

Climatic Perspectives

A WEEKLY REVIEW OF CANADIAN CLIMATE

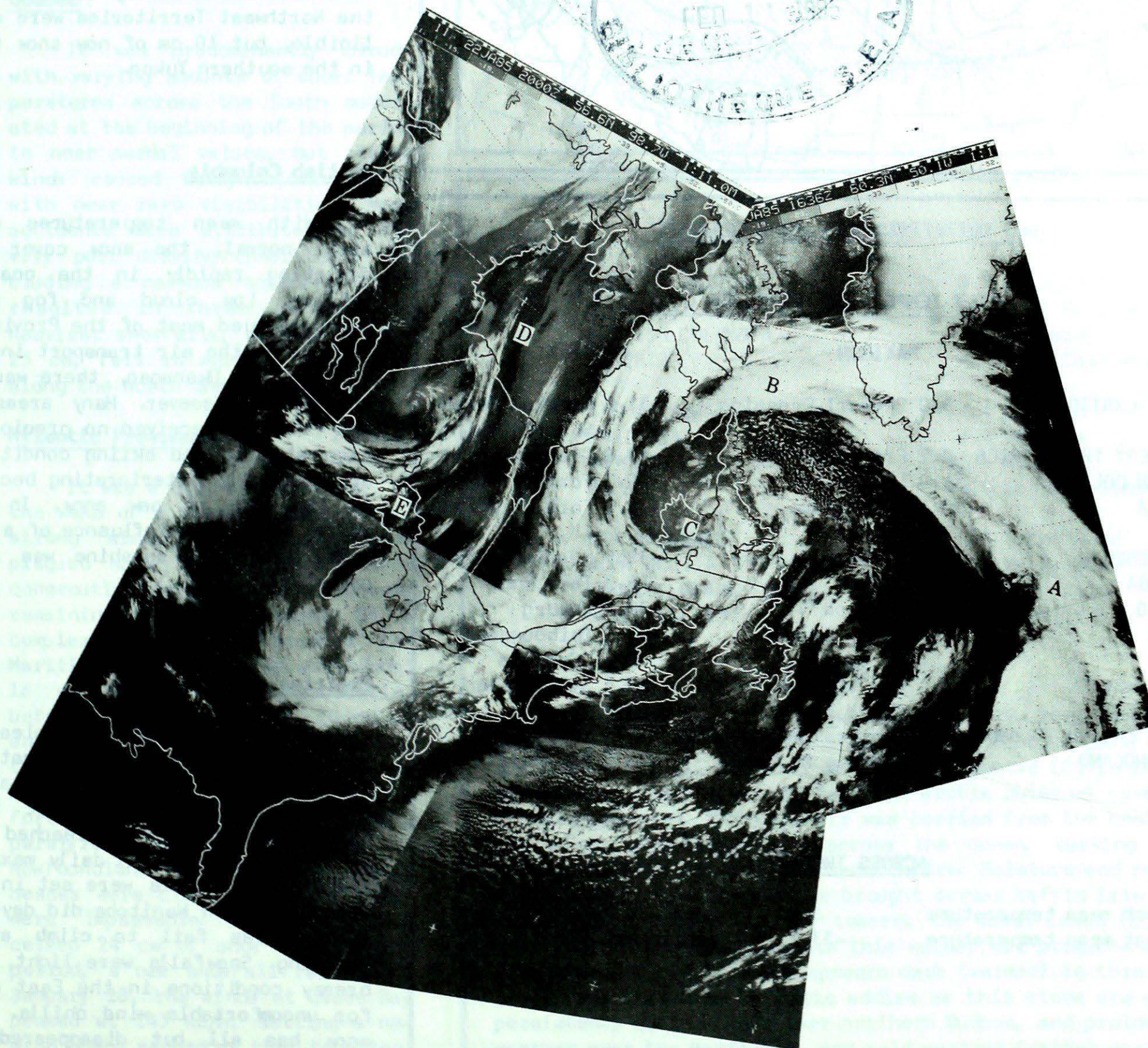
Canadian Climate Centre

For the period January 22 to 28, 1985

Vol.7 No.4

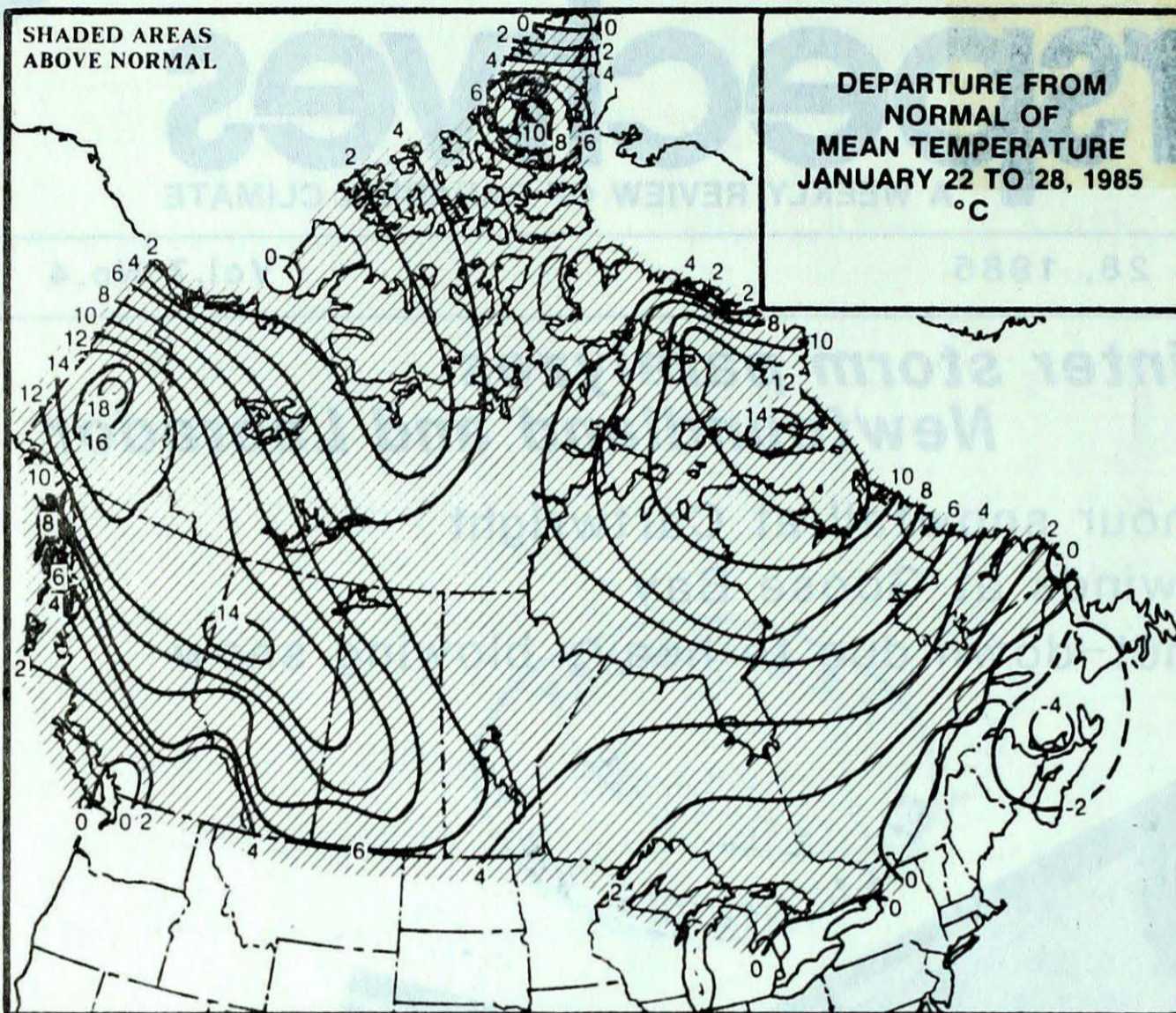
● **Another major winter storm paralyzes Newfoundland and Labrador**

