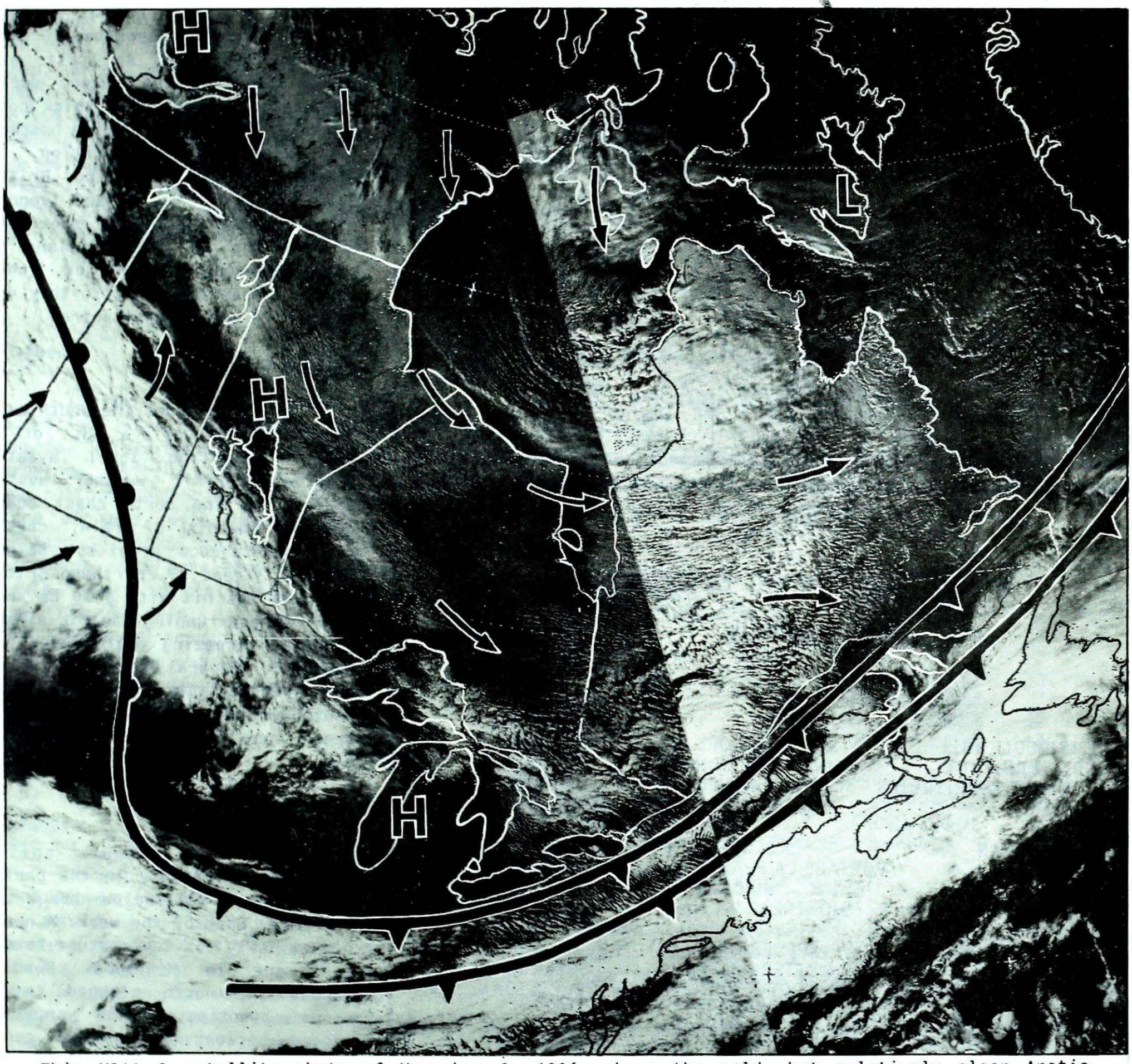
Environment Canada Environnement Canada

Climatic Perspectives

weekly review of Canadian climate October 28 to November 3, 1986 Vol.8 No.44



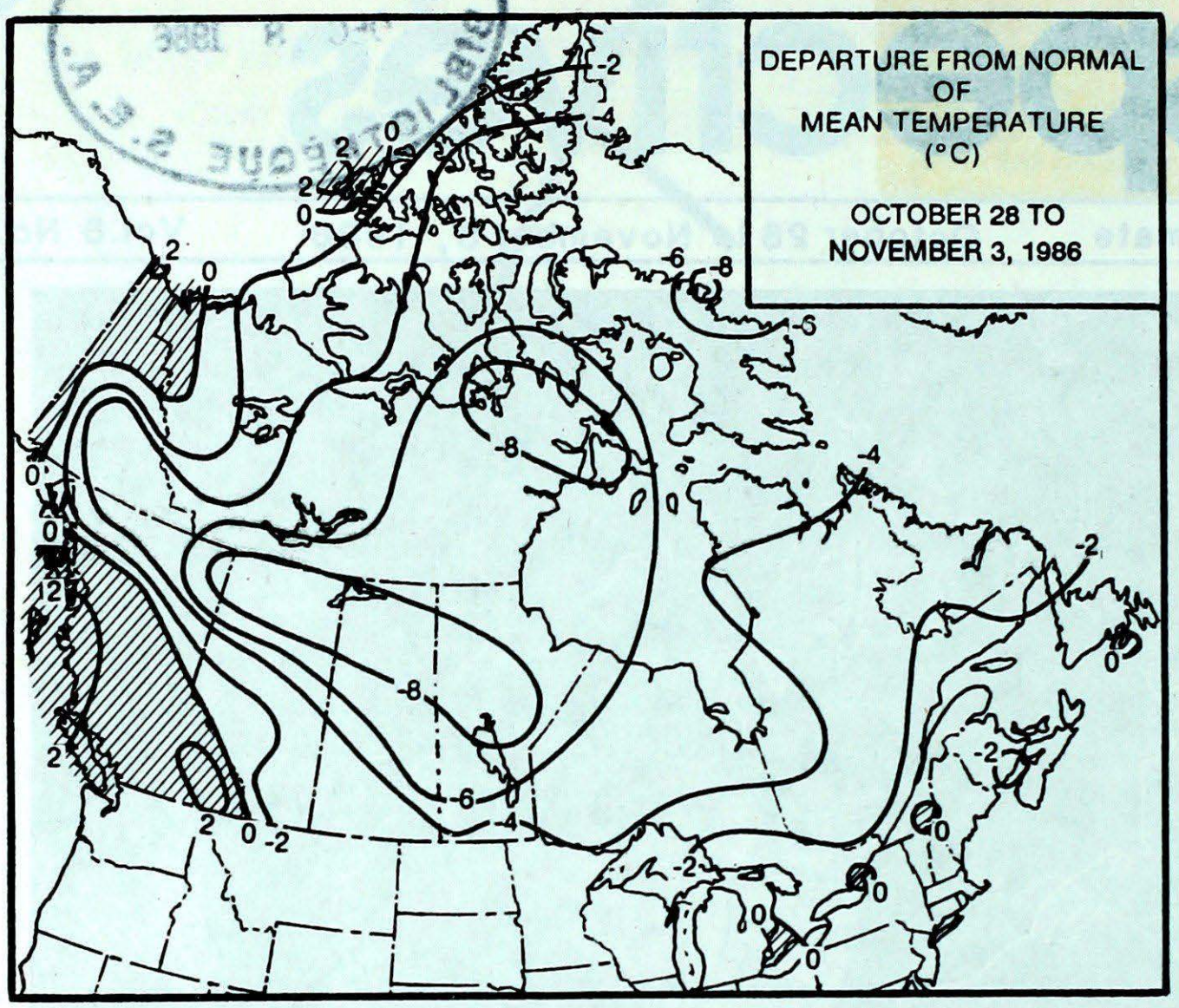
This NOAA 9 satellite photo of November 2, 1986, shows the cold, but relatively clear Arctic airmass streaming southwards across Ontario towards Atlantic Canada. More information on page 3.

