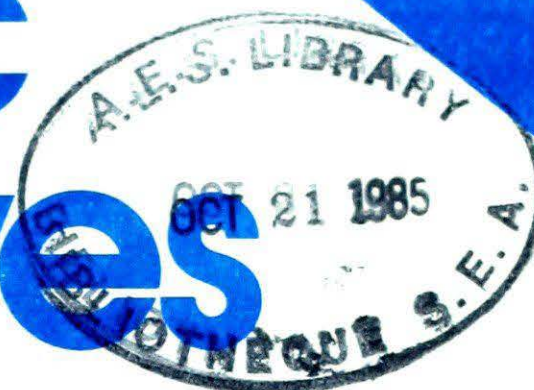


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CLIMATIC PERSPECTIVES

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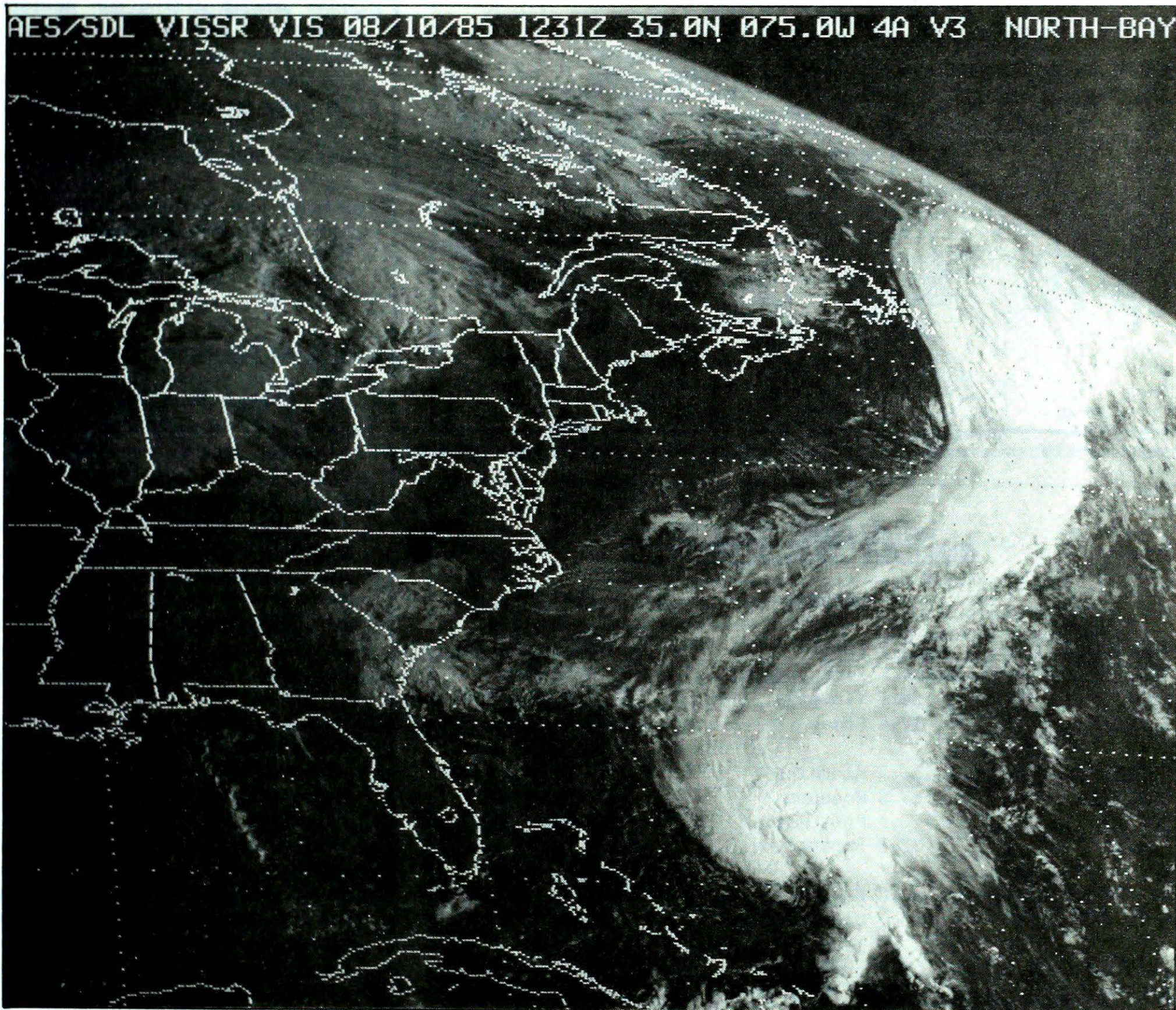
# CLIMATIC PERSPECTIVES



