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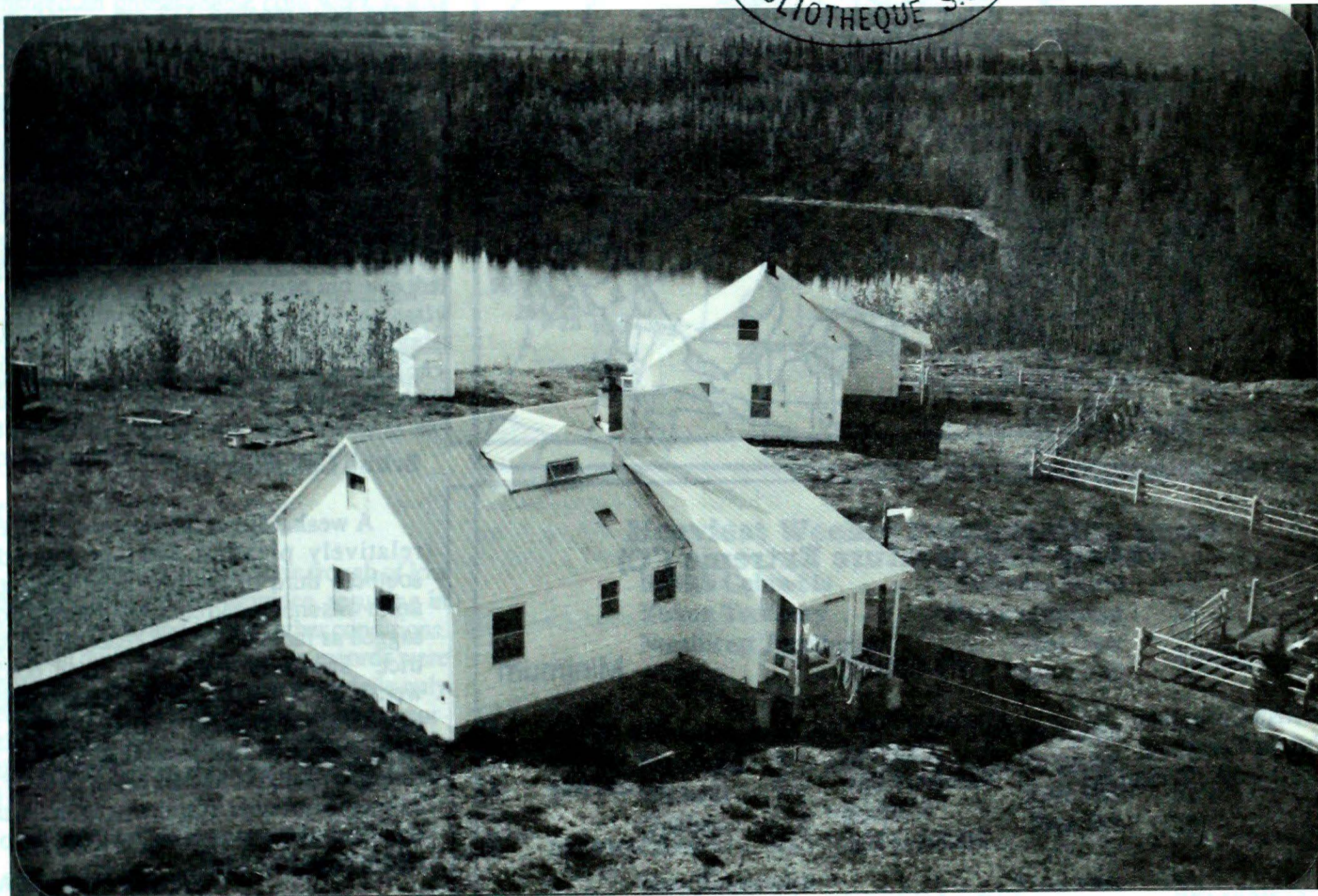
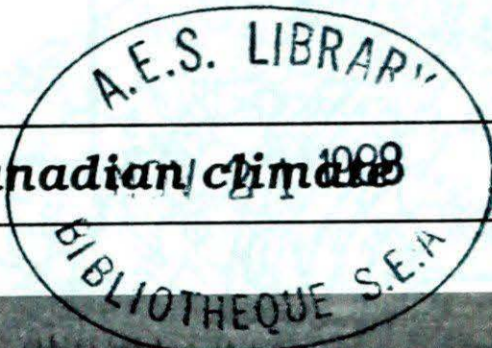
Environnement
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Climatic Perspectives

October 25 to 31, 1988

A weekly review of Canadian climate

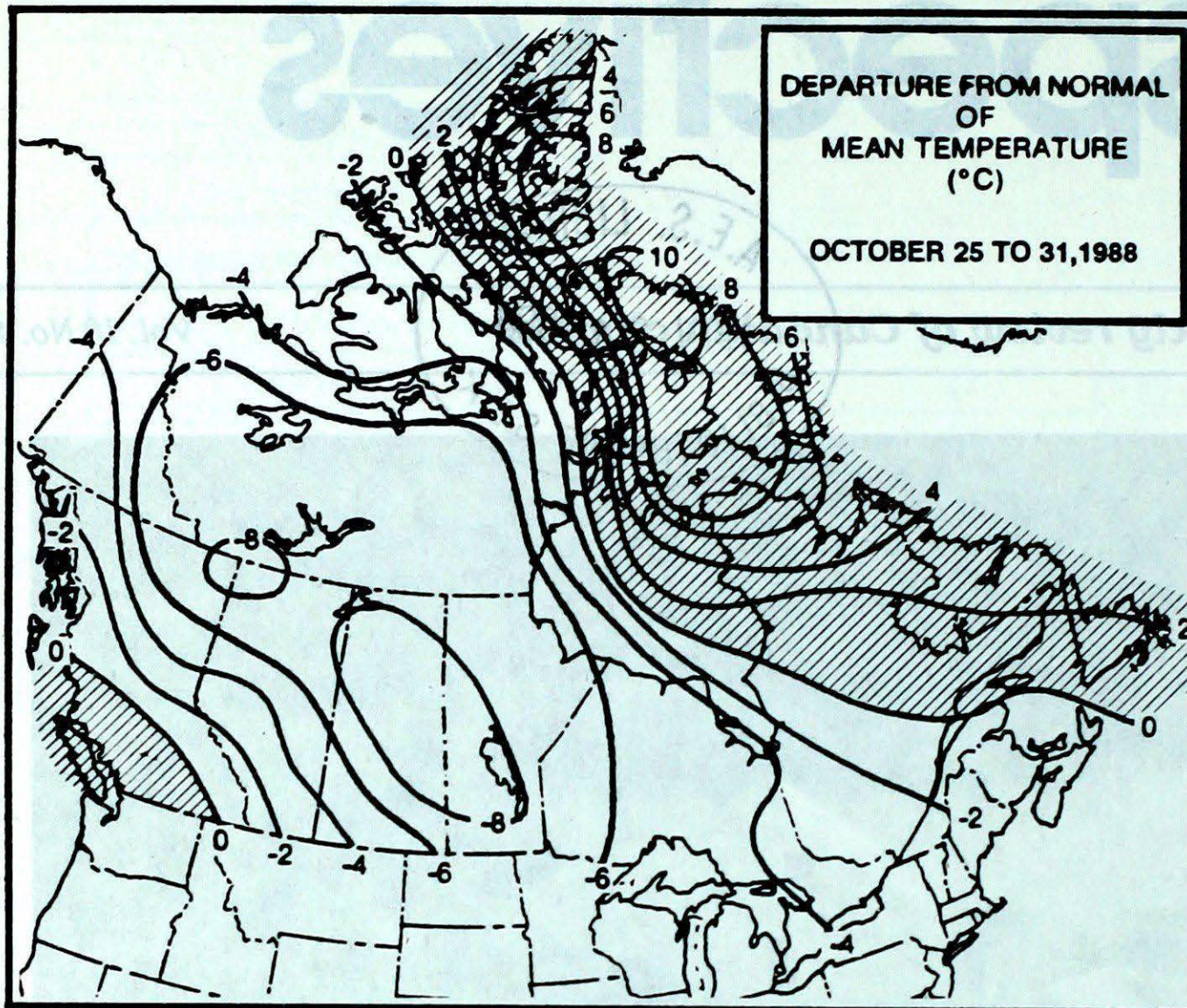
Vol. 10 No. 44



The Dease Lake Weather Station, at an elevation of 318 metres, is located in northern British Columbia on the Pacific Arctic Divide. The station is approximately 2 km south of the town of Dease Lake in the Tanzilla River Valley, adjacent to thirty mile long Dease Lake. The instrument compound is just off to the left of the photo. More information on page 3 and 9.

● Winter makes an early appearance

- Snow cover extends well south
- Arctic air plunges southward



Across the country...

Yukon and Northwest Territories

An intense slow moving low pressure system produced blizzard conditions across a large portion of the Arctic, with heaviest snowfalls occurring on Baffin Island. As much as 76 cm fell along the west coast of the Island this week, where snow depths have now reached 112 cm. Elsewhere across the north, 5 to 10 centimetre snowfalls were more common. In the Yukon, the Dempster Highway is closed at the Peel and Mackenzie River crossings due to both ferries being taken out of service for the duration of the winter two weeks ago. Ice bridges should be ready by mid-November. Most of the smaller lakes in the southern Yukon are frozen. The ferry crossing the Mackenzie River at Fort Providence along the highway to Yellowknife is expected to be operating till mid-November. By now most small lakes are frozen in the Northwest Territories.

