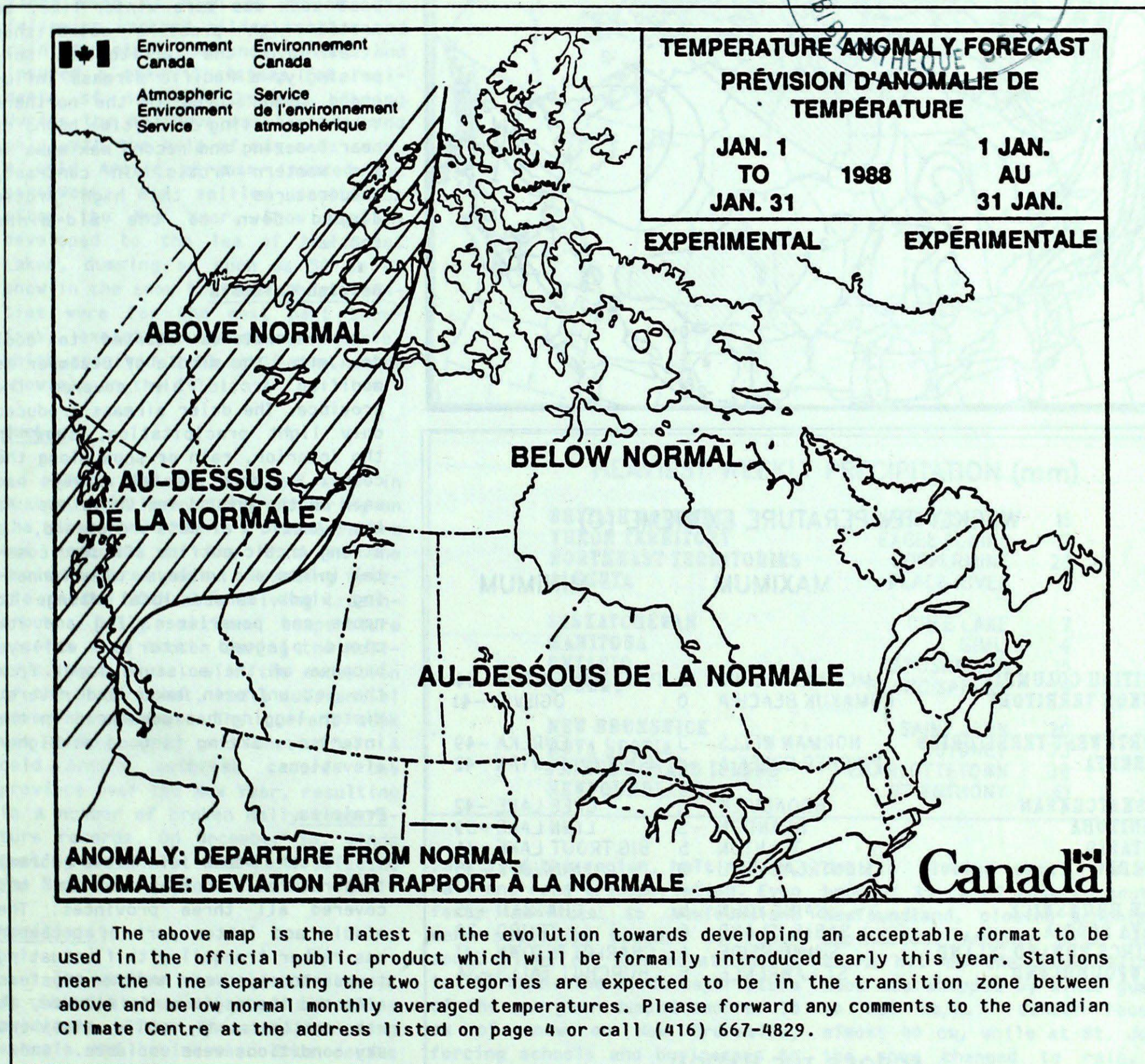
Climatic Perspectives

A weekly review of Canadian Climate

Dec 15, 1987 to Jan 4, 1988

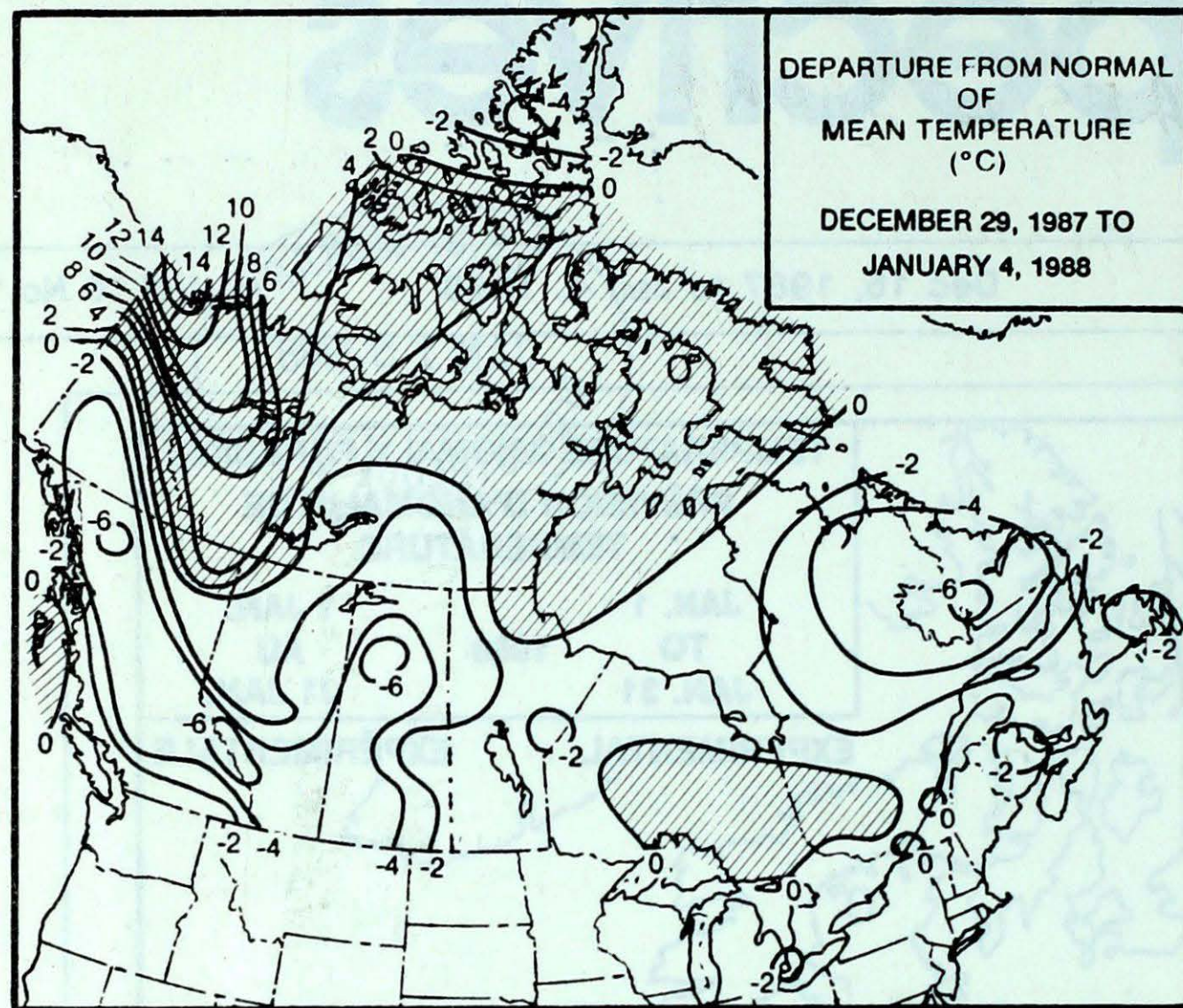
Vol.10 No.1

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JAN 15 1988



- **Heavy snowfalls bury Atlantic Canada**
- **Much colder air sweeps across the country**

TEMPERATURE



ACROSS THE COUNTRY

Yukon and Northwest Territories

Mild weather conditions persisted in the Yukon through Christmas, with readings in the south climbing above freezing. Unfrozen lakes were responsible for low cloud and fog in the southern mountain valleys. This past week was more winter-like, as Arctic high pressure established itself over the Territories. Surprisingly, a Pacific airmass influenced temperatures in the northern Yukon, resulting in daytime highs of near freezing and record maximums in the western Arctic. In contrast, temperatures in the high Arctic dipped down to the mid-minus forties.

British Columbia

Temperatures started to cool down after the middle of December as modified Arctic air covered the province. The drier airmass produced only light precipitation, snow in the interior, rain or snow along the coast. Southern coastal valleys had snow on the ground for Christmas. As the Arctic airmass deepened, a strong Arctic outflow affected coastal inlets and valleys. The funneling winds caused local damage to roofs and powerlines. Fog and low cloud plagued interior valleys because of the moisture input from the yet unfrozen lakes and rivers. Winter logging has commenced in the interior. Skiing is good at higher elevations.

Prairies

After weeks of above normal temperatures a deep freeze has covered all three provinces. The middle and latter part of December was rather tranquil with fluctuating temperatures. Weak weather systems affected the regions. In Alberta, it was mostly sunny, while elsewhere sky conditions were variable. Snowfalls were generally light. Christmas was cold in the east, with warmer readings in the west. A number of new daily temperature records were set in Alberta, some as high as 10°C. It was mild and foggy the last few days of the year in the east. A bitterly cold Arctic airmass herald-

WEEKLY TEMPERATURE EXTREME (C)

	MAXIMUM	MINIMUM
BRITISH COLUMBIA	MCINNES ISLAND 10	PUNTZI MOUNTAIN -34
YUKON TERRITORY	KOMAKUK BEACH A 0	OGILVIE -41
NORTHWEST TERRITORIES	NORMAN WELLS -3	EUREKA -49
ALBERTA	PINCHER CREEK A -1	FORT CHIPEWYAN -42
SASKATCHEWAN	BROADVIEW 1	CREE LAKE -42
MANITOBA	BRANDON -3	LYNN LAKE -39
ONTARIO	TRENTON 5	BIG TROUT LAKE -34
QUEBEC	MONTREAL INT'L 3	INUKJUAK -35
NEW BRUNSWICK	SAINT JOHN 5	CHATHAM -25
NOVA SCOTIA	SABLE ISLAND 6	TRURO -20
PRINCE EDWARD ISLAND	SUMMERSIDE 4	CHARLOTTETOWN -17
NEWFOUNDLAND	ST LAWRENCE 5	CHURCHILL FALLS -34

ACROSS THE NATION

WARMEST MEAN TEMPERATURE	6	CAPE ST. JAMES	BC
COOLEST MEAN TEMPERATURE	-43	EUREKA	NWT

PRECIPITATION

ed in the New Year, forcing temperatures down to the minus thirties and forties. Strong winds produced dangerous wind chills.

Ontario

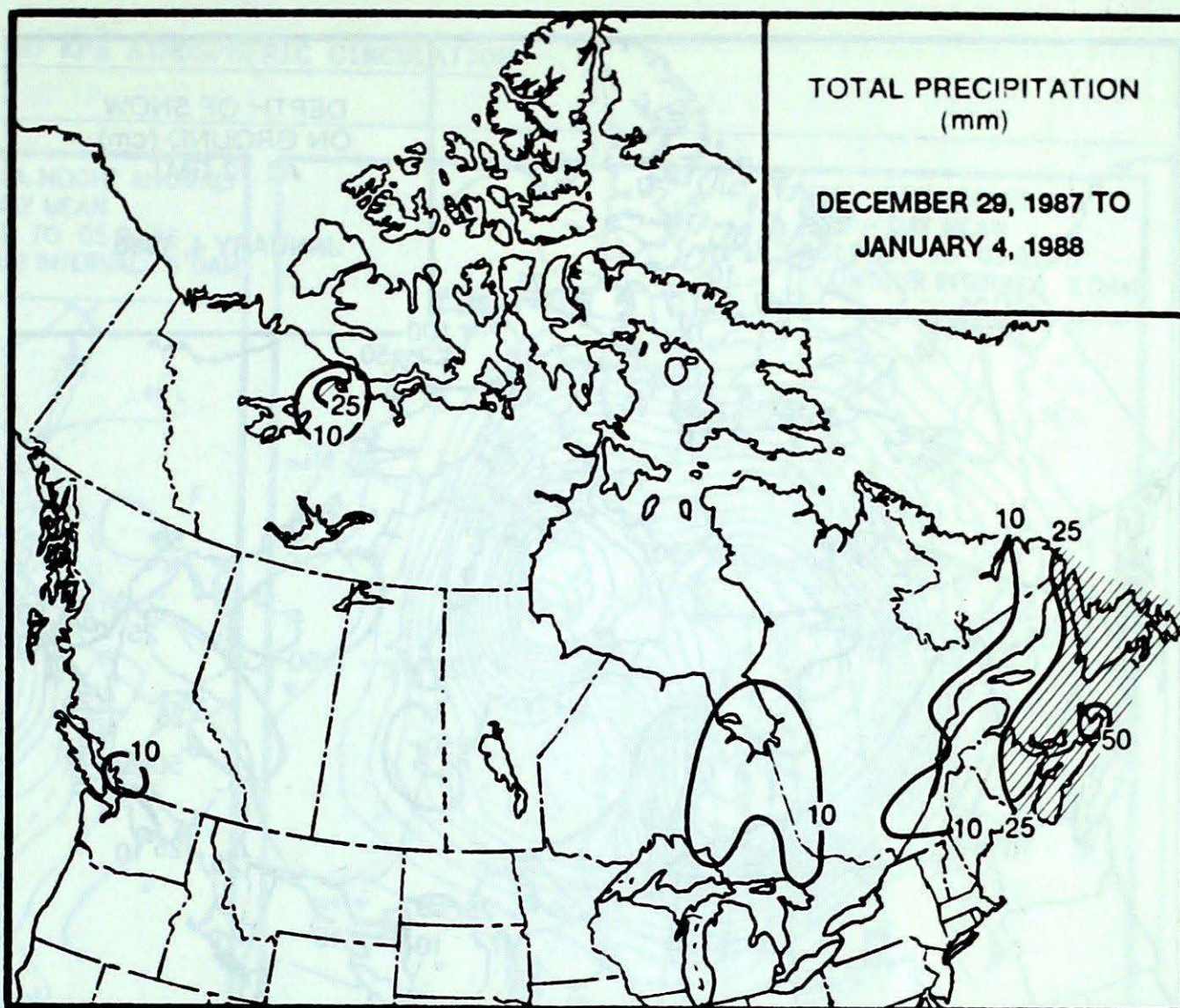
A snow storm on the 15th gave southern Ontario its first real taste of winter. In the north, accumulations were as high as 30 cm. The following weekend milder weather and rain depleted the snow cover, and insured a green Christmas for residents of southern Ontario. Skiing during the holidays was limited, and only with the help of man-made snow. A cold Arctic airmass invaded the northwest, and spilled southwards after the New Year. Snow squalls developed to the lee of the Great Lakes, dumping as much as 50 cm of snow in the snow belt. Southern counties were for the most part snow-free, except southwestern Ontario, which received a 10 to 15 centimetre snowfall on the 29th.

Quebec

There was no lack of snow in Quebec, with heavy falls occurring on the 15th and 20th. A thunderstorm was reported on the 15th in the Trois-Rivieres region. Freezing drizzle on the 20th made driving treacherous. Daily maximum temperature records were broken during the holidays. Most areas, with the exception of the north coast, had a substantial covering of snow. The current week was rather sunny and uneventful. A cold Arctic outbreak covered the province over the New Year, resulting in a number of broken daily temperature records. On December 30, winds gusting to almost 100 km/h affected the Sept-Îles region.

