

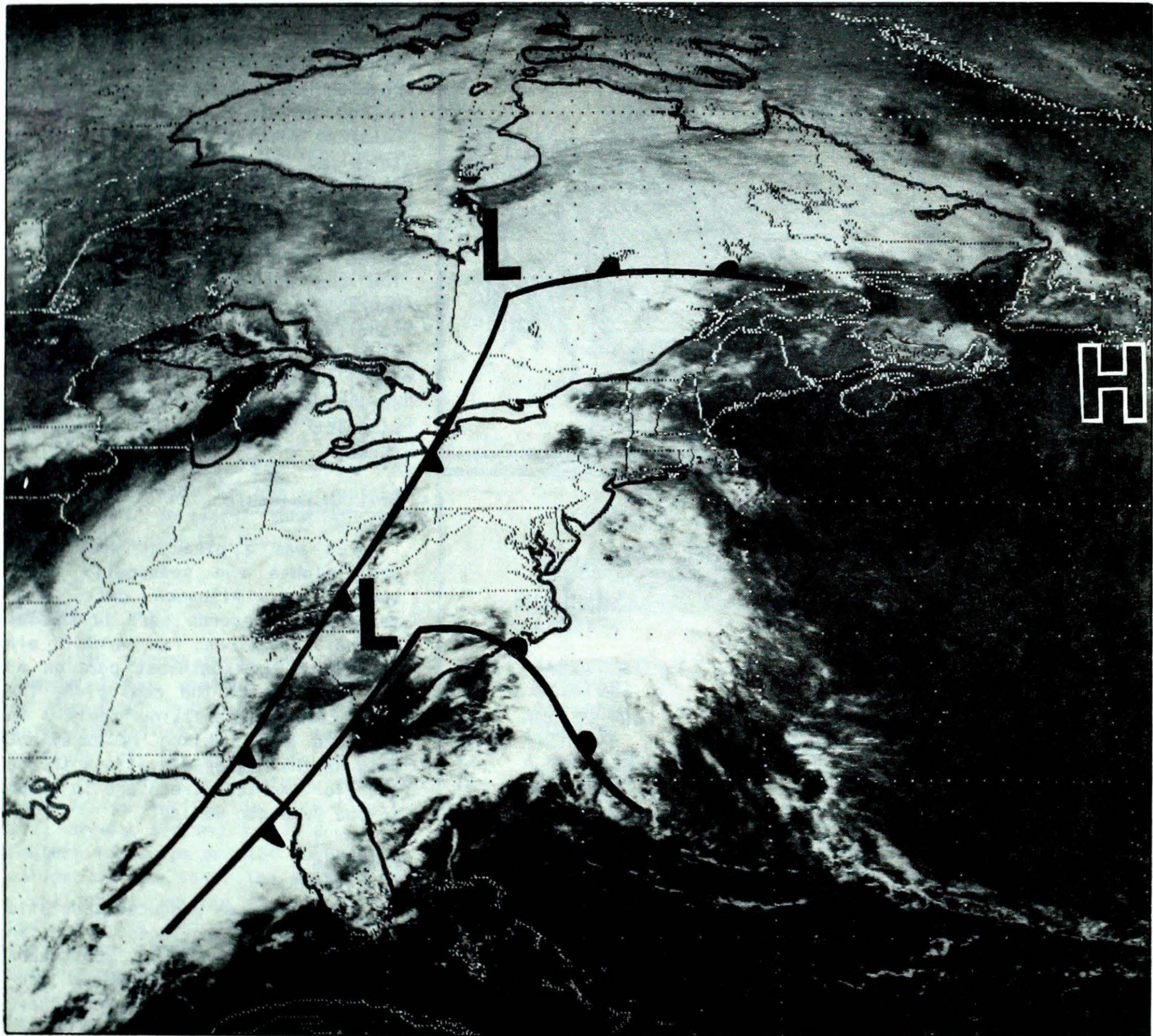
Climatic Perspectives



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Vol. 9 No. 13

A weekly review of Canadian climate

March 24 to 30, 1987



The massive cloud shield, which covers most of the eastern half of North America, is associated with a strengthening low pressure system which moved up from the American south and tracked toward the lower Lakes. The combination of a good moisture feed from the Gulf States and an Arctic airmass sweeping southeastwards from the prairies, behind the system, produced substantial snowfalls throughout the lower Great Lakes basin. G.O.E.S. Satellite photo, March 30, 1987.

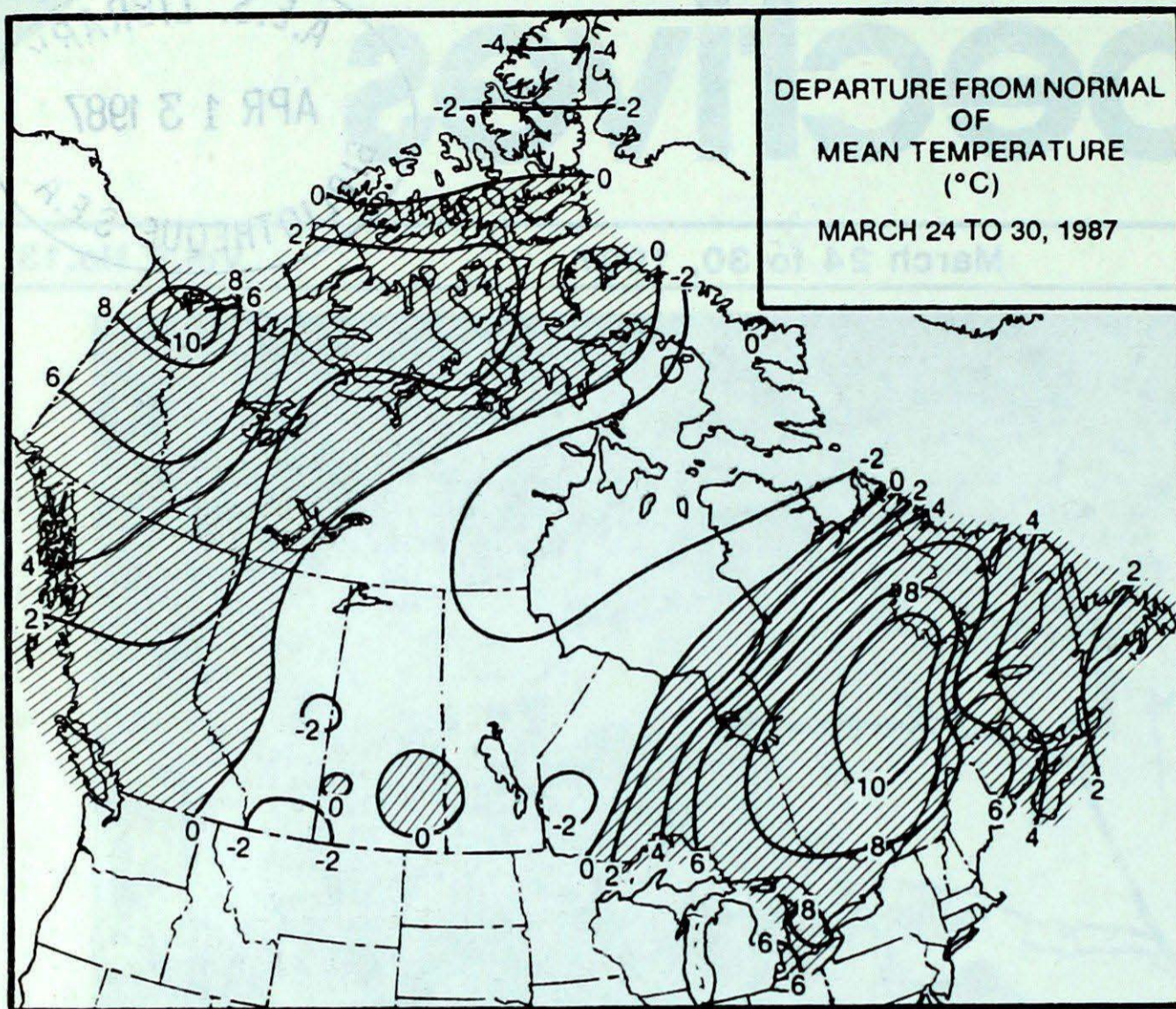
● **Spring shortlived as wintry blast hits central Canada**