British Columbia

A weak ridge of high pressure ensured relatively pleasant weather over the southern third of the province, while the north was snowy and cold, as an Arctic front sagged as far south as the Peace River district. Snowfalls along the Yukon border were in the 10 cm range. Fort Nelson during the month of October received 66 cm of snow compared to a normal of 19 cm. In contrast, Castlegar had the driest October in 22 years of records. Kamloops recorded the first frost of the season on the 27th, the old record being the 21st.

Prairie Provinces

In the agricultural districts of Alberta maximum temperatures plunged from the teens early in the period to sub-zero temperature readings by mid-week, everywhere. A light snow fall on the 26th caused a rash of traffic accidents in Calgary. Record daily minimums, down to the minus twenties in the north, were broken on October 27 and 28. It was a predominantly cloudy week until the weekend.

In Saskatchewan and Manitoba it was a wintry weather regime as a cold Arctic air mass covered the region. There were many new daily record low temperatures established throughout, dipping down to the minus twenties in the south. By mid-week

Weekly Temperature Extreme (°C)

Location	Maximum	Minimum
British Columbia Kindakun Point	22	Fort Nelson -18
Yukon Territory Carcross	6	Ogilvie -29
Northwest Territories Frobisher Bay	5	Mould Bay -31
	Killinek	
Alberta Medicine Hat	19	Fort Chipewyan -21
Saskatchewan Eastend Cypress	16	Meadow Lake -22
Manitoba Brandon	7	Churchill -21
Ontario Port Weller	11	Armstrong -20
Québec Gaspé	14	Parent -12
New Brunswick Moncton	15	Chatham -6
Nova Scotia Western Head	18	Greenwood -5
Prince Edward Island Charlottetown	16	Summerside -2
Newfoundland St John's	16	Wabush Lake -16

Across The Country...

Warmest Mean Temperature	Estevan Point (BC)	9
Coollest Mean Temperature	Mould Bay (NWT)	-24

88/10/25-88/10/31

snow covered the entire region, including the southern agricultural districts. On Saturday Winnipeg set a new daily record of -17 C, a record that stood for over a hundred years.

Ontario

A persistent northwesterly circulation insured an unseasonable cold week across the province. Heavy snowfalls of 15 to 30 centimetres fell in northern Ontario, especially the northwest. In addition, local snow squalls were prevalent to the lee of the Great lakes, causing in some areas blowing and drifting snow and treacherous driving conditions. The first hard frost hit southwestern Ontario over the weekend. The temperature at Windsor dipped to -4 C. Reports from Ontario's Poultry Association indicate that last summer's heat wave was directly responsible for the loss of 1.5 million birds. Most of these losses were uninsured, forcing poultry producers to evaluate their strategy in coping with heat waves as experienced the last two summers.

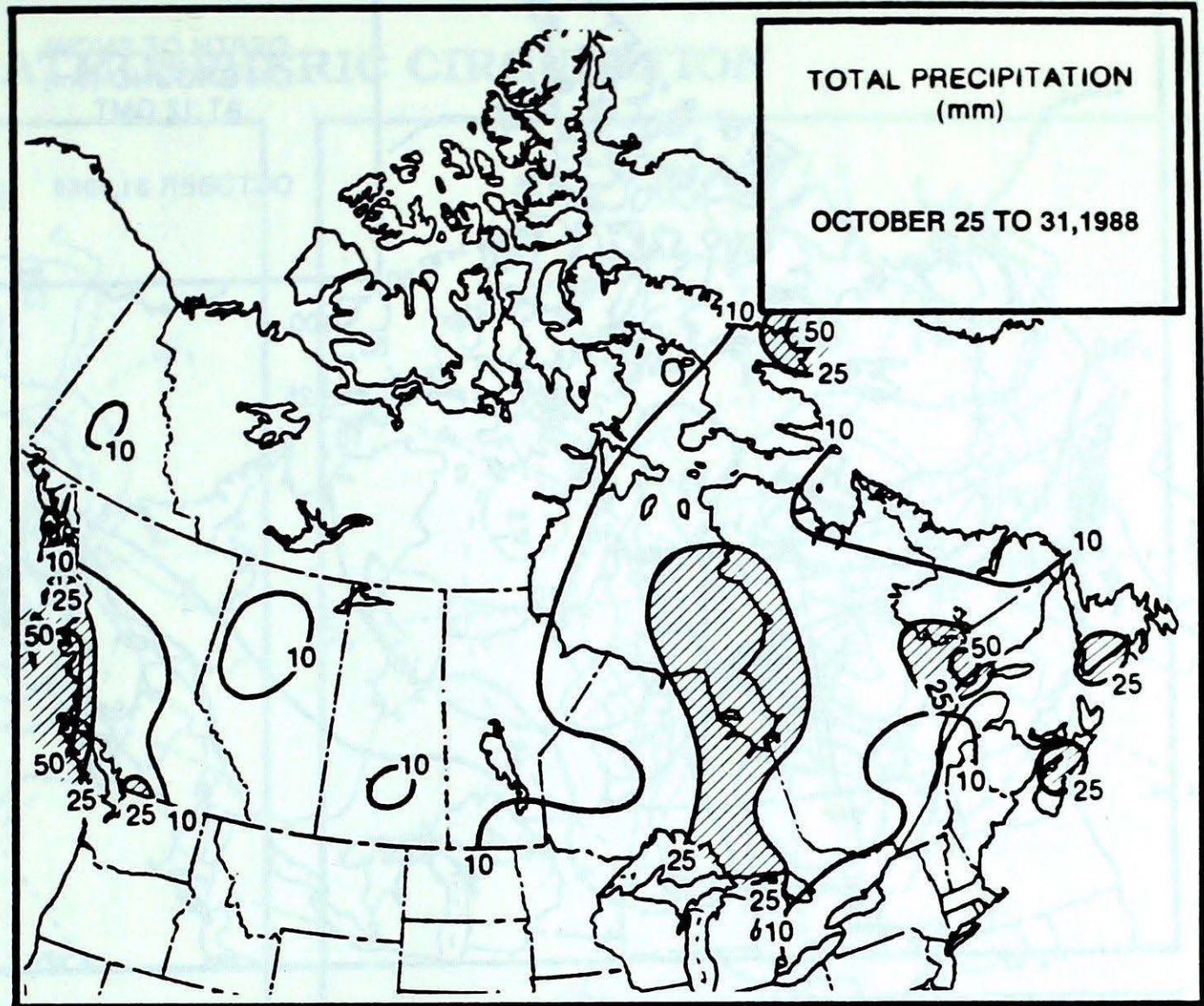
Quebec

A persistent atmospheric trough of low pressure plagued the province, resulting in mostly cloudy and cold weather conditions. Several daily low temperature records were broken. Last week's heavy snowfalls only remained in the central and northern portions of the province. Precipitation across the southern half of the province fell mainly as rain.

Atlantic Provinces

Weather systems approaching from the Great Lakes were funnelled northward towards Labrador, where as a result it was a windy and variable week. Interior locations received from 10 to 15 centimetres of snow during the weekend. On the island of Newfoundland passing disturbances gave much the same type of fluctuating weather conditions, but it was warmer, with readings during part of the week reaching the teens.

In the Maritimes, it was a typically changeable week. Precipitation fell mostly in the form of rain, but some snow was reported in New Brunswick. Shearwater got the most rain, 44.6 mm, bringing their monthly total to 250.6 mm. This easily breaks the old October precipitation record of 227 mm. Records date back to 1944.