• *Cold Arctic blast sweeps southward across the country*

— major snowfalls hit northern agricultural areas

Canada

TEMPERATURE



WEEKLY TEMPERATURE EXTREME (C)

	MAXIMUM		MINIMUM	
BRITISH COLUMBIA	KAMLOOPS	17	FORT NELSON	−24
YUKON TERRITORY	HAINES JUNCTION	12	OGILVIE	−31
NORTHWEST TERRITORIES	YELLOWKNIFE	−1	EUREKA	−41
ALBERTA	CALGARY INT'L	17	FORT CHIPEWYAN	−26
SASKATCHEWAN	ROCKGLEN	14	COLLINS BAY	−23
MANITOBA	PORTAGE LA PRAIRIE	15	THOMPSON	−28
ONTARIO	WINDSOR	20	WINISK	−19
QUEBEC	MONTREAL INT'L	18	KUUJJUAQ	−19
NEW BRUNSWICK	FREDERICTON	15	CHARLO	−8
NOVA SCOTIA	WESTERN HEAD	19	GREENWOOD	−6
PRINCE EDWARD ISLAND	CHARLOTTETOWN EAST POINT	11	CHARLOTTETOWN	−4
NEWFOUNDLAND	CAPE RACE	14	WABUSH LAKE	−17

ACROSS THE NATION

WARMEST MEAN TEMPERATURE	12	LAWN POINT BC
COOLEST MEAN TEMPERATURE	−33	EUREKA NWT

ACROSS THE COUNTRY...

Yukon and Northwest Territories

Temperatures in the Arctic continued to cool off at a rapid rate, with readings dropping to the minus thirties and forties. Weather systems, tracking across northern British Columbia, deposited 10 cm of snow in the Yukon. An Arctic warm front affecting the Yukon, during the weekend, produced a thick coating of freezing rain, which hampered all modes of transportation. The Alaska Highway near the British Columbia border was closed temporarily because of heavy snowfalls. Snow depths on Baffin Island now range upwards to 80 cm, while across the southern Arctic they vary between 20 and 40 centimetres.

British Columbia

Sea fog plagued the south coast and adjoining valleys most of the week, disrupting local aviation traffic. Pacific weather systems approaching the north coast dumped copious amounts of rain, causing road maintenance problems. Between October 27 and 29, northern British Columbia was hit with a 30 cm snowfall. An overrunning Pacific airmass produced freezing rain over the weekend. Several daily temperature records were broken in the Kootanays. Seventeen centimetres of fresh snow fell on local mountain passes.

Prairies

An Arctic airmass spilled southeastwards early in the period, resulting in well-below-normal temperatures most of the week. A number of new daily low temperature records were set in Manitoba. Readings across the north plunged to the minus twenties, while snowfalls ranged between 10 and 20 centimetres. Agricultural districts received a mixture of rain and snow; some farming communities had 6 cm of snow covering the ground this week. In Calgary, the first snowfall of the season resulted in a rash of fender benders. With a few exceptions in Alberta and Manitoba, the harvesting of cereal crops is virtually complete.

PRECIPITATION

Ontario

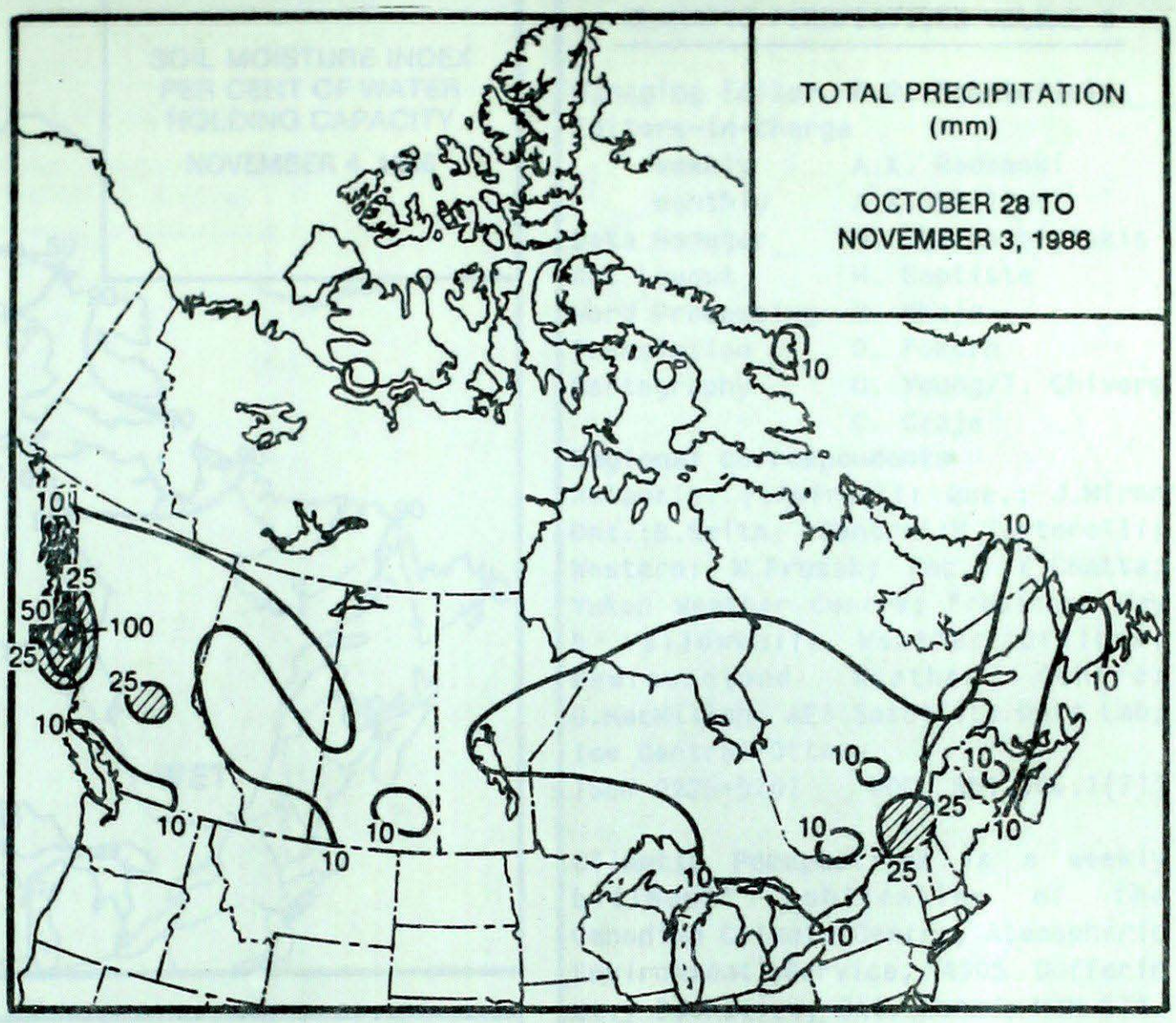
Typical mid-autumn weather prevailed, with fluctuating day-to-day temperatures. Sunny afternoons and frosty nights were interspersed among the inclement days. Disturbances produced some rain in the south, and a mixture of rain and snow in the north. An Arctic airmass invaded the province over the weekend, after which, maximum temperatures in northern Ontario failed to climb above freezing. Up to 10 cm of snow blanketted northwestern Ontario on November 1 and 2. A few snowflurries fell in southern Ontario. Many crops such as corn still remain unharvested because of wet fields.