A weekly review of Canadian climate

October 1 to 7, 1985

Vol.7 No.39

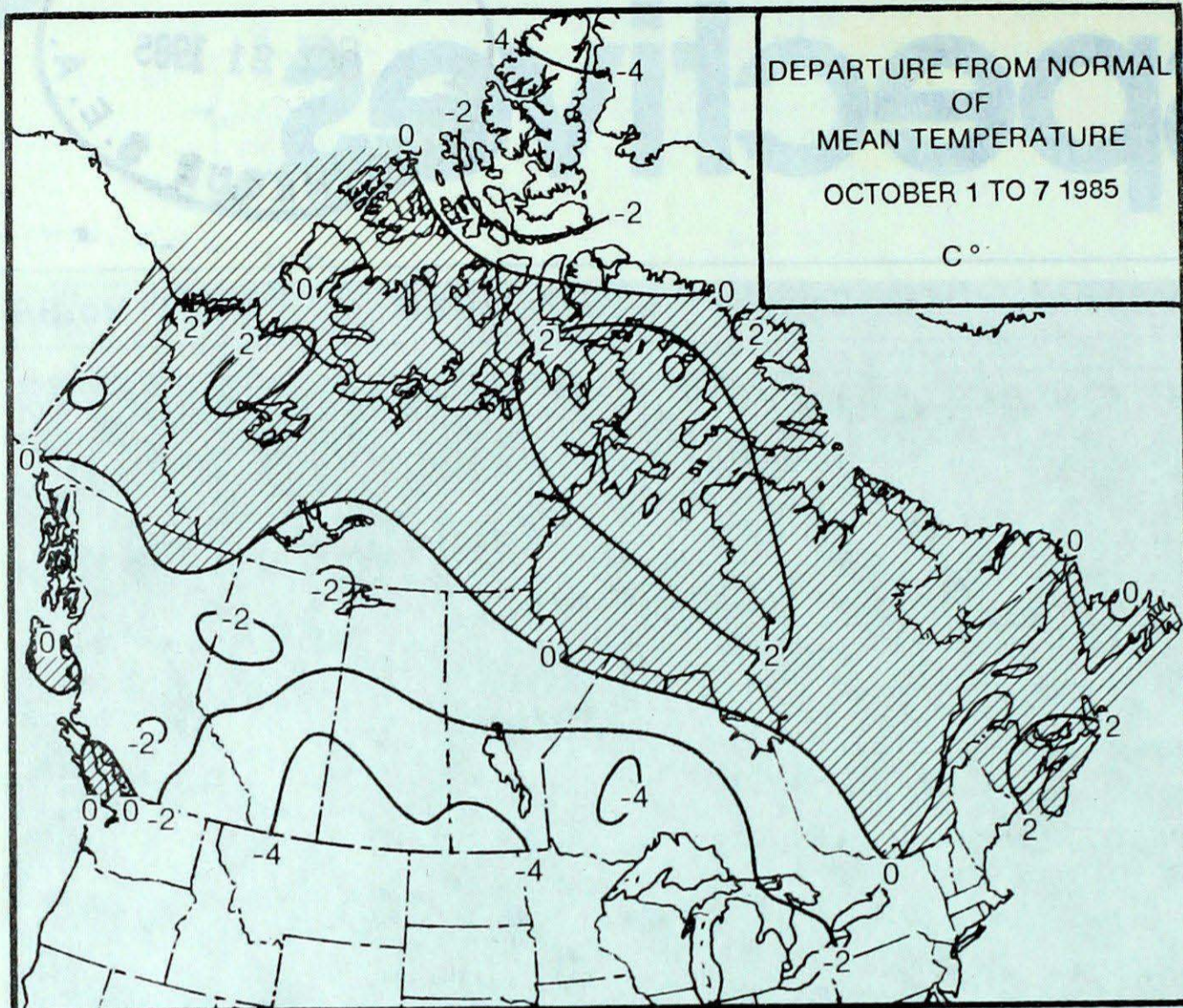


Brewing in the south Atlantic, another tropical storm has been caught in its early stages of development. This photograph was taken by the GOES geostationary weather satellite from approximately 35,800 km above the equator on October 8, 1985.

- ***Prairie harvest set back by heavy snow***
- ***Gales lash Newfoundland***

Canada 

# TEMPERATURE



## ACROSS THE COUNTRY...

### Yukon and Northwest Territories

A mixture of rain and snow fell in the southern Yukon. Snow was reported at higher elevations and more northern districts. Whitehorse received its first significant snowfall of the season. Wind warnings were issued during the weekend for Hudson Bay and the eastern Arctic as another major storm intensified over northwestern Quebec. Shipping and resupply operations have almost come to an end in the Beaufort. Both coast guard ice breakers have already left the area. There was substantial new ice growth in Lancaster Sound. Temperatures in the high Arctic were consistently below freezing, and plunged as low as  $-29^{\circ}\text{C}$  this week.

### British Columbia

Except for the southern interior it was cool and relatively pleasant. Damp weather hampered harvesting in the south. Ground frost occurred in the interior valleys and along the coast. Due to slash burning, smoke was trapped in some valleys because of an inversion, lowering visibilities and hampering local aviation traffic.

### Prairies

A ridge of high pressure gave westerners several days of warm, dry weather, and farmers hastily resumed harvesting operations. Daytime temperatures in Alberta climbed to the low double digits, but dropped steadily since mid-week. In the east, harvesting weather continued to be grim. Most crops have been swathed, but less than half have been combined because of soggy fields. Colder winter-like weather moved in during the weekend. On October 6, an intensifying weather system left 5 to 10 centimetres of snow on the ground in southern Alberta. As the snow storm moved eastwards heavier amounts fell in Saskatchewan and Manitoba on October 7. Snowfalls ranged between 10 and 20 cm in eastern agricultural districts. Southwestern Manitoba received 15 to 25 cm of fresh snow by the morning of October 8.