— Cold and snow on the Prairies

— Major snow storm hits Ontario

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TEMPERATURE



ACROSS THE COUNTRY...

Yukon and Northwest Territories

A major Pacific weather system produced significant snowfalls in the southern and central Yukon. More than 20 cm of snow fell in the Cassiar Mountains of the southeast, disrupting traffic on the Alaska Highway. Daily maximum temperature records were broken in the Yukon, while in the southern Mackenzie District daytime highs only managed to climb to near freezing, as an Arctic air mass established itself over the Territories. On March 27, Whitehorse set a new monthly sunshine record of 205.1 hours surpassing the previous record of 195.1 hours in 1974. Although weather conditions were seasonally fair over southern Baffin Island, blowing snow, blizzards and dangerous wind-chills were reported in the Keewatin District and along the Hudson Bay coast.

British Columbia

It was a pleasant week, with cool nights and seasonally mild, sunny days. Although daily high temperature records were broken at several locations, an Arctic air mass kept the southeast portion of the province on the cool side. The snow cover was melting rapidly in northern B.C.. Skiing is excellent only at the higher elevations in the interior. Apricot trees are in bloom in the Okanagan Valley.

Prairies

Disturbances produced snowfalls in all three provinces, with an Arctic airmass slipping southwards by the weekend. Near seasonal temperatures earlier in the week gave way to below normal values after the 28th, as an area of high pressure covered the region. After the middle of the week, daytime readings were suppressed well below the freezing mark, with over night minimums plugging to the minus twenties and thirties. A few daily low temperature records were broken in the north. Most areas had fresh snowfalls, ranging from a trace to

WEEKLY TEMPERATURE EXTREME (C)

		MAXIMUM		MINIMUM
BRITISH COLUMBIA	HOPE	19	FORT ST. JOHN	-23
YUKON TERRITORY	MAYO	9	TUCHITUA	-29
NORTHWEST TERRITORIES	HAY RIVER	6	SHEPHERD BAY A	-43
ALBERTA	CALGARY INT'L	17	HIGH LEVEL	-31
SASKATCHEWAN	KINDERSLEY	12	COLLINS BAY	-28
MANITOBA	DAUPHIN	9	CHURCHILL	-32
ONTARIO	WINDSOR	21	BIG TROUT LAKE	-30
QUEBEC	BAGOTVILLE	19	KUUJUAQ	-28
	SHERBROOKE			
NEW BRUNSWICK	CHATHAM	19	CHATHAM	-8
NOVA SCOTIA	GREENWOOD	17	AMHERST	-8
PRINCE EDWARD ISLAND	CHARLOTTETOWN	10	SUMMERSIDE	-8
NEWFOUNDLAND	DEER LAKE	11	CHURCHILL FALLS	-8

ACROSS THE NATION

WARMEST MEAN TEMPERATURE	9	WINDSOR	ONT
COOLEST MEAN TEMPERATURE	-39	EUREKA	NWT

10 cm. Blowing snow was reported in some districts on the 27th. Temperatures started to moderate, from the west, over the weekend.

Ontario

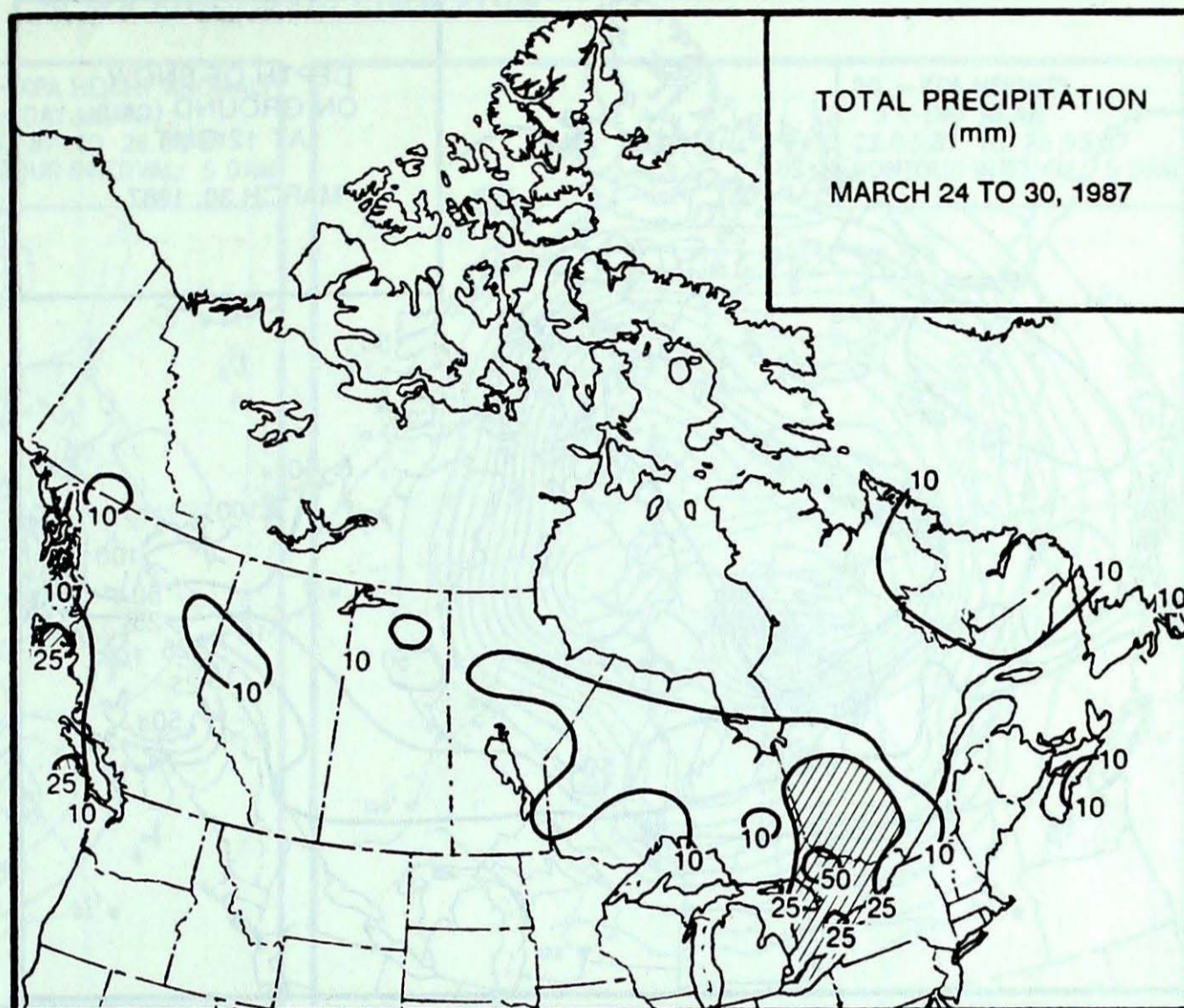
In spite of the numerous new daily warm temperature records set in the province on March 23 and 24, the sunny, dry weather of the previous three weeks came to a gradual end. By mid-week, rain was reported falling in the south, and a mixture of rain and snow in the north. Winter returned with a vengeance the final day of the period, as a complex low pressure system emerged out of the American mid-west, bringing with it a mixed bag of precipitation on the 29th. As Arctic air spilled southeastwards behind a cold front, the rain in the south, on the evening of the 30th, changed to a mixture of freezing rain, ice pellets and snow. On the morning of the 31st, already up to 15 cm of fresh snow covered southern Ontario. Needless to say, after the beautiful stretch of spring weather experienced earlier, morning rush hour traffic was in chaos.