Québec

It was a mostly cloudy and unsettled week, as a number of frontal disturbances affected the province. Precipitation in central and northern Quebec was mostly in the form of snow, with amounts ranging between 10 and 25 centimetres. Temperatures were more seasonal in the south, where precipitation fell in the form of rain. A large area of high pressure brought a couple of days of sunny weather during the middle of the week. A cold Arctic airmass covered the province over the weekend.

Atlantic

Milder weather conditions returned to the Maritimes early in the period. A new daily maximum temperature record of 14.4°C was set at Halifax on October 30. A cold front crossing the region over the weekend resulted in increased shower activity, which eventually changed to snowflurries. Several weak weather systems affected Newfoundland this week, resulting primarily in cool, damp weather conditions, although there were some intervals of sunshine. In Labrador, snow earlier in the week gave way to a mixture of sun and cloud. Most locations had several centimetres of snow on the ground by the end of the period.



HEAVIEST WEEKLY PRECIPITATION (mm)

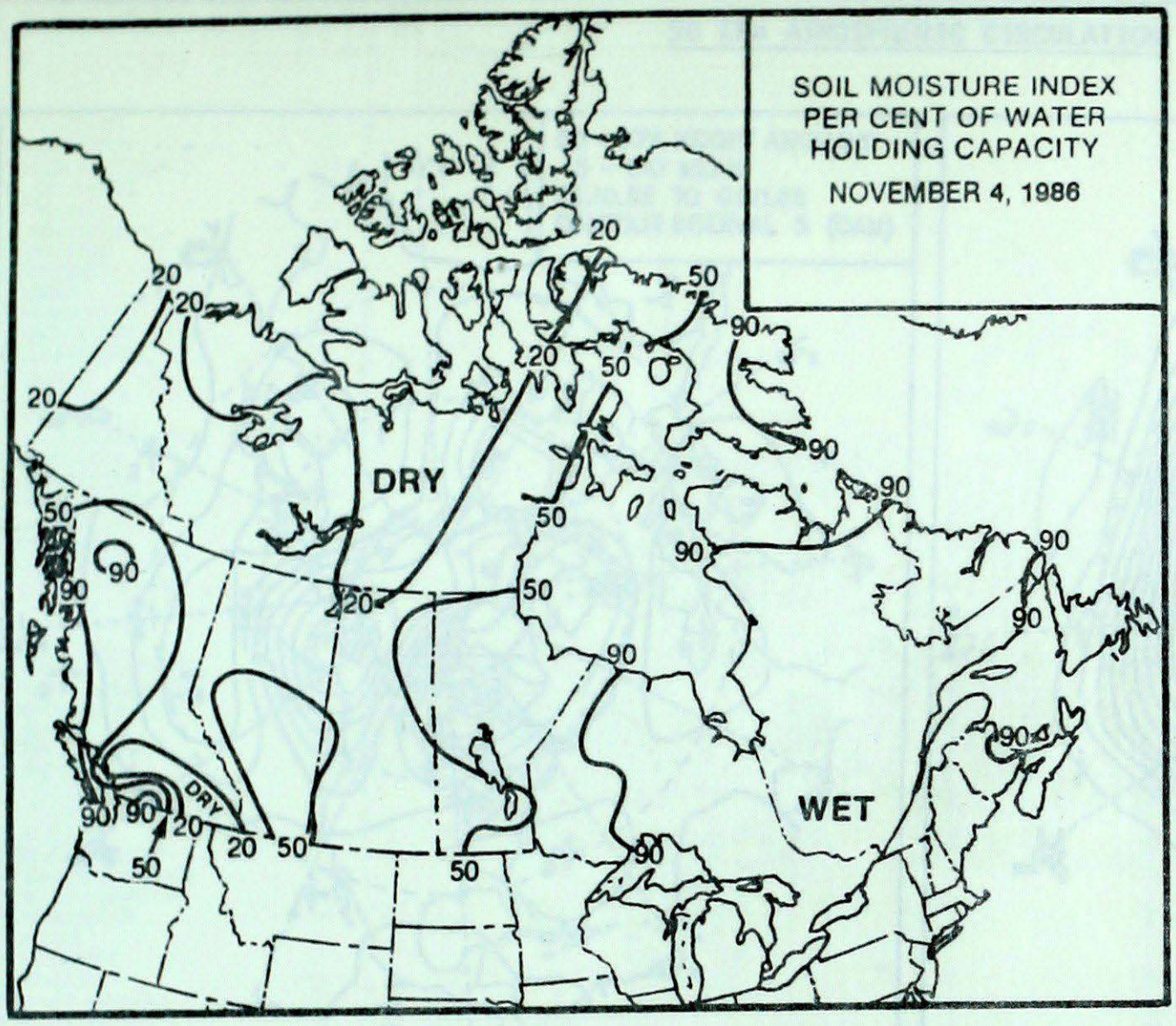
BRITISH COLUMBIA	PRINCE RUPERT	125
YUKON TERRITORY	WATSON LAKE	7
NORTHWEST TERRITORIES	CAPE DYER	17
ALBERTA	LLOYDMINSTER	18
SASKATCHEWAN	WYNYARD	13
MANITOBA	NORWAY HOUSE	17
ONTARIO	WAWA	42
QUEBEC	KUUJUARAPIK	43
NEW BRUNSWICK	MISCOU ISLAND	23
NOVA SCOTIA	GREENWOOD	6
PRINCE EDWARD ISLAND	SUMMERSIDE	12
NEWFOUNDLAND	DANIEL'S HARBOUR	43