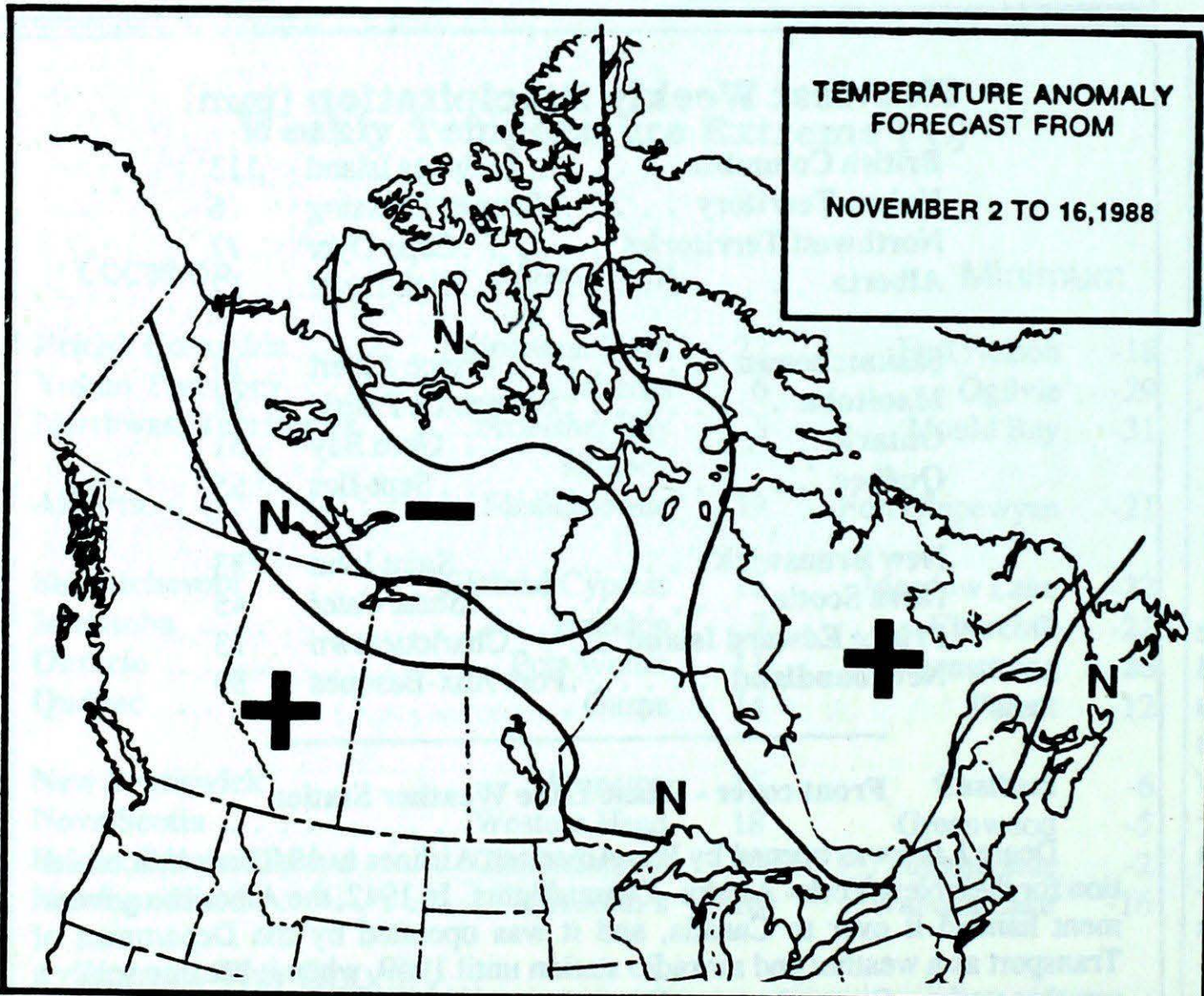
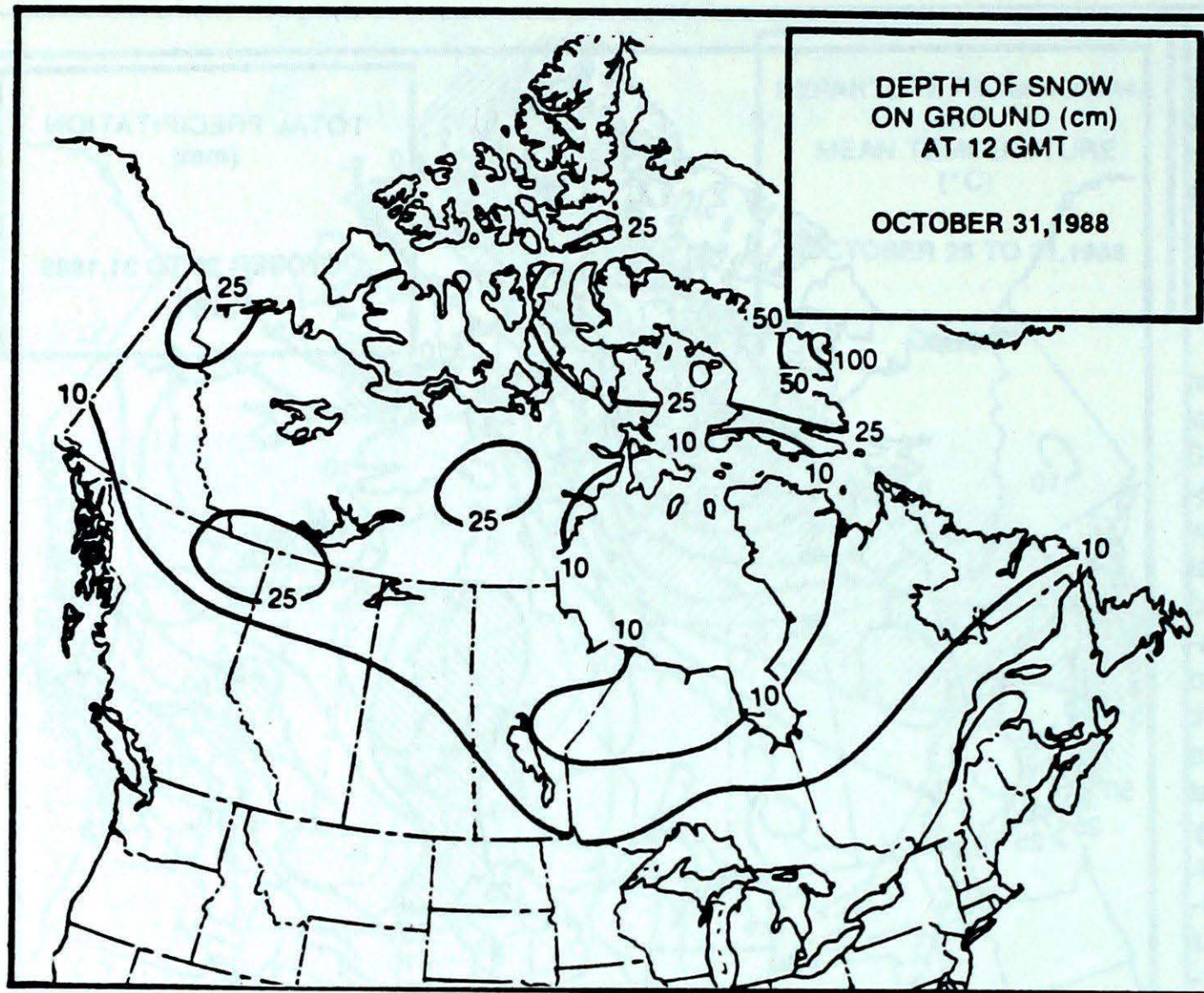


Heaviest Weekly Precipitation (mm)

British Columbia	McInnes Island	113
Yukon Territory	Stewart Crossing	16
Northwest Territories	Cape Dyer	77
Alberta	High Level	12
Saskatchewan	Prince Albert	15
Manitoba	Portage La Prairie	14
Ontario	Gore Bay	51
Québec	Sept-Iles	55
New Brunswick	Saint John	33
Nova Scotia	Shearwater	45
Prince Edward Island	Charlottetown	13
Newfoundland	Port-Aux-Basques	30

Front cover - Dease Lake Weather Station

Dease Lake was opened by Pan American Airlines in 1940 as a beacon station for their New York - Alaska - Orient flights. In 1942, the American government handed it over to Canada, and it was operated by the Department of Transport as a weather and air radio station until 1969, when it became solely a weather station. Currently, two AES meteorological specialists man this isolated post. They transmit both synoptic and hourly weather observations from 7 am to 4 pm local time and every 3 hours thereafter, 24-hours a day. The small airport sports a 4,500 foot asphalt runway, which the provincial government uses as a water bomber base during the forest fire season. Two aviation charter companies also operate from here, one of them since 1938. The airport is frequently used by charter aircraft companies, which service two gold mines currently under development.



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

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.

**CLIMATIC PERSPECTIVES
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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. The contents may be reprinted freely with proper credit.