Quebec

Mild temperatures and sunshine dominated the weather picture most of the week, but cloudy skies were more prevalent in the northern sections of the province. No less than 39 daily temperature records were broken during the period, with the mercury soaring to 19°C in the Eastern Townships and the Laurentians earlier in the week. The weather was excellent for spring skiing, but ski resorts have had to close some of their lower slopes. Difficulties have been experienced with maple syrup production because the mild weather has greatly reduced sap flows. Spring flooding was reported in the Beauce region. The Chaudiere River has been flowing over its banks since the 27th, although flood waters are reported to be now receding.

Maritimes

It was a mild week, with sunny weather conditions during the early and latter parts of the period. In New Brunswick, the mercury soared to



HEAVIEST WEEKLY PRECIPITATION (mm)

BRITISH COLUMBIA	PRINCE RUPERT	40
YUKON TERRITORY	MORLEY RIVER	15
NORTHWEST TERRITORIES	CAPE DORSET A	7
ALBERTA	GRANDE PRAIRIE	10
SASKATCHEWAN	COLLINS BAY	13
MANITOBA	GILLAM	12
ONTARIO	NORTH BAY	50
QUEBEC	MANIWAKI	31
NEW BRUNSWICK	CHATHAM	9
NOVA SCOTIA	SABLE ISLAND	18
PRINCE EDWARD ISLAND	CHARLOTTETOWN	9
NEWFOUNDLAND	PORT-AUX-BASQUES	21

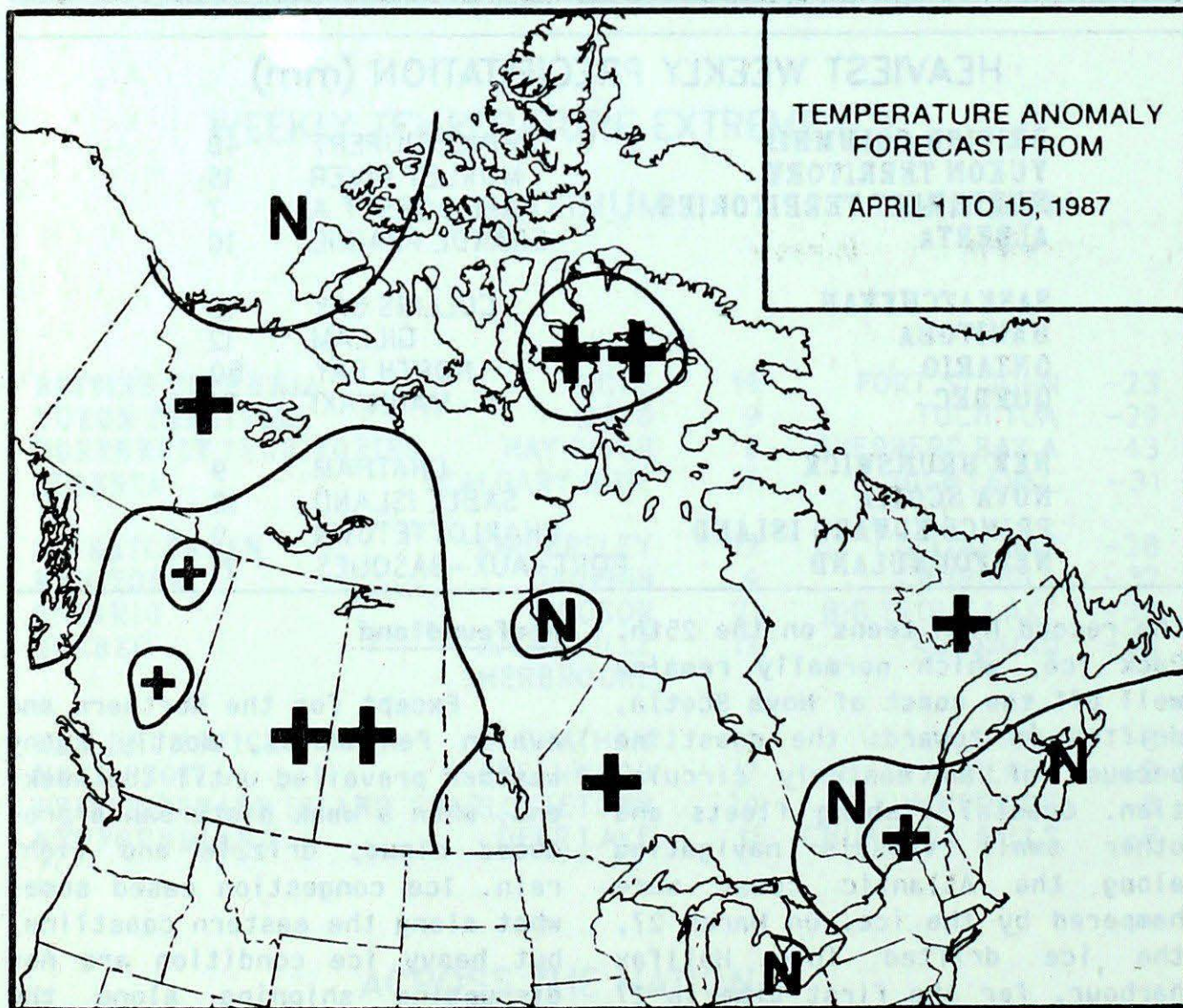
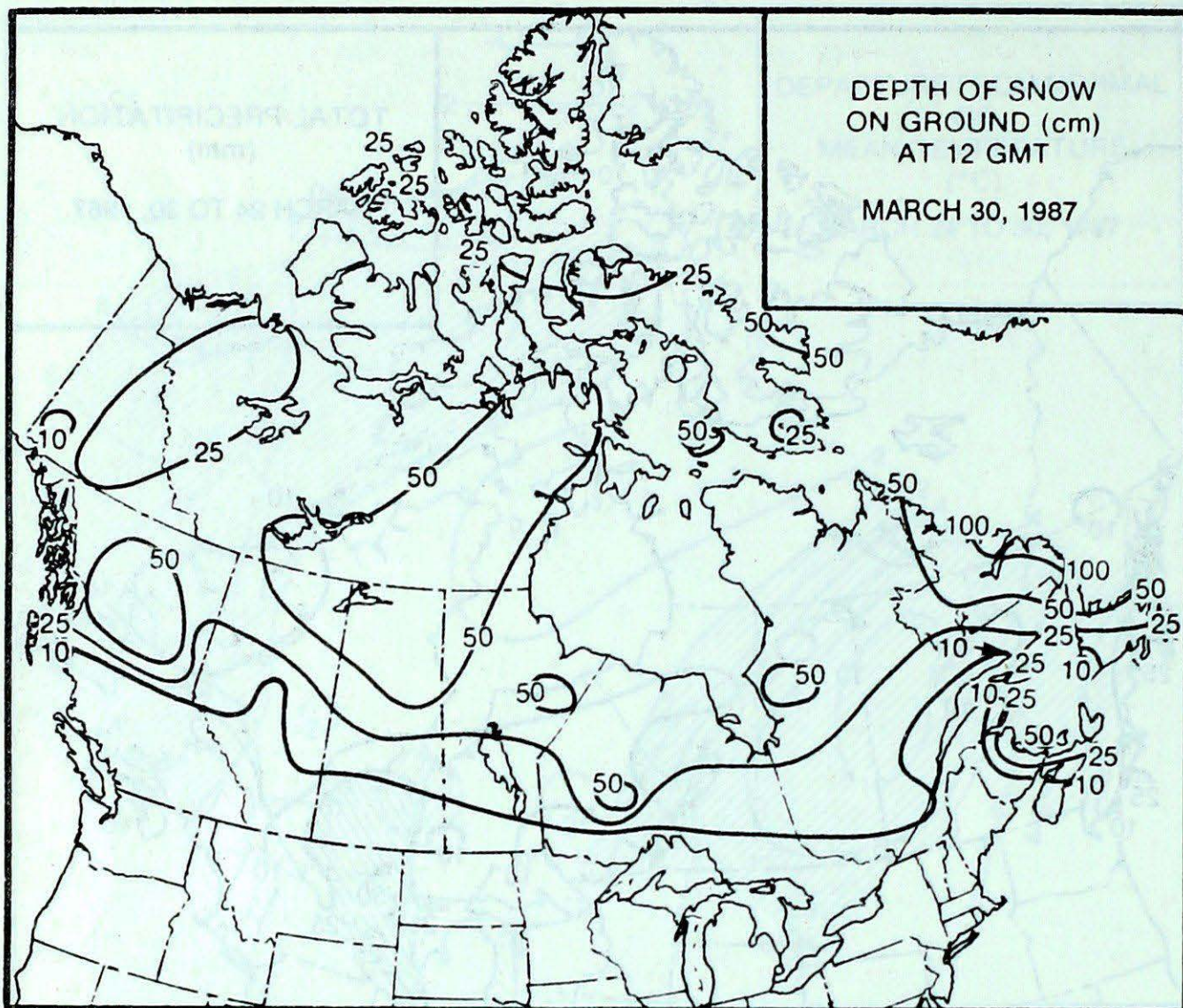
the record high teens on the 25th. Pack ice, which normally remains well off the coast of Nova Scotia, drifted in towards the coastline because of an easterly circulation. Coastal fishing fleets and other small vessels navigating along the Atlantic coast were hampered by the ice. On March 27, the ice drifted into Halifax harbour, for the first time in 27 years, disrupting a lot of marine traffic. Ferry services between Halifax and Dartmouth were halted because of the ice, stranding many passengers. Shipping returned to normal over the weekend, when the ice finally moved out of the normally ice-free ocean port.