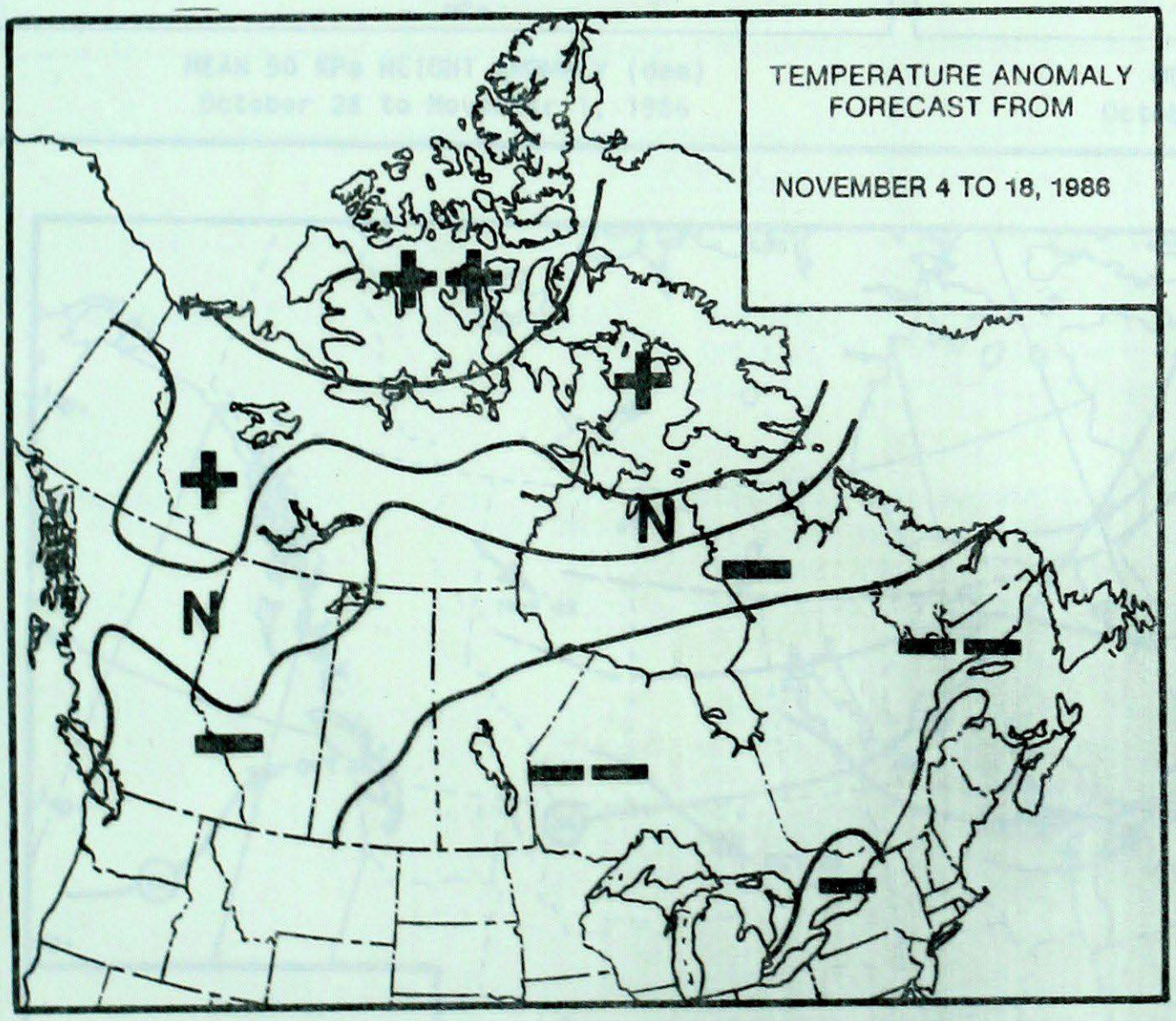
Front Cover

In the wake of a sharp cold front, bitterly cold Arctic air streamed southwards, covering most of the country by the weekend. Note the increased amount of cloud around large bodies of open water, because of the increased moisture input saturating the cold airmass. Low stratus type clouds are clearly visible drifting down wind from Great Slave Lake and Lake Athabasca. This is a common phenomena at this time of year, as long as the lakes and rivers in northern Canada remain unfrozen. This low cloud frequently hampers northern aviation traffic, which follows the mountain valleys in the Yukon and Mackenzie District.

Cloud associated with the warm front, which produced heavy snowfalls and freezing rain in northern British Columbia, is seen edging northward across the Prairies. The snow cover over the Prairie provinces has gradually spread southwards this week, and now extends into northwestern Ontario.

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 8

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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.