Record six-hour snowfall at Cartwright
Record high winds at Goose Bay
St. John's shut-down due to heavy blowing snow



The NOAA 9 satellite image of January 22, 1985 reveals a huge atmospheric eddy over eastern Canada. For more details see page 3.

ACROSS THE COUNTRY...



DEPARTURE FROM NORMAL OF MEAN TEMPERATURE JANUARY 22 TO 28, 1985 °C

Yukon and Northwest Territories

A mild Pacific airmass continued to push across the Yukon and into the Northwest Territories. With the exception of the high Arctic, mean temperatures were above normal everywhere, especially in the Yukon, Mackenzie district and Baffin Island, where readings averaged 10 to 18 degrees warmer than normal. For several consecutive days, daytime temperatures in the southern Yukon climbed above freezing. On January 23, the mercury registered 5° at Stewart Crossing. Snowfalls in the Northwest Territories were negligible, but 10 cm of new snow fell in the southern Yukon.

British Columbia

With mean temperatures well above normal, the snow cover was depleting rapidly in the coastal valleys. Low cloud and fog once again plagued most of the Province, disrupting the air transport industry. In the Okanagan, there was no sunshine whatsoever. Many areas in the Province received no precipitation at all, and skiing conditions are gradually deteriorating because of the lack of new snow. In the North, under the influence of a dry Arctic airmass, sunshine was more prevalent.

Prairies

Mild and relatively pleasant weather prevailed. Mean temperatures ranged from 4 to 15 degrees above normal. The temperature at both Calgary and Lethbridge reached 10° on January 24. Several daily maximum temperature records were set in the North. Only in Manitoba did daytime temperatures fail to climb above freezing. Snowfalls were light, but breezy conditions in the East made for uncomfortable wind chills. The snow has all but disappeared in southern Alberta.

WEEKLY TEMPERATURE EXTREMES (°C)

	MAXIMUM	MINIMUM
YUKON TERRITORY	5.0 Stewart Crossing	-32.2 Komakuk Beach Shingle Point
NORTHWEST TERRITORIES	-4.2 Frobisher Bay	-48.6 Gladman Point
BRITISH COLUMBIA	11.0 Lawn Point	-20.7 Fort Nelson
ALBERTA	10.1 Lethbridge	-34.0 Fort Chipewyan
SASKATCHEWAN	2.6 Buffalo Narrows	-38.9 Uranium City
MANITOBA	- 2.2 Gretna	-35.2 Thompson
ONTARIO	0.1 Trenton	-33.7 Coburg
QUÉBEC	1.2 Blanc Sablon	-33.6 Chibougamau- Chapais
NEW BRUNSWICK	- 1.1 St. Stephen	-23.5 St. Stephen
NOVA SCOTIA	3.1 Sable Island	-18.9 Truro
PRINCE EDWARD ISLAND	- 3.8 Summerside	-19.3 Summerside
NEWFOUNDLAND	5.7 Daniels Harbour	-28.5 Churchill Falls

ACROSS THE NATION

Warmest mean temperature	6.2	Cape St. James, BC
Coollest mean temperature	-33.2	Alert, NWT