Newfoundland

Except for the Northern and Avalon Peninsulas, mostly sunny weather prevailed until the weekend, when a weak disturbance produced cloud, drizzle and light rain. Ice congestion eased somewhat along the eastern coastline, but heavy ice conditions are now disrupting shipping along the south coast near Placentia and St. Mary's Bay.

In Labrador, temperatures were unseasonably mild. A weak weather system lingering over the area most of the week gave generally cloudy conditions with periods of snow and rain.

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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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. The contents may be reprinted freely with proper credit.

The data 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.

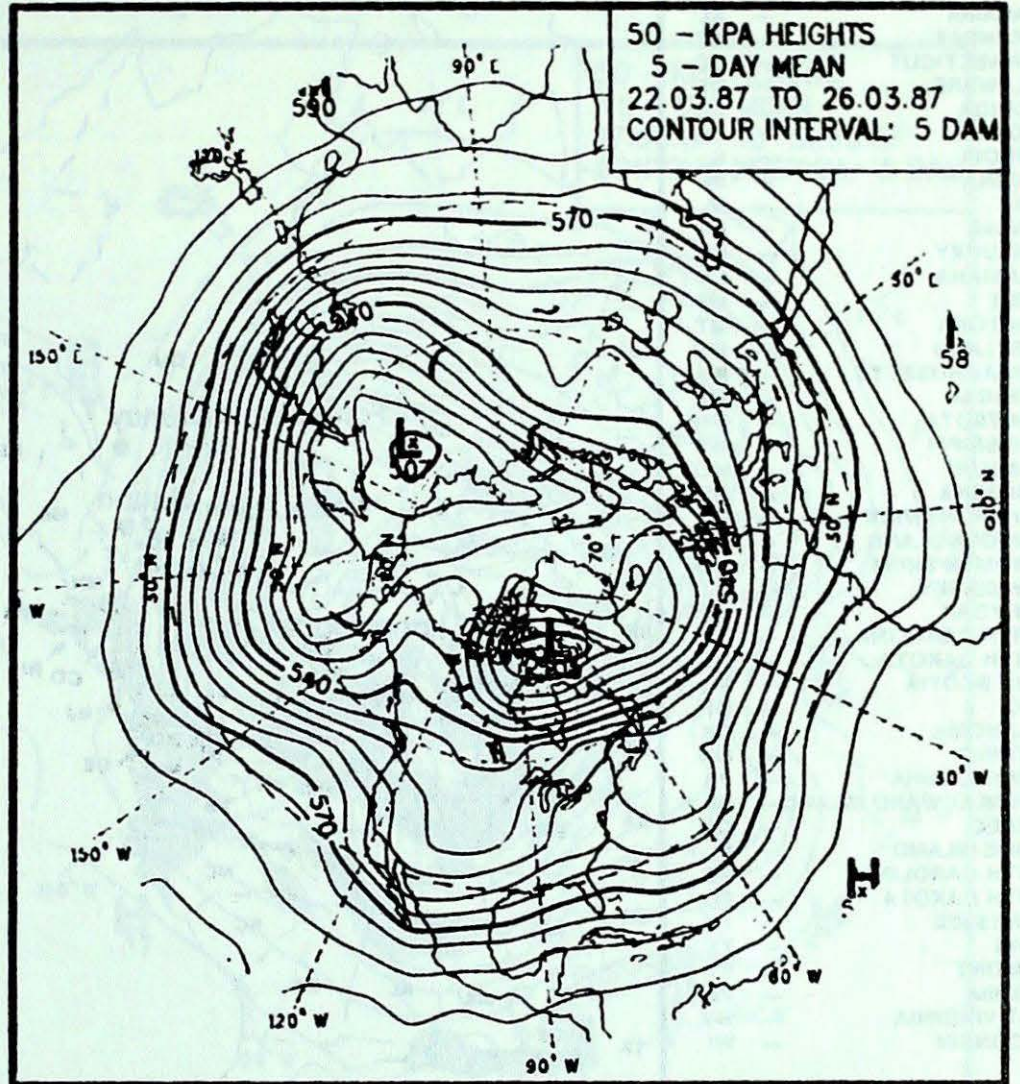
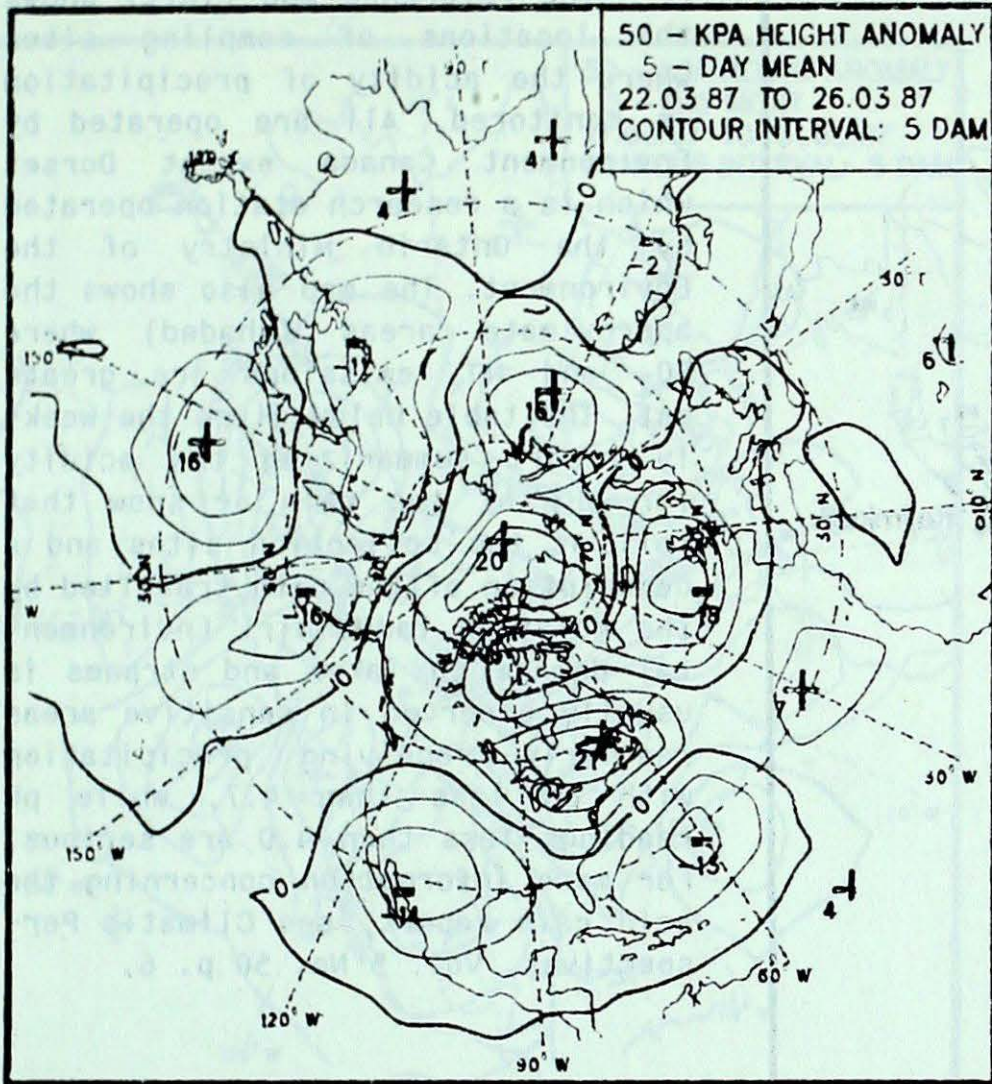
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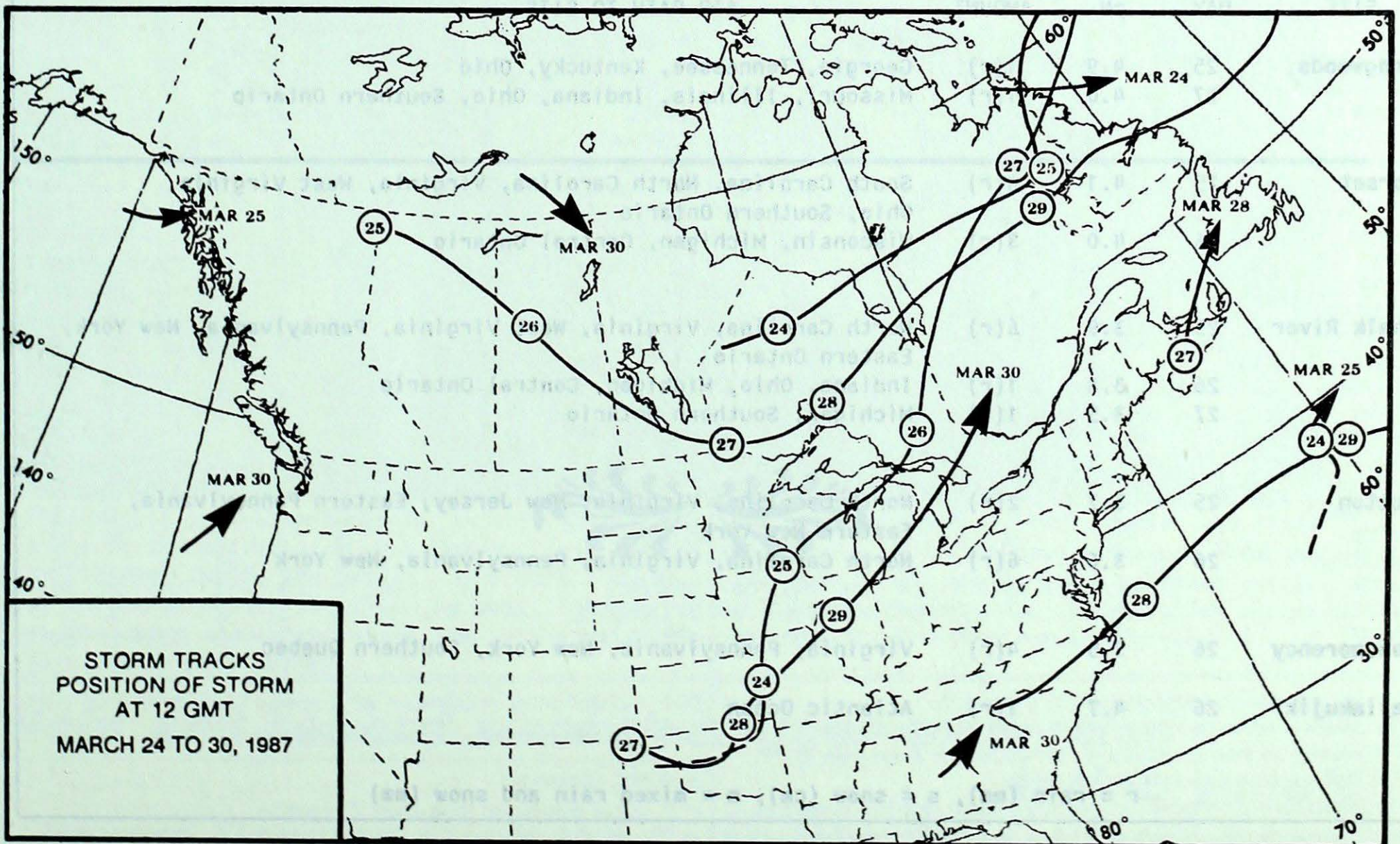
CIRCULATION