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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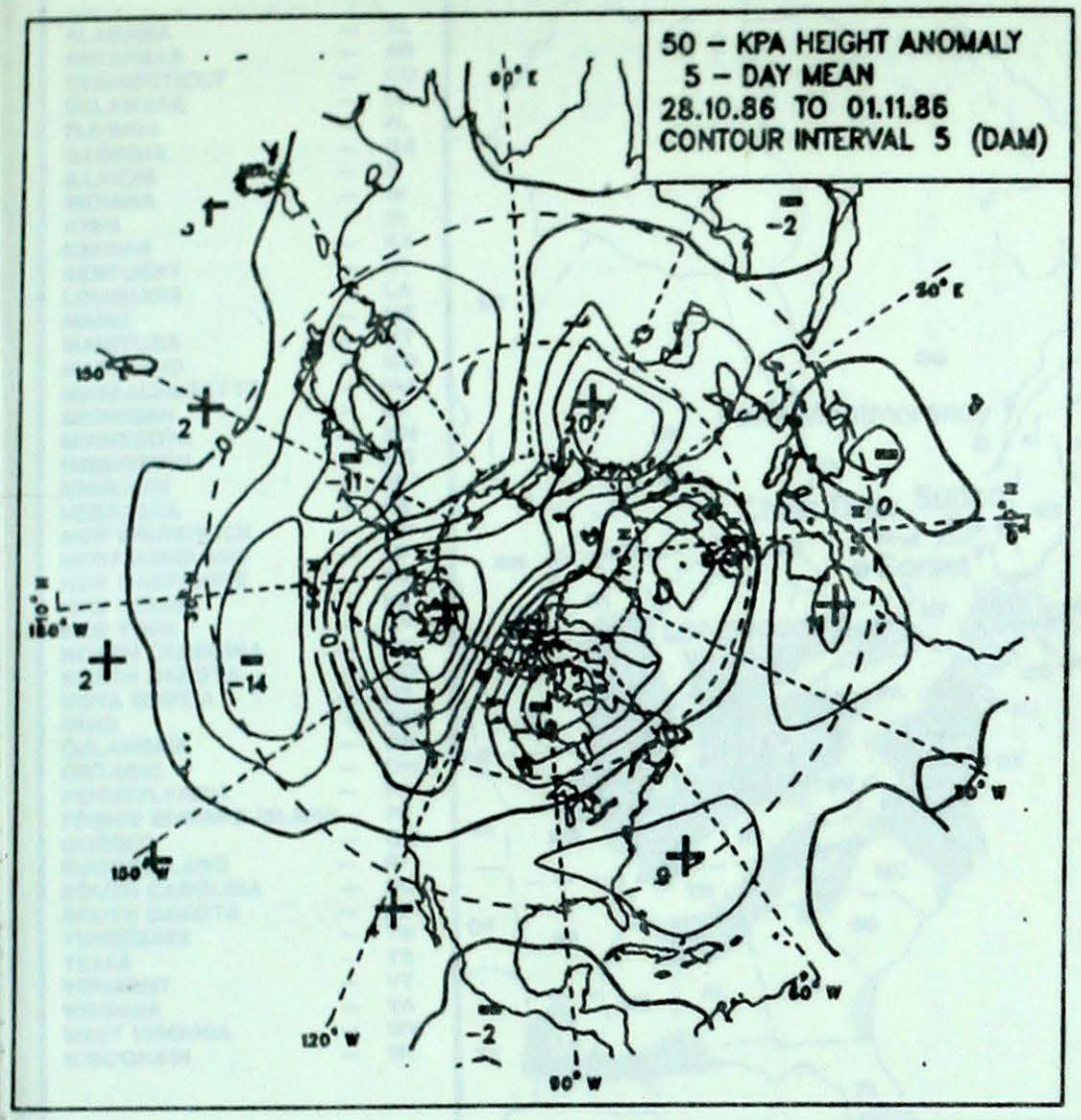
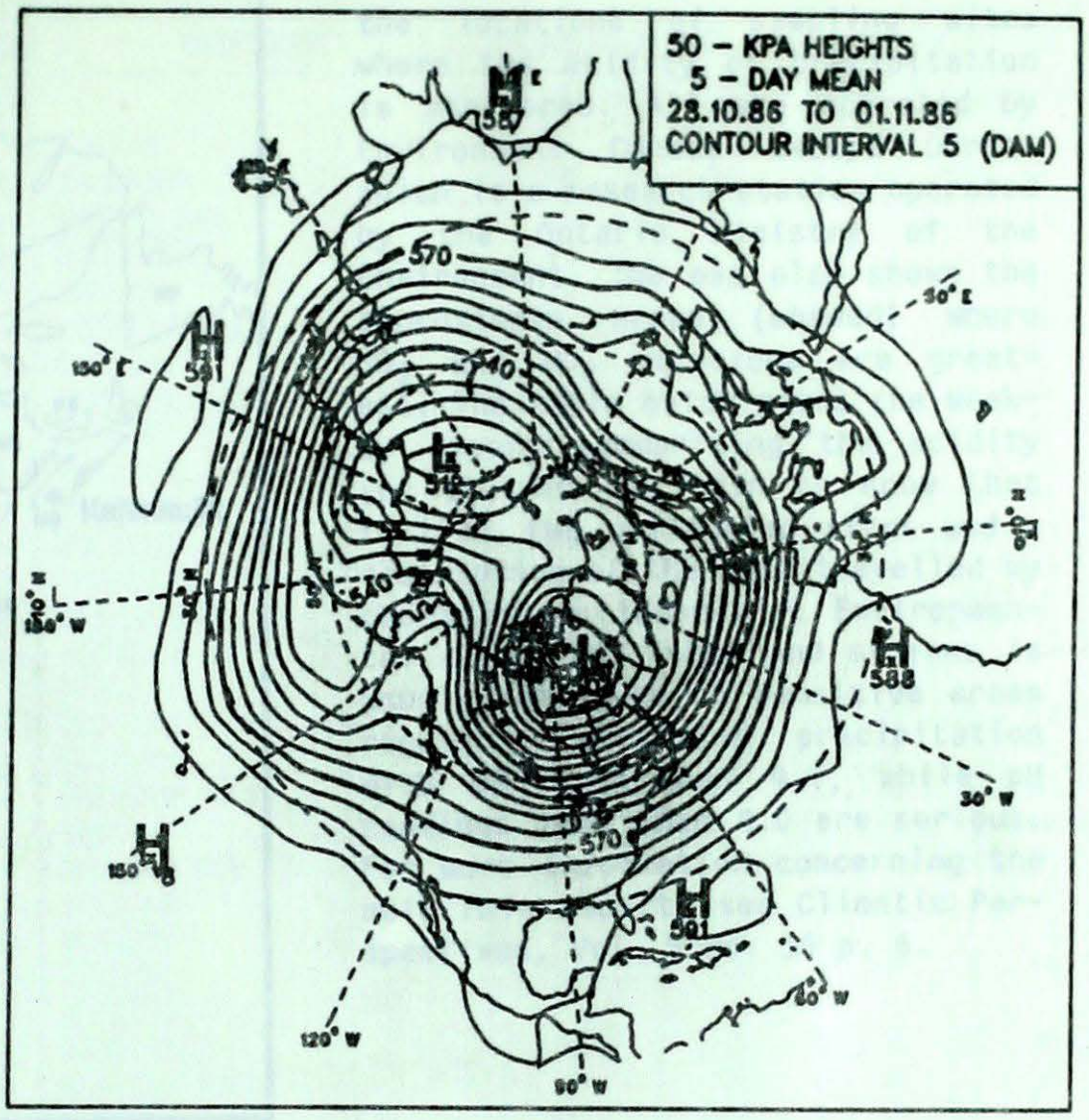
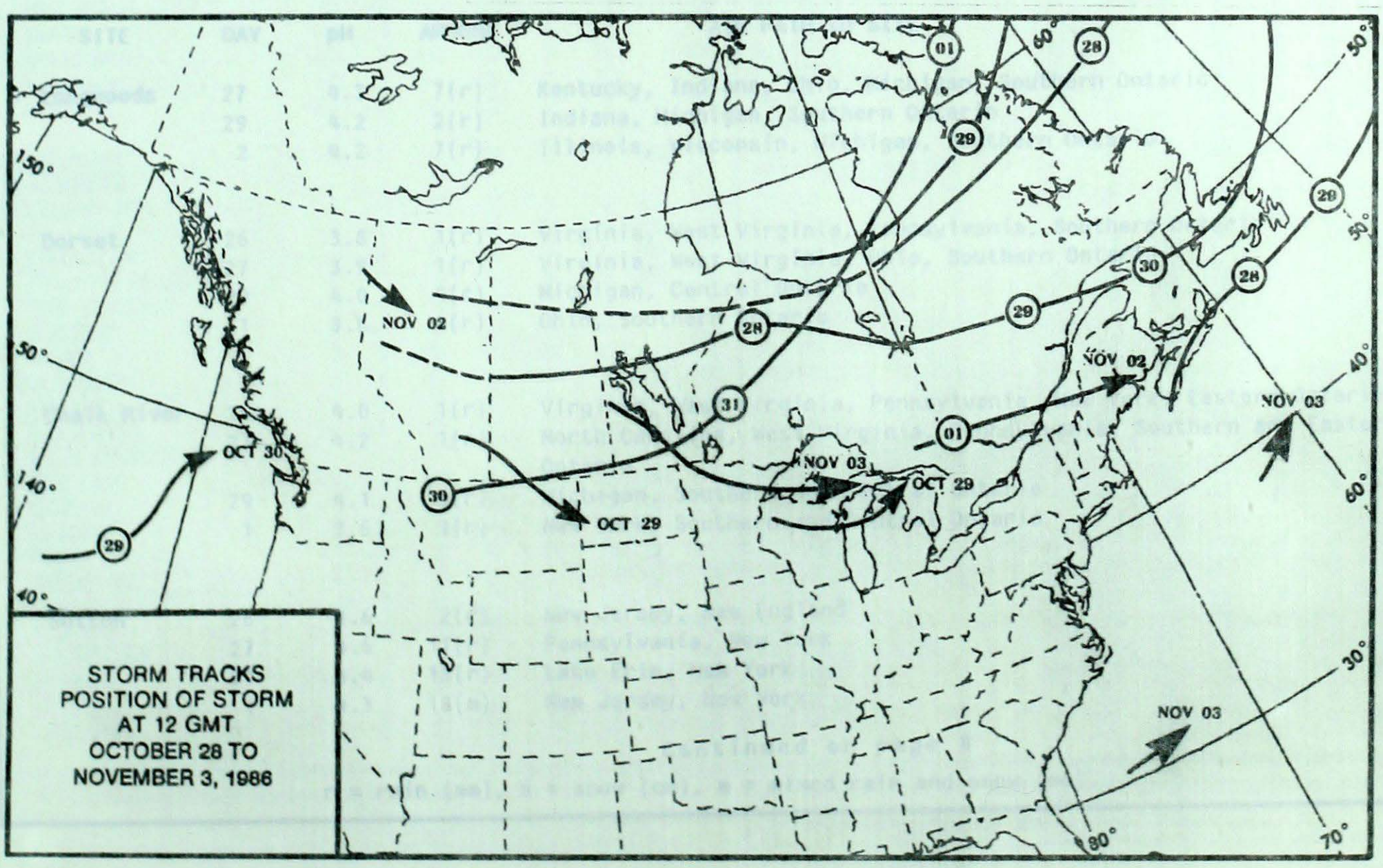
50 KPa ATMOSPHERIC CIRCULATION