Maritimes

The weather was cold and stormy, as major storms affected all three provinces before Christmas, closing schools and businesses. Snow depths increased substantially over the holiday period. Strong winds disrupted ferry services. By Christmas both P.E.I. and New Brunswick had more than 50cm of snow on the ground. Snow storms struck again on December 30 and January 4, disrupting transportation and forcing closures. Hardest hit on the 30th was Cape Breton, where 52 cm fell. Blizzard conditions



HEAVIEST WEEKLY PRECIPITATION (mm)

BRITISH COLUMBIA	ABBOTSFORD	15
YUKON TERRITORY	EAGLE PLAINS	12
NORTHWEST TERRITORIES	COPPERMINE	28
ALBERTA	PEACE RIVER	7
SASKATCHEWAN	CREE LAKE	7
MANITOBA	GIMLI	4
ONTARIO	KAPUSKASING	15
QUEBEC	BLANC SABLON	36
NEW BRUNSWICK	SAINT JOHN	20
NOVA SCOTIA	SYDNEY	73
PRINCE EDWARD ISLAND	CHARLOTTETOWN	38
NEWFOUNDLAND	ST ANTHONY	61

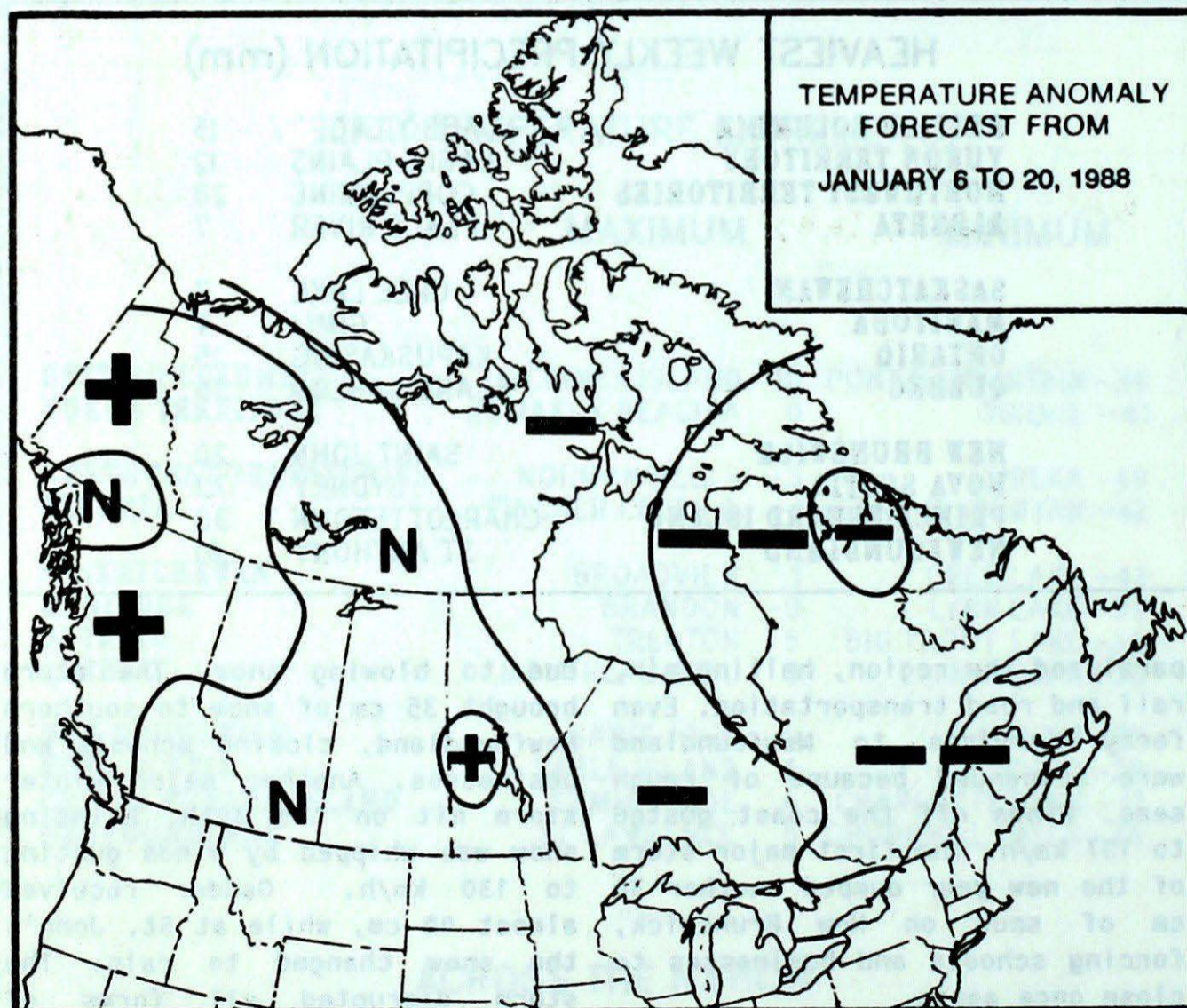
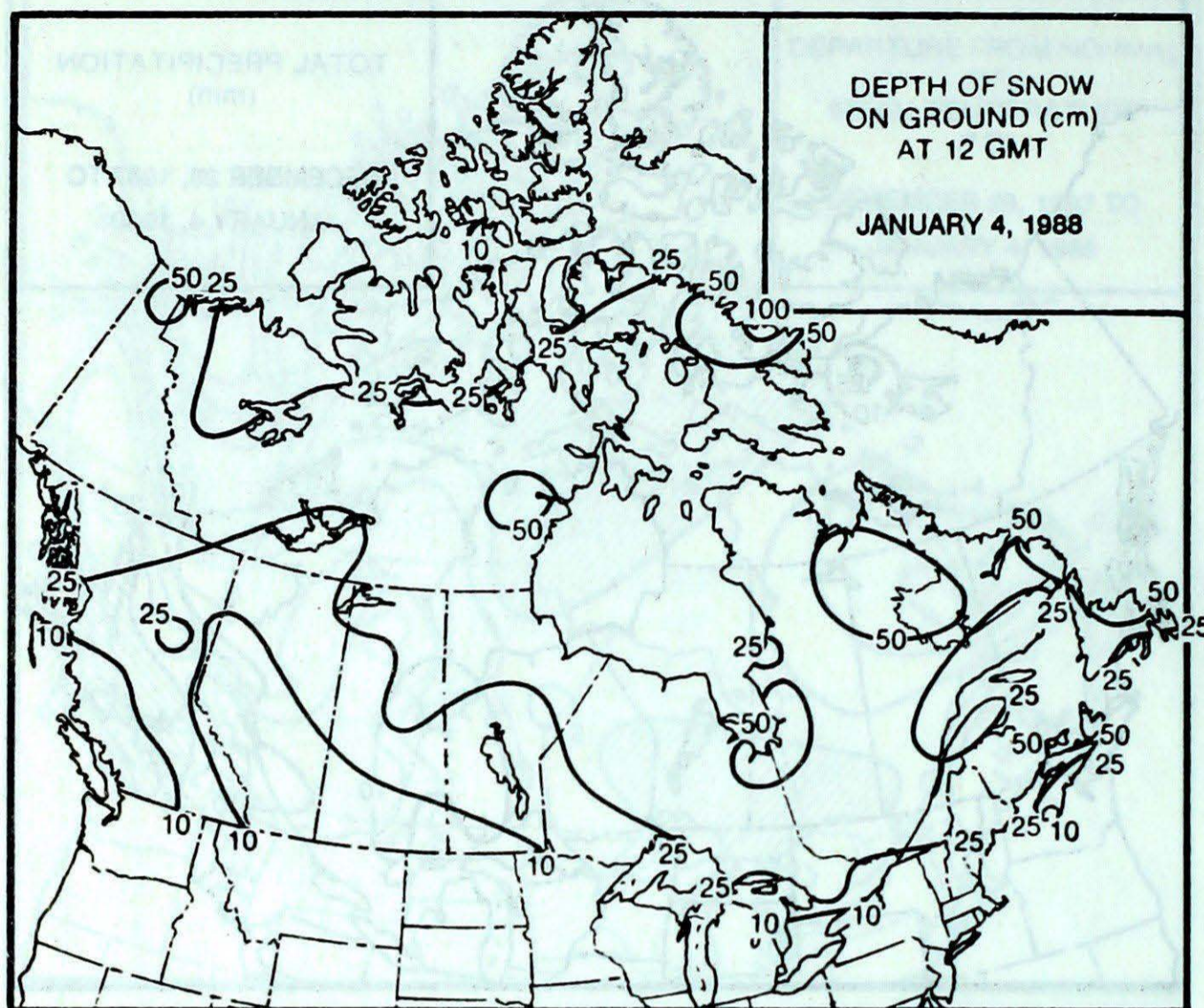
paralyzed the region, halting air, rail and road transportation. Even ferry services to Newfoundland were suspended because of rough seas. Winds off the coast gusted to 137 km/h. The first major storm of the new year dumped another 30 cm of snow on New Brunswick, forcing schools and businesses to close once again.

Newfoundland

The Island also endured blustery weather conditions. Flurries and occasional freezing drizzle were common the week preceding the holidays. On the 17th, winds gusting to 100 km/h produced whiteouts

due to blowing snow. The storm brought 35 cm of snow to southern Newfoundland, closing schools and businesses. Another major winter storm hit on the 30th. Blinding snow was whipped by winds gusting to 130 km/h. Gander received almost 40 cm, while at St. John's the snow changed to rain. The storm disrupted all forms of transportation and knocked down power lines on the Burin Peninsula. For the most part, Labrador missed the heavy snowfalls although winds were strong, causing white outs. Temperatures were cold, especially after New Years, when readings dropped down to the minus thirties.

FORECAST



Temperature Anomaly Forecast

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

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.

CLIMATIC PERSPECTIVES VOLUME 10

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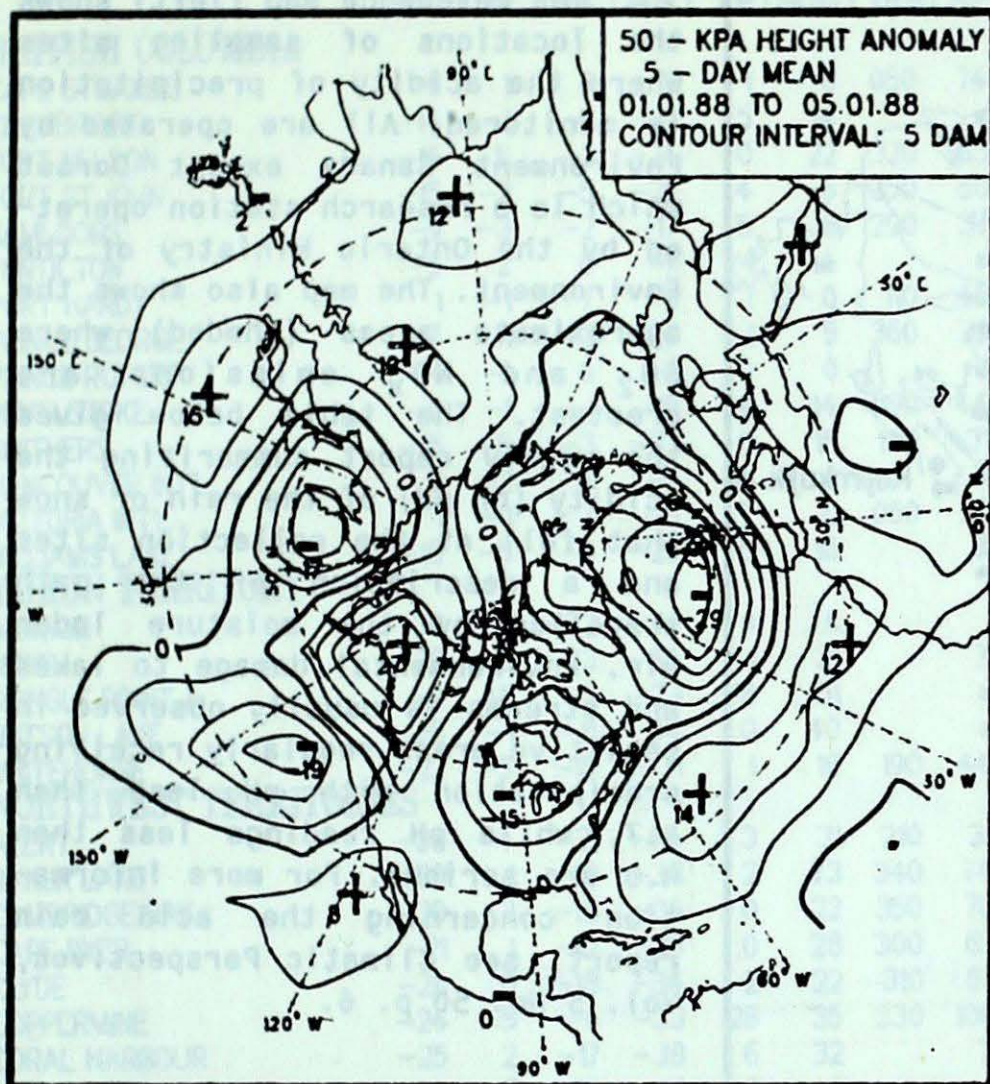
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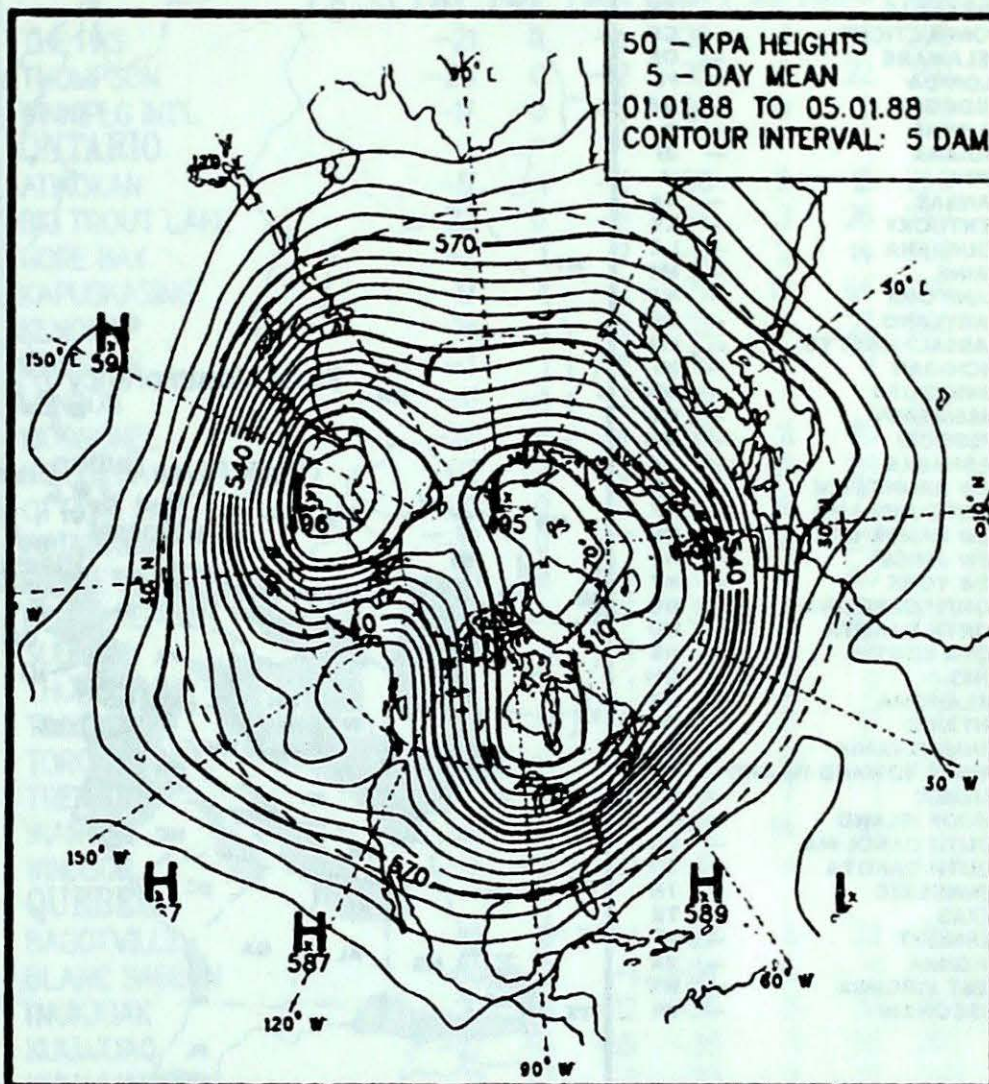
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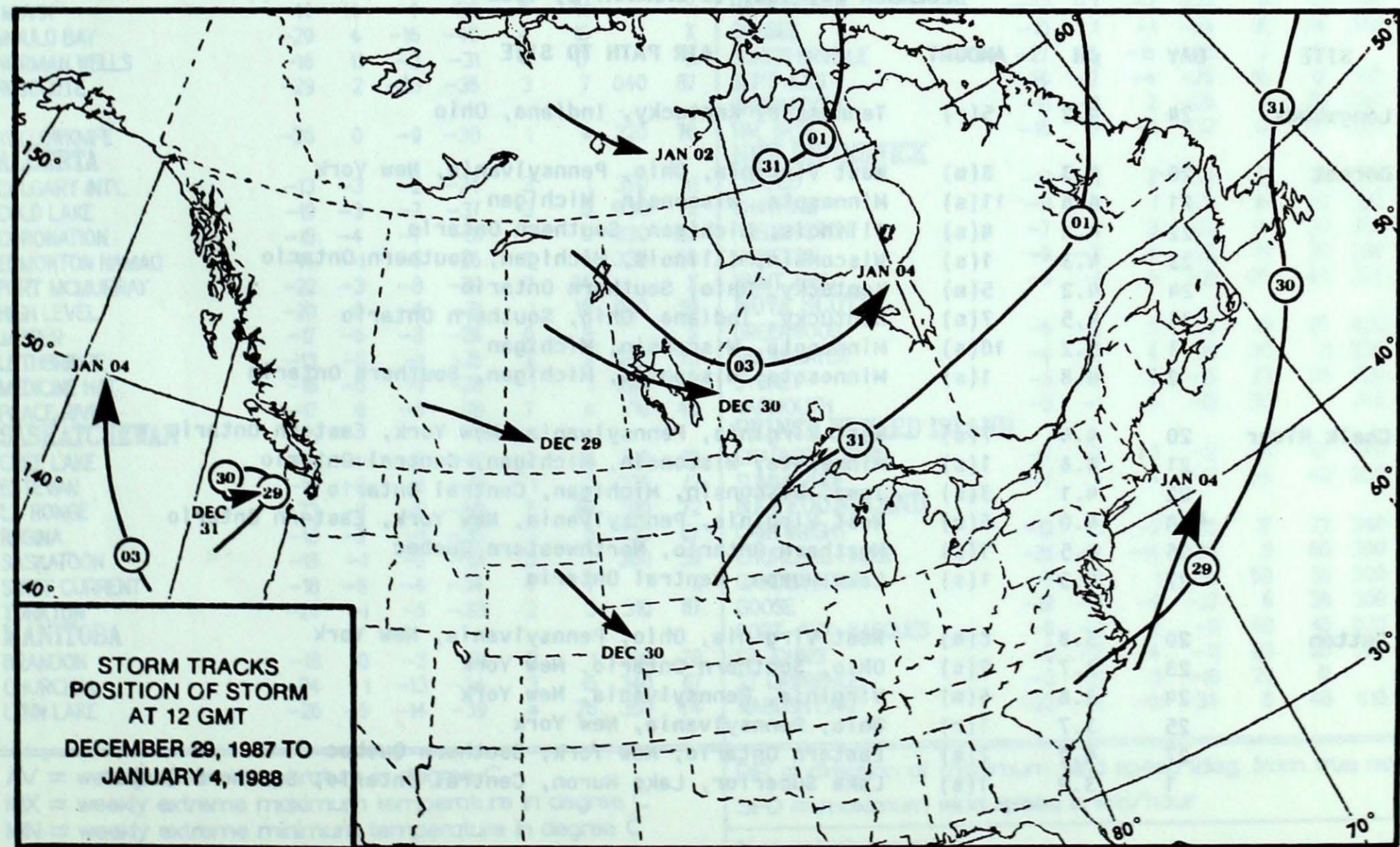
50 KPa ATMOSPHERIC CIRCULATION