Ontario

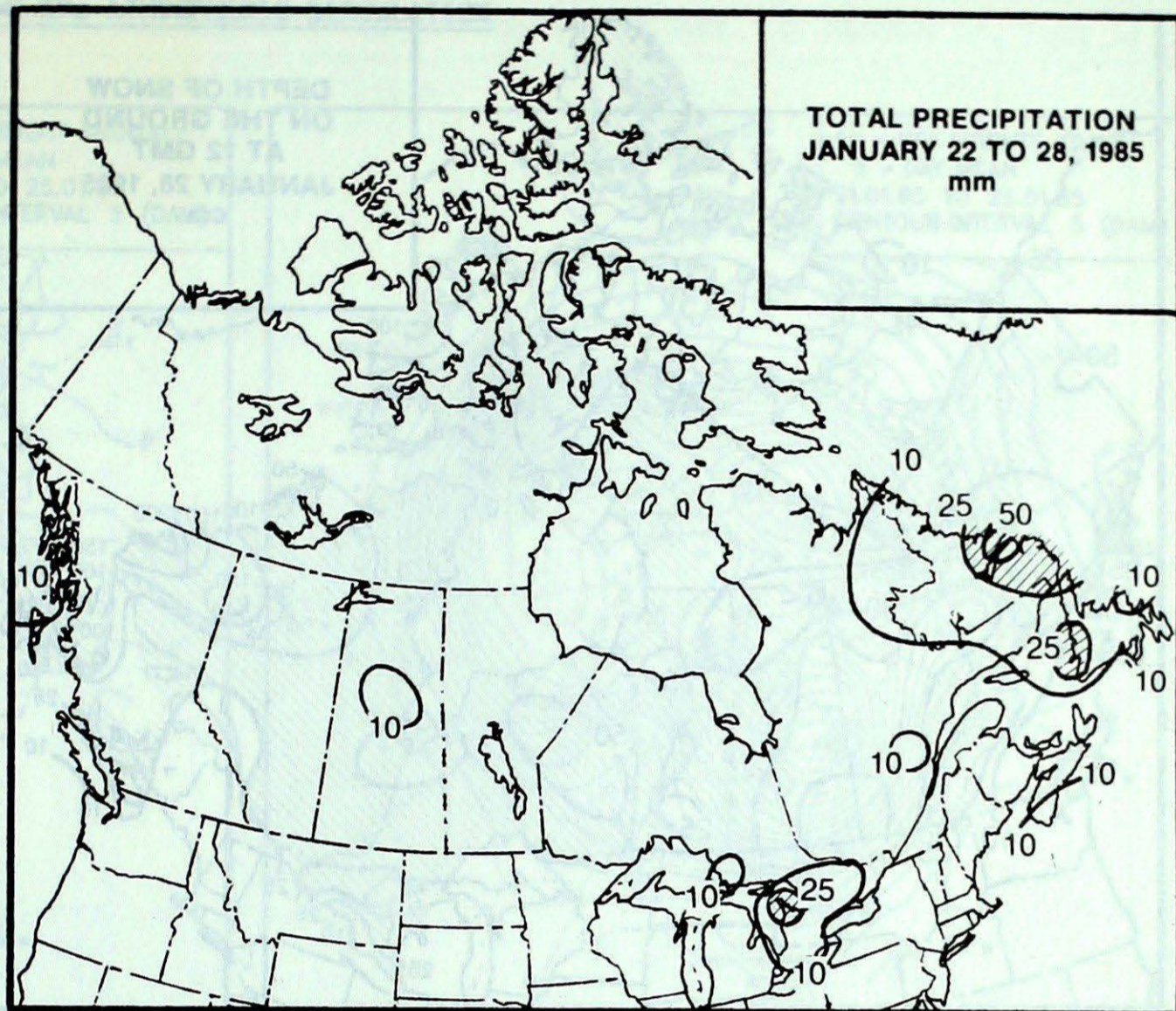
The weather turned much warmer at the beginning of the week as a milder airmass approached from western Canada. Snow squalls continued unabated till mid-week in the snowbelt areas to the lee of the Great Lakes. Heavy snow and blowing snow isolated several communities in southern Ontario, and many highways were closed intermittently due to poor visibilities. Fort Erie, on the Niagara Peninsula, received more than 50 cm of new snow. Due to the heavy snow pack officials have expressed concern about the deer herds not being able to fend for themselves.

Québec

It was predominantly cloudy with varying amounts of snow. Temperatures across the South moderated at the beginning of the period to near normal values, but strong winds caused heavy blowing snow with near zero visibilities. Many accidents were attributed to the very poor driving conditions, including a car-bus accident which resulted in three fatalities. Heaviest snowfalls, between 10 and 25 cm, fell in eastern Quebec and along the North Shore.

Atlantic Provinces

It was a cold wintery week. In the wake of a storm on January 21, strong winds and blowing snow plagued Nova Scotia for a second consecutive day, with many schools remaining closed. On January 26, a complex disturbance brushed the Maritimes, depositing an additional 16 cm of snow in Nova Scotia, before dumping more than 20 cm of snow on the Avalon Peninsula. As the storm intensified on January 27, heavy snow, blizzards and gale force winds exceeding 100 km/h, paralyzed Labrador and most of Newfoundland. Schools and businesses were closed and many roads were impassable. Cartwright received 24 cm of snow in a 6-hour period, a new snowfall record. On January 28, the winds at Goose Bay peaked at 143 km/h, setting a new wind speed record at that location.