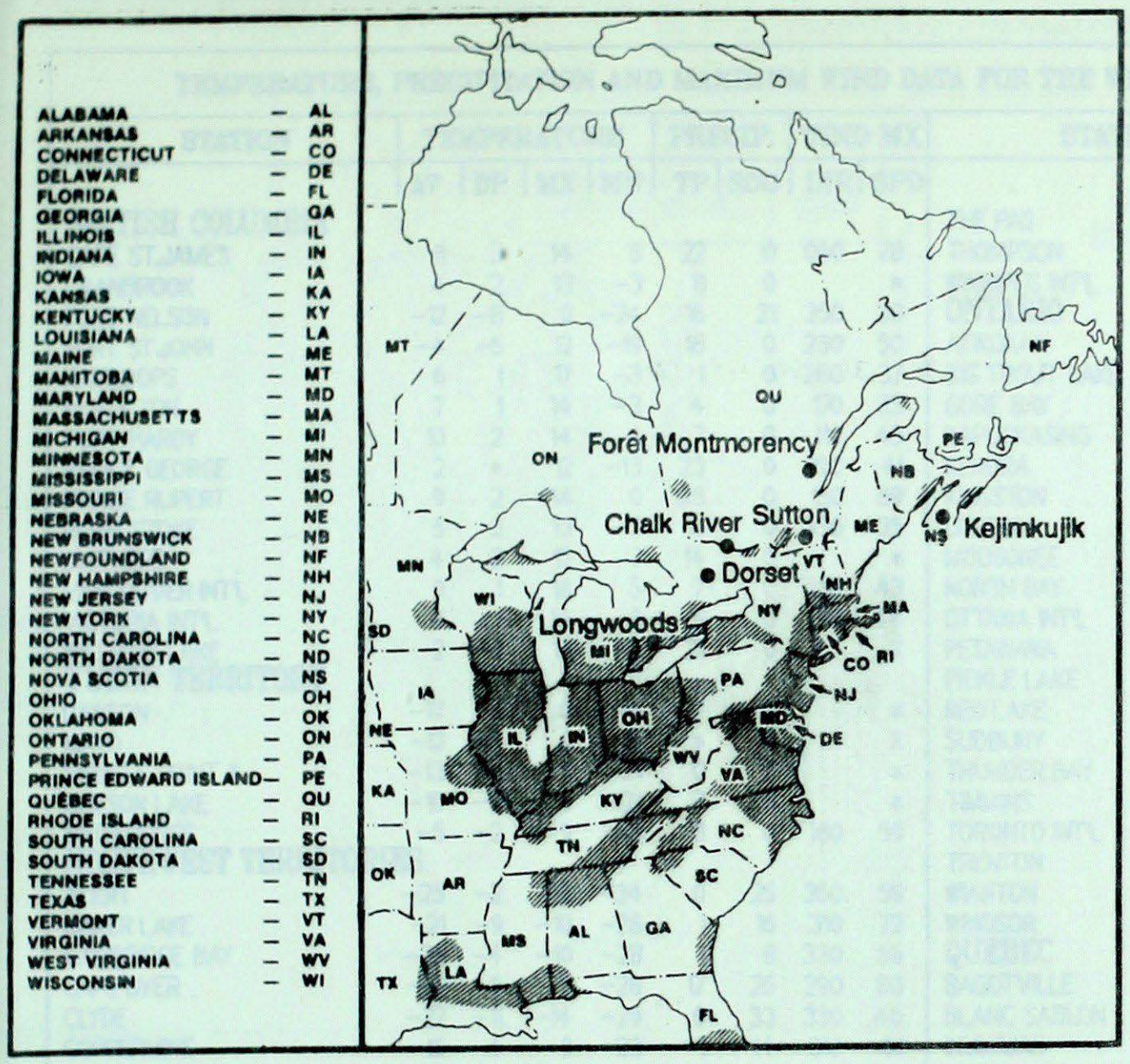
MEAN 50 KPa HEIGHT ANOMALY (dam)
October 28 to November 1, 1986



MEAN 50 KPa HEIGHTS (dam)
October 28 to November 1, 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 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.

OCTOBER 26 TO NOVEMBER 1, 1986

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	27	4.3	7(r)	Kentucky, Indiana, Ohio, Michigan, Southern Ontario
	29	4.2	2(r)	Indiana, Michigan, Southern Ontario
	2	4.2	7(r)	Illinois, Wisconsin, Michigan, Southern Ontario
Dorset	26	3.8	1(r)	Virginia, West Virginia, Pennsylvania, Southern Ontario
	27	3.9	1(r)	Virginia, West Virginia, Ohio, Southern Ontario
	29	4.0	4(r)	Michigan, Central Ontario
	1	3.8	4(r)	Ohio, Southern Ontario
Chalk River	26	4.0	1(r)	Virginia, West Virginia, Pennsylvania, New York, Eastern Ontario
	27	4.2	1(r)	North Carolina, West Virginia, Pennsylvania, Southern and Eastern Ontario
	29	4.1	5(r)	Michigan, Southern and Central Ontario
	1	3.6	3(r)	New York, Southern and Central Ontario
Sutton	26	4.6	2(r)	New Jersey, New England
	27	4.6	11(r)	Pennsylvania, New York
	29	4.4	18(r)	Lake Erie, New York
	1	4.3	13(m)	New Jersey, New York