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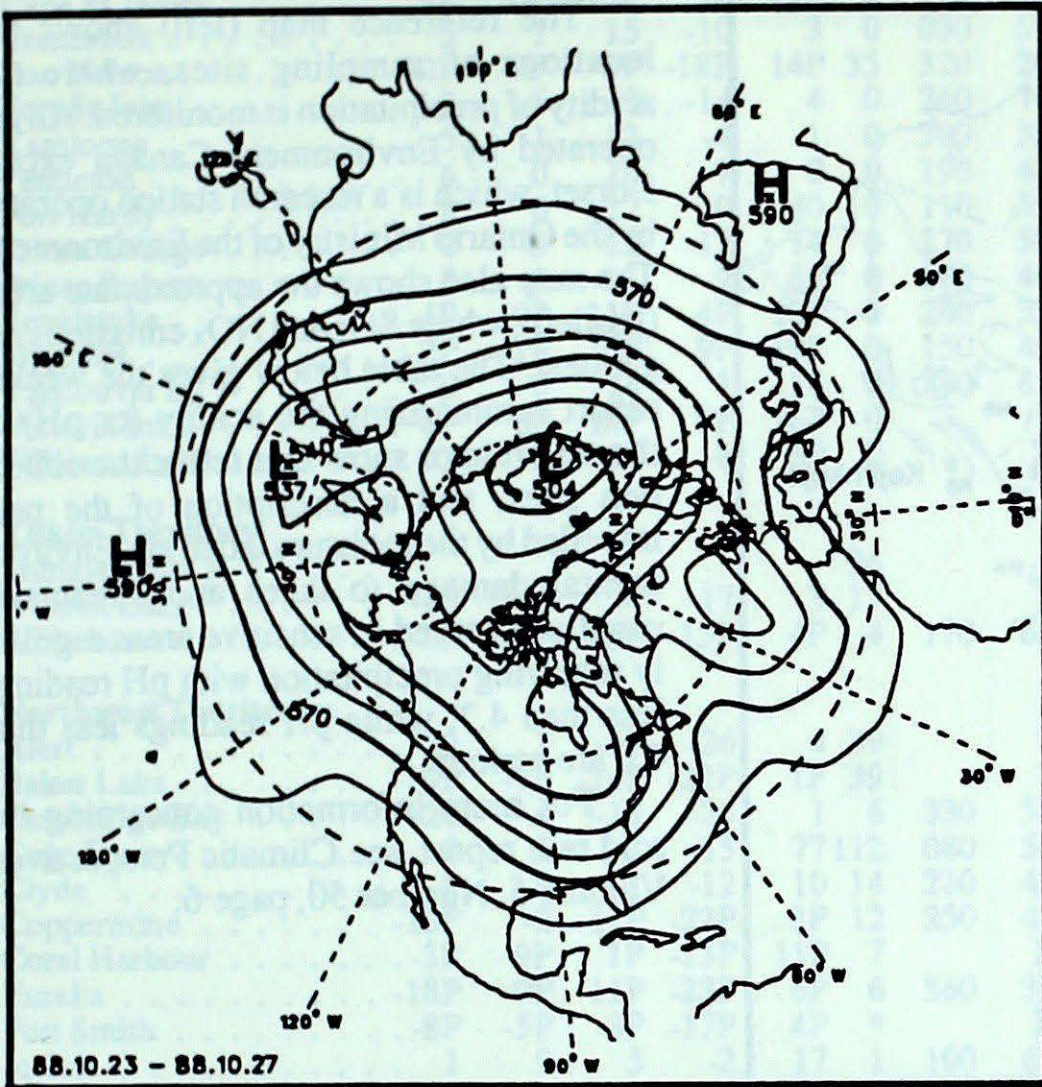
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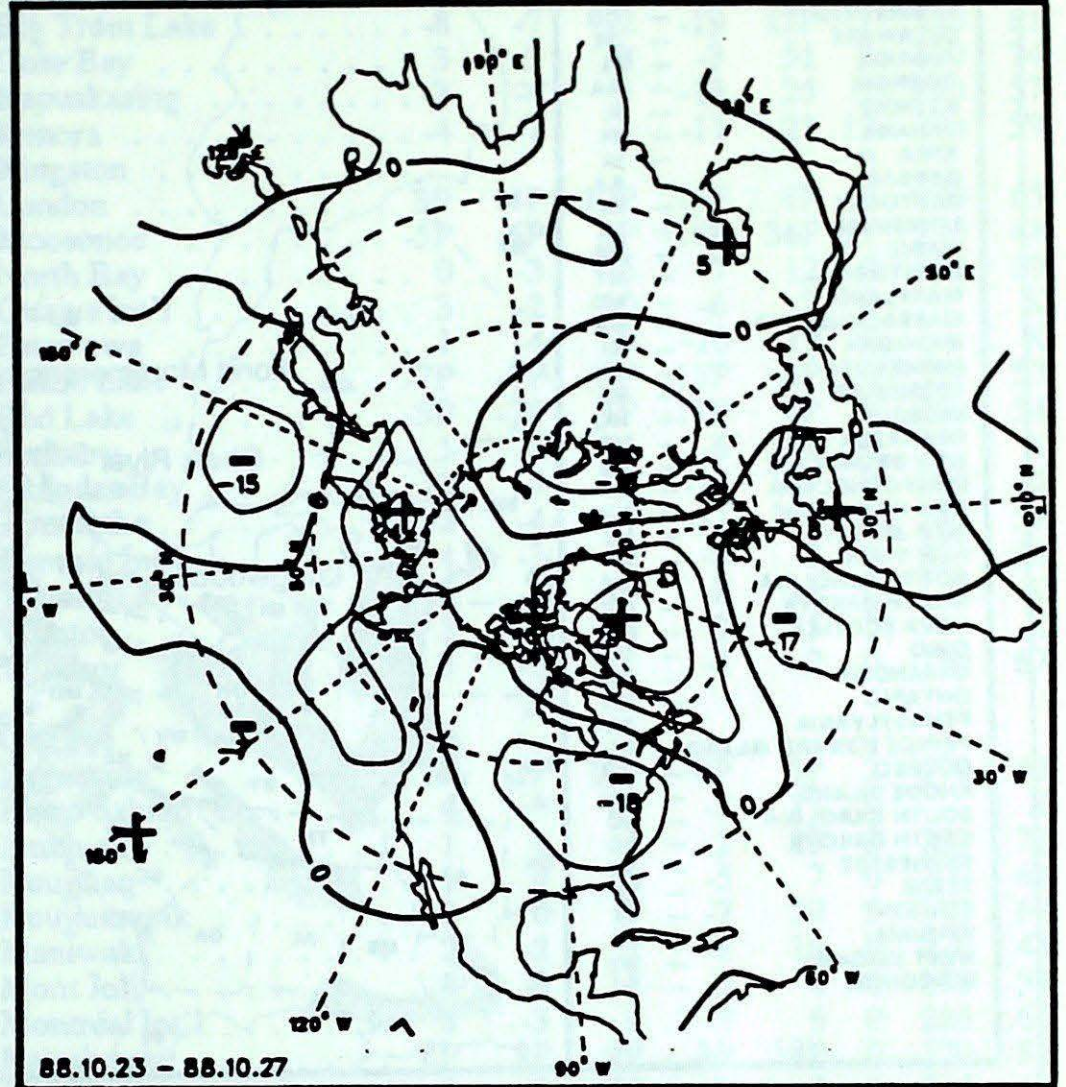
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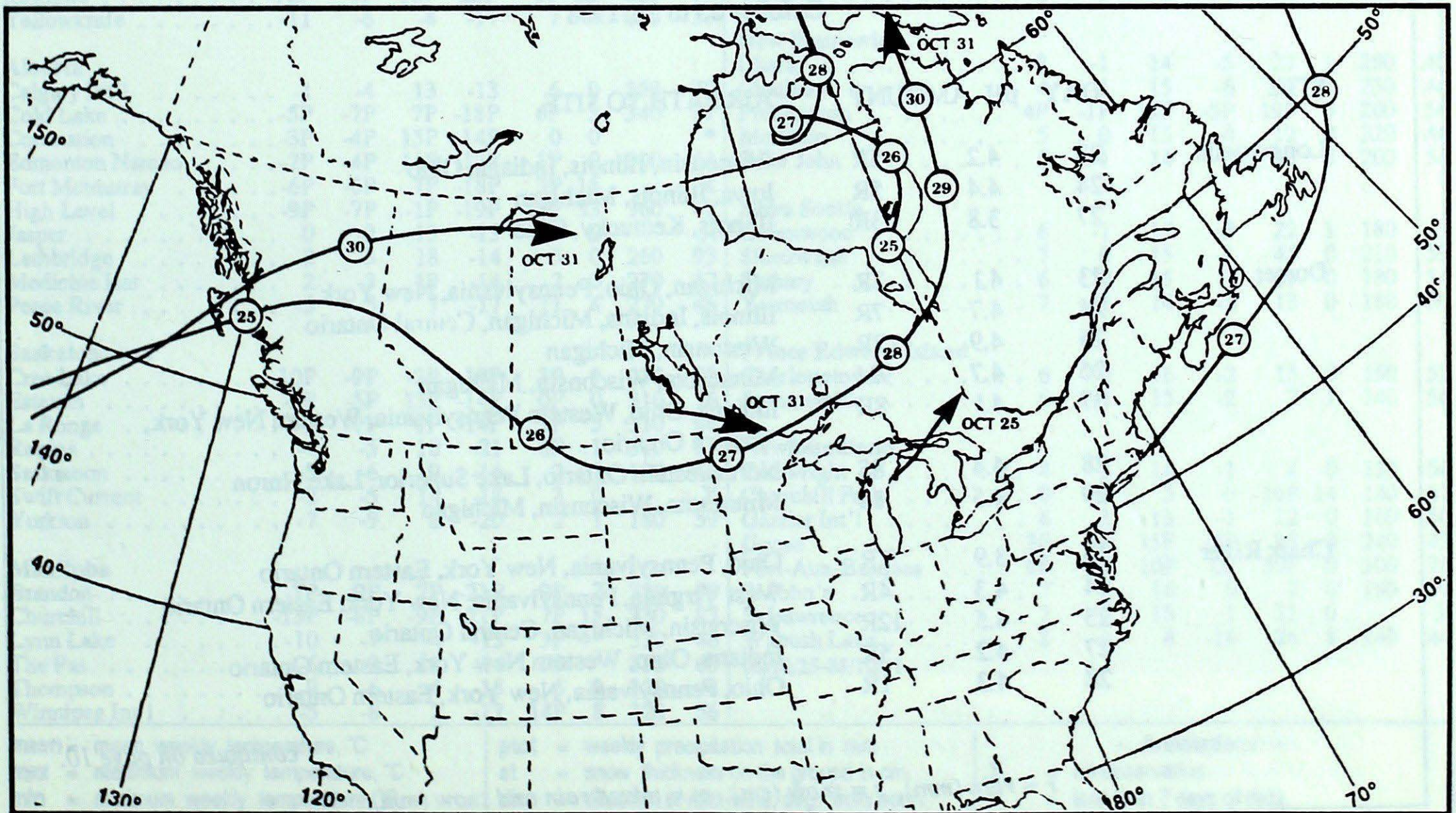
50 kPa ATMOSPHERIC CIRCULATION