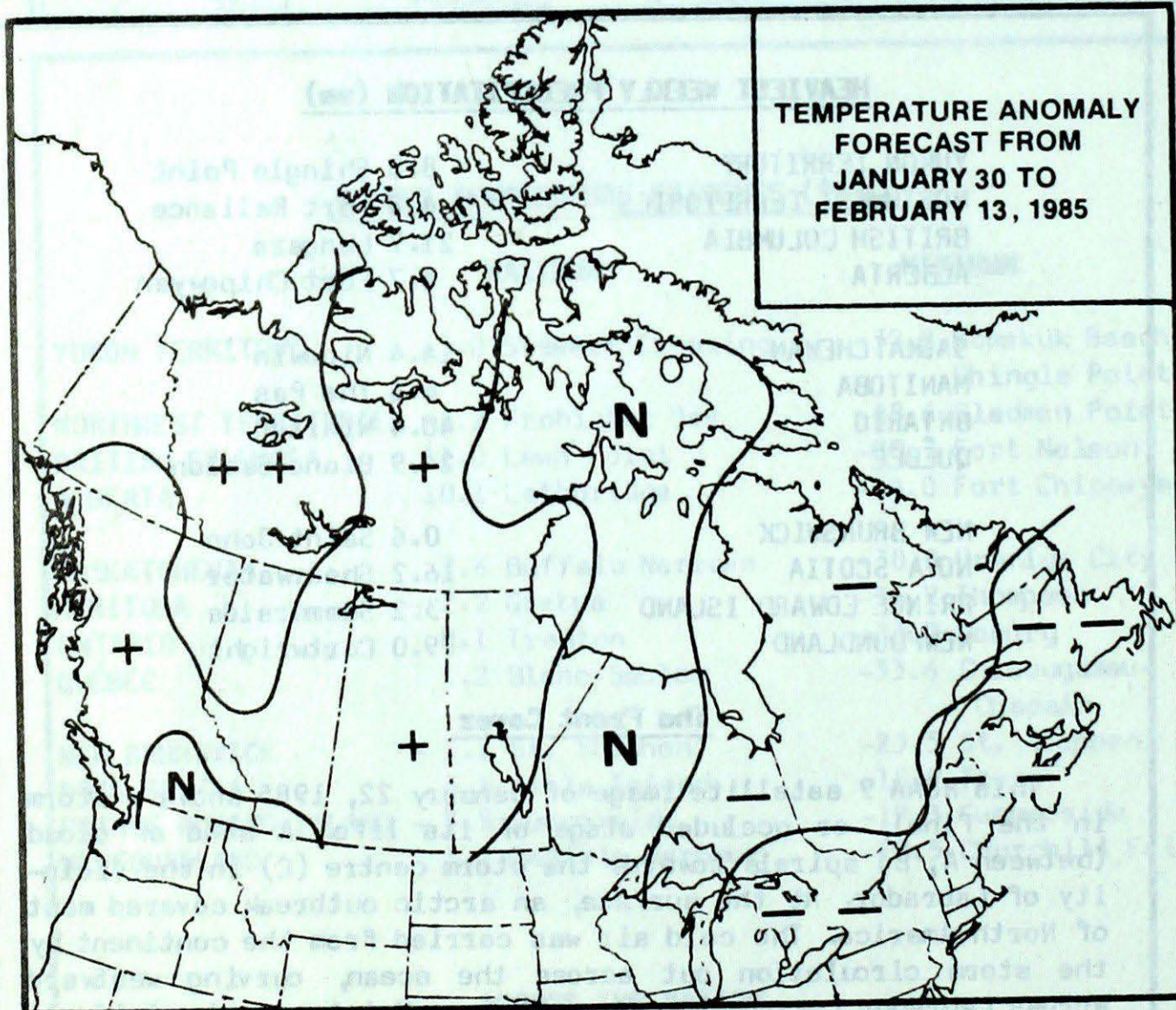
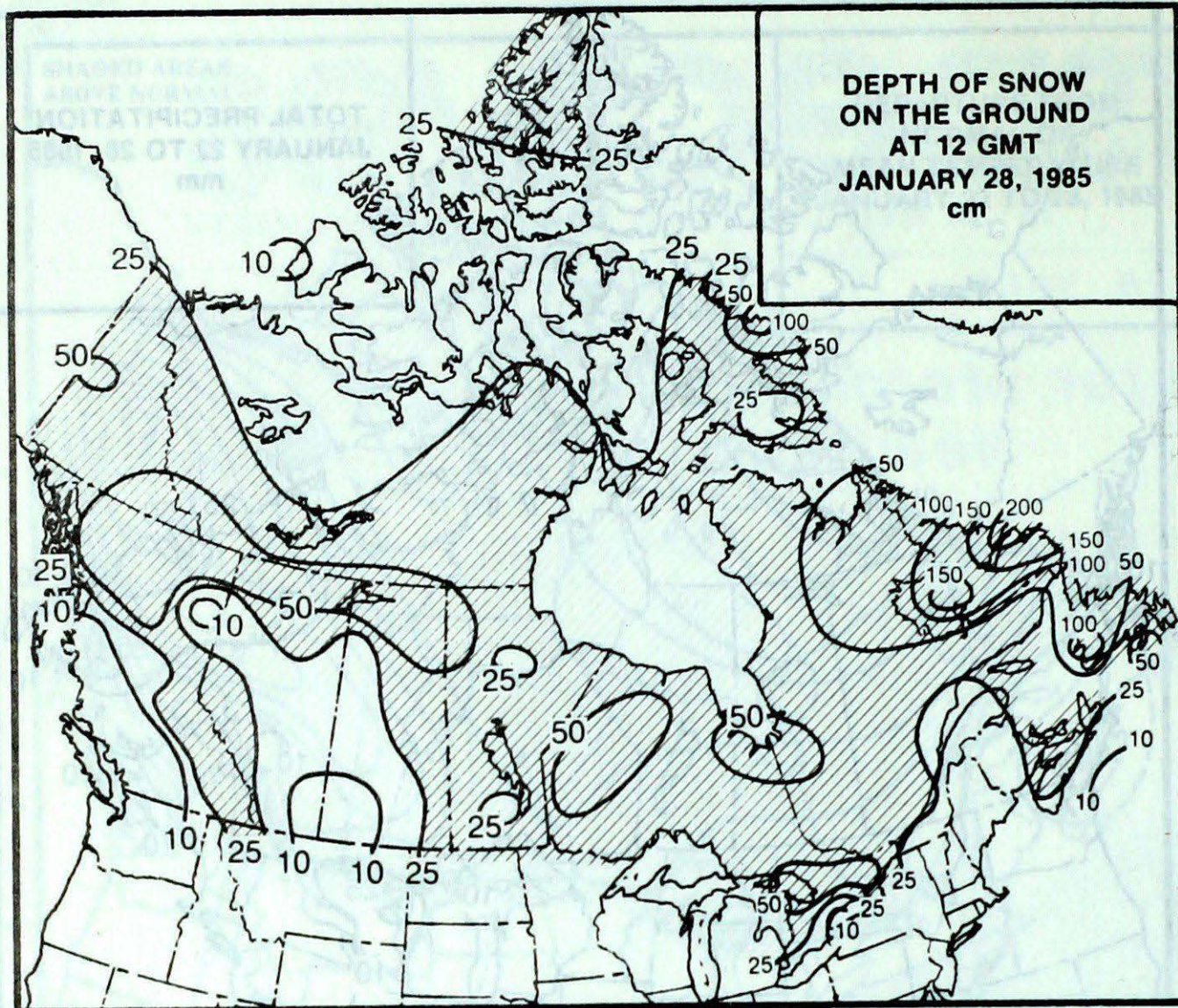


HEAVIEST WEEKLY PRECIPITATION (mm)

YUKON TERRITORY	8.0 Shingle Point
NORTHWEST TERRITORIES	4.8 Fort Reliance
BRITISH COLUMBIA	21.7 Langara
ALBERTA	4.7 Fort Chipewyan
SASKATCHEWAN	14.4 Nipawin
MANITOBA	6.6 The Pas
ONTARIO	40.4 Wiarton
QUÉBEC	24.9 Blanc Sablon
NEW BRUNSWICK	0.6 Saint John
NOVA SCOTIA	16.2 Shearwater
PRINCE EDWARD ISLAND	3.2 Summerside
NEWFOUNDLAND	79.0 Cartwright

The Front Cover

This NOAA 9 satellite image of January 22, 1985 shows a storm in the final, or occluded stage of its life. A band of cloud (between A, B) spirals towards the storm centre (C) in the vicinity of Labrador. At the surface, an arctic outbreak covered most of North America. The cold air was carried from the continent by the storm circulation out across the ocean, curving westward across Labrador towards the storm centre. Moisture and relatively warmer North Atlantic air was brought across Baffin Island southwards across Hudson Bay (D) towards the Great Lakes (E). Riding over the cold airmass beneath this warmer air produced an extensive sheet of cloud, which appears dark (warmer) in this infrared image. Such giant atmospheric eddies as this storm are extremely persistent, quite common over northern Québec, and prolong stormy weather over the Maritimes, and cold weather further west.