50 KPa ATMOSPHERIC CIRCULATION



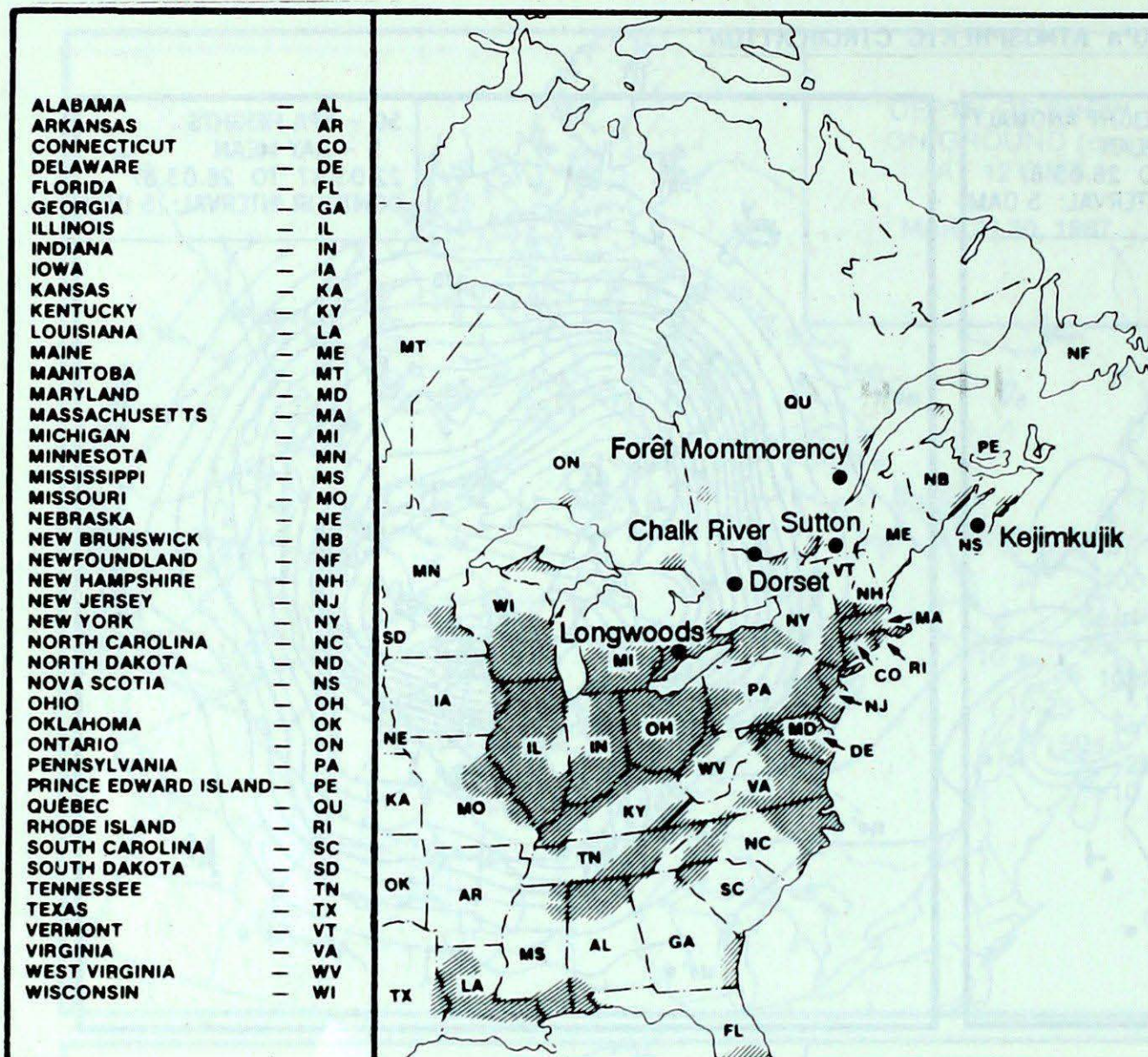
MEAN 50 KPa HEIGHT ANOMALY (dam)
March 22 to 26, 1987

MEAN 50 KPa HEIGHTS (dam)
March 22 to 26, 1987



ACID RAIN

ACID RAIN REPORT



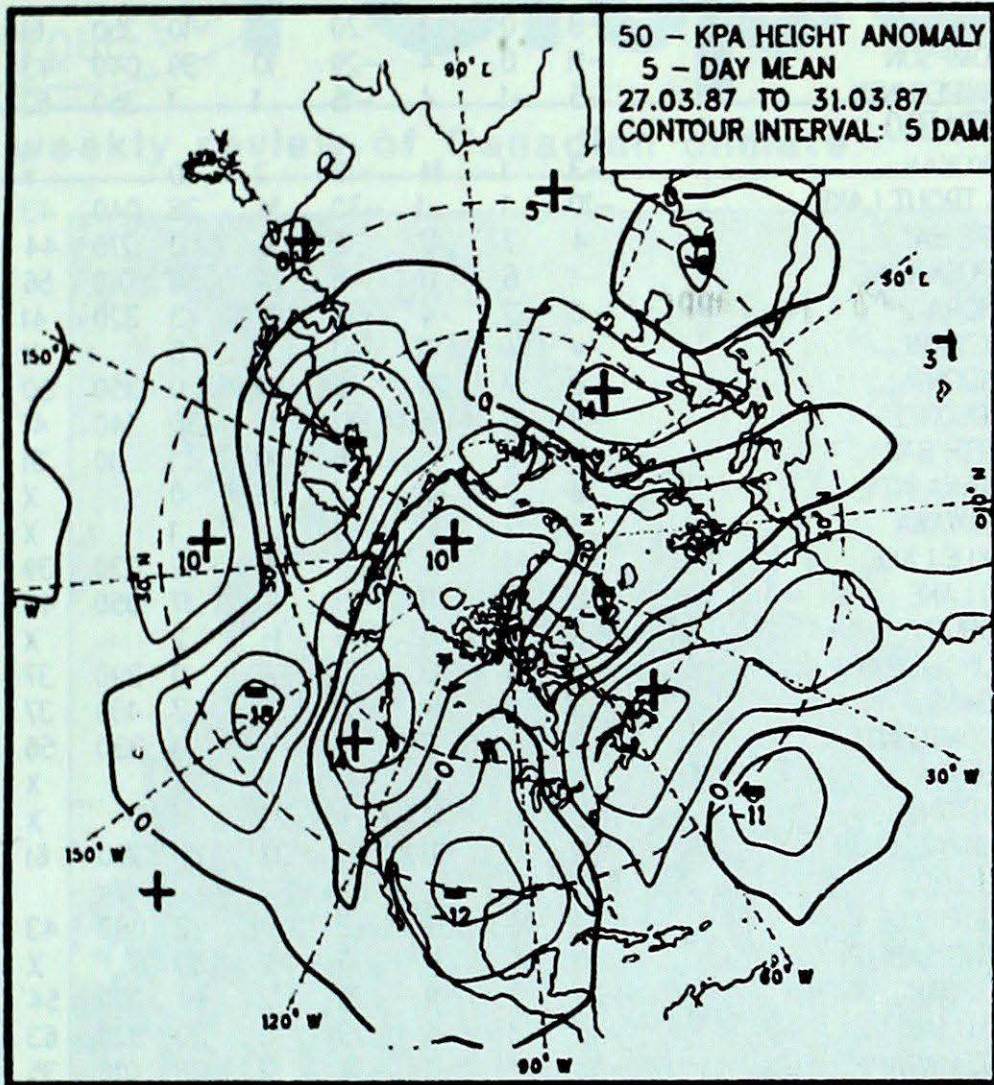
The reference map (left) shows the locations of sampling sites where the acidity of precipitation is monitored. All are operated by Environment Canada except Dorset which is a research station operated by the Ontario Ministry of the Environment. The map also shows the approximate areas (shaded) where 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.