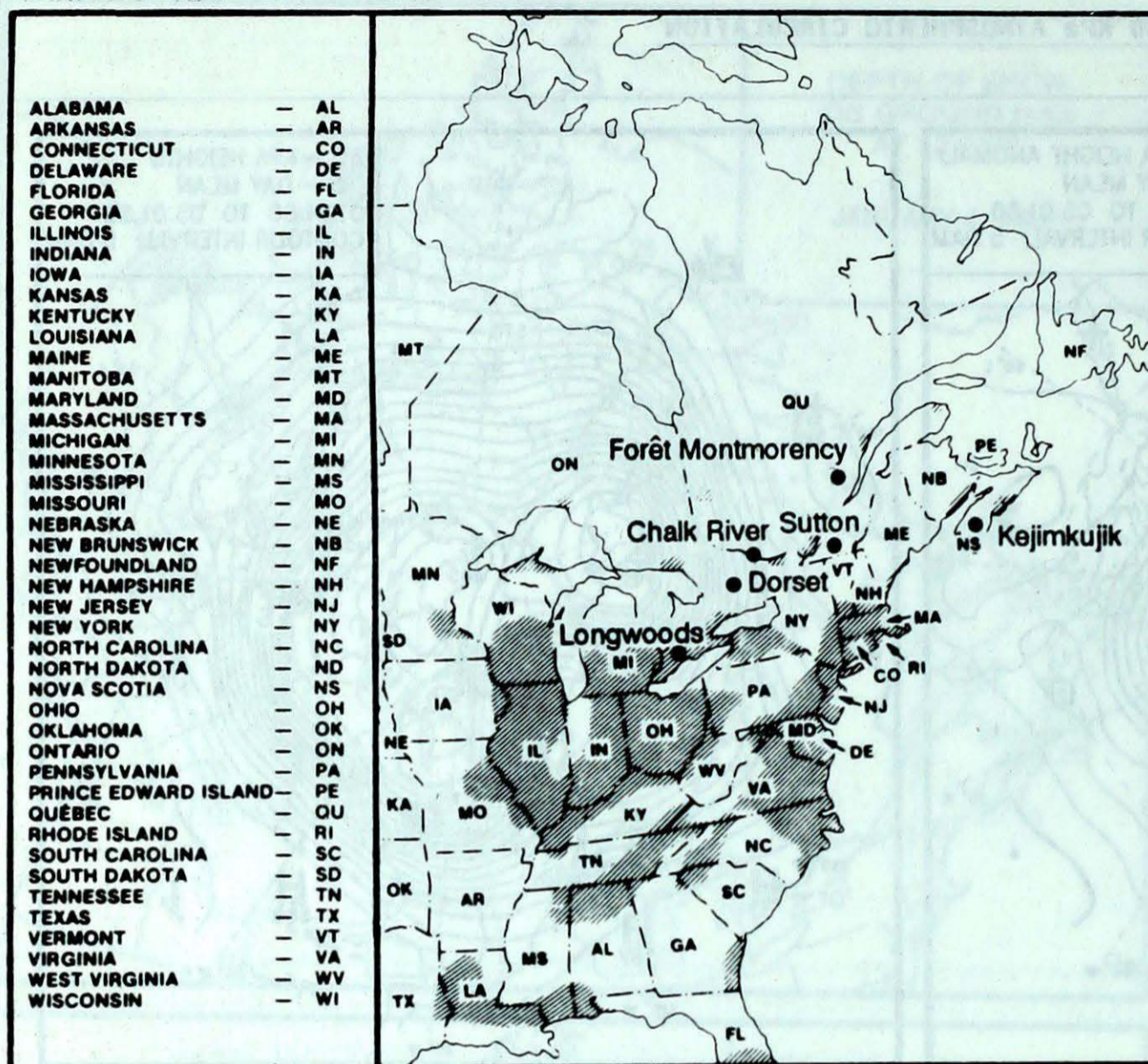
MEAN 50 KPa HEIGHT ANOMALY (dam)



MEAN 50 KPa HEIGHTS (dam)



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 SO_2 and 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 20, 1987 TO JANUARY 2, 1988

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	24	4.2	5(r)	Tennessee, Kentucky, Indiana, Ohio
Dorset	20	4.3	8(m)	West Virginia, Ohio, Pennsylvania, New York
	21	4.8	11(s)	Minnesota, Wisconsin, Michigan
	22	4.2	4(s)	Illinois, Michigan, Southern Ontario
	23	4.3	1(s)	Wisconsin, Illinois, Michigan, Southern Ontario
	24	4.2	5(m)	Kentucky, Ohio, Southern Ontario
	31	4.5	7(s)	Kentucky, Indiana, Ohio, Southern Ontario
	1	5.2	10(s)	Minnesota, Wisconsin, Michigan
	2	4.8	1(s)	Minnesota, Wisconsin, Michigan, Southern Ontario
Chalk River	20	4.4	7(s)	West Virginia, Pennsylvania, New York, Eastern Ontario
	21	4.8	1(s)	Minnesota, Wisconsin, Michigan, Central Ontario
	22	4.1	3(s)	Iowa, Wisconsin, Michigan, Central Ontario
	24	4.0	6(m)	West Virginia, Pennsylvania, New York, Eastern Ontario
	25	4.5	1(s)	Northern Ontario, Northwestern Quebec
	27	4.3	1(s)	Lake Huron, Central Ontario
Sutton	20	3.8	8(m)	West Virginia, Ohio, Pennsylvania, New York
	23	3.7	2(s)	Ohio, Southern Ontario, New York
	24	3.8	6(m)	Virginia, Pennsylvania, New York
	25	3.7	1(r)	Ohio, Pennsylvania, New York
	27	4.2	2(s)	Eastern Ontario, New York, Southern Quebec
	1	3.9	1(s)	Lake Superior, Lake Huron, Central Ontario, Southern Quebec

Cont'd on page 15

TEMPERATURE, PRECIPITATION AND MAXIMUM WIND DATA FOR THE WEEK ENDING 0600 GMT JANUARY 5, 1988

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
BRITISH COLUMBIA									THE PAS	-21	0	-6	-35	1	16	290	63
CAPE ST. JAMES	6	1	8	3	1	0	050	74	THOMPSON	-24	0	-12	-35	4	22	340	46
CRANBROOK	-14	-1	-6	-26	5	14		*	WINNIPEG INT'L	-17	0	-6	-29	*	5	300	65
FORT NELSON	-16	5	-2	-24	0	22	320	63	ONTARIO								
FORT ST. JOHN	-15	-2	-5	-25	4	6	350	50	ATIKOKAN	-17	-1	-5	-30	5	15	260	44
KAMLOOPS	-9	-3	-2	-17	5	8	290	37	BIG TROUT LAKE	-23	0	-8	-34	3	26	340	57
PENTICTON	-5	-2	0	-9	1	4		*	GORE BAY	-7	1	2	-17	2	14	200	76
PORT HARDY	1	-1	7	-5	1	0	110	46	KAPUSKASING	-17	1	-2	-29	15	46	310	52
PRINCE GEORGE	-17	-1	-3	-26	2	5	360	39	KENORA	-18	-1	-5	-32	4	22	280	54
PRINCE RUPERT	-1	-1	6	-8	0	0		*	KINGSTON	-7	1	4	-19	0	0		X
REVELSTOKE	-9	-1	-1	-18	4	14	320	44	LONDON	-6	-1	3	-15	1	1	220	59
SMITHERS	-15	-5	-3	-23	0	15	130	31	MOOSONEE	-20	-1	-4	-30	11	70	340	37
VANCOUVER INT'L	0	-2	7	-7	14	0		*	NORTH BAY	-12	-1	0	-27	10	28		*
VICTORIA INT'L	1	-1	7	-5	7	0	050	39	OTTAWA INT'L	-10	0	3	-22	4	22		X
WILLIAMS LAKE	-15	-6	-4	-25	5	16		X	PETAWAWA	-12	0	1	-25	6	23		X
YUKON TERRITORY									PICKLE LAKE	-21	-1	-5	-30	4	40		*
DAWSON	-30	-4	-23	-34	*	*			RED LAKE	-20	-1	-5	-32	4	23	350	48
MAYO	-28	-3	-23	-34	1	31		X	SUDBURY	-11	1	1	-25	4	40		X
SHINGLE POINT A	-9	14	-2	-23	8	51		*	THUNDER BAY	-14	-1	1	-27	2	9	290	56
WATSON LAKE	-25	-1	-11	-34	0	40		*	TIMMINS	-16	0	0	-31	8	41	310	46
WHITEHORSE	-22	-5	-15	-31	1	18	190	44	TORONTO INT'L	-6	-1	4	-16	0	1	260	69
NORTHWEST TERRITORIES									TRENTON	-7	-1	5	-19	7	1		X
ALERT	-36	-4	-21	-44	3	31	210	31	WIARTON	-6	-1	3	-18	14	10		X
BAKER LAKE	-30	1	-18	-38	2	73	340	74	WINDSOR	-7	-3	3	-17	*	*	240	81
CAMBRIDGE BAY	-30	2	-18	-36	0	22	350	70	QUEBEC								
CAPE DYER	-21	1	-12	-28	0	29	300	65	BAGOTVILLE	-15	0	-1	-28	6	22	260	48
CLYDE	-26	0	-18	-34	2	22	310	57	BLANC SABLON	-10	-2	-1	-24	36	5		X
COPPERMINE	-24	5	-6	-33	28	35	330	106	INUKJUAQ	-22	0	-12	-36	5	37	160	56
CORAL HARBOUR	-25	2	-17	-38	6	32		X	KUUJUAQ	-27	-6	-15	-35	1	55	260	33
EUREKA	-43	-7	-32	-49	0	11		*	KUUJUJARAPIK	-22	-2	-7	-33	7	17	150	76
FORT SMITH	-25	-1	-8	-40	3	37		X	MANIWAKI	-12	0	0	-24	6	24	290	52
IQUALUIT	-23	0	-14	-32	*	*	350	37	MONT JOLI	-11	-1	0	-20	8	15	220	59
HALL BEACH	-28	1	-18	-36	1	30		*	MONTREAL INT'L	-9	0	3	-21	3	*	220	65
INUVIK	-14	14	-4	-28	6	41		X	NATASHQUAN	-13	-3	-2	-23	11	12	360	93
MOULD BAY	-29	4	-16	-40	4	15		X	QUEBEC	-10	1	-1	-24	16	34	240	63
NORMAN WELLS	-16	11	-3	-31	6	17		X	SCHIEFFERVILLE	-27	-5	-15	-35	3	51		*
RESOLUTE	-29	2	-23	-35	3	7	040	87	SEPT-ILES	-14	-2	-4	-26	16	12	360	94
YELLOWKNIFE	-26	0	-9	-38	1	*	320	76	SHERBROOKE	-11	-1	2	-25	9	26	260	59
ALBERTA									VAL D'OR	-16	0	-1	-32	12	45	260	52
CALGARY INT'L	-13	-3	-2	-24	3	1	350	61	NEW BRUNSWICK								
COLD LAKE	-19	-3	-7	-37	3	8	330	72	CHARLO	-12	-1	2	-22	12	29	270	52
CORONATION	-18	-4	-7	-31	0	0	330	69	CHATHAM	-11	-3	1	-25	16	29	320	59
EDMONTON NAMAO	-14	-1	-6	-26	5	6	330	56	FREDERICTON	-7	1	3	-22	14	30	280	65
FORT MCMURRAY	-22	-3	-8	-39	7	24		X	MONCTON	-9	-3	4	-22	18	30	280	63
HIGH LEVEL	-20	0	-6	-31	1	18	030	59	SAINT JOHN	-9	-3	5	-21	25	40	320	69
JASPER	-17	-6	-3	-26	0	8		X	NOVA SCOTIA								
LETHBRIDGE	-13	-5	-1	-25	2	2	280	78	GREENWOOD	-6	-2	5	-14	19	28	030	70
MEDICINE HAT	-16	-5	-1	-28	1	1	290	46	SHEARWATER	-6	-3	4	-16	36	11	330	78
PEACE RIVER	-17	0	-6	-28	7	*	310	43	SYDNEY	-5	-2	3	-15	73	55	020	96
SASKATCHEWAN									YARMOUTH	-3	-1	5	-12	30	1	260	80
CREE LAKE	-26	-6	-9	-42	7	21	310	69	PRINCE EDWARD ISLAND								
ESTEVAN	-16	-2	1	-29	1	2	320	72	CHARLOTTE TOWN	-7	-2	3	-17	38	67	340	78
LA RONGE	-23	-3	-6	-40	7	49	310	72	SUMMERSIDE	-7	1	4	-17	24	40	330	72
REGINA	-18	-2	-1	-35	3	5	330	67	NEWFOUNDLAND								
SASKATOON	-19	-1	-5	-35	3	7	300	59	CARTWRIGHT	-12	-1	-2	-25	17	72	340	93
SWIFT CURRENT	-18	-6	-4	-34	4	7		X	CHURCHILL FALLS	-25	-7	-14	-34	5	60	300	41
YORKTON	-20	-1	-5	-33	2	3	310	67	GANDER INT'L	-7	-2	1	-16	50	55	300	100
MANITOBA									GOOSE	-19	-4	-9	-27	6	36	360	72
BRANDON	-18	0	-3	-31	2	1	290	78	PORT-AUX-BASQUES	-5	-2	2	-11	48	45	030	104
CHURCHILL	-24	1	-13	-34	3	15	340	67	ST JOHN'S	-5	-2	4	-11	23	25	290	93
LYNN LAKE	-26	-5	-14	-39	*	26	350	44	ST LAWRENCE	-3	-1	5	-10	29	17		X
									WABUSH LAKE	-23	-3	-11	-34	6	48	010	33