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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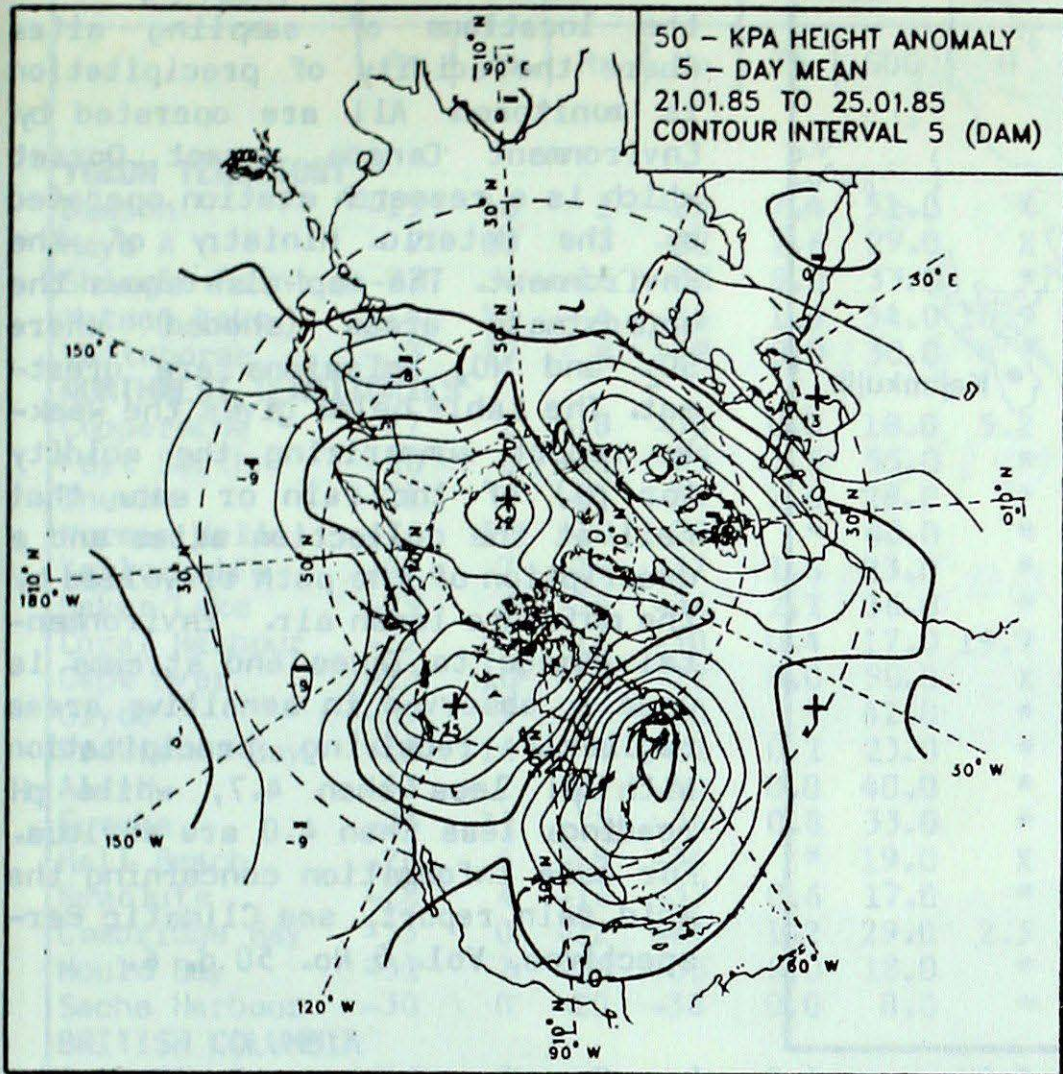
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