Mean geopotential height
50 kPa level (5 decameter intervals)



Mean geopotential height anomaly
50 kPa level (5 decameter intervals)

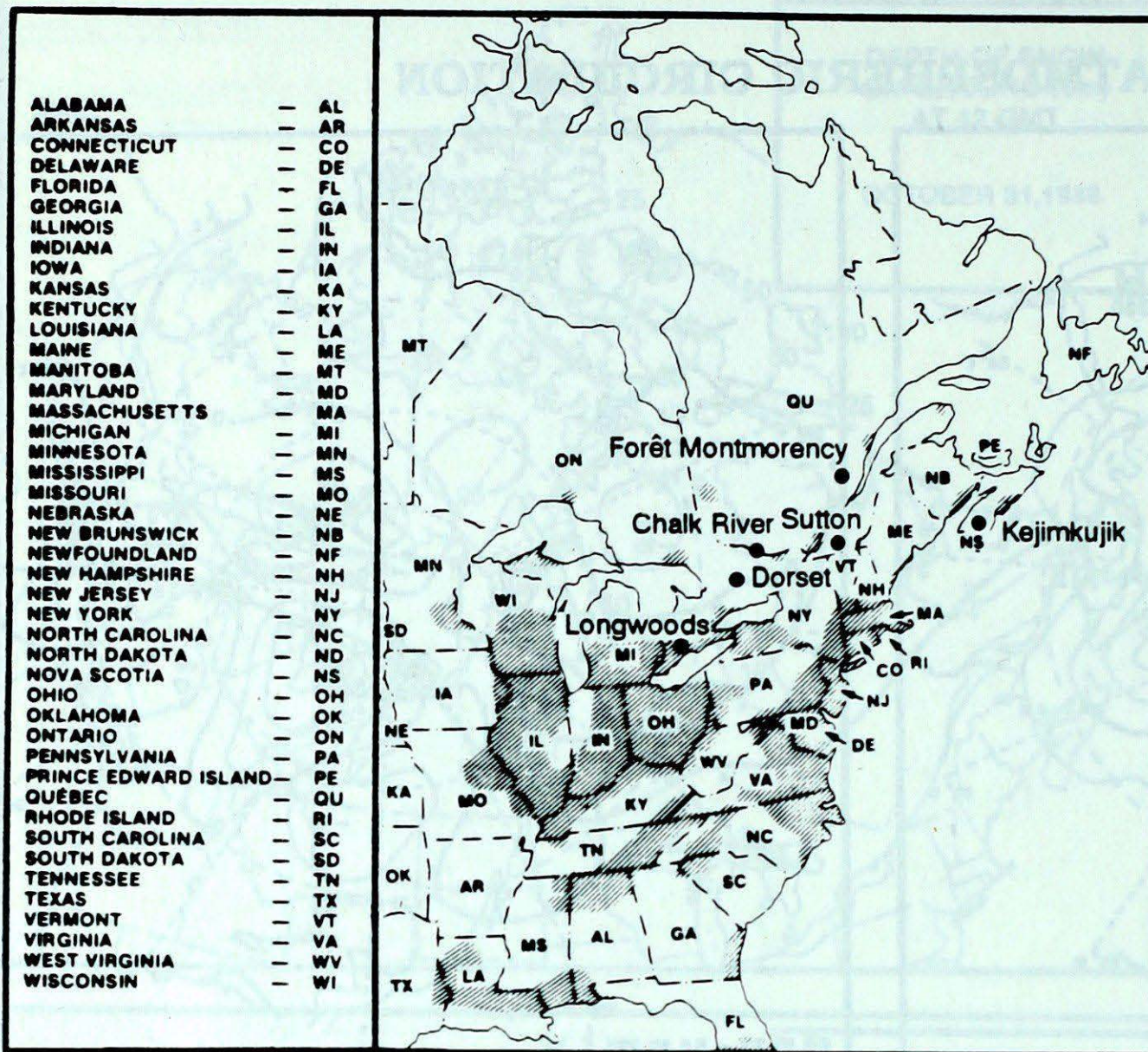


Storm track - Position of storm at 12 GMT each day during the period.

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 acid 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 readings less than 4.7, while pH readings less than 4.0 are serious.

For more information concerning the acid rain report, see Climatic Perspectives, Volume 5, Number 50, page 6.



October 23 to 29, 1988

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	23	4.2	5R	Wisconsin, Illinois, Indiana, Ohio
	24	4.4	5R	Iowa, Illinois, Michigan
	27	3.8	3R	Illinois, Kentucky, Ohio
Dorset	23	4.1	3R	Michigan, Ohio, Pennsylvania, New York
	24	4.7	7R	Illinois, Indiana, Michigan, Central Ontario
	25	4.9	7R	Wisconsin, Michigan
	26	4.7	9M	Minnesota, Wisconsin, Michigan
	27	4.1	8R	Indiana, Ohio, Western Pennsylvania, Western New York, Eastern Ontario
	28	4.4	8S	Northwestern Ontario, Lake Superior, Lake Huron
	29	4.5	1S	Minnesota, Wisconsin, Michigan
Chalk River	23	3.9	1R	Ohio, Pennsylvania, New York, Eastern Ontario
	24	4.3	4R	West Virginia, Pennsylvania, New York, Eastern Ontario
	25	4.5	12R	Wisconsin, Michigan, Central Ontario
	27	4.2	5R	Indiana, Ohio, Western New York, Eastern Ontario
	28	4.3	1R	Ohio, Pennsylvania, New York, Eastern Ontario

continued on page 10.