### WEEKLY TEMPERATURE EXTREMES ( $^{\circ}\text{C}$ )

	MAXIMUM	MINIMUM
YUKON TERRITORY	11.9 Teslin	-15.0 Sheldon Lake
NORTHWEST TERRITORIES	14.2 Fort Simpson	-29.4 Eureka
BRITISH COLUMBIA	20.1 Victoria	-10.6 Puntzi Mountain
ALBERTA	17.4 Edson	-10.0 Fort Chipewyan
SASKATCHEWAN	16.7 Kindersley	-8.7 Prince Albert
MANITOBA	17.0 Brandon	-7.2 Lynn Lake
ONTARIO	20.3 Port Weller	-6.6 Upsala
QUÉBEC	22.2 Sherbrooke	-4.0 Border
NEW BRUNSWICK	22.0 Moncton	-1.0 St. Stephen
NOVA SCOTIA	25.5 Greenwood	1.7 Sydney
PRINCE EDWARD ISLAND	21.3 Summerside	4.0 Charlottetown
NEWFOUNDLAND	17.9 St. Johns	-6.6 Badger

### ACROSS THE NATION

Warmest mean temperature	15.4	Sable Island, N.S.
Coollest mean temperature	-21.7	Alert, N.W.T.

**Ontario**

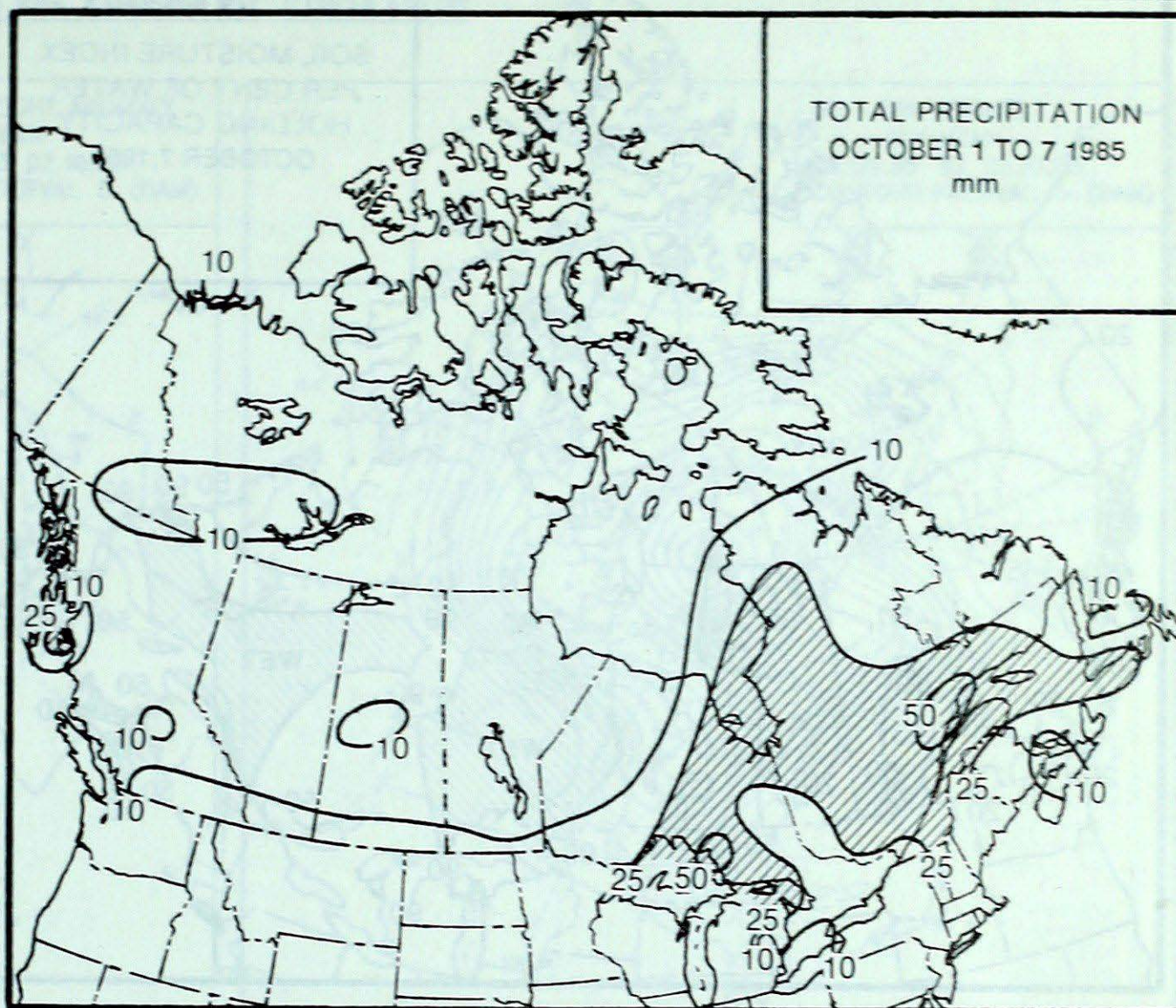
Cool temperatures in the south moderated to near normal values by the weekend. Ground frost occurred across much of the south earlier in the week. A large portion of the province received significant amounts of rain just before the weekend; amounts generally ranged between 20 and 30 millimeters. Several daily 24-hour precipitation records were broken on October 4. Light snow fell in northern Ontario at the beginning of the week. A cold front crossing southern Ontario on October 4 touched off a small twister north of Wheatley, causing some damage to farm equipment and buildings.

**Quebec**

Mild but typically changeable autumn weather ensued. Many areas in the province received above normal rainfalls. Significant amounts of rain fell along the north shore, some areas received more than 50 mm. Temperatures in the south climbed to the low twenties, and even in the extreme north temperatures managed to reach the double digits. The fall harvest, occasionally hampered by wet conditions, is continuing, but generally one to two weeks behind schedule. With a few exceptions, yields and quality are considered to be good to excellent.