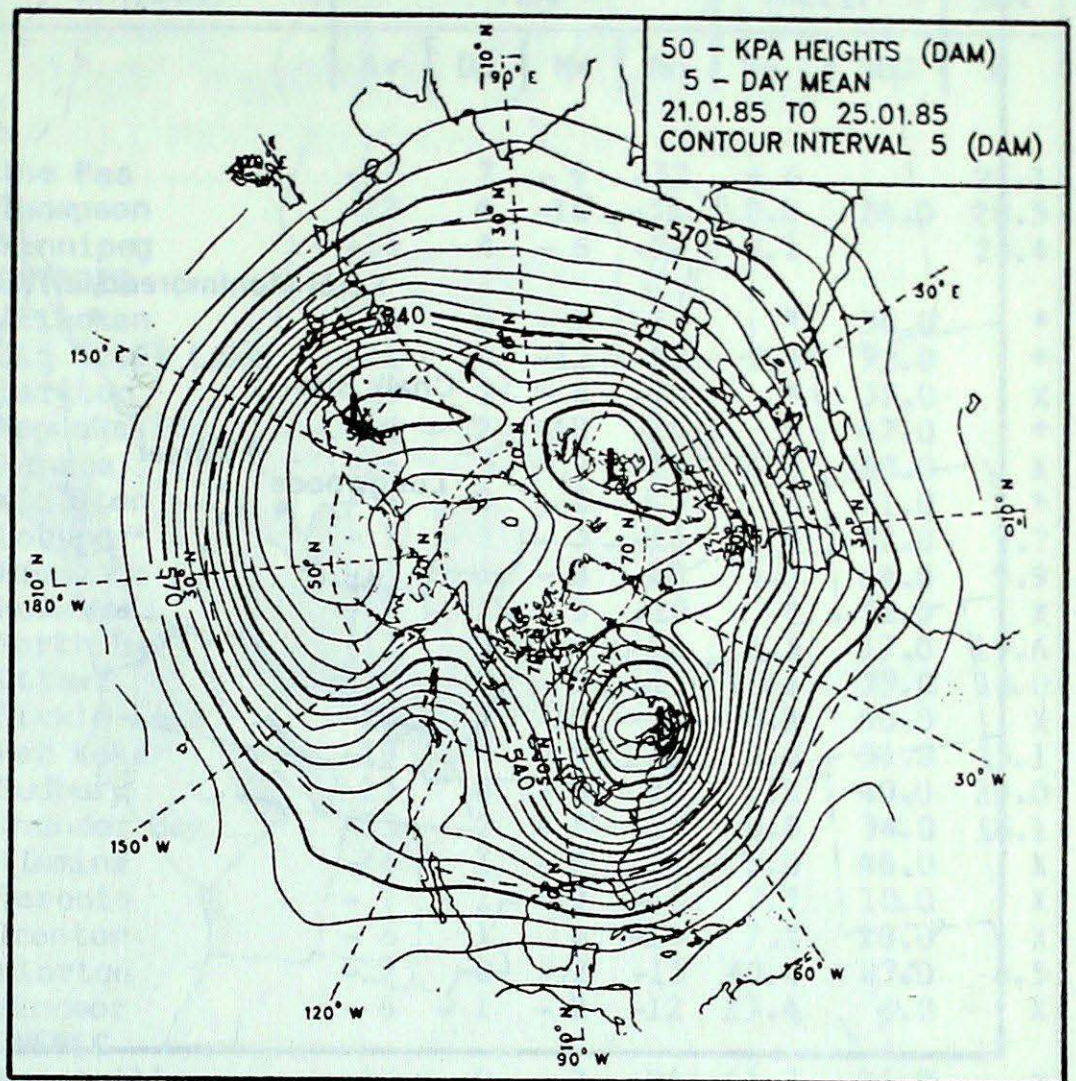
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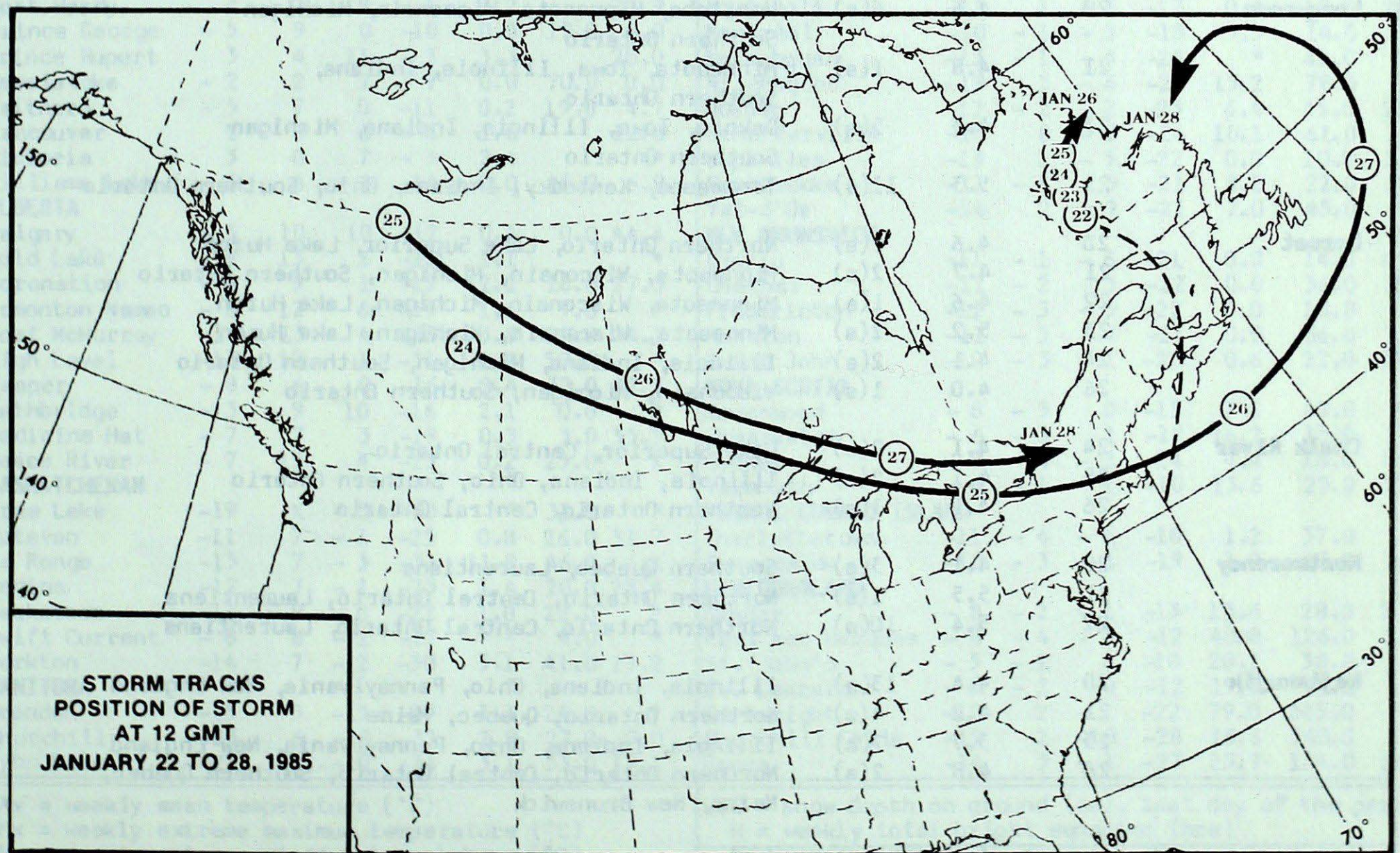
50 KPa ATMOSPHERIC CIRCULATION