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

X = not observed

P = value based on less than 7 days

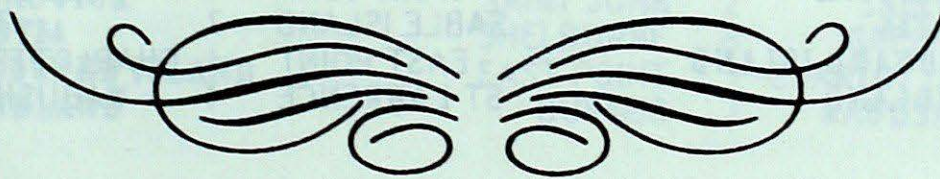
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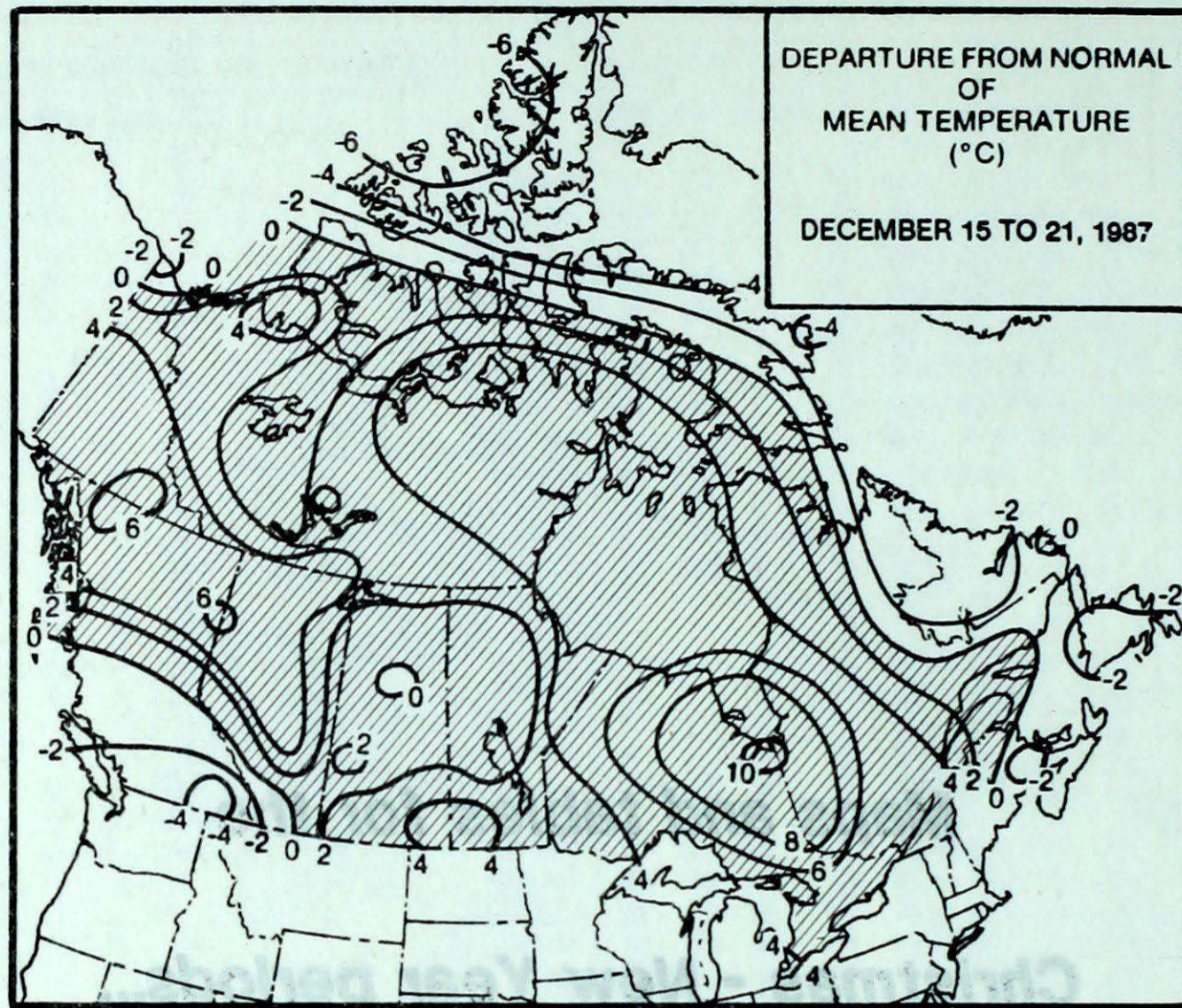
December 15 - 21, 1987

December 22 - 28, 1987



COOLEST WITH TEMPERATURE
WARMEST WITH TEMPERATURE

TEMPERATURE

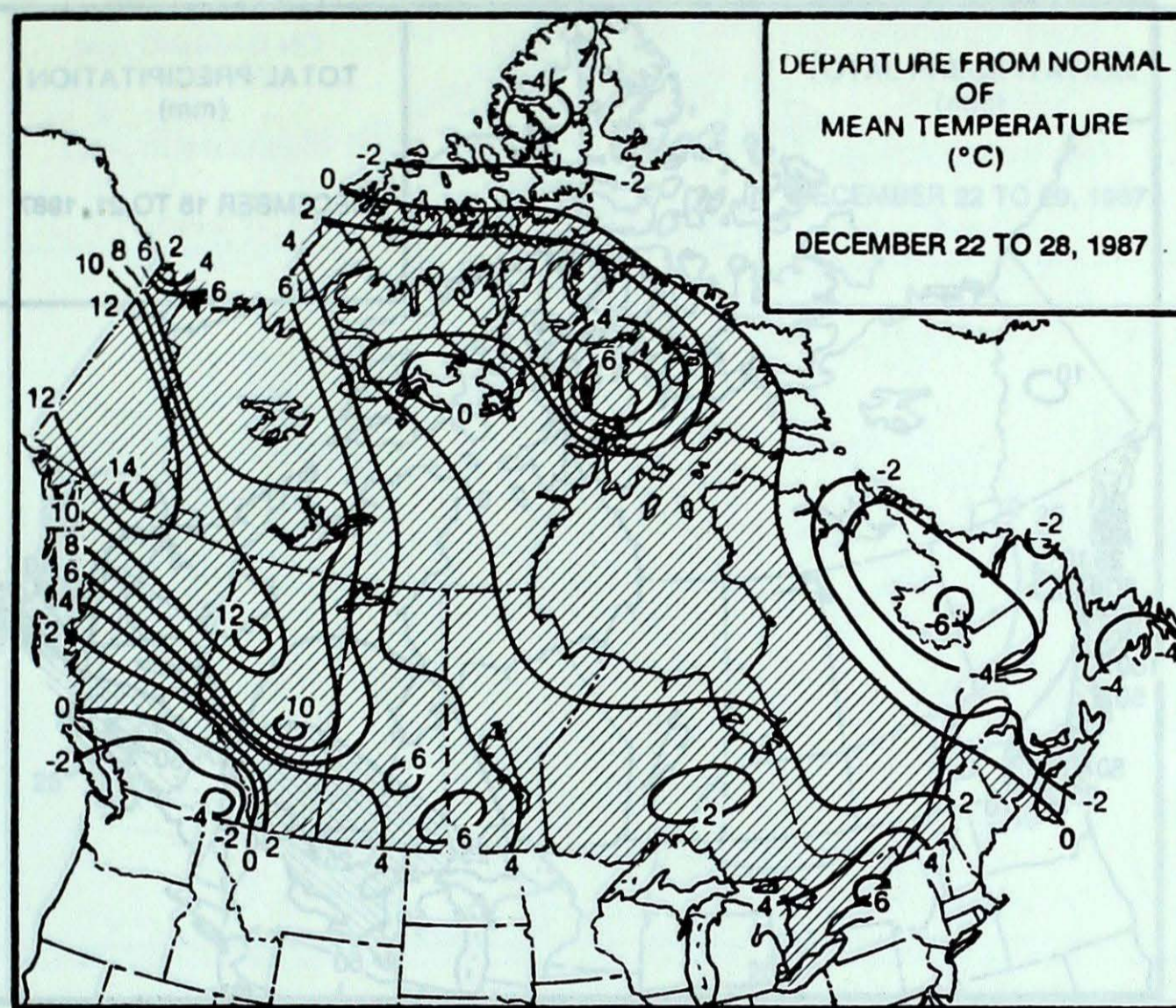


WEEKLY TEMPERATURE EXTREME (C)

	MAXIMUM	MINIMUM
BRITISH COLUMBIA	MCINNES ISLAND 8	FORT NELSON -27
YUKON TERRITORY	TESLIN 0	MAYO -34
NORTHWEST TERRITORIES	CAPE DORSET A -8	EUREKA -48
ALBERTA	RED DEER 4	FORT CHIPEWYAN -30
SASKATCHEWAN	ESTEVAN 3	CREE LAKE -34
MANITOBA	PORTAGE LA PRAIRIE -1	THOMPSON -30
ONTARIO	PORT WELLER 9	RED LAKE -25
QUEBEC	MONTREAL INT'L 5	SCHEFFERVILLE -35
NEW BRUNSWICK	SAINT JOHN 1	FREDERICTON -22
NOVA SCOTIA	SABLE ISLAND 7	TRURO -20
PRINCE EDWARD ISLAND	EAST POINT 1	CHARLOTTETOWN -15
NEWFOUNDLAND	ST LAWRENCE 1	WABUSH LAKE -37

ACROSS THE NATION

WARMEST MEAN TEMPERATURE	4	MCINNES ISLAND	BC
COOLEST MEAN TEMPERATURE	-42	EUREKA	NWT

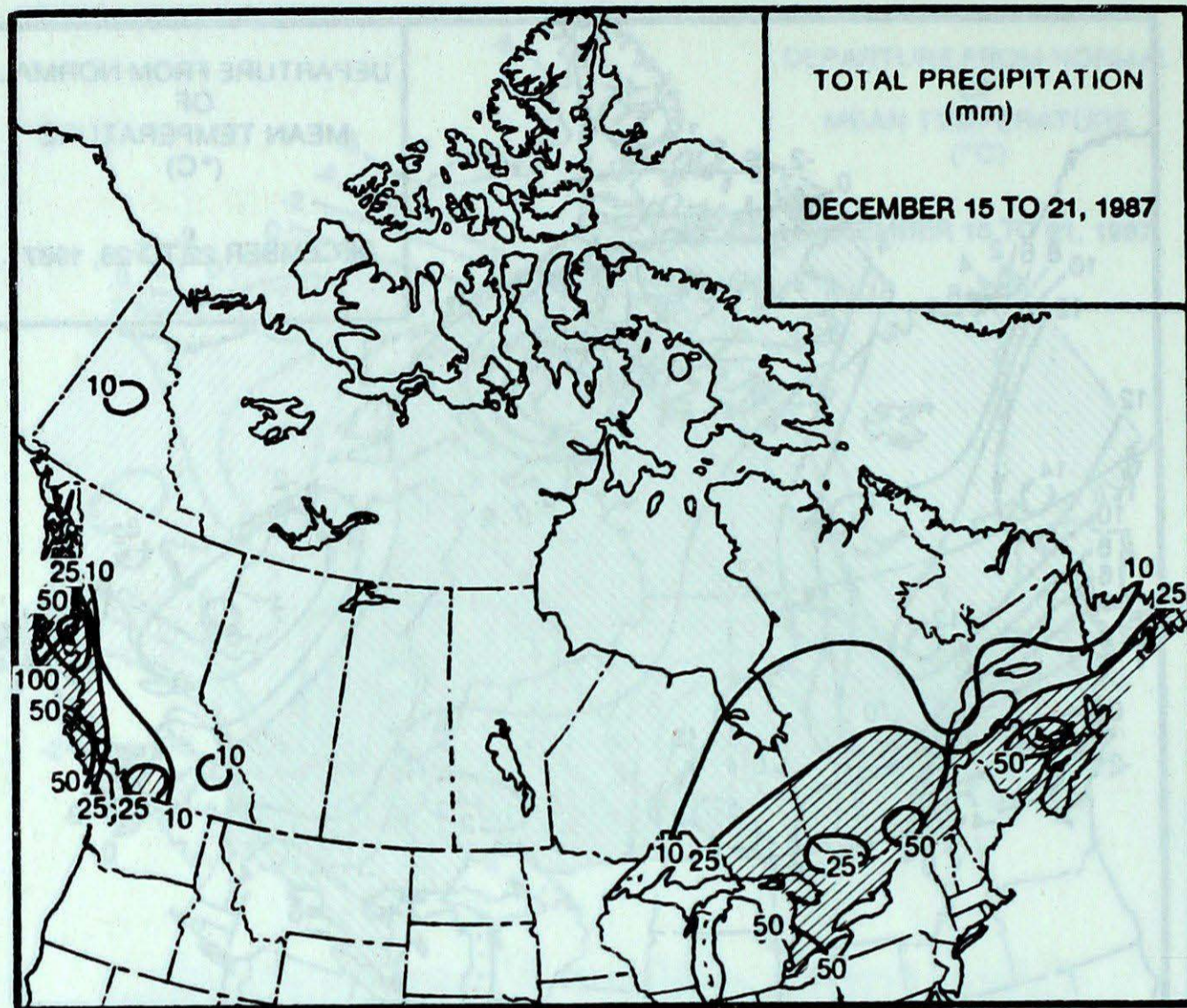
**WEEKLY TEMPERATURE EXTREME (C)**

	MAXIMUM	MINIMUM
BRITISH COLUMBIA	ESTEVAN POINT 9	FORT NELSON -22
YUKON TERRITORY	WHITEHORSE 4	SHINGLE POINT A -34
NORTHWEST TERRITORIES	INUVIK -4	EUREKA -45
ALBERTA	LETHBRIDGE 10	FORT CHIPEWYAN -29
SASKATCHEWAN	BROADVIEW 5	CREE LAKE -31
MANITOBA	PORTAGE LA PRAIRIE 2	CHURCHILL -32
ONTARIO	WINDSOR 10	THOMPSON
QUEBEC	MONTREAL INT'L 4	RED LAKE -32
	SHERBROOKE	SCHEFFERVILLE -39
NEW BRUNSWICK	SAINT JOHN 2	SAINT JOHN -21
NOVA SCOTIA	SHELburnE 6	GREENWOOD -18
PRINCE EDWARD ISLAND	EAST POINT 1	CHARLOTTETOWN -16
NEWFOUNDLAND	BURGeo 2	WABUSH LAKE -35