**Atlantic**

In the Maritimes, the period was cloudy and mild. Precipitation was variable. In parts of Prince Edward Island and southeastern New Brunswick, where rain is urgently needed, less than 5 mm was recorded. Changeably sunny, but cool conditions started off the week in Newfoundland. Showery weather affected the Island briefly during the middle of the week. Over the weekend, an area of low pressure affected eastern Newfoundland and Labrador. Although precipitation was not unusually heavy, very strong southerly winds buffeted the Avalon, Burin and Bonavista Peninsulas. Wind gusts on October 6 reached 96 and 85 km/h at Bonavista and St. John's, respectively.

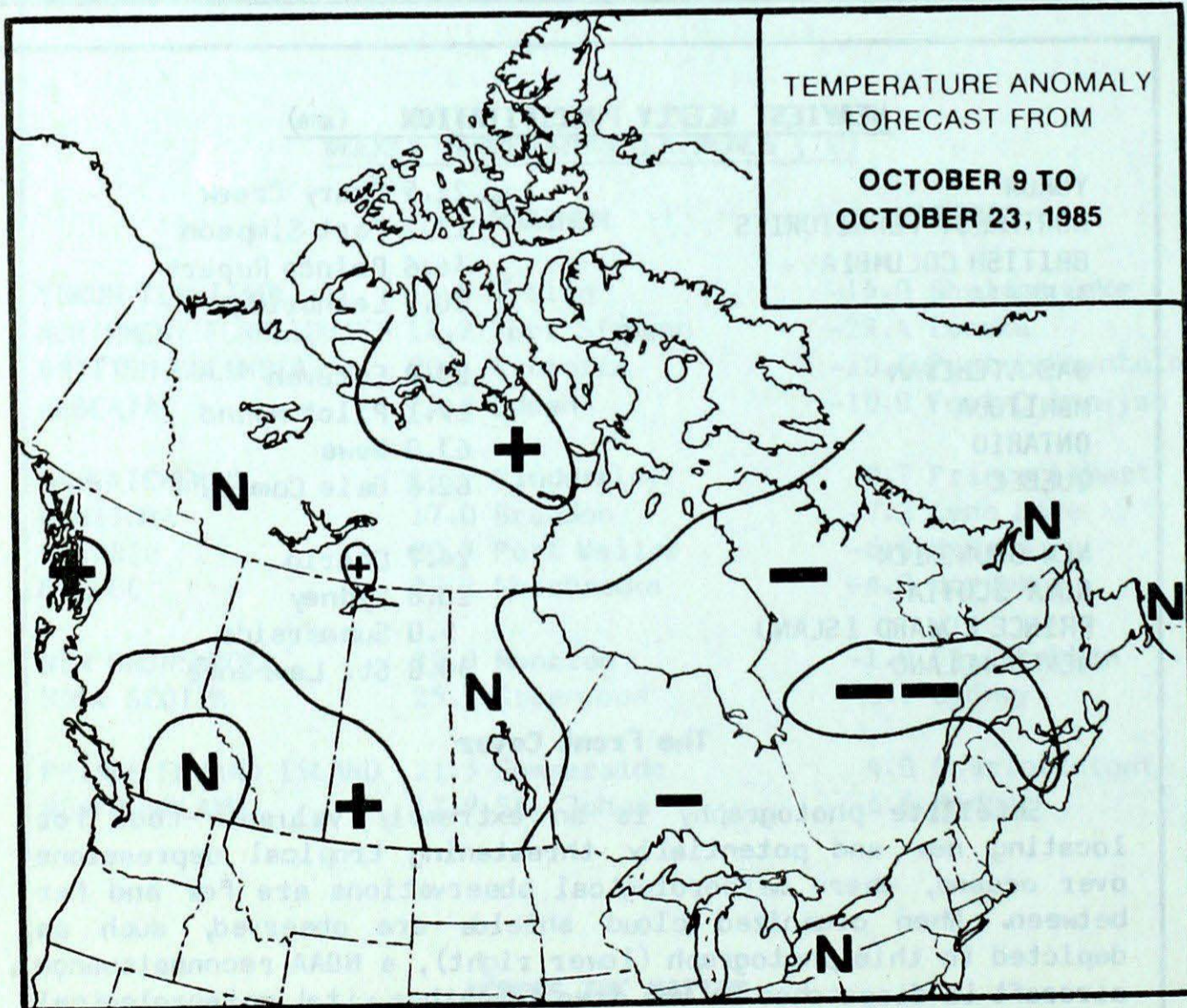
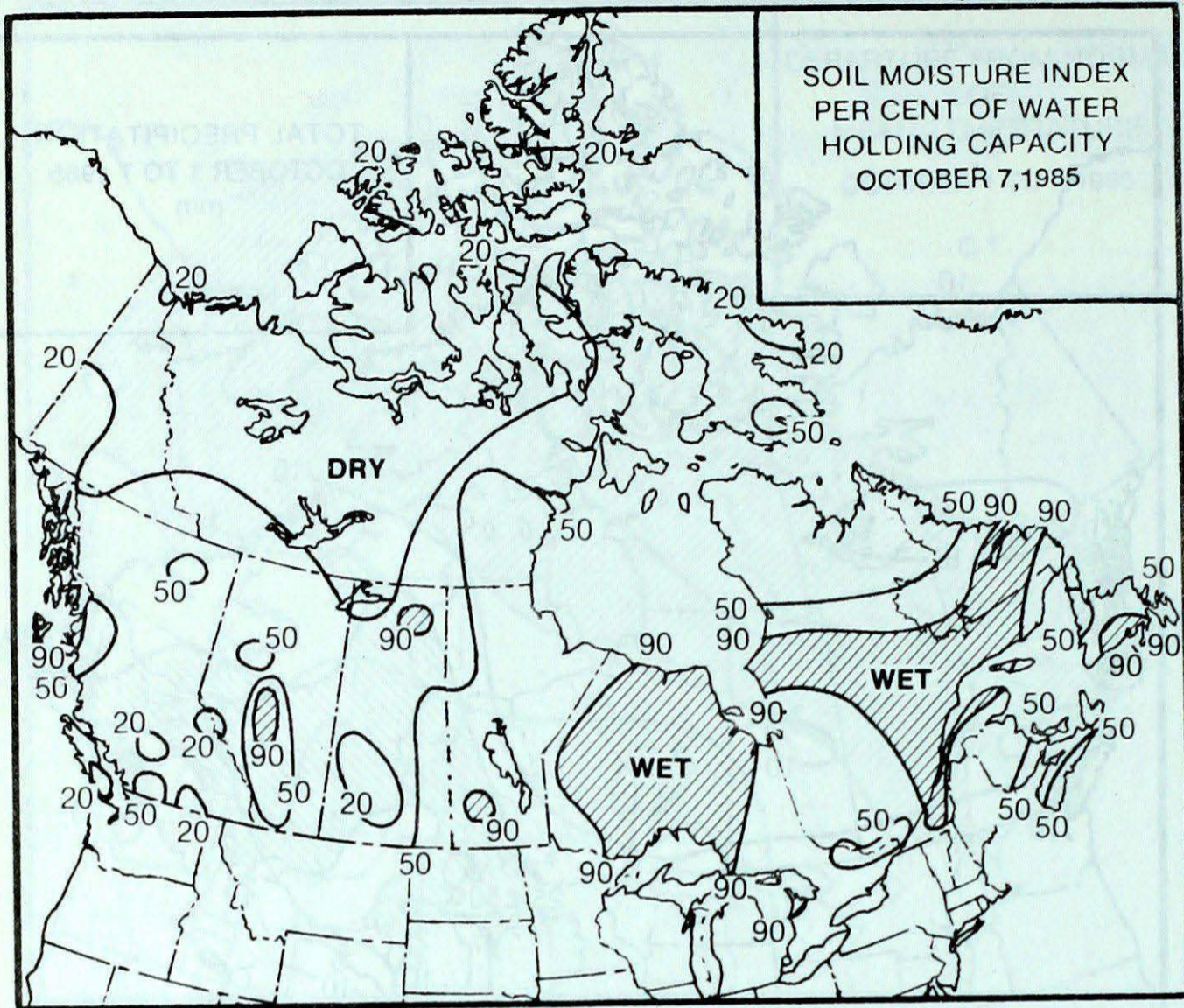
**HEAVIEST WEEKLY PRECIPITATION (mm)**