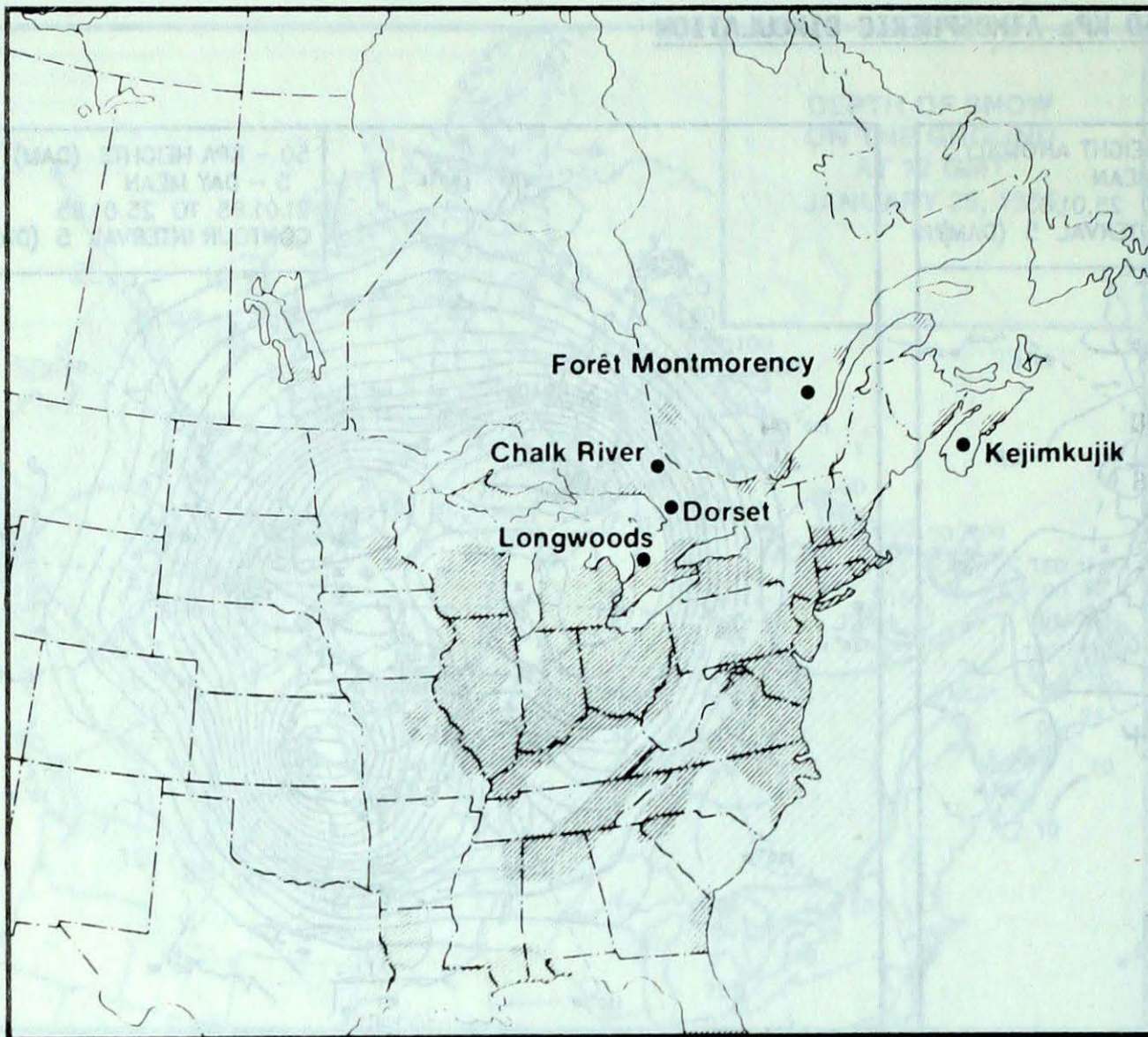


MEAN 50 KPa HEIGHT ANOMALY (dam)
January 21 to January 25, 1985



MEAN 50 KPa HEIGHTS (dam)
January 21 to January 25, 1985



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 SO₂ 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.

JANUARY 20, to JANUARY 26, 1985

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	20	4.6	6(s)	Manitoba, Minnesota, Wisconsin, Michigan Southern Ontario
	21	4.8	1(s)	Minnesota, Iowa, Illinois, Indiana, Southern Ontario
	23	4.3	5(s)	Dakota, Iowa, Illinois, Indiana, Michigan Southern Ontario
	25	5.3	11(s)	Tennessee, Kentucky, Indiana, Ohio, Southern Ontario
Dorset	20	4.6	2(s)	Northern Ontario, Lake Superior, Lake Huron
	21	4.7	2(s)	Minnesota, Wisconsin, Michigan, Southern Ontario
	22	4.6	1(s)	Minnesota, Wisconsin, Michigan, Lake Huron
	23	5.2	2(s)	Minnesota, Wisconsin, Michigan, Lake Huron
	24	4.1	2(s)	Illinois, Indiana, Michigan, Southern Ontario
	26	4.0	1(s)	Wisconsin, Michigan, Southern Ontario
Chalk River	24	4.1	2(s)	Lake Superior, Central Ontario
	25	4.1	2(s)	Illinois, Indiana, Ohio, Southern Ontario
	26	4.1	3(s)	Northern Ontario, Central Ontario
Montmorency	20	4.1	3(s)	Southern Quebec, Laurentians
	21	5.5	1(s)	Northern Ontario, Central Ontario, Laurentians
	22	5.4	10(s)	Northern Ontario, Central Ontario, Laurentians
Kejimikujik	20	4.4	13(s)	Illinois, Indiana, Ohio, Pennsylvania, New England
	21	4.2	4(s)	Northern Ontario, Quebec, Maine
	25	3.7	7(s)	Illinois, Indiana, Ohio, Pennsylvania, New England
	26	4.0	2(s)	Northern Ontario, Central Ontario, Southern Quebec, Maine, New Brunswick