ACROSS THE NATION

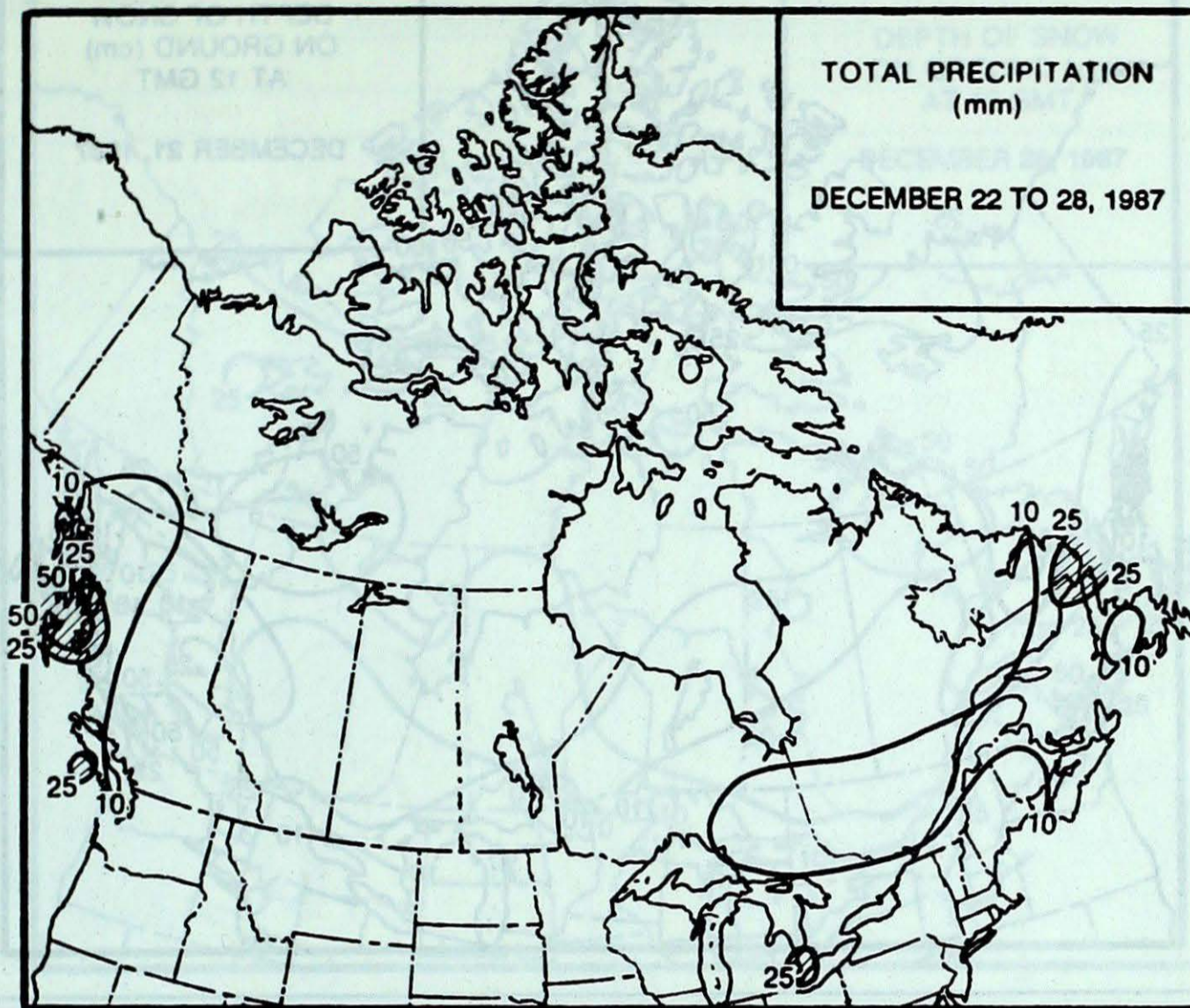
WARMEST MEAN TEMPERATURE	6	CAPE ST. JAMES	BC
COOLEST MEAN TEMPERATURE	-40	EUREKA	NWT

PRECIPITATION



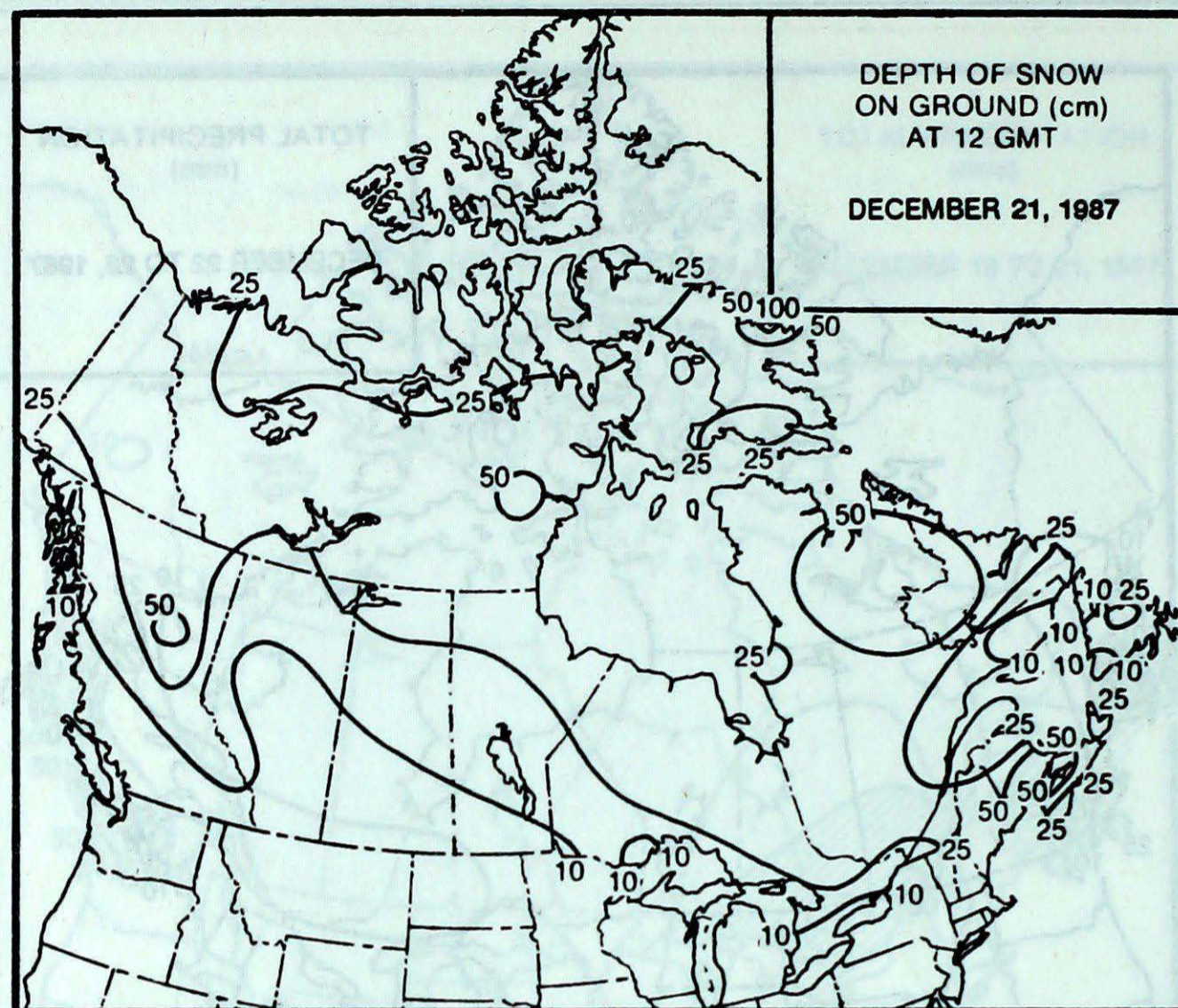
HEAVIEST WEEKLY PRECIPITATION (mm)

BRITISH COLUMBIA	PRINCE RUPERT	101
YUKON TERRITORY	MAYO	10
NORTHWEST TERRITORIES	CAPE DORSET A	8
ALBERTA	FORT CHIPEWYAN	7
SASKATCHEWAN	WYNYARD	6
MANITOBA	NORWAY HOUSE	7
ONTARIO	LONDON	62
QUEBEC	STE AGATHE DES MONTS	50
NEW BRUNSWICK	MONCTON	60
NOVA SCOTIA	SHELburnE	35
PRINCE EDWARD ISLAND	SUMMERSIDE	63
NEWFOUNDLAND	ST JOHN'S	42



HEAVIEST WEEKLY PRECIPITATION (mm)

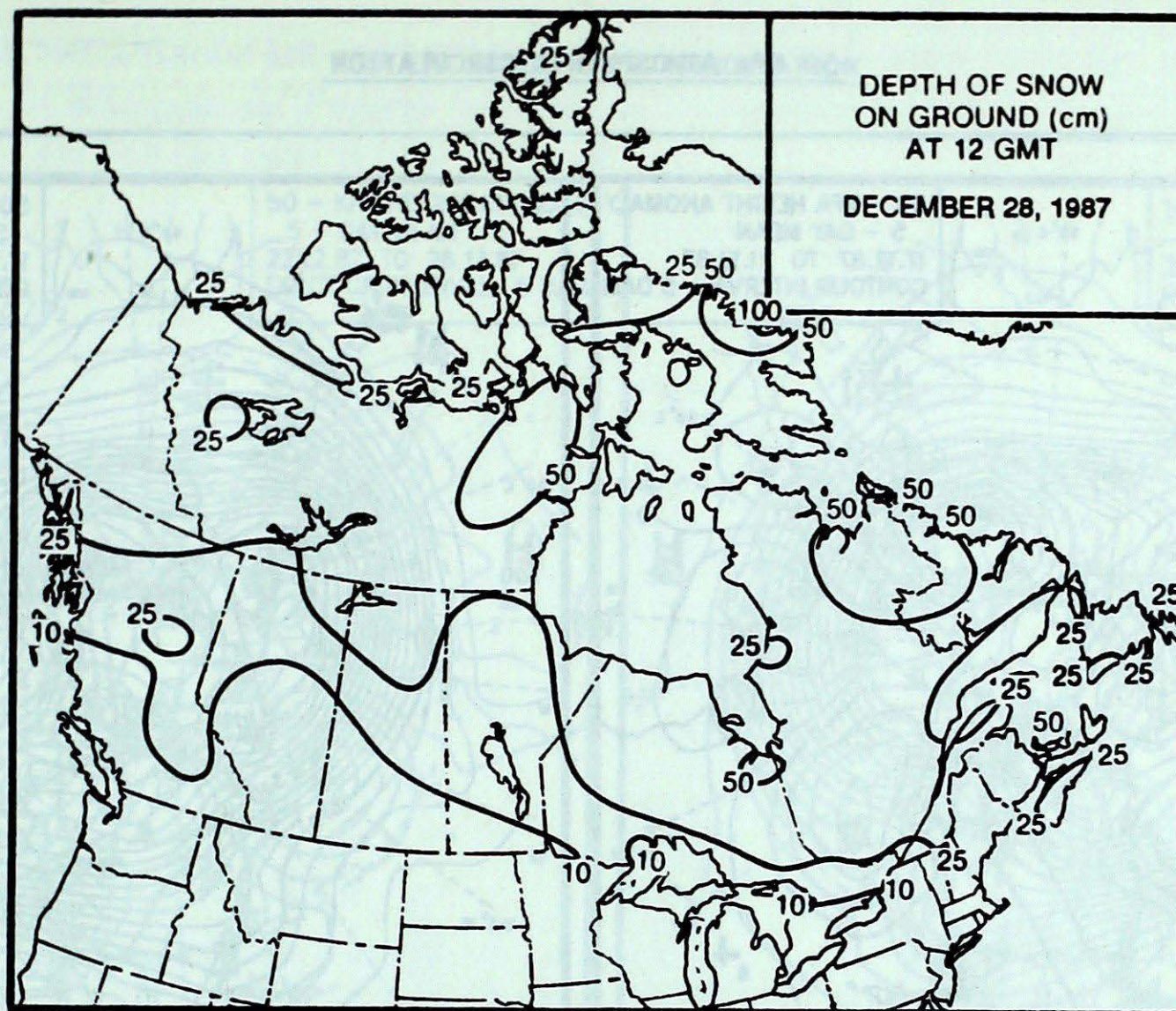
BRITISH COLUMBIA	LANGARA	63
YUKON TERRITORY	WATSON LAKE	16
NORTHWEST TERRITORIES	FORT SIMPSON	10
ALBERTA	FORT MCMURRAY	4
SASKATCHEWAN	LA RONGE	4
MANITOBA	THOMPSON	4
ONTARIO	WINDSOR	28
QUEBEC	BLANC SABLON	26
NEW BRUNSWICK	CHARLO	22
NOVA SCOTIA	SABLE ISLAND	15
PRINCE EDWARD ISLAND	CHARLOTTETOWN	21
NEWFOUNDLAND	ST ANTHONY	46



DECEMBER 13 TO DECEMBER 19, 1987

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	14	4.4	16(m)	Indiana, Ohio, Pennsylvania
	15	4.1	12(m)	Ohio, Pennsylvania
	16	4.7	9(s)	Northern Ontario, Michigan
	19	4.2	18(r)	Tennessee, Kentucky, Ohio
Dorset	13	4.8	5(m)	Minnesota, Wisconsin, Michigan
	14	4.4	1(s)	Wisconsin, Michigan
	15	4.5	25(s)	Ohio, Pennsylvania, New York, Eastern Ontario
	16	4.4	1(s)	Northwestern Quebec, Central Ontario
	18	4.1	3(s)	Wisconsin, Michigan, Southern Ontario
	19	4.6	7(s)	Kentucky, Ohio, Pennsylvania, New York
Chalk River	15	4.6	18(s)	Michigan, New York, Eastern Ontario
	16	4.2	1(s)	Central Quebec, Southern Quebec
	18	4.1	5(s)	Missouri, Illinois, Michigan, Central Ontario
	19	4.6	8(s)	Illinois, Michigan, Southern Ontario, Eastern Quebec
Sutton	15	4.3	9(s)	Central Ontario, New York, Vermont, Massachusetts, New Hampshire
	16	4.2	8(s)	Lower North Shore, New Brunswick, Maine, Southern Quebec
	18	4.3	1(s)	Northwestern Quebec, Central Ontario, Southern Ontario, New York
	19	3.9	2(s)	Lake Huron, Southern Ontario, Southern Quebec
Montmorency	15	5.4	11(s)	Labrador, New Brunswick, Maine
	18	4.5	1(s)	Northern Quebec, Central Quebec, Southern Quebec
Kejinkujik	15	5.4	11(s)	Nova Scotia, Prince Edward Island, Lower North Shore
	16	5.4	8(s)	Newfoundland, Nova Scotia
	18	5.0	1(s)	Labrador, Lower North Shore, New Brunswick
	19	5.4	1(s)	Northern Quebec, Central Quebec, Southern Quebec, Maine