MARCH 22, TO MARCH 28, 1987

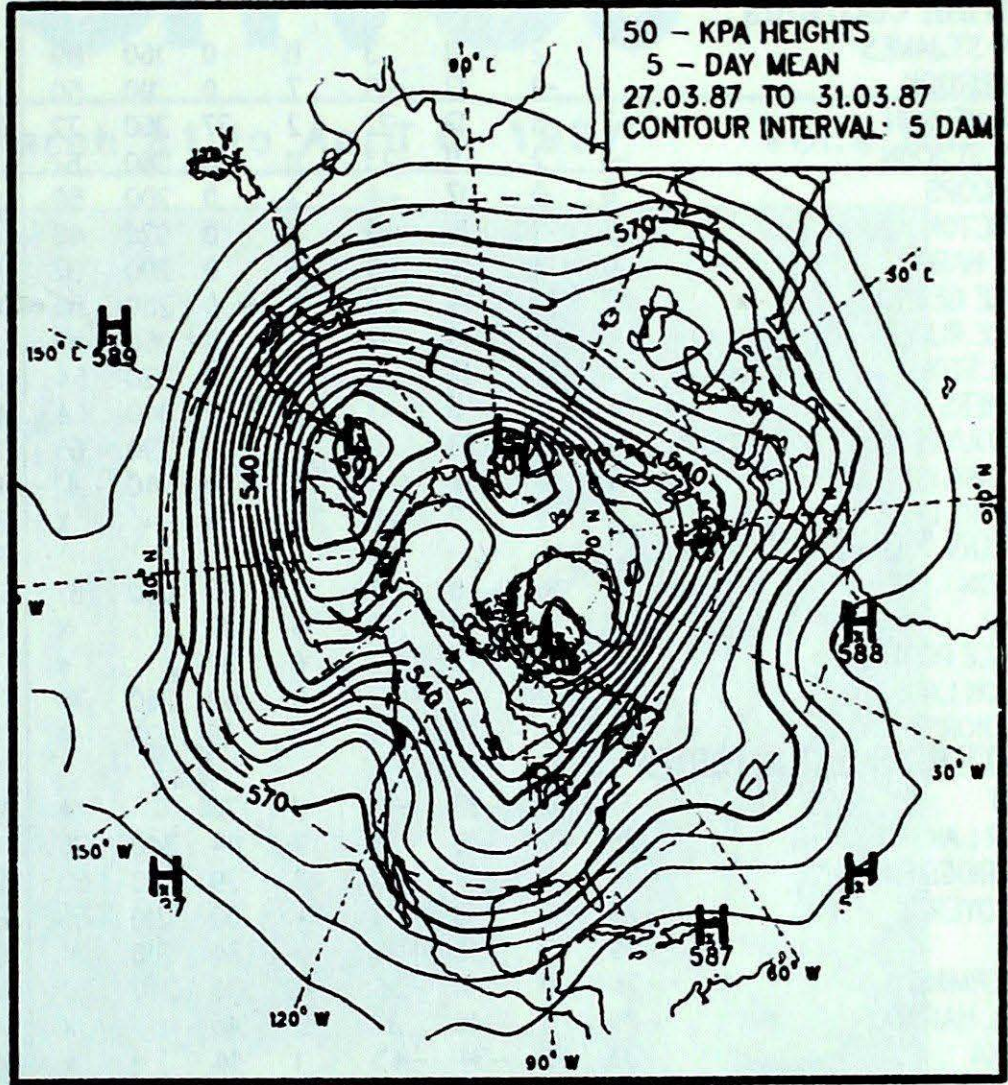
SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	25	4.9	1(r)	Georgia, Tennessee, Kentucky, Ohio
	27	4.0	1(r)	Missouri, Illinois, Indiana, Ohio, Southern Ontario
Dorset	25	4.1	4(r)	South Carolina, North Carolina, Virginia, West Virginia, Ohio, Southern Ontario
	26	4.0	3(r)	Wisconsin, Michigan, Central Ontario
Chalk River	25	3.9	6(r)	North Carolina, Virginia, West Virginia, Pennsylvania, New York, Eastern Ontario
	26	3.8	1(r)	Indiana, Ohio, Michigan, Central Ontario
	27	3.5	1(r)	Michigan, Southern Ontario
Sutton	25	3.7	2(r)	North Carolina, Virginia, New Jersey, Eastern Pennsylvania, Eastern New York
	26	3.6	6(r)	North Carolina, Virginia, Pennsylvania, New York
Montmorency	26	3.5	4(r)	Virginia, Pennsylvania, New York, Southern Quebec
Kejimikujik	26	4.7	1(r)	Atlantic Ocean

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

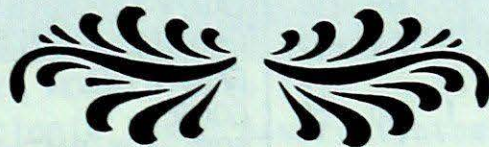
50 KPa ATMOSPHERIC CIRCULATION



MEAN 50 KPa HEIGHT ANOMALY (dam)
March 27 to 31, 1987



MEAN 50 KPa HEIGHTS (dam)
March 27 to 31, 1987



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Severe flooding along the Saint-John River, the Bay
 Railway bridge washed out in the
 Beauce Region of Quebec