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

TEMPERATURE, PRECIPITATION AND BRIGHT SUNSHINE DATA FOR THE WEEK ENDING 0600 GMT JANUARY 29, 1985

STATION	TEMP				PRECIP		SUN	STATION	TEMP				PRECIP		SUN
	Av	Dp	Mx	Mn	Tp	SOG	H		Av	Dp	Mx	Mn	Tp	SOG	H
YUKON TERRITORY															
Dawson	-13	16	1	-25	7.4	51.0	X	The Pas	-17	7	-9	-32	6.6		21.1
Mayo A	-9	18	3	-22	2.6	29.0	X	Thompson	-22	4	-10	-35	0.8	24.0	20.5
Shingle Point	-22	4	-16	-32	8.0	33.0	*	Winnipeg	-15	4	-6	-28	2.1		24.4
Watson Lake	-14	14	-4	-24	1.6	54.0	10.9	ONTARIO							
Whitehorse	-3	17	4	-19	0.0	30.0	*	Atikokan	-16	0	-7	-27	*	36.0	*
NORTHWEST TERRITORIES															
Coppermine	-27	2	-18	-38	0.8	18.0	5.2	Big Trout Lake	-21	4	-12	-32	2.9	92.0	*
Fort Smith	-20	8	-11	-35	3.5	55.0	*	Earlton	-14	2	-8	-20	*	38.0	X
Inuvik	-21	7	-15	-34	2.6	28.0	*	Kapusking	-16	2	-10	-25	*	47.0	*
Norman Wells	-16	12	-10	-29	*	40.0	*	Kenora	-16	3	-7	-26	6.0	43.0	X
Yellowknife	-22	7	-15	-37	1.6	23.0	*	Kingston	-6	0	-1	-13	*	51.0	*
Baker Lake	-29	6	-18	-36	2.1	36.0	*	London	-7	-1	-3	-16	11.0	27.0	7.7
Coral Harbour	-22	10	-14	-30	0.4	17.0	19.9	Moosonee	-17	3	-8	-30	3.3	64.0	9.9
Cape Dyer	-13	10	-5	-22	0.0	90.0	X	Muskoka	-9	1	-3	-20	*	52.0	X
Clyde	-25	3	-17	-30	*	42.0	*	North Bay	-12	0	-6	-22	8.3	37.0	19.6
Frobisher Bay	-12	16	-4	-22	0.2	23.0	*	Ottawa	-10	0	-5	-17	10.6	39.0	14.0
Alert	-33	-2	-23	-40	0.0	40.0	*	Pickle Lake	-18	3	-10	-28	0.2	66.0	X
Eureka	-26	11	-15	-36	0.8	33.0	*	Red Lake	-18	3	-9	-31	4.0	58.0	15.1
Hall Beach	-26	6	-18	-34	*	19.0	X	Sudbury	-13	0	-6	-20	5.6	40.0	23.0
Resolute	-28	4	-16	-37	0.6	17.0	*	Thunder Bay	-13	2	-5	-23	0.8	34.0	16.1
Cambridge Bay	-33	0	-22	-43	1.2	29.0	2.3	Timmins	-16	1	-6	-27	5.0	48.0	X
Mould Bay	-31	2	-20	-38	0.0	18.0	*	Toronto	-7	-1	-2	-15	7.3	10.0	X
Sachs Harbour	-30	0	-20	-38	0.0	8.0	*	Trenton	-6	1	0	-14	7.1	28.0	X
BRITISH COLUMBIA															
Cape St. James	6	3	8	4	4.4		12.2	Warton	-7	0	-2	-13	40.4	87.0	4.5
Cranbrook	-5	3	-1	-10	0.0	30.0	0.0	Windsor	-6	-1	-2	-12	13.4	6.0	X
Fort Nelson	-10	13	5	-21	3.6	53.0	*	QUEBEC							
Fort St. John	-4	15	5	-13	0.8	7.0	X	Bagotville	-16	0	-7	-24	11.7	21.0	X
Kamloops	0	7	3	-4	0.0	2.0	4.6	Blanc-Sablon	-11	1	1	-21	24.9	43.0	13.7
Penticton	0	3	2	-4	0.4	2.0	0.0	Inukjuak	-16	10	-7	-23	1.0	46.0	3.7
Port Hardy	4	2	9	-1	7.2		23.9	Kuujuuaq	-12	13	-1	-25	15.0	75.0	4.3
Prince George	-5	9	0	-10	0.8	19.0	8.0	Kuujuuarapik	-15	8	-8	-22	8.0	25.0	2.6
Prince Rupert	3	4	11	-3	3.3		20.0	Maniwaki	-12	0	-4	-21	6.2	41.0	19.5
Revelstoke	-2	2	2	-7	0.0	70.0	0.0	Mont-Joli	-11	1	-6	-17	0.4	15.0	26.3
Smithers	-5	7	0	-11	0.2	19.0	4.7	Montréal	-10	-1	-5	-15	5.5	14.0	13.5
Vancouver	2	0	6	-4	1.6		12.8	Natashquan	-13	-1	-4	-24	*	41.0	*
Victoria	3	0	7	-3	2.4		*	Nitchequon	-19	5	-6	-27	15.2	78.0	8.4
Williams Lake	-6	6	-2	-14	0.0	45.0	6.9	Québec	-13	-2	-7	-23	6.4	45.0	24.6
ALBERTA															
Calgary	-3	10	10	-12	0.4	0.0	44.4	Schefferville	-16	8	-8	-24	10.1	61.0	12.7
Cold Lake	-8	13	2	-22	1.1		*	Sept-Iles	-13	1	-5	-22	0.0	10.0	31.7
Coronation	-9	9	1	-19	2.2	18.0	27.5	Sherbrooke	-11	-1	-5	-21	8.2	22.0	13.6
Edmonton Nameo	-6	12	6	-19	1.6	9.0	*	Val-d'Or	-14	2	-9	-22	7.0	45.0	8.5
Fort McMurray	-10	13	4	-29	3.0	20.0	4.3	NEW BRUNSWICK							
High Level	-13	12	1	-31	1.4	50.0	*	Charlo	-11	-1	-6	-21	0.0	14.0	48.2
Jasper	-8	6	0	-16	0.4	32.0	22.7	Chatham	-11	-2	-3	-22	0.0	36.0	35.3
Lethbridge	-3	9	10	-16	2.1	0.0	*	Fredericton	-11	-3	-3	-22	0.0	10.0	*
Medicine Hat	-7	7	3	-19	0.3	3.0	35.9	Moncton	-11	-3	-4	-21	0.0	36.0	31.5
Peace River	-7	15	4	-23	0.2	25.0	X	Saint John	-10	-3	-1	-20	0.6	22.0	32.6
SASKATCHEWAN															
Cree Lake	-19	X	-5	-33	*	32.0	*	NOVA SCOTIA							
Estevan	-11	7	-1	-25	0.8	26.0	31.7	Greenwood	-8	-3	0	-15	7.6	40.0	X
La Ronge	-15	7	-3	-31	11.8	46.0	X	Shearwater	-6	-3	1	-12	16.2	15.0	35.3
Regina	-12	7	-1	-25	1.4	20.0	28.4	Sydney	-8	-4	-2	-14	4.4	18.0	40.6
Saskatoon	-11	9	0	-22	1.0	22.0	*	Yarmouth	-4	-1	1	-10	13.6	25.0	21.6
Swift Current	-8	8	-2	-17	*	5.0	*	PRINCE EDWARD ISLAND							
Yorkton	-14	7	-2	-30	3.1	41.0	23.2	Charlottetown	-11	-4	-6	-18	1.2	37.0	*
MANITOBA															
Brandon	-15	5	-3	-29	3.3	26.0	*	Summerside	-10	-3	-4	-19	3.2	43.0	36.7
Churchill	-23	6	-13	-31	2.9	27.0	7.0	NEWFOUNDLAND							
Lynn Lake	-22	4	-10	-34	3.1	53.0	13.1	Gander	-8	-2	-1	-13	13.6	28.0	20.9
								Port aux Basques	-8	-4	-4	-12	40.8	126.0	23.9
								St. John's	-5	-1	0	-10	20.2	38.0	*
								St. Lawrence	-5	-2	0	-12	19.5	55.0	X
								Cartwright	-12	2	-1	-22	79.0	245.0	X
								Churchill Falls	-19	2	-10	-28	16.6	160.0	X
								Goose	-14	3	-1	-27	15.7	134.0	24.4

Av = weekly mean temperature (°C)
Mx = weekly extreme maximum temperature (°C)
Mn = weekly extreme minimum temperature (°C)
Tp = weekly total precipitation (mm)
Dp = Departure of mean temperature from normal (°C)

SOG = snow depth on ground (cm), last day of the period
H = weekly total bright sunshine (hrs)
X = not observed
P = extreme value based on less than 7 days
* = missing