Continued on page 8

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

STATISTICS

TEMPERATURE, PRECIPITATION AND MAXIMUM WIND DATA FOR THE WEEK ENDING 0600 GMT NOVEMBER 4,1986

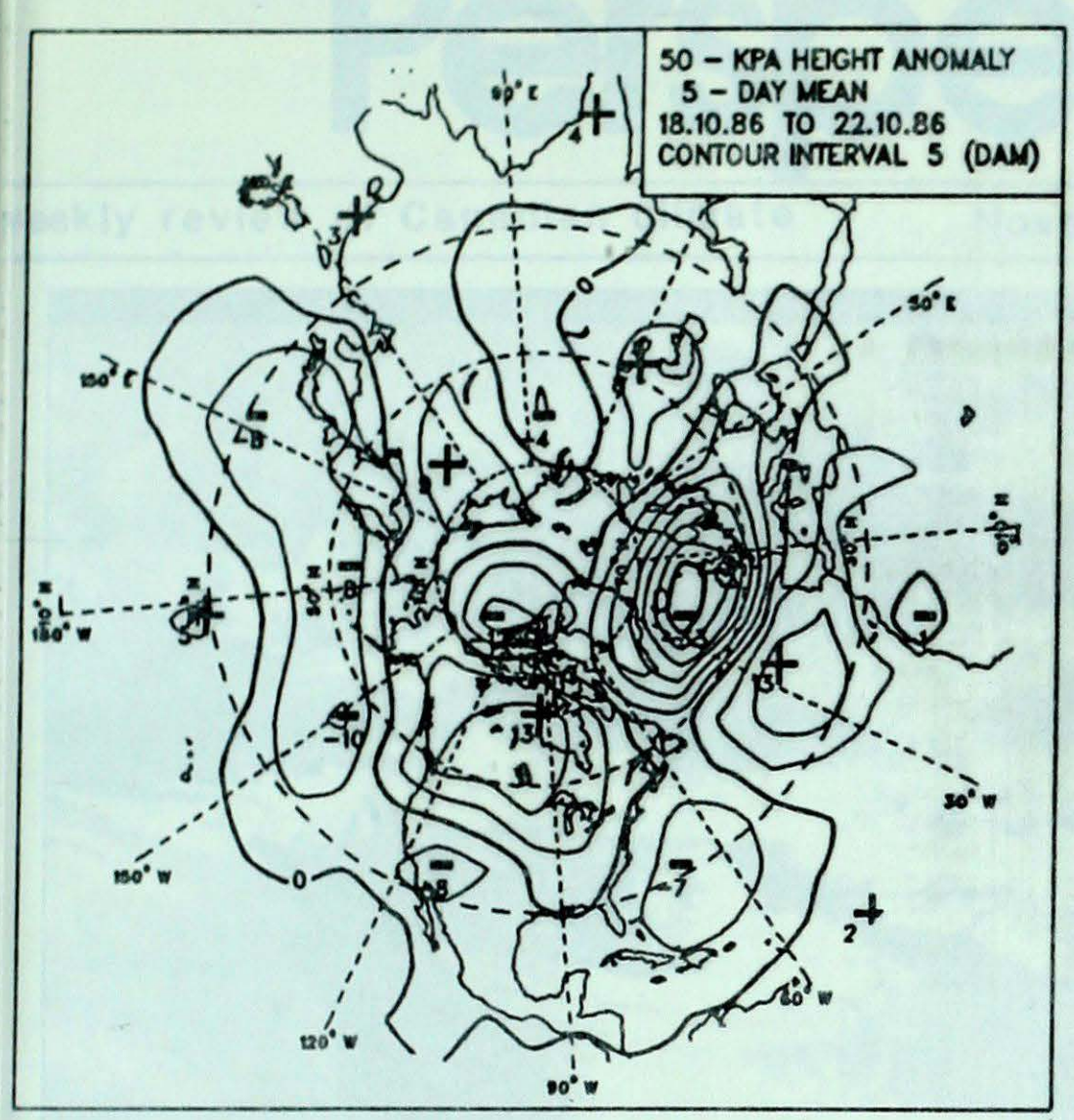
STATION	TEMPERATURE				PRECIP.		WIND MX	
	AV	DP	MX	MN	TP	SOG	DIR	SPD
BRITISH COLUMBIA								
CAPE ST JAMES	11	3	14	8	22	0	050	78
CRANBROOK	4	2	13	-3	11	0		*
FORT NELSON	-12	-8	0	-24	16	21	350	30
FORT ST JOHN	-4	-5	12	-19	18	0	230	50
KAMLOOPS	6	1	17	-3	1	0	280	37
PENTICTON	7	1	14	-3	4	0	170	33
PORT HARDY	10	2	14	4	7	0	110	43
PRINCE GEORGE	2	*	12	-13	23	0	190	41
PRINCE RUPERT	9	2	14	0	125	0	150	59
REVELSTOKE	5	2	13	-2	16	0	330	35
SMITHERS	4	2	12	-2	14	0		*
VANCOUVER INT'L	9	1	16	5	7	0	130	43
VICTORIA INT'L	9	1	14	3	5	0	110	44
WILLIAMS LAKE	2	-1	13	-9	21	0		X
YUKON TERRITORY								
DAWSON	-17	*	0	-29	7	4		*
MAYO	-12	-5	0	-21	*	0		X
SHINGLE POINT A	-13	1	-7	-21	0	17		*
WATSON LAKE	-10	-5	6	-21	7	6		*
WHITEHORSE	-5	-2	9	-18	3	0	160	59
NORTHWEST TERRITORIES								
ALERT	-25	-2	-16	-34	0	25	350	59
BAKER LAKE	-21	-9	-10	-28	1	16	310	72
CAMBRIDGE BAY	-22	-4	-10	-28	1	8	330	56
CAPE DYER	-16	-6	-9	-28	17	25	290	80
CLYDE	-22	-11	-14	-29	0	33	330	46
COPPERMINE	-16	-4	-9	-23	1	14	310	61
CORAL HARBOUR	-22	-10	-8	-31	*	7		X
EUREKA	-33	-5	-21	-41	1	13		*
FORT SMITH	-12	-8	-4	-22	13	0		X
FROBISHER BAY	-14	-6	-2	-23	3	9	320	59
HALL BEACH	-21	-5	-9	-29	2	11	080	50
INUVIK	-14	1	-7	-23	0	7		X
MOULD BAY	-20	2	-13	-31	7	26		X
NORMAN WELLS	-11	0	-5	-20	2	6		X
RESOLUTE	-24	-4	-16	-32	2	11	060	54
YELLOWKNIFE	-11	-5	-1	-19	1	1	320	46
ALBERTA								
CALGARY INT'L	2	-1	17	-12	3	0	350	48
COLD LAKE	-5	-5	4	-16	12	11	300	41
CORONATION	-1	-2	13	-13	1	0	340	57
EDMONTON NAMAO	0	-2	11	-11	9	0	330	52
FORT MCMURRAY	-8	-6	0	-18	2	3		X
HIGH LEVEL	-12	-9	-4	-25	3	12		*
JASPER	2	0	12	-11	0	0		X
LETHBRIDGE	3	-2	15	-15	15	0	260	69
MEDICINE HAT	0	-3	16	-14	15	0	340	39
PEACE RIVER	-6	-6	10	-22	17	5	280	41
SASKATCHEWAN								
CREE LAKE	-11	-9	-4	-22	*	5	280	48
ESTEVAN	0	-2	11	-9	9	0	320	70
LA RONGE	-9	-8	1	-21	10	10	260	48
REGINA	-3	-3	7	-14	10	1	350	70
SASKATOON	-4	-4	2	-12	7	0	350	59
SWIFT CURRENT	-1	-3	14	-13	9	0		X
YORKTON	-6	-6	9	-16	9	4	340	61
MANITOBA								
BRANDON	-4	-5	9	-14	8	1	120	56
CHURCHILL	-13	-7	-2	-21	9	3	320	78
LYNN LAKE	-12	-8	-1	-21	8	11	310	46
THE PAS	-7	*	6	-18	5	3	350	70
THOMPSON	-12	-9	-2	-28	8	9	350	46
WINNIPEG INT'L	-2	-4	10	-13	*	0	320	72
ONTARIO								
ATIKOKAN	-3	-4	11	-14	9	2	300	57
BIG TROUT LAKE	-9	-6	6	-19	18	8	320	69
GORE BAY	5	-1	14	-3	8	0	180	65
KAPUSKASING	-2	-4	13	-14	13	0	180	74
KENORA	-2	-4	10	-10	*	0	270	67
KINGSTON	*	*	15	-4	18	0		X
LONDON	7	0	18	-1	8	0	240	43
MOOSONEE	-3	-5	10	-16	10	0	270	50
NORTH BAY	2	-2	11	-6	22	0	210	43
OTTAWA INT'L	5	-1	15	-6	20	0		X
PETAWAWA	2	-3	12	-10	9	0		X
PICKLE LAKE	-4	-4	7	-13	*	2		
RED LAKE	-4	-5	7	-13	7	0	310	63
SUDBURY	2	-2	11	-7	-7	0		X
THUNDER BAY	0	-2	14	-11	8	6	230	72
TIMMINS	-1	-3	15	-12	18	0	180	46
TORONTO INT'L	6	0	19	-5	10	0	230	44
TRENTON	6	0	15	-4	19	0		X
WIARTON	6	-1	16	-4	4	0		X
WINDSOR	9	1	20	0	8	0	230	46
QUEBEC								
BAGOTVILLE	-1	-3	8	-13	15	2	260	46
BLANC SABLON	0	-2	5	-10	*	0		X
INUKJUAK	-7	-4	0	-15	*	21	260	76
KUUJJUAQ	-8	-4	2	-19	9	7	250	89
KUUJJUARAPIK	-3	-3	3	-12	43	17	170	81
MANIWAKI	1	-3	12	-9	9	0	180	33
MONT JOLI	2	-1	11	-6	13	0	200	67
MONTREAL INT'L	6	0	18	-5	25	0	240	46
NATASHQUAN	0	-2	6	-12	10	0	290	65
QUEBEC	3	-1	12	-5	18	0	320	41
SCHEFFERVILLE	-8	-3	3	-18	3	15	210	83
SEPT-ILES	-1	-2	5	-12	5	0	330	56
SHERBROOKE	4	1	18	-7	29	0	270	39
VAL D'OR	-1	-2	10	-10	28	0	180	57
NEW BRUNSWICK								
CHARLO	1	-2	9	-8	11	0	300	41
CHATHAM	3	-1	13	-6	10	0	310	54
FREDERICTON	3	-1	15	-5	9	0	220	54
MONCTON	4	-1	14	-6	11	0	310	56
SAINT JOHN	4	-2	13	-5	11	0	220	63
NOVA SCOTIA								
GREENWOOD	6	-1	15	-6	6	0	310	61
SHEARWATER	6	-1	16	-3	6	0	230	54
SYDNEY	5	-1	15	-5	6	0	220	67
YARMOUTH	6	-2	13	-2	6	0	340	56
PRINCE EDWARD ISLAND								
CHARLOTTETOWN	4	-1	11	-4	7	0	220	46
SUMMERSIDE	5	-1	11	-3	12	0	220	57
NEWFOUNDLAND								
CARTWRIGHT	-1	-2	5	-9	0	0	250	59
CHURCHILL FALLS	-6	-2	5	-17	2	8	220	50
GANDER INT'L	2	-2	10	-5	9	0	340	52
GOOSE	-2	-2	6	-12	0	0	230	57
PORT-AUX-BASQUES	4	-1	10	-3	8	0	070	56
ST JOHN'S	4	-1	11	-6	32	0	260	65
ST LAWRENCE	5	0	10	-5	18	0		X
WABUSH LAKE	-6	-2	3	-17	1	4	180	56