YUKON	21.5 Drury Creek
NORTHWEST TERRITORIES	13.2 Fort Simpson
BRITISH COLUMBIA	36.6 Prince Rupert
ALBERTA	20.9 Lethbridge
SASKATCHEWAN	23.8 Estevan
MANITOBA	19.1 Pilot Mound
ONTARIO	63.0 Wawa
QUEBEC	62.6 Baie Comeau
NEW BRUNSWICK	24.7 Charlo
NOVA SCOTIA	20.8 Sydney
PRINCE EDWARD ISLAND	5.0 Summerside
NEWFOUNDLAND	38.0 St. Lawrence

**The Front Cover**

Satellite photography is an extremely valuable tool for locating new and potentially threatening tropical depressions over oceans, where meteorological observations are few and far between. When organized cloud shields are observed, such as depicted in this photograph (lower right), a NOAA reconnaissance aircraft is dispatched to the area to gather vital meteorological information, which is then transmitted to the National Hurricane Centre in Miami. On October 7, a broad low pressure area was observed north of Hispaniola. A day later on October 8, maximum sustained winds had increased to 80 km/h and the depression was upgraded to a tropical storm. The photograph shows Isabel 600 km east of Nassau, moving north at 16 km/h. The subsequent day gusts in squalls north and east of the centre were hurricane force.

# 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.

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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.