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

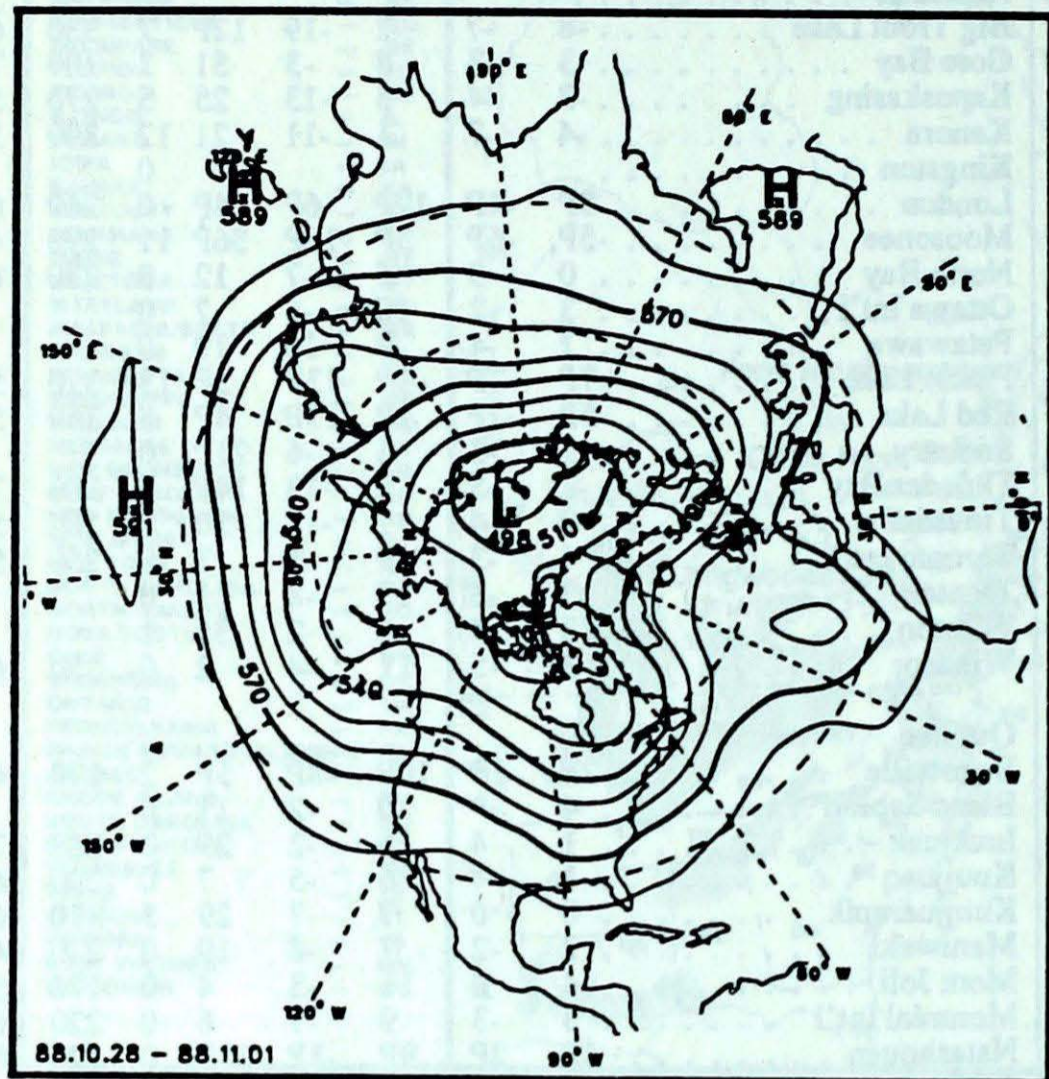
STATION	temperature				precip. ptot	st	wind max		STATION	temperature				precip. ptot	st	wind max		
	moy	anom	max	min			dir	vit		moy	anom	max	min			dir	vit	
British Columbia									Ontario									
Cape St. James	9P	0P	13P	5P	10P	0	170	102	Atikokan	*								
Cranbrook	3	1	15	-10	3	0	030	59	Big Trout Lake	-8	-7	-2	-19	12P	7	330	61	
Fort Nelson	-12P	-9P	-6P	-18P	14P	35	320	20	Gore Bay	3	-3	8	-3	51	3	180	74	
Fort St. John	-3	-5	9	-14	4	0	260	74	Kapuskasing	-3	-4	5	-13	25	5	270	57	
Kamloops	5	-1	13	-4	1	0	300	35	Kenora	-4	-7	1	-11	21	12	300	59	
Penticton	6	0	16	-7	0	0	190	48	Kingston									
Port Hardy	8	0	12	0	40	0	110	59	London	3P	-4P	10P	-6P	4P	0	260	65	
Prince George	0	-3	12	-12	14	0	270	50	Moosonee	-5P	-6P	3P	-16P	36P	11	290	48	
Prince Rupert	6	-1	11	-2	58	0	160	46	North Bay	0	-3	5	-7	12	0	230	69	
Revelstoke	4P	0P	11P	-4P	18P	0	260	33	Ottawa Int'l	3	-2	10	-6	7	0		X	
Smithers	2P	-1P	10P	-9P	19P	0	150	44	Petawawa	1	-4	9	-10	19	0		X	
Vancouver Int'l	9	0	14	1	18	0	280	61	Pickle Lake	-7P	-7P	-1P	-13P	3P	13	310	57	
Victoria Int'l	8P	0P	14P	0P	16P	0		*	Red Lake	-5P	-7P	1P	-11P	4P	8	350	54	
Williams Lake	3	0	16	-8	6P	0		X	Sudbury	1	-3	6	-6	21P	0		X	
Yukon Territory									Thunder Bay									
Shingle Point A								24	Timmins	-2	-4	7	-11	20	3	280	59	
Watson Lake	-10	-6	-4	-17	3	17		*	Toronto Int'l	4	-3	9	-5	3	0	250	56	
Whitehorse	-5P	-3P	5P	-15P	4P	4	170	63	Trenton	3	-3	10	-8	11	0		X	
Northwest Territories									Warton									
Alert	-22	1	-17	-26	4	39		*	Windsor	3	-5	11	-4	2	0	250	67	
Baker Lake	-19P	-7P	-16P	-22P	1P	39		*	Québec									
Cambridge Bay	-20	-4	-13	-26	1	6	330	57	Bagotville	2P	-1P	10P	-8P	5P	2	170	43	
Cape Dyer	-5	5	1	-15	77	12	080	56	Blanc Sablon	4	*	10	-2	11	0		X	
Clyde	-5	6	1	-12	10	14	210	43	Inukjuak	1	4	6	-2	29	3	220	72	
Coppermine	-15P	-2	-11P	-22P	3P	12	250	41	Kuujuuaq	1	4	6	-5	7	0	200	61	
Coral Harbour	-3P	9P	1P	-13P	11P	7		X	Kuujuarapik	0	0	7	-7	29	5	310	67	
Eureka	-18P	9P	-11P	-23P	6P	6	360	33	Maniwaki	2	-2	7	-8	19	0	220	48	
Fort Smith	-8P	-5P	-3P	-17P	4P	*		X	Mont Joli	4	0	11	-3	4	0	170	59	
Iqaluit	1	9	5	-2	17	1	100	69	Montréal Int'l	3	-3	9	-7	6	0	220	61	
Hall Beach	-6P	8P	-1P	-19P	8P	24	300	67	Natashquan	4P	2P	9P	-3P	18P	0	120	81	
Inuvik	-19	-6	-12	-29	3	27		X	Québec	2	-2	10	-8	9	0	260	61	
Mould Bay	-24	-3	-17	-31	2	15		X	Schefferville	-2	2	3	-12	21P	*	280	50	
Norman Wells	-15	-6	-10	-22	3	5		X	Sept-Iles	2	1	7	-7	55	0	080	78	
Resolute	-18P	1P	-10P	-23P	3P	23	020	74	Sherbrooke	2	-2	11	-10	9	0	260	63	
Yellowknife	-11	-6	-4	-17	7	4	080	37	Val D'or	-2	-3	6	-11	22	*	290	52	
Alberta									New Brunswick									
Calgary Int'l	-1	-4	13	-13	6	0	350	72	Charlo	2	-1	14	-5	21	1	280	48	
Cold Lake	-5P	-7P	7P	-18P	6P	5	340	37	Chatham	4	-1	15	-6	24	0	230	44	
Coronation	-3P	-4P	15P	-14P	0	0		*	Fredericton	4P	-1P	15P	-5P	19P	0	200	56	
Edmonton Namao	-2P	-4P	14P	-12P	1P	0	300	61	Moncton	5	0	15	-4	12	0	220	46	
Fort McMurray	-6P	-6P	7P	-18P	3P	15		X	Saint John	5	-1	14	-4	33	0	200	56	
High Level	-9P	-7P	-1P	-19P	12P	33	360	41	Nova Scotia									
Jasper	0	-2	13	-13	9	0		X	Greenwood	6	-1	17	-5	22	1	180	63	
Lethbridge	2	-3	18	-14	5	0	260	93	Shearwater	7	0	15	-1	45	0	210	59	
Medicine Hat	2	-3	19	-14	2	0	270	67	Sydney	6	0	15	-3	19	0	180	54	
Peace River	-5	-5	7	-17	11	4	270	46	Yarmouth	7	-1	14	-2	13	0	180	50	
Saskatchewan									Prince Edward Island									
Cree Lake	-10P	-9P	-2P	-18P	3P	*	030	43	Charlottetown	6	0	16	-2	13	0	160	52	
Estevan	-2P	-5P	13P	-14P	0P	0	310	76	Summerside	6	-1	15	-2	7	1	140	56	
La Ronge	-7P	-7P	1P	-14P	3P	5	310	46	Newfoundland									
Regina	-4	-5	10	-21	2P	1	310	57	Cartwright	4	3	14	-1	4	0	120	56	
Saskatoon	-5	-6	9	-16	2	1	120	52	Churchill Falls	0	3	5	-9	16P	14	140	67	
Swift Current	-2	-5	14	-18	3	0		X	Gander Int'l	6	1	13	-1	12	0	160	50	
Yorkton	-7	-9	8	-20	2	1	180	59	Goose	3P	3P	11P	-4P	2P	0	240	43	
Manitoba									Port-Aux-Basques									
Brandon	-7P	-9P	7P	-21P	9P	7	330	59	6P	0P	10P	0P	30P	0	100	78		
Churchill	-13P	-8P	-9P	-21P	7P	15	330	87	St John's	7	2	16	0	7	0	180	57	
Lynn Lake	-10	-7	-4	-15	3P	*	330	46	St Lawrence	7	2	15	1	21	0		X	
The Pas	-6	-7	1	-14	5P	*	330	63	Wabush Lake	-2	1	4	-16	26	8	240	44	
Thompson	-9	-6	-4	-15	5	9	320	46	88/10/25-88/10/31									
Winnipeg Int'l	-5	-8	2	-17	14P	8	320	56										

mean = mean weekly temperature, °C
 max = maximum weekly temperature, °C
 min = minimum weekly temperature, °C
 anom = mean temperature anomaly, °C