Canada

TEMPERATURE, PRECIPITATION AND MAXIMUM WIND DATA FOR THE WEEK ENDING 0600 GMT MARCH 31, 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	-8	0	5	-20	2	10	350	61
CAPE ST. JAMES	7	2	11	3	11	0	160	89	THOMPSON	-11	0	4	-29	10	39	040	43
CRANBROOK	1	-1	12	-15	7	0	110	50	WINNIPEG INT'L	-5	-1	4	-15	1	1	350	52
FORT NELSON	-2	3	12	-22	2	37	350	72	ONTARIO								
FORT ST. JOHN	-1	2	11	-23	11	10	360	67	ATIKOKAN	-3	1	14	-18	2	0		*
KAMLOOPS	6	0	17	-4	2	0	200	50	BIG TROUT LAKE	-10	1	1	-30	14	28	040	43
PENTICTON	5	-1	15	-5	1	0	020	48	GORE BAY	4	7	17	-6	14	0	270	44
PORT HARDY	6	1	15	0	14	0	290	37	KAPUSKASING	-1	6	17	-11	24	18	010	56
PRINCE GEORGE	2	1	14	-9	8	0	280	56	KENORA	-6	-2	4	-18	17	3	320	41
PRINCE RUPERT	6	3	13	-2	40	0	150	67	KINGSTON	*	*	18	-1	*	0		X
REVELSTOKE	4	2	15	-4	6	0	320	54	LONDON	8	7	20	-4	42	0	350	50
SMITHERS	4	3	11	-3	1	0	340	44	MOOSONEE	-3	8	16	-12	12	30	340	41
VANCOUVER INT'L	7	0	13	0	4	0	290	65	NORTH BAY	5	8	16	-6	50	1	110	31
VICTORIA INT'L	7	0	14	-1	0	0	240	41	OTTAWA INT'L	8	9	18	1	16	0		X
WILLIAMS LAKE	2	2	12	-11	1	0		X	PETAWAWA	5	7	16	-5	31	1		X
YUKON TERRITORY									PICKLE LAKE	-8	-1	4	-27	15	52	030	39
DAWSON	0	10	8	-12	7	27	090	37	RED LAKE	-8	-2	3	-25	10	17	050	43
MAYO	0	7	9	-9	5	17		X	SUDBURY	3	7	16	-6	14	2		X
SHINGLE POINT A	-13	11	-3	-22	4	32		*	THUNDER BAY	-1	3	12	-13	4	0	290	37
WATSON LAKE	-6	2	7	-28	6	40	260	74	TIMMINS	3	9	17	-7P	9	7	180	37
WHITEHORSE	0	4	6	-9	2	15	220	91	TORONTO INT'L	7	6	17	-2	17	0	330	56
NORTHWEST TERRITORIES									TRENTON	8	7	17	-1	38	0		X
ALERT	-37	-5	-33	-41	1	28		*	WIARTON	7	8	18	-4	23	1		X
BAKER LAKE	-28	-2	-16	-36	2	84	340	76	WINDSOR	9	6	21	-2	37	151	220	61
CAMBRIDGE BAY	-28	2	-17	-40	2	29	320	50	QUEBEC								
CAPE DYER	-25	-3	-13	-34	*	52	210	65	BAGOTVILLE	7	10	19	-3	2	3	080	43
CLYDE	-29	-3	-18	-39	2	34	310	74	BLANC SABLON	0	4	4	-3	9	30		X
COPPERMINE	-24	0	-11	-38	0	36	240	37	INUKJUAQ	-20	-2	-9	-28	2	44	320	54
CORAL HARBOUR	-28	-5	-15	-37	5	45		X	KULUJUAQ	-16	-1	-6	-28	5	30	320	63
EUREKA	-39	-3	-34	-43	1	14		*	KULUJUAPIK	-13	1	-1	-24	7	38	010	35
FORT SMITH	-11	-1	3	-28	1	85		X	MANIWAKI	6	9	19	-5	31	0	180	33
IQUALUIT	-24	-3	-12	-31	1	20	140	67	MONT JOLI	6	8	17	-3	7	0	170	57
HALL BEACH	-25	2	-16	-37	2	34	060	48	MONTREAL INT'L	8	8	17	-1	12	1	150	41
INUVIK	-12	11	-1	-18	0	36		X	NATASHQUAN	0	3	5	-4	14	6	110	48
MOULD BAY	-30	0	-19	-40	*	45		X	QUEBEC	7	9	16	-2	13	15	220	52
NORMAN WELLS	-10	6	1	-22	0	15		X	SCHIEFFERVILLE	-3	9	5	-15	13	33	170	33
RESOLUTE	-28	2	-19	-35	1	19	060	70	SEPT-ILES	1	5	10	-3	8	4	090	63
YELLOWKNIFE	-15	0	2	-32	1	23	160	46	SHERBROOKE	7	9	19	-3	3	2	200	59
ALBERTA									VAL D'OR	4	9	16	-6	28	1	190	39
CALGARY INT'L	-1	0	17	-18	1	0	360	61	NEW BRUNSWICK								
COLD LAKE	-7	-2	10	-23	1	15	340	41	CHARLO	4	6	18	-5	7	8	090	30
CORONATION	-6	-3	6	-20	0	11		*	CHATHAM	5	6	19	-8	6	51	230	50
EDMONTON NAMAO	-3	0	12	-20	1	5	300	48	FREDERICTON	5	5	19	-5	6	15	190	52
FORT MCMURRAY	-5	0	13	-26	1	36		X	MONCTON	5	5	15	-7	5	15	150	41
HIGH LEVEL	-8	-2	7	-31	4	82	010	46	SAINT JOHN	4	5	15	-5	3	15	200	37
JASPER	0	0	14	-17	0	1		X	NOVA SCOTIA								
LETHBRIDGE	-3	-4	12	-20	4	1	360	72	GREENWOOD	5	4	17	-5	2	8	180	61
MEDICINE HAT	-2	-2	14	-15	1	0	360	52	SHEARWATER	4	4	14	-2	11	1	360	41
PEACE RIVER	-4	0	10	-24	1	18	350	48	SYDNEY	1	2	6	-4	2	25	360	54
SASKATCHEWAN									YARMOUTH	5	3	12	-2	7	1	360	50
CREE LAKE	-12	-1	3	-27	5	58	320	52	PRINCE EDWARD ISLAND								
ESTEVAN	-3	-1	7	-13	4	1	340	63	CHARLOTTETOWN	2	3	10	-8	9	22	160	33
LA RONGE	-9	0	9	-25	2	57	010	48	SUMMERSIDE	2	3	9	-8	8	35	160	39
REGINA	-4	0	9	-15	1	1	340	67	NEWFOUNDLAND								
SASKATOON	-5	0	10	-18	0	1	360	56	CARTWRIGHT	0	6	5	-6	20	192	210	56
SWIFT CURRENT	-3	-1	10	*	0	0		X	CHURCHILL FALLS	1	10	8	-8	16	75	130	37
YORKTON	-5	1	9	-16	2	1	350	59	GANDER INT'L	1	2	8	-4	7	19	320	48
MANITOBA									GOOSE	0	5	7	-6	17	66	170	39
BRANDON	-6	-2	3	-19	4	6	330	50	PORT-AUX-BASQUES	1	2	7	-6	21	1	100	59
CHURCHILL	-22	-4	-7	-32	7	25	030	52	ST JOHN'S	-1	0	6	-6	11	50	180	57
LYNN LAKE	-13	0	-1	-30	7	30	030	50	ST LAWRENCE	1	1	5	-3	7	14		X
									WABUSH LAKE	2	11	9	-5	19	21	180	31

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