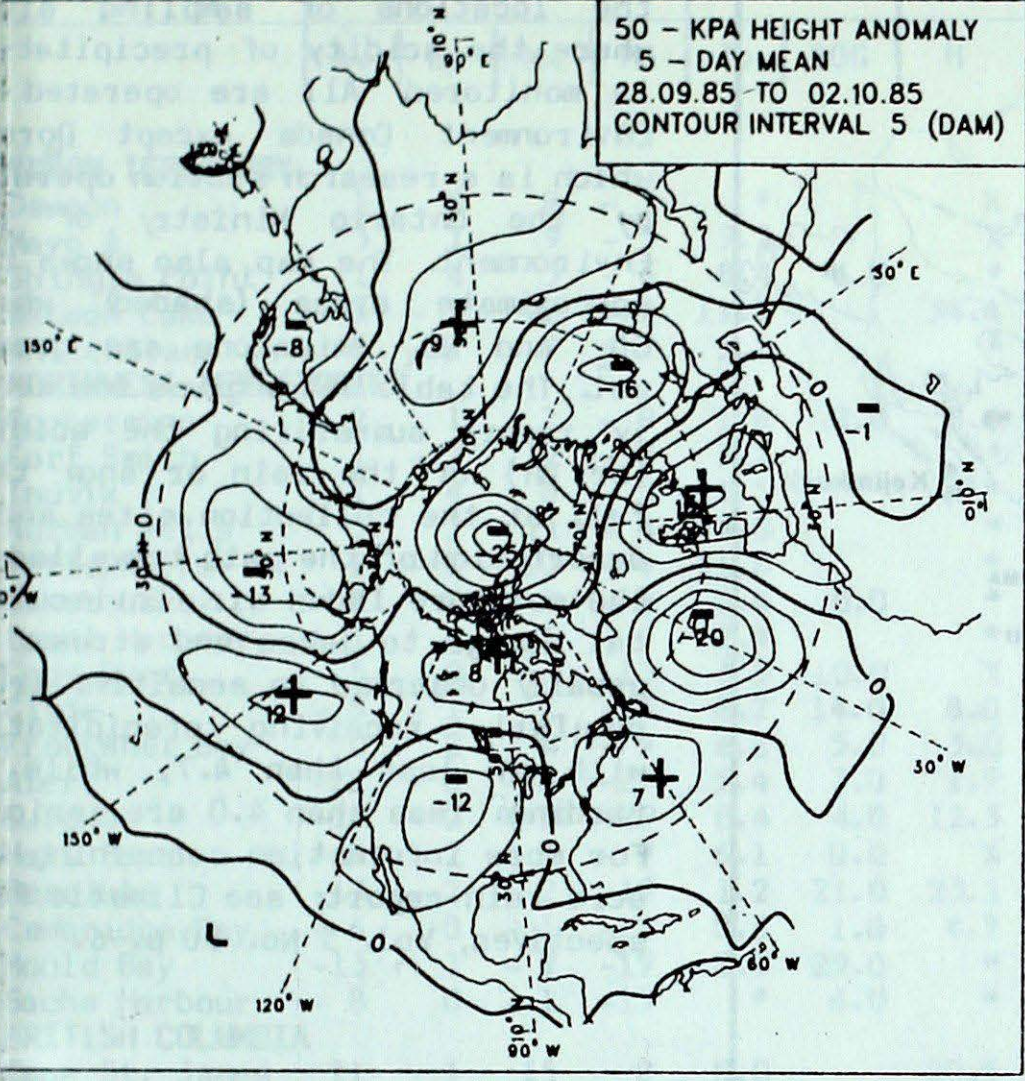
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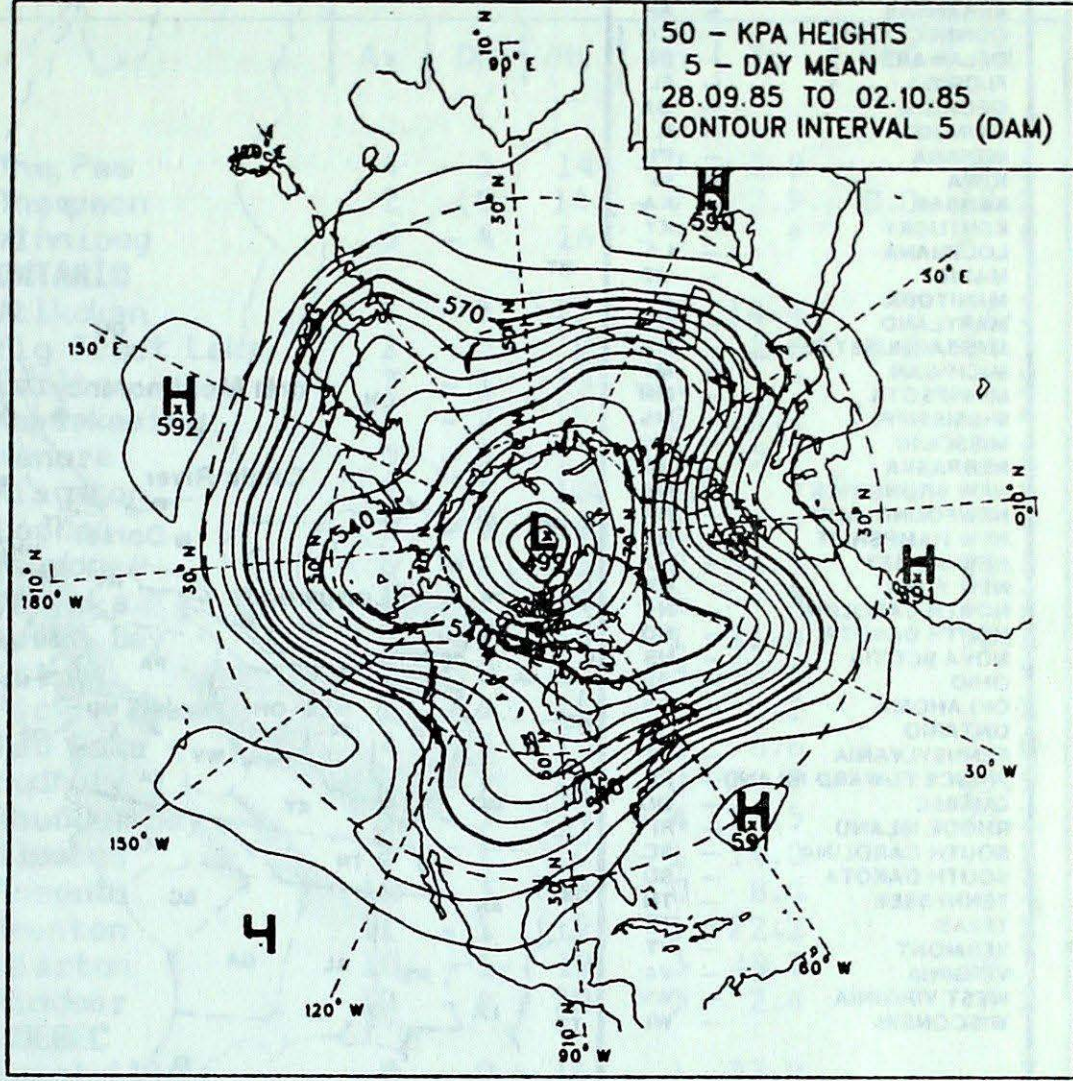
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**50 KPa ATMOSPHERIC CIRCULATION**