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



Cont'd from page 4

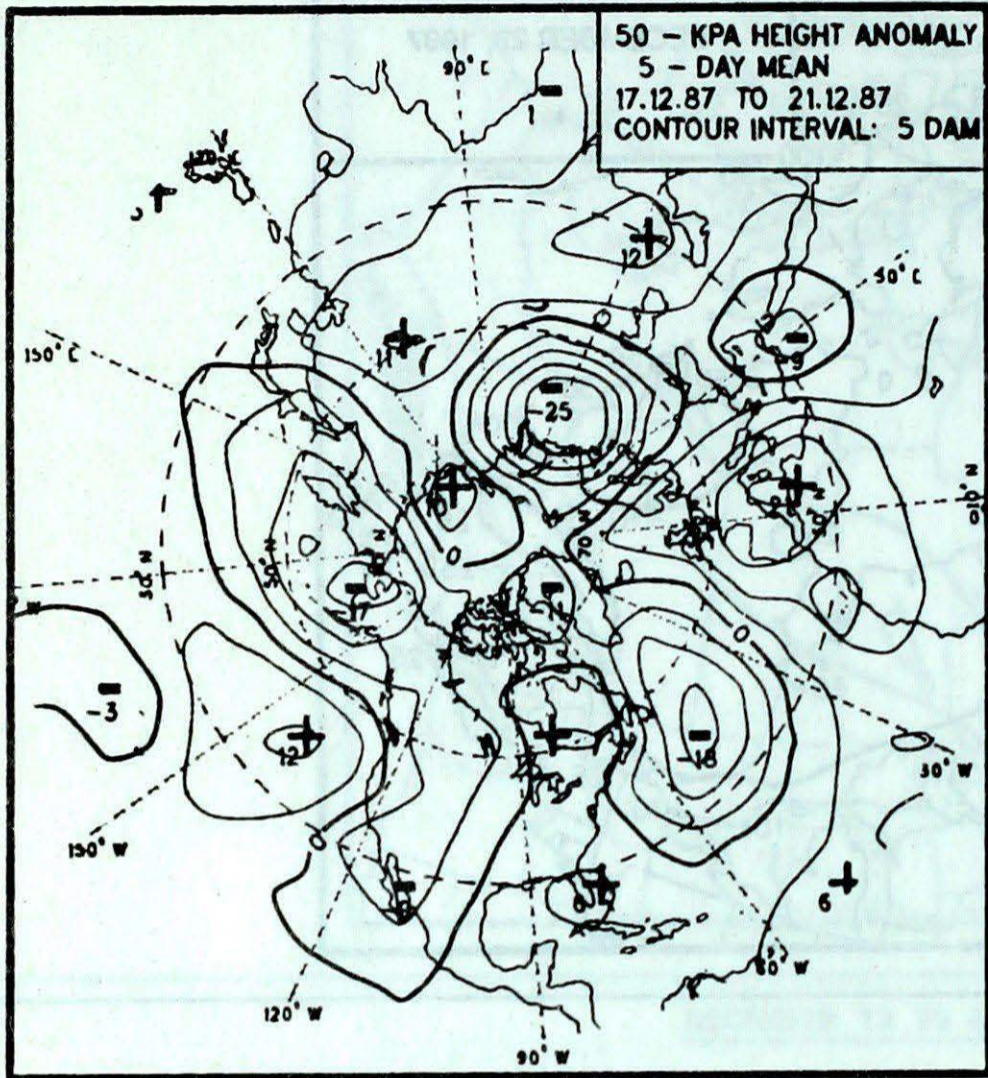
DECEMBER 20, 1987 TO JANUARY 2, 1988

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Montmorency	20	4.5	14(s)	Pennsylvania, New York, Southern Quebec
	21	4.9	3(s)	Minnesota, Wisconsin, Central Ontario, Central Quebec
	22	4.4	3(s)	Wisconsin, Michigan, Central Ontario, Central Quebec
	23	4.3	2(s)	Michigan, Central Ontario, Central Quebec
	24	4.1	3(s)	Pennsylvania, New York, Central Quebec
	25	4.1	4(s)	Pennsylvania, New York, Central Quebec
	31	4.1	6(s)	Southern Ontario, New York, Southern Quebec
	1	4.7	3(s)	Pennsylvania, New York, Eastern Ontario, Central Quebec
Kejimikujik	20	4.5	10(m)	New England, Atlantic Ocean
	24	3.9	1(s)	Atlantic Ocean
	25	3.8	3(s)	Atlantic Ocean
	26	4.1	7(s)	Quebec, New Brunswick
	28	3.8	1(s)	Quebec, New Brunswick
	30	5.2	13(s)	Quebec, New Brunswick
	31	4.7	2(s)	Virginia, New Jersey, Southern New England
	1	4.2	2(s)	Ohio, Pennsylvania, Southern New England

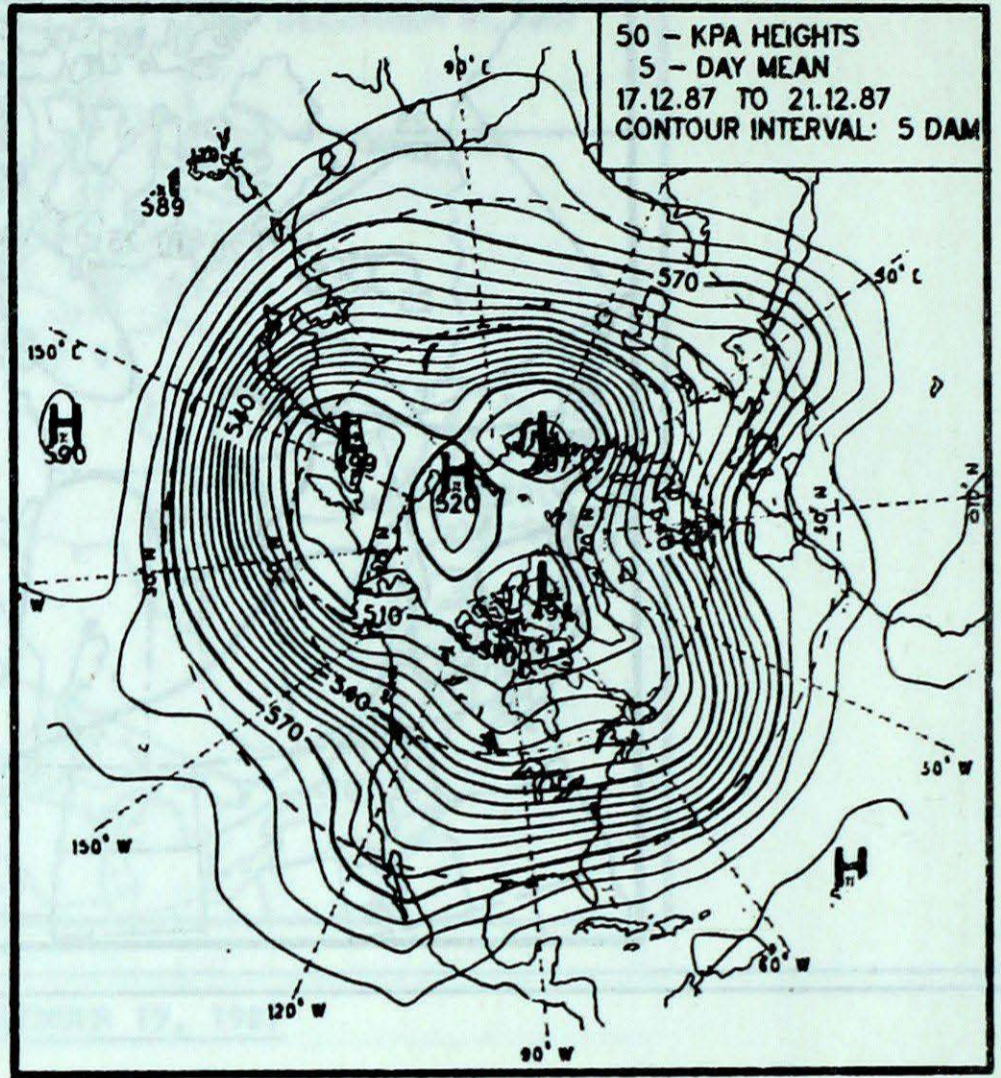
r = rain (mm), s = snow (cm), m = mixed rain and snow (mm)

CIRCULATION

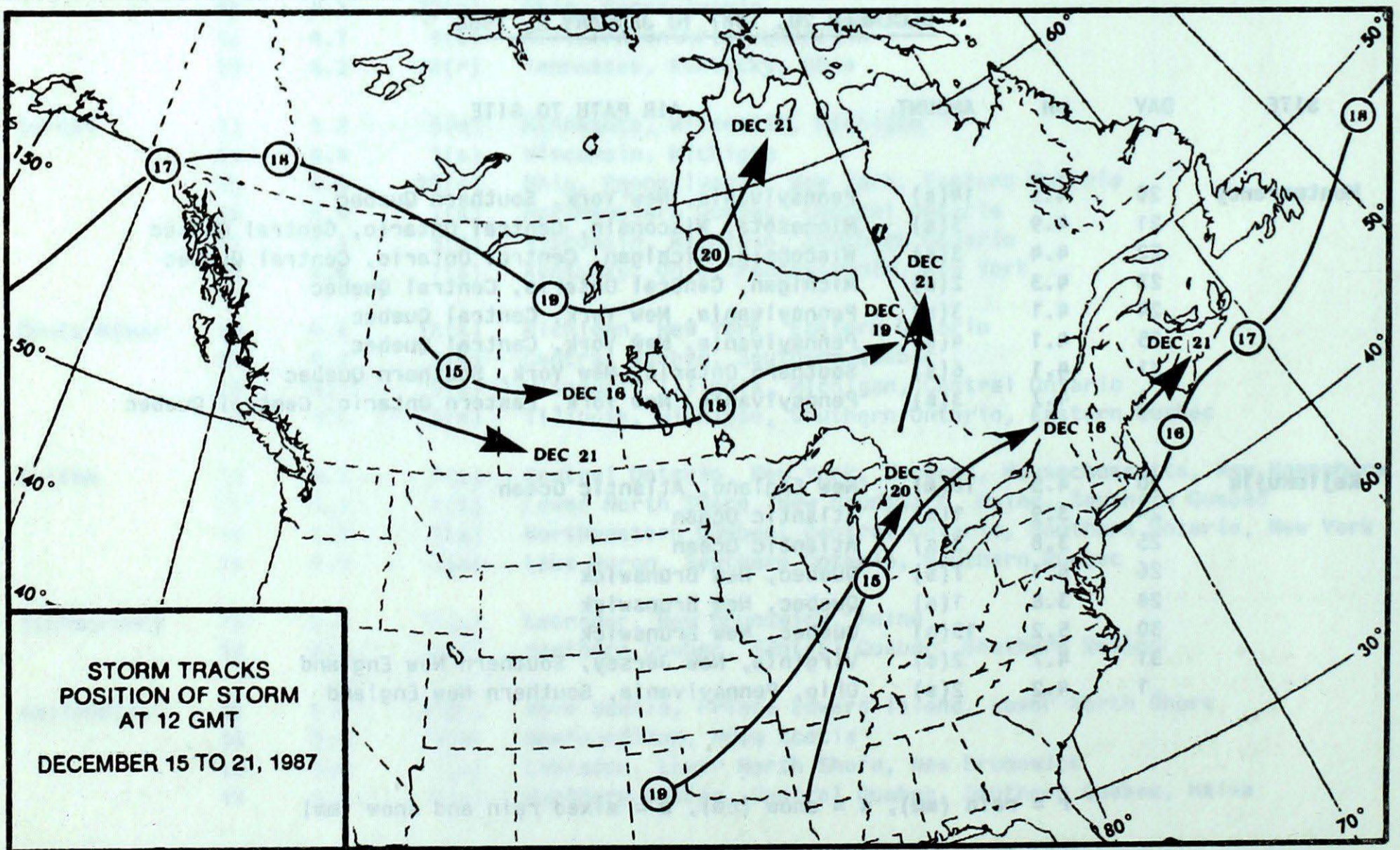
50 KPa ATMOSPHERIC CIRCULATION



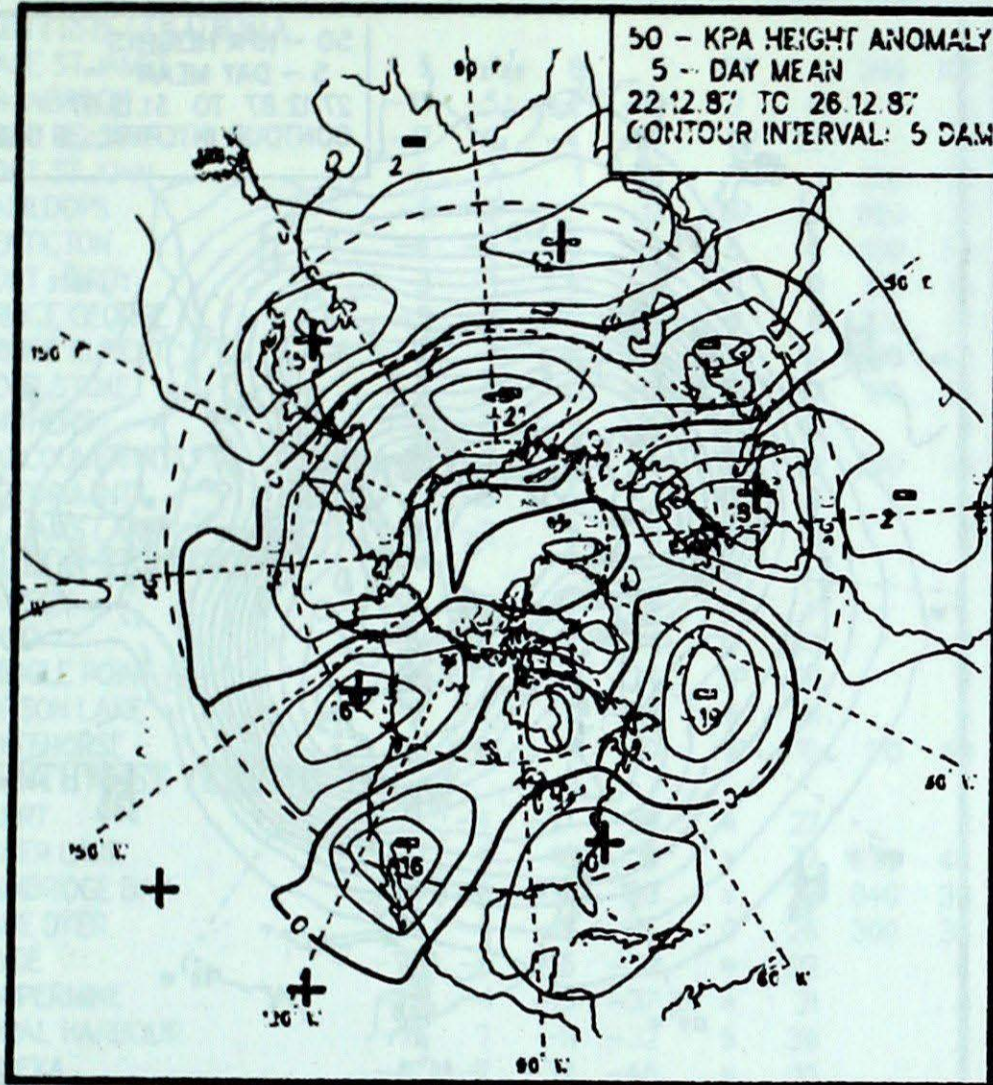
MEAN 50 KPa HEIGHT ANOMALY (dam)