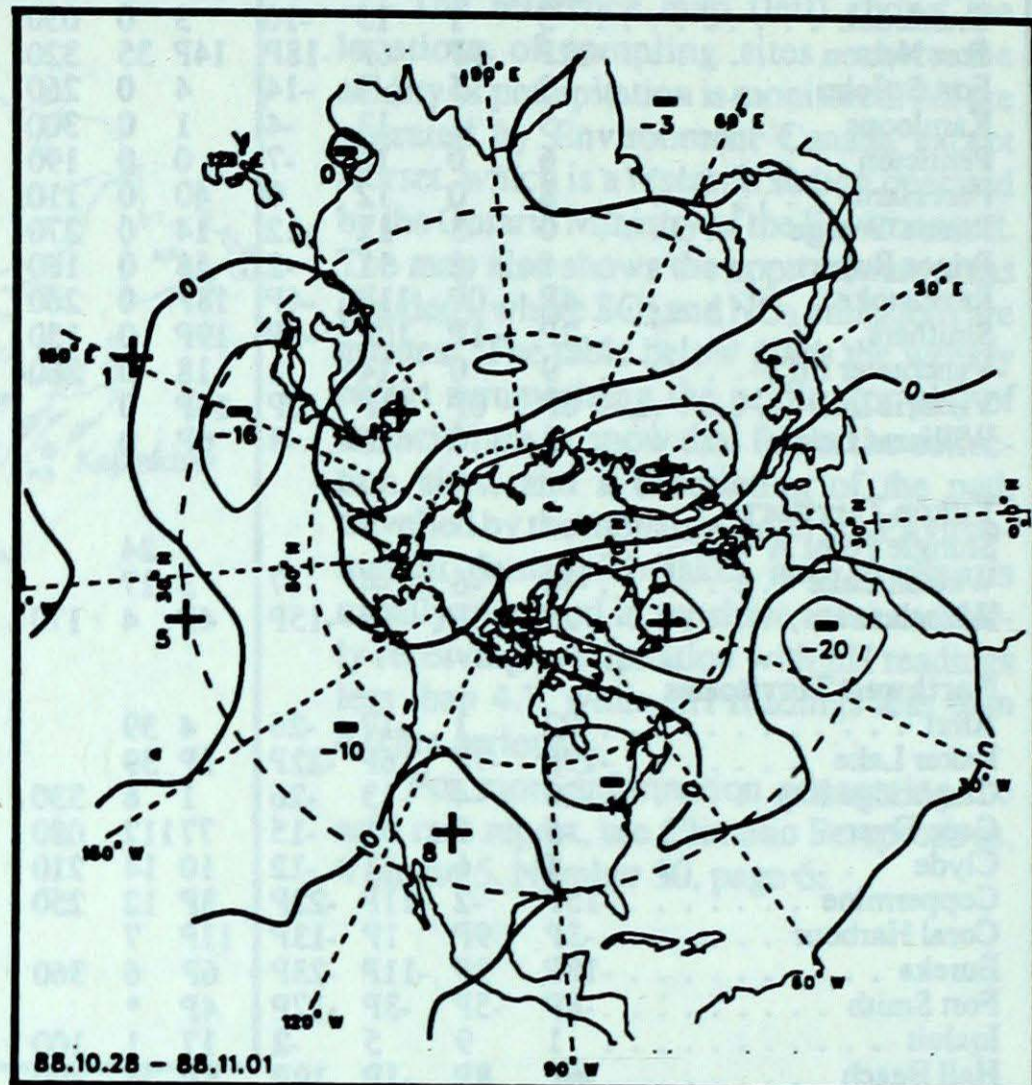
ptot = weekly precipitation total in mm
 st = snow thickness on the ground in cm
 dir = direction of max wind, deg. from north.
 vit = wind speed in km/h

- Annotations -
 X = no observation
 P = less than 7 days of data.
 * = missing data when going to printing.

50 kPa ATMOSPHERIC CIRCULATION



Mean geopotential height
50 kPa level (5 decameter intervals)



Mean geopotential height anomaly
50 kPa level (5 decameter intervals)

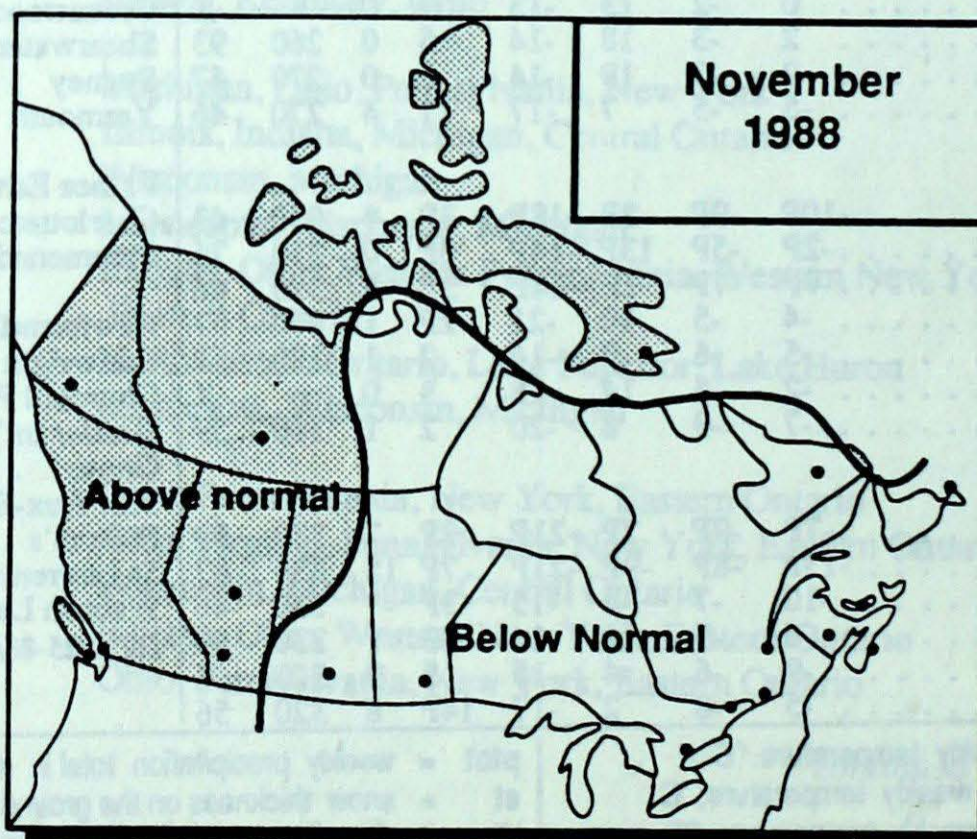


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MONTHLY TEMPERATURE FORECAST

Normal temperatures for the month of November, °C

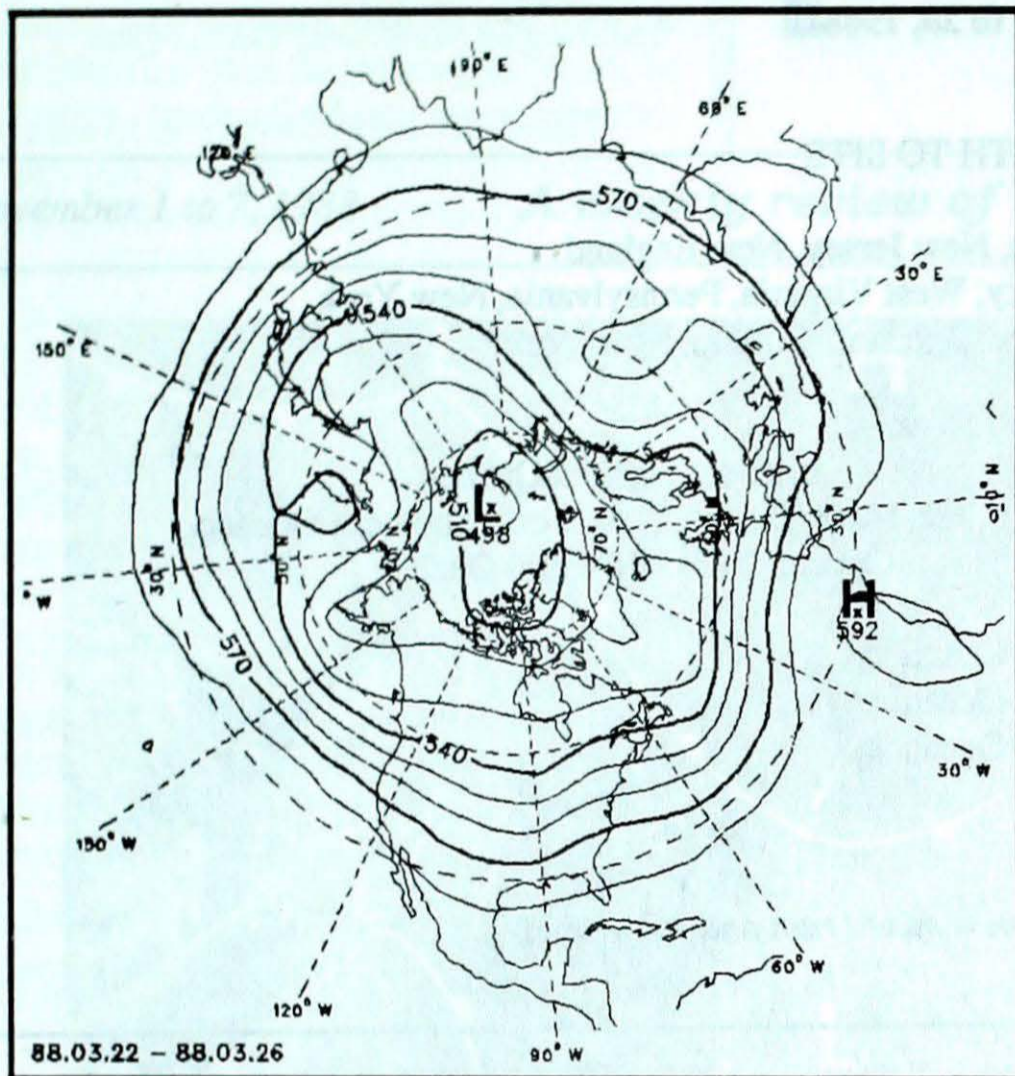
Whitehorse	-9	Toronto	3
Yellowknife	-14	Ottawa	1
Iqaluit	-13	Montreal	2
Vancouver	6	Quebec	0
Victoria	6	Fredericton	1
Calgary	-3	Halifax	3
Edmonton	-5	Charlottetown	3
Regina	-5	Goose Bay	-4
Winnipeg	-5	St. John's	3