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

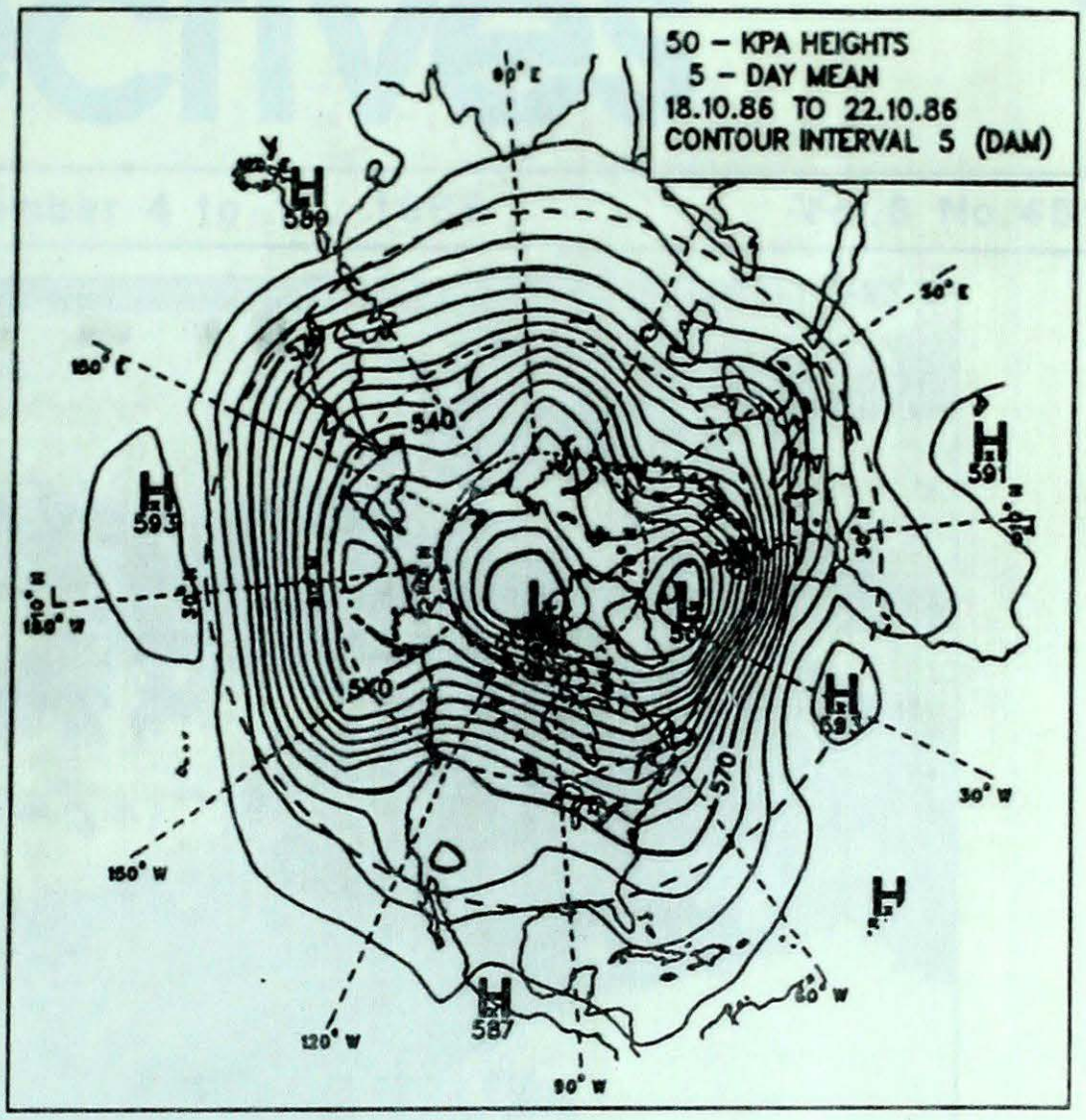
DIR = direction of maximum wind speed (deg. from true north)
SPD = maximum wind speed in km/hour

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

50 KPa ATMOSPHERIC CIRCULATION



MEAN 50 KPa HEIGHT ANOMALY (dam)
October 18 to October 22, 1986



MEAN 50 KPa HEIGHTS (dam)
October 18 to October 22, 1986

ACID RAIN

Cont'd from page 6

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Montmorency	27	6.0	8(r)	New England, Southern Quebec
	28	6.5	1(r)	Lake Huron, Central Ontario, Central Quebec
	29	4.6	4(m)	Central Ontario, Central Quebec
	1	4.3	7(m)	New York, Southern Ontario, Southern Quebec
Kejimkujik	DATA NOT AVAILABLE			

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