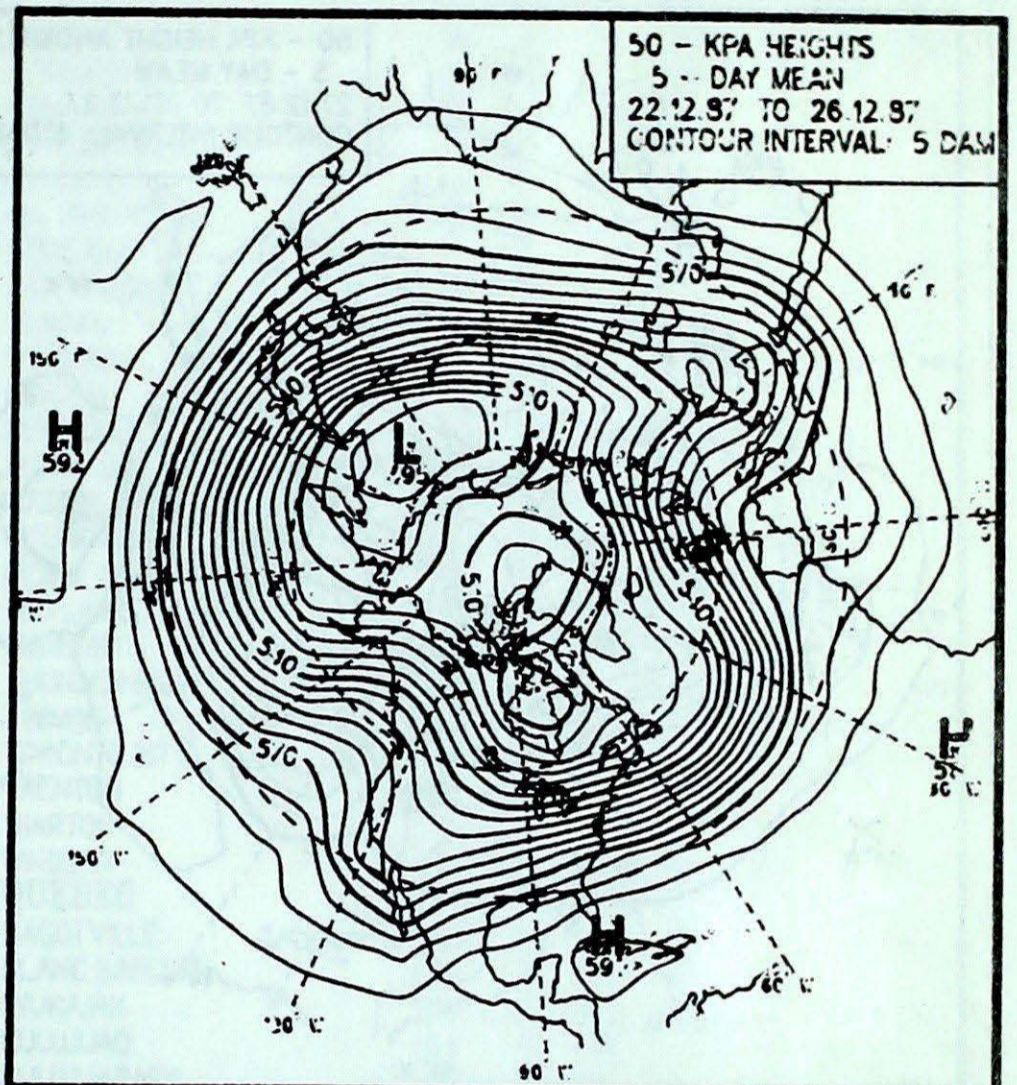
MEAN 50 KPa HEIGHTS (dam)



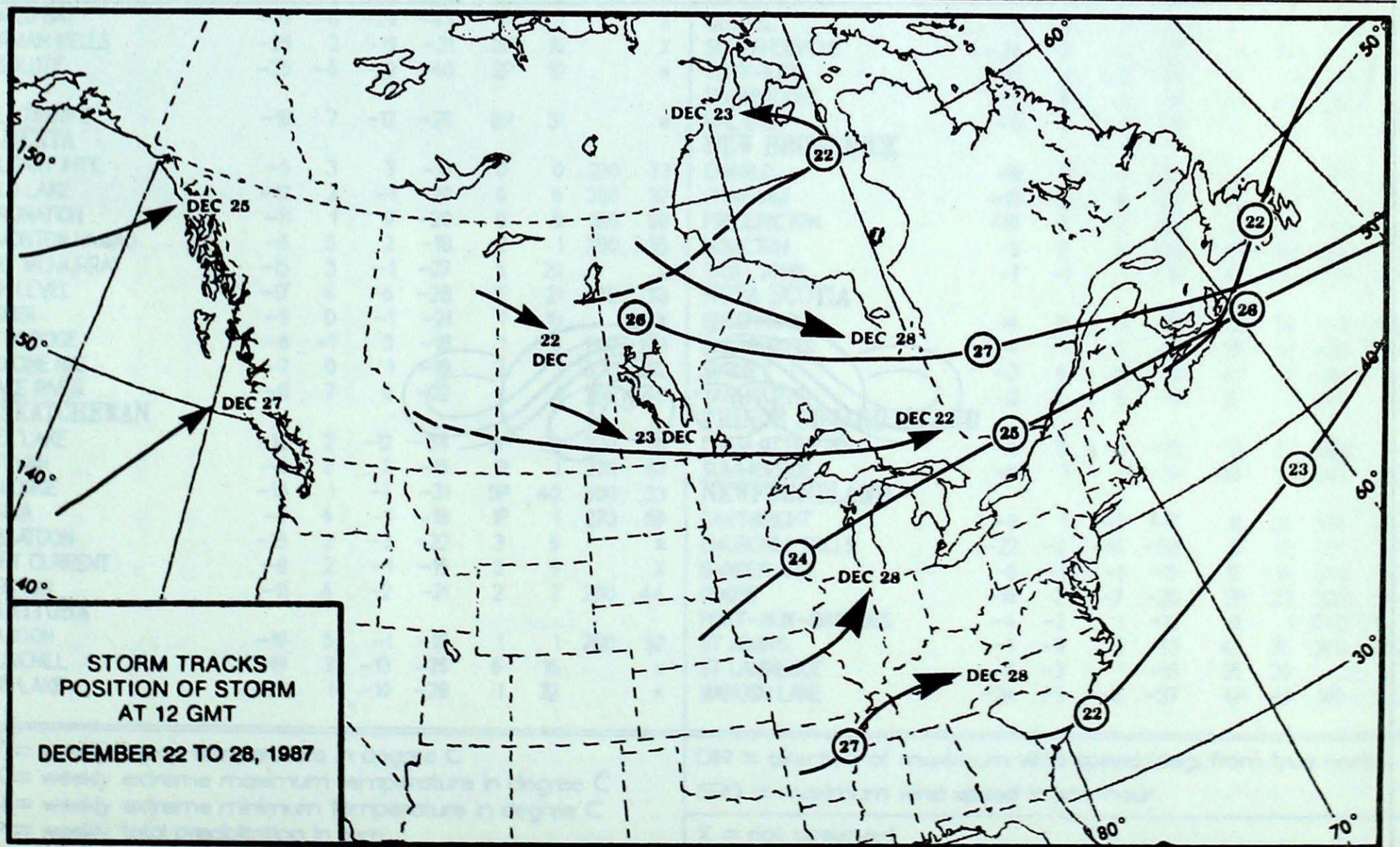
50 KPa ATMOSPHERIC CIRCULATION



MEAN 50 KPa HEIGHT ANOMALY (dam)

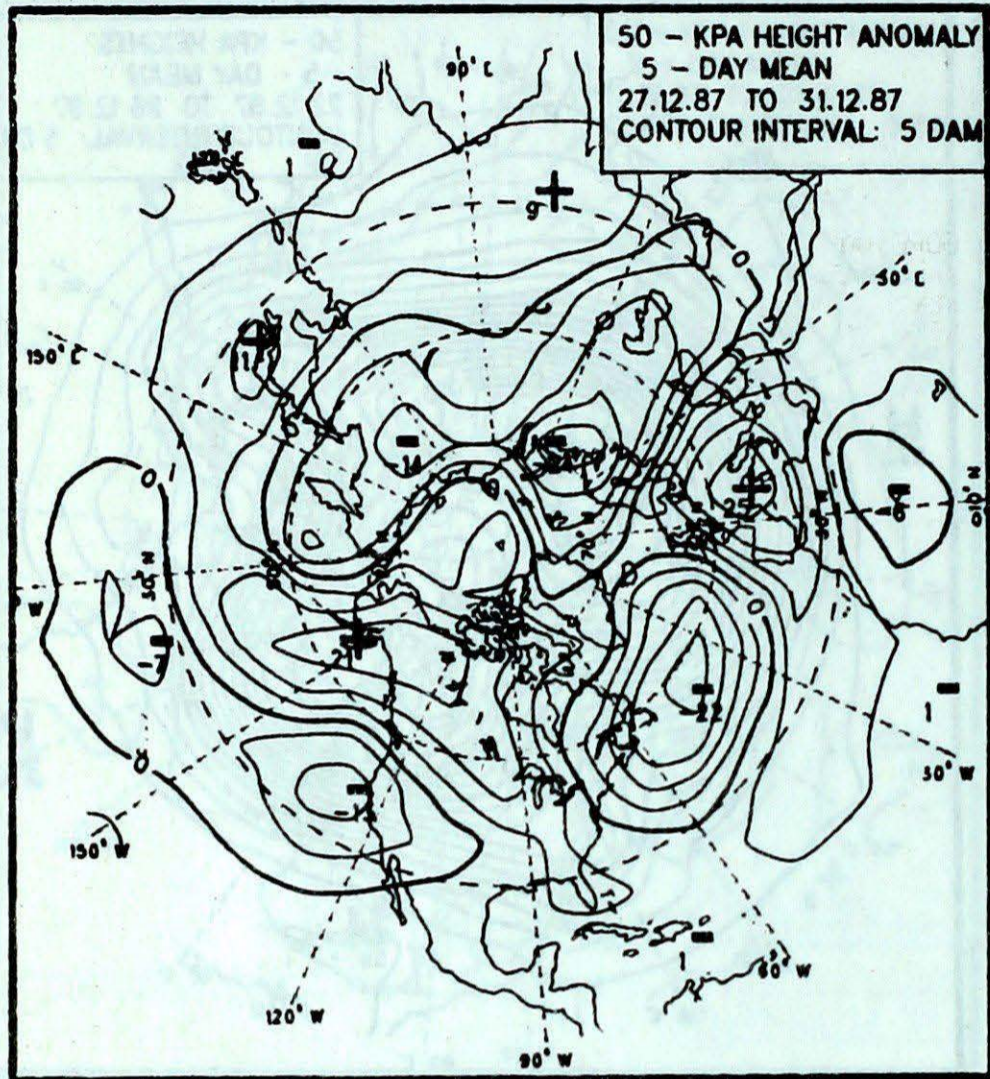


MEAN 50 KPa HEIGHTS (dam)

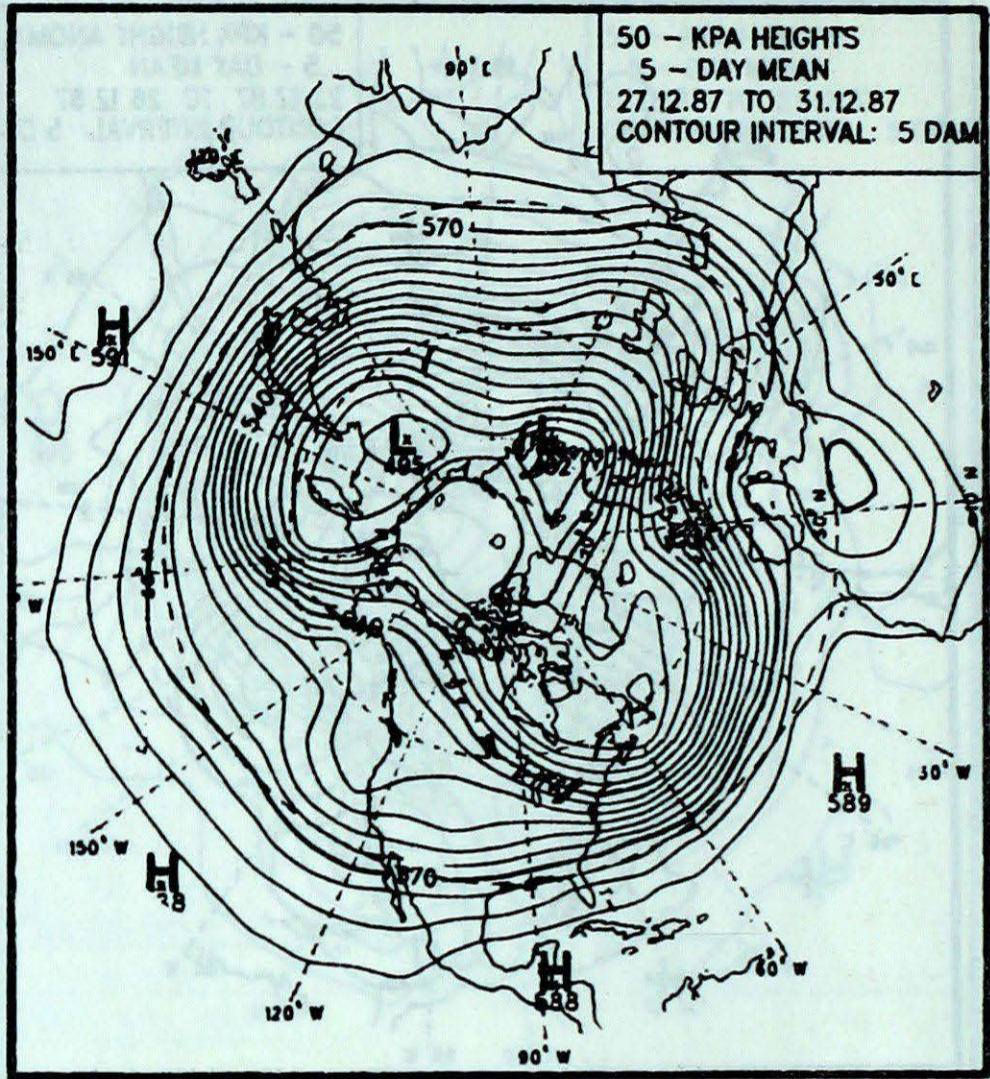


CIRCULATION

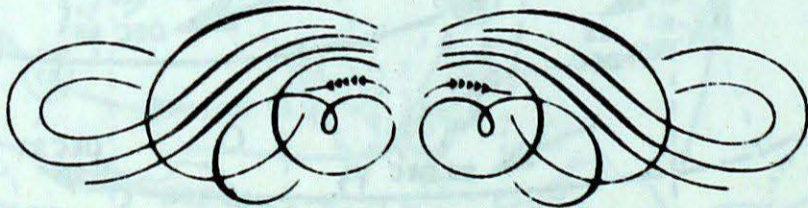
50 KPa ATMOSPHERIC CIRCULATION



MEAN 50 KPa HEIGHT ANOMALY (dam)