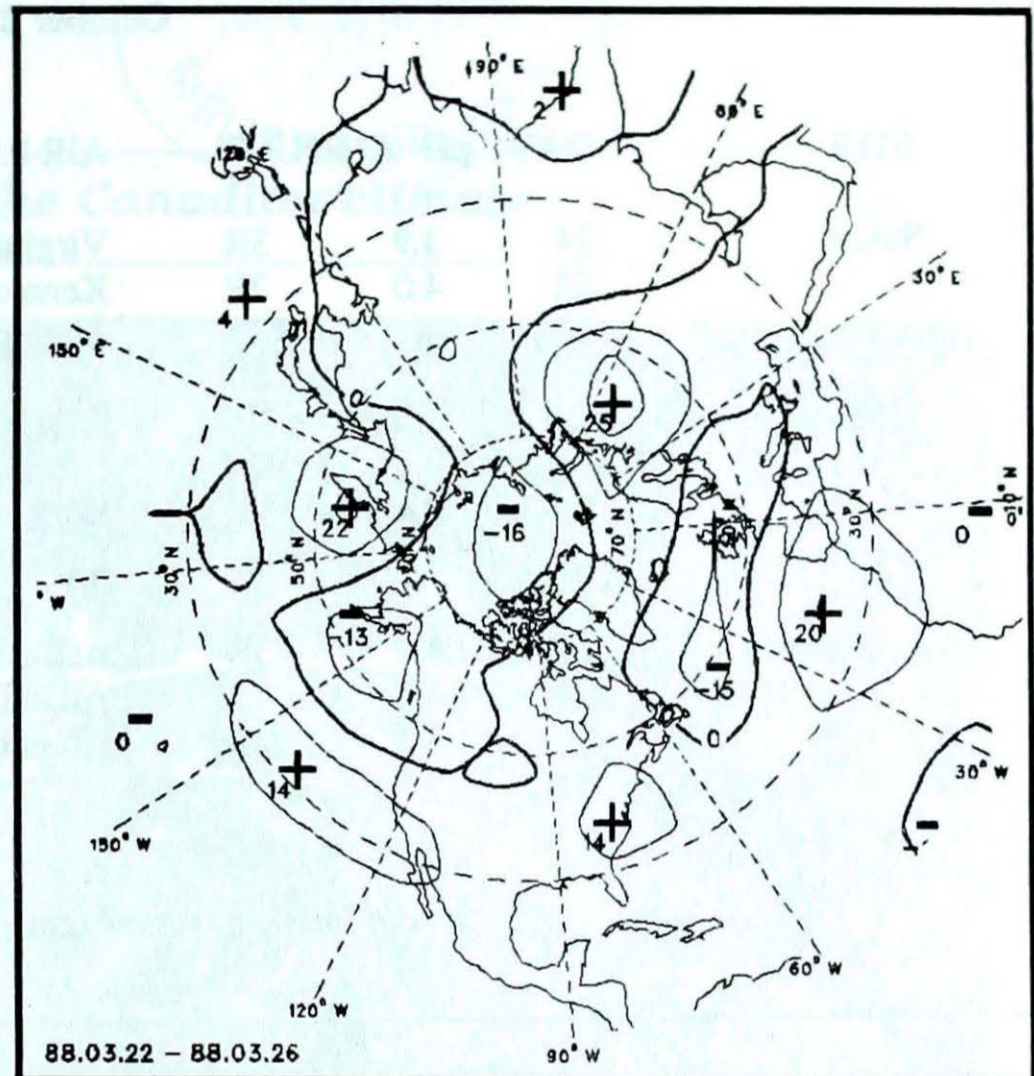
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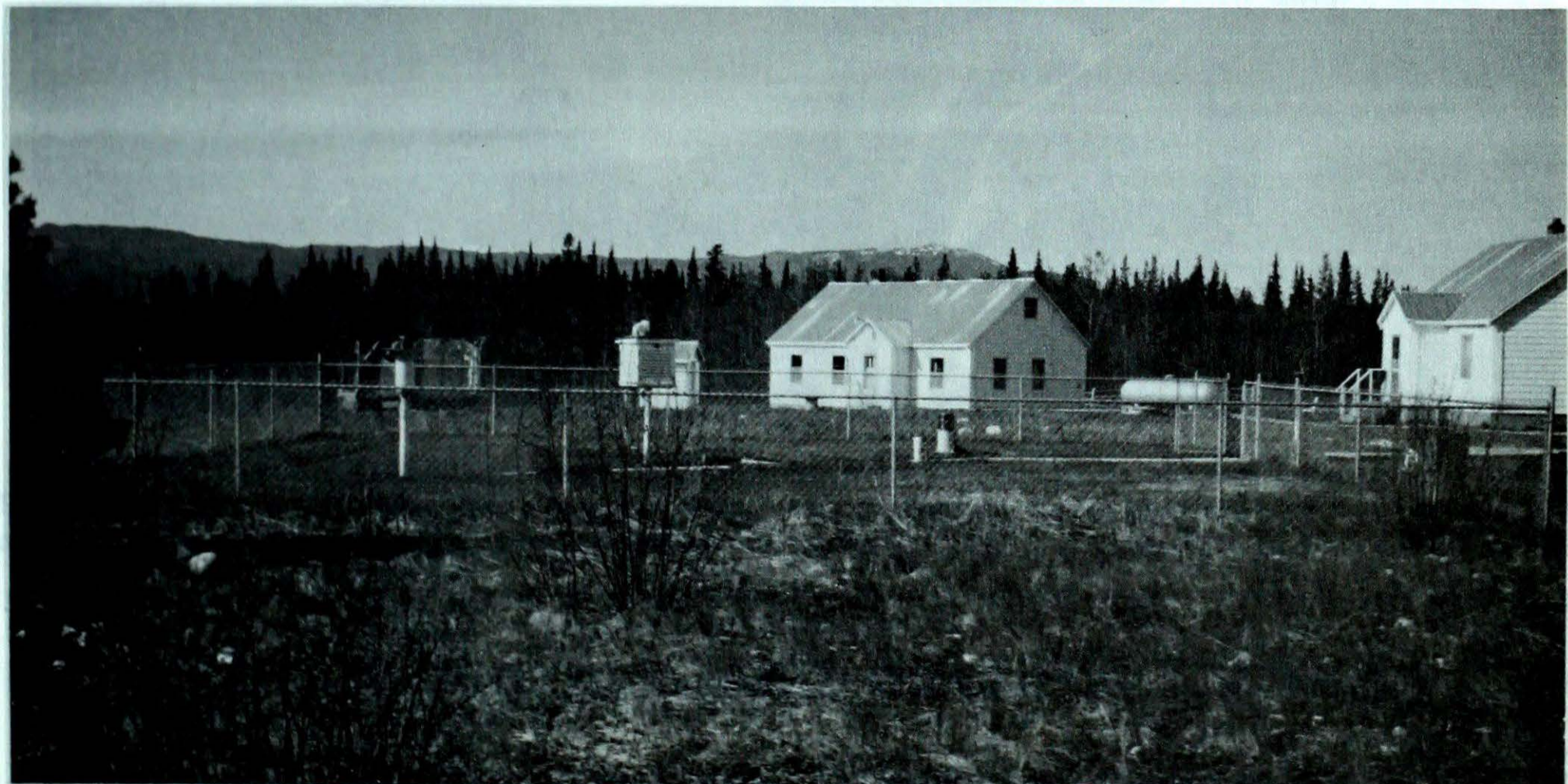
(Please note the date of this pentad, which should of been included in an earlier issue)



Mean geopotential heights
50 kPa level (10 decameter intervals)



Mean geopotential height anomaly
50 kPa level (10 decameter intervals)



The weather station is located at the edge of a small lake. The surrounding country side is mountainous and heavily wooded. The closest mountain peak is Tanzilla Butte 8 km to the southeast, but the highest mountain range is approximately 8 km further. Dense fog and low cloud occur frequently in the spring and fall, when Dease Lake is ice-free. Average winter snow depths range from 50 to 60 centimetres. Minimum temperatures are known to go as low as -45°C .

Acid Rain continued from page 6

October 23 to 29, 1988

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Sutton	24	3.9	3R	Virginia, New Jersey, New England
	28	4.0	7R	Kentucky, West Virginia, Pennsylvania, New York
	29	4.4	1S	Michigan, Southern Ontario, New York
Montmorency	23	4.0	2M	Eastern Quebec
	24	3.9	16M	New Jersey, New England, Southern Quebec
	25	4.4	6M	West Virginia, Pennsylvania, New York, Southern Quebec
	27	4.2	1S	Lake Superior, Central Ontario, Central Quebec
Kejimkujik	23	4.0	3R	Atlantic Ocean
	24	4.7	7R	Atlantic Ocean
	28	4.2	12R	Atlantic Ocean

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