MEAN 50 KPa HEIGHTS (dam)



STORM TRACK
POSITION OF STORM
AT 15 GMT
DECEMBER 28 TO 31 1987

TEMPERATURE, PRECIPITATION AND MAXIMUM WIND DATA FOR THE WEEK ENDING 0600 GMT DECEMBER 22, 1987

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
BRITISH COLUMBIA									THE PAS	-14	4	-9	-22	7P	12	300	43
CAPE ST. JAMES	5	-1	8	1	5P	*	280	106	THOMPSON	-19	2	-10	-30	2	23		*
CRANBROOK	-10	-5	-2	-19	2	6		*	WINNIPEG INT'L	-10	4	-2	-19	1P	4	160	43
FORT NELSON	-17	5	-4	-27	0	23		*	ONTARIO								
FORT ST. JOHN	-6	7	1	-20	1	1	240	50	ATIKOKAN	-10	3	-2	-25	4	13	270	31
KAMLOOPS	-5	-2	1	-12	6P	6	090	37	BIG TROUT LAKE	-15	6	-5	-24	6P	29	300	41
PENTICTON	-4	-3	0	-9	5	4	180	54	GORE BAY	-2	4	2	-9	21	18	060	65
PORT HARDY	3	-1	6	-2	51	0	120	59	KAPUSKASING	-7	9	-1	-15	15	28	020	61
PRINCE GEORGE	-5	5	0	-11	9	6	220	59	KENORA	-11	4	-5	-16	2	14	180	31
PRINCE RUPERT	2	1	6	-5	101	0	180	70	KINGSTON	-1	5	6	-10	18P	0		X
REVELSTOKE	-5	-2	0	-12	15	12	170	56	LONDON	0	4	7	-5	62	1	230	85
SMITHERS	-5	3	1	-14	5	16		*	MOOSONEE	-7	10	-3	-15	11	46	040	33
VANCOUVER INT'L	2	-2	6	-4	21	0	290	39	NORTH BAY	-5	7	1	-10	34P	20	250	48
VICTORIA INT'L	1	-3	6	-3	13	0		*	OTTAWA INT'L	-3	6	4	-8	47	30		X
WILLIAMS LAKE	-8	-2	2	-18	10P	10		X	PETAWAWA	-3	9	2	-9	41	30		X
YUKON TERRITORY									PICKLE LAKE	-12	6	-4	-25	8	34		*
DAWSON	-25	0	-13	-34	*	*			RED LAKE	-13	3	-6	-25	4P	22	280	41
MAYO	-19	4	-2	-34	10	30		X	SUDBURY	-5	6	1	-14	34P	33		X
SHINGLE POINT A	-25	-1	-19	-34	3P	21		*	THUNDER BAY	-7	5	-1	-18	7P	7	010	50
WATSON LAKE	-17	7	-3	-32	6	31		*	TIMMINS	-7	9	-1	-14	34	46	040	54
WHITEHORSE	-11	4	-1	-30	1P	16	170	63	TORONTO INT'L	0	4	6	-9	31	1	090	74
NORTHWEST TERRITORIES									TRENTON	-1	5	7	-11	41	1		X
ALERT	-34	-4	-27	-39	*	27		*	WIARTON	-1	4	5	-7	36	8		X
BAKER LAKE	-22	6	-16	-29	*	77	330	48	WINDSOR	1	4	9	-3	56	0	210	104
CAMBRIDGE BAY	-24	6	-14	-33	*	20	040	33	QUEBEC								
CAPE DYER	-25	-4	-15	-35	0	26	300	35	BAGOTVILLE	-10	4	1	-16	7	15	100	52
CLYDE	-30	-5	-16	-38	*	22		*	BLANC SABLON	-9	*	-2	-18	1	1		X
COPPERMINE	-26	1	-15	-37	*	31		*	INUKJUAK	-14	5	-5	-23	9	34	140	44
CORAL HARBOUR	-19	7	-11	-32	5	39		X	KUUJUAQ	-24	-4	-10	-31	0	56		*
EUREKA	-42	-7	-32	-48	*	10		*	KULUJARAPIK	-12	5	-4	-22	7	14	280	52
FORT SMITH	-17	5	-10	-29	5	33		X	MANIWAKI	-4	8	3	-11	32P	19		*
IQALUIT	-21	1	-10	-30	1P	19	140	46	MONT JOLI	-8	2	2	-16	8	10	140	80
HALL BEACH	-24	3	-14	-35	*	24	050	41	MONTREAL INT'L	-3	5	5	-15	40	17	240	59
INUVIK	-27	0	-18	-35	*	35		X	NATASHQUAN	-11	0	-1	-22	13	1	040	48
MOULD BAY	-37	-6	-29	-43	*	11		X	QUEBEC	-6	5	3	-15	40	30	070	69
NORMAN WELLS	-25	2	-19	-31	3P	16		X	SCHIEFFERVILLE	-24	-3	-10	-35	3P	50		*
RESOLUTE	-35	-6	-29	-40	2P	10		*	SEPT-ILES	-12	1	-2	-22	14	10	120	52
YELLOWKNIFE	-18	7	-12	-28	8P	31		*	SHERBROOKE	-5	5	2	-14	40	34	260	50
ALBERTA									VAL D'OR	-6	9	-1	-15	27	35	100	37
CALGARY INT'L	-5	3	3	-15	0	0	270	72	NEW BRUNSWICK								
COLD LAKE	-12	2	-1	-20	6	6	280	37	CHARLO	-9	1	-1	-20	11P	12	080	50
CORONATION	-11	1	0	-20	0	0	310	59	CHATHAM	-10	-2	0	-22	33	32	080	67
EDMONTON NAMAO	-6	5	2	-18	2	1	280	65	FREDERICTON	-10	-2	0	-22	34	38	040	76
FORT MCMURRAY	-15	3	-1	-27	5	20		X	MONCTON	-9	-2	0	-22	60	68	020	83
HIGH LEVEL	-17	4	-6	-28	5	21	340	33	SAINT JOHN	-7	-1	1	-18	34	56	030	63
JASPER	-9	0	-1	-21	1	10		X	NOVA SCOTIA								
LETHBRIDGE	-6	-1	3	-18	1	*	260	100	GREENWOOD	-4	0	3	-15	21	29	040	83
MEDICINE HAT	-7	0	1	-18	2	1	300	52	SHEARWATER	-4	-1	5	-12	39	14	010	74
PEACE RIVER	-8	7	0	-22	1	1	260	48	SYDNEY	-3	0	0	-8	33	26	080	76
SASKATCHEWAN									YARMOUTH	-2	0	5	-8	27	6	100	78
CREE LAKE	-18	2	-12	-34	5P	22	320	31	PRINCE EDWARD ISLAND								
ESTEVAN	-6	5	3	-15	1P	1	270	67	CHARLOTTETOWN	-6	0	0	-15	31	57	050	74
LA RONGE	-16	1	-7	-31	5P	40	300	33	SUMMERSIDE	-5	1	1	-14	63	61	060	85
REGINA	-9	4	-1	-18	1P	1	270	59	NEWFOUNDLAND								
SASKATOON	-13	2	-3	-22	3	5		*	CARTWRIGHT	-9	1	-2	-17	8	36	340	74
SWIFT CURRENT	-8	2	-1	-15	3	9		X	CHURCHILL FALLS	-22	-2	-10	-30	5	62	300	37
YORKTON	-11	4	-2	-21	2	2	280	44	GANDER INT'L	-6	-1	-1	-15	12	14	340	67
MANITOBA									GOOSE	-16	-2	-7	-26	3P	23	330	54
BRANDON	-10	5	-1	-19	1	1	280	52	PORT-AUX-BASQUES	-4	-2	1	-10	11	1	040	93
CHURCHILL	-19	3	-13	-25	6	16		*	ST JOHN'S	-4	-2	0	-13	42	35	360	83
LYNN LAKE	-20	1	-10	-28	1	22		*	ST LAWRENCE	-5	-3	1	-15	31	20		X
									WABUSH LAKE	-24	-3	-6	-37	4P	49	160	33

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

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 29, 1987

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
BRITISH COLUMBIA									THE PAS	-13	6	-2	-28	2	15		*
CAPE ST. JAMES	6	1	9	3	63	0	140	93	THOMPSON	-20	3	-6	-32	4	23		*
CRANBROOK	-13	-6	-4	-20	0	6		*	WINNIPEG INT'L	-11	4	1	-21	1	3	180	39
FORT NELSON	-11	10	-3	-22	2	24	320	41	ONTARIO								
FORT ST. JOHN	-2	12	5	-13	3	1	250	70	ATIKOKAN	-12	5	-2	-26	1	11	220	33
KAMLOOPS	-6	-3	-2	-12	1	4		*	BIG TROUT LAKE	-21	1	-9	-31	6	38	050	35
PENTICTON	-5	-4	1	-10	2	5	170	37	GORE BAY	-3	4	2	-11	6	15	240	56
PORT HARDY	3	0	8	-2	13	0	120	65	KAPUSKASING	-15	1	-4	-24	13	36	200	33
PRINCE GEORGE	-6	3	0	-15	5	5	200	39	KENORA	-11	4	-1	-21	2	16	200	43
PRINCE RUPERT	4	3	8	-3	51	0	180	83	KINGSTON	0	7	7	-11	0	0		X
REVELSTOKE	-6	-1	0	-10	1	12		*	LONDON	1	5	9	-6	9	0	090	50
SMITHERS	-7	2	3	-17	0	16		*	MOOSONEE	-15	3	7	-26	6	50		*
VANCOUVER INT'L	1	-2	6	-4	0	0		*	NORTH BAY	-8	4	-1	-21	15	23		*
VICTORIA INT'L	2	-2	7	-3	1	0		*	OTTAWA INT'L	-4	5	3	-15	13	22		X
WILLIAMS LAKE	-8	1	0	-18	0	10		X	PETAWAWA	-8	1	2	-23	8	25		X
YUKON TERRITORY									PICKLE LAKE	-16	3	-7	-27	2	36		*
DAWSON	-18	9	-3	-34	*	*			RED LAKE	-16	2	-4	-32	2	21	190	35
MAYO	-12	12	0	-27	3	31		X	SUDBURY	-7	5	1	-19	13	39		X
SHINGLE POINT A	-19	5	-1	-34	2	45		*	THUNDER BAY	-10	3	-1	-22	1	7		*
WATSON LAKE	-9	15	2	-19	16	42		*	TIMMINS	-13	2	-4	-26	15	36	320	37
WHITEHORSE	-6	12	4	-27	2	24	160	59	TORONTO INT'L	0	5	8	-7	4	1	120	43
NORTHWEST TERRITORIES									TRENTON	0	6	8	-11	4	0		X
ALERT	-34	-4	-30	-43	0	26		*	WIARTON	-1	4	6	-7	14	2		X
BAKER LAKE	-30	0	-26	-33	0	74	320	67	WINDSOR	1	4	10	-3	28	0	060	50
CAMBRIDGE BAY	-32	-1	-20	-39	0	21	310	44	QUEBEC								
CAPE DYER	-22	-3	-11	-33	0	26	290	78	BAGOTVILLE	-14	0	-3	-27	18	31	300	44
CLYDE	-25	0	-20	-32	0	21	310	48	BLANC SABLON	-11	-3	-2	-19	26	12		X
COPPERMINE	-23	4	-15	-36	6	35		*	INUKJUAQ	-18	2	-5	-34	3	37	230	43
CORAL HARBOUR	-27	0	-10	-30	3	40		X	KULUJUAQ	-25	-6	-12	-34	1	55		*
EUREKA	-40	-5	-31	-45	1	10		*	KULUJUAPIK	-17	2	-10	-28	6	15	270	43
FORT SMITH	-15	8	-8	-28	2	33		X	MANIWAKI	-8	4	0	-22	12	27	340	31
IQALUIT	-22	1	-8	-35	9	29	130	43	MONT JOLI	-10	0	-1	-17	19	24	320	74
HALL BEACH	-21	7	-12	-35	4	29	080	50	MONTREAL INT'L	-4	5	4	-15	8	12	290	39
INUVIK	-19	8	-4	-33	5	37		X	NATASHQUAN	-15	-5	-3	-22	6	10	340	37
MOULD BAY	-32	-1	-16	-42	2	11		X	QUEBEC	-8	2	-1	-19	10	36	070	50
NORMAN WELLS	-19	7	-13	-29	2	15		X	SCHIEFFERVILLE	-27	-7	-11	-39	0	50		*
RESOLUTE	-26	4	-18	-34	1	11	060	43	SEPT-ILES	-14	-2	-4	-22	2	12	320	61
YELLOWKNIFE	-16	10	-9	-26	3P	30		*	SHERBROOKE	-7	3	4	-20	7	26	270	56
ALBERTA									VAL D'OR	-14	1	-4	-27	14	37	330	41
CALGARY INT'L	-3	5	8	-13	1	0	270	43	NEW BRUNSWICK								
COLD LAKE	-8	7	2	-18	3	6	340	37	CHARLO	-11	-1	-1	-20	22	37	300	52
CORONATION	-7	5	2	-14	2	0	330	35	CHATHAM	-10	-2	0	-20	12	36	310	41
EDMONTON NAMAQ	-3	9	9	-13	0	1	290	48	FREDERICTON	-9	-1	2	-21	8	37	320	46
FORT MCMURRAY	-10	8	2	-24	4	19		X	MONCTON	-9	-3	-1	-20	9	39	300	57
HIGH LEVEL	-11	9	4	-25	1	20	340	33	SAINT JOHN	-7	-1	2	-21	9	44	300	59
JASPER	-8	2	-3	-15	1	8		X	NOVA SCOTIA								
LETHBRIDGE	-3	3	10	-15	1	1	250	50	GREENWOOD	-5	-1	4	-18	11	21	270	59
MEDICINE HAT	-6	2	7	-17	0	1		*	SHEARWATER	-5	-2	3	-16	10	11	310	48
PEACE RIVER	-4	13	6	-11	0	0	270	70	SYDNEY	-6	-3	1	-10	11	30	030	57
SASKATCHEWAN									YARMOUTH	-1	0	6	-10	11	1	330	67
CREE LAKE	-17	3	-5	-31	4	23		*	PRINCE EDWARD ISLAND								
ESTEVAN	-7	4	4	-17	0	1	220	39	CHARLOTTETOWN	-7	-2	-1	-16	21	70	300	56
LA RONGE	-13	5	1	-28	4	44		*	SUMMERSIDE	-7	-2	0	-15	16	68	310	48
REGINA	-9	4	1	-24	1	1	260	43	NEWFOUNDLAND								
SASKATOON	-10	5	0	-22	1	6	340	39	CARTWRIGHT	-12	-1	-5	-18	23	47	330	93
SWIFT CURRENT	-8	3	2	-22	2	8		X	CHURCHILL FALLS	-24	-5	-10	-32	1	61	300	35
YORKTON	-10	5	1	-25	0	1		*	GANDER INT'L	-8	-4	-1	-14	14	26	260	63
MANITOBA									GOOSE	-18	-3	-8	-27	8	29	250	39
BRANDON	-12	3	1	-24	1	1	240	39	PORT-AUX-BASQUES	-5	-2	1	-10	17	24	280	102
CHURCHILL	-24	0	-18	-32	0	16	300	56	ST JOHN'S	-6	-4	0	-12	15	38	130	74
LYNN LAKE	-19	4	-6	-31	1	23		*	ST LAWRENCE	-6	-4	1	-11	11	30		X
									WABUSH LAKE	-24	-5	-12	-35	1	48		*

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

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