50 - KPa HEIGHT ANOMALY  
5 - DAY MEAN  
28.09.85 TO 02.10.85  
CONTOUR INTERVAL 5 (DAM)

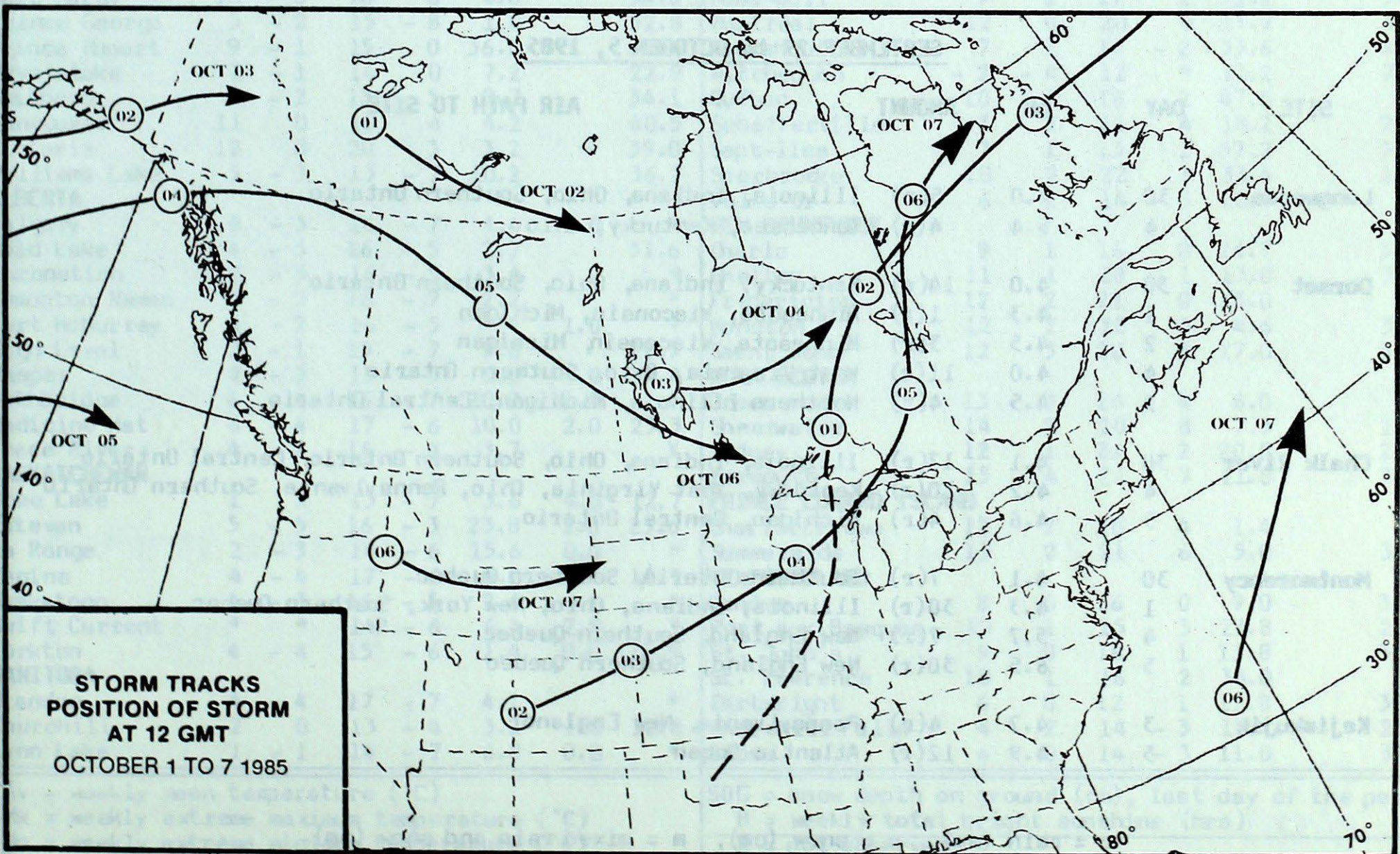


50 - KPa HEIGHTS  
5 - DAY MEAN  
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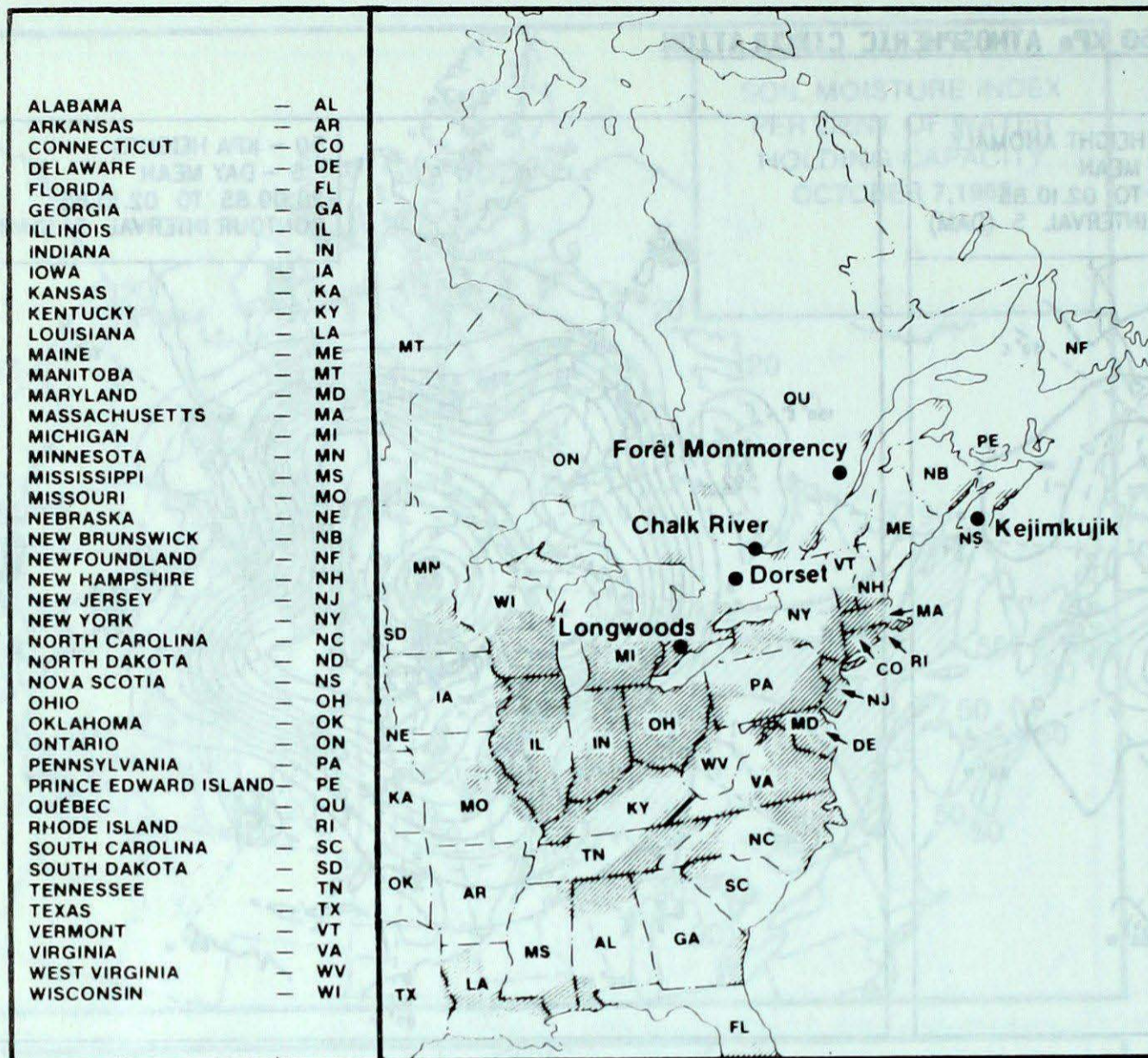


MEAN 50 KPa HEIGHT ANOMALY (dam)  
September 28 to October 2, 1985

MEAN 50 KPa HEIGHTS (dam)  
September 28, to October 2, 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 SO<sub>2</sub> and NO<sub>x</sub> 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.

### SEPTEMBER 29 to OCTOBER 5, 1985

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	30	4.0	5(r)	Illinois, Indiana, Ohio, Southern Ontario
	4	5.4	4(r)	Tennessee, Kentucky, Ohio
Dorset	30	4.0	14(r)	Kentucky, Indiana, Ohio, Southern Ontario
	1	4.3	1(r)	Minnesota, Wisconsin, Michigan
	2	4.5	3(r)	Minnesota, Wisconsin, Michigan
	4	4.0	11(r)	West Virginia, Ohio, Southern Ontario
	5	4.5	4(r)	Northern Illinois, Michigan, Central Ontario
Chalk River	30	4.1	17(r)	Illinois, Indiana, Ohio, Southern Ontario, Central Ontario
	4	4.2	10(r)	Kentucky, West Virginia, Ohio, Pennsylvania, Southern Ontario
	5	4.6	4(r)	Michigan, Central Ontario
Montmorency	30	4.1	7(r)	Southern Ontario, Southern Quebec
	1	4.3	30(r)	Illinois, Indiana, Ohio, New York, Southern Quebec
	4	5.7	7(r)	New England, Southern Quebec
	5	6.5	30(r)	New England, Southern Quebec
Kejimikujik	3	4.7	4(r)	Pennsylvania, New England
	5	4.9	12(r)	Atlantic Ocean

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

## TEMPERATURE, PRECIPITATION AND BRIGHT SUNSHINE DATA FOR THE WEEK ENDING 0600 GMT OCTOBER 8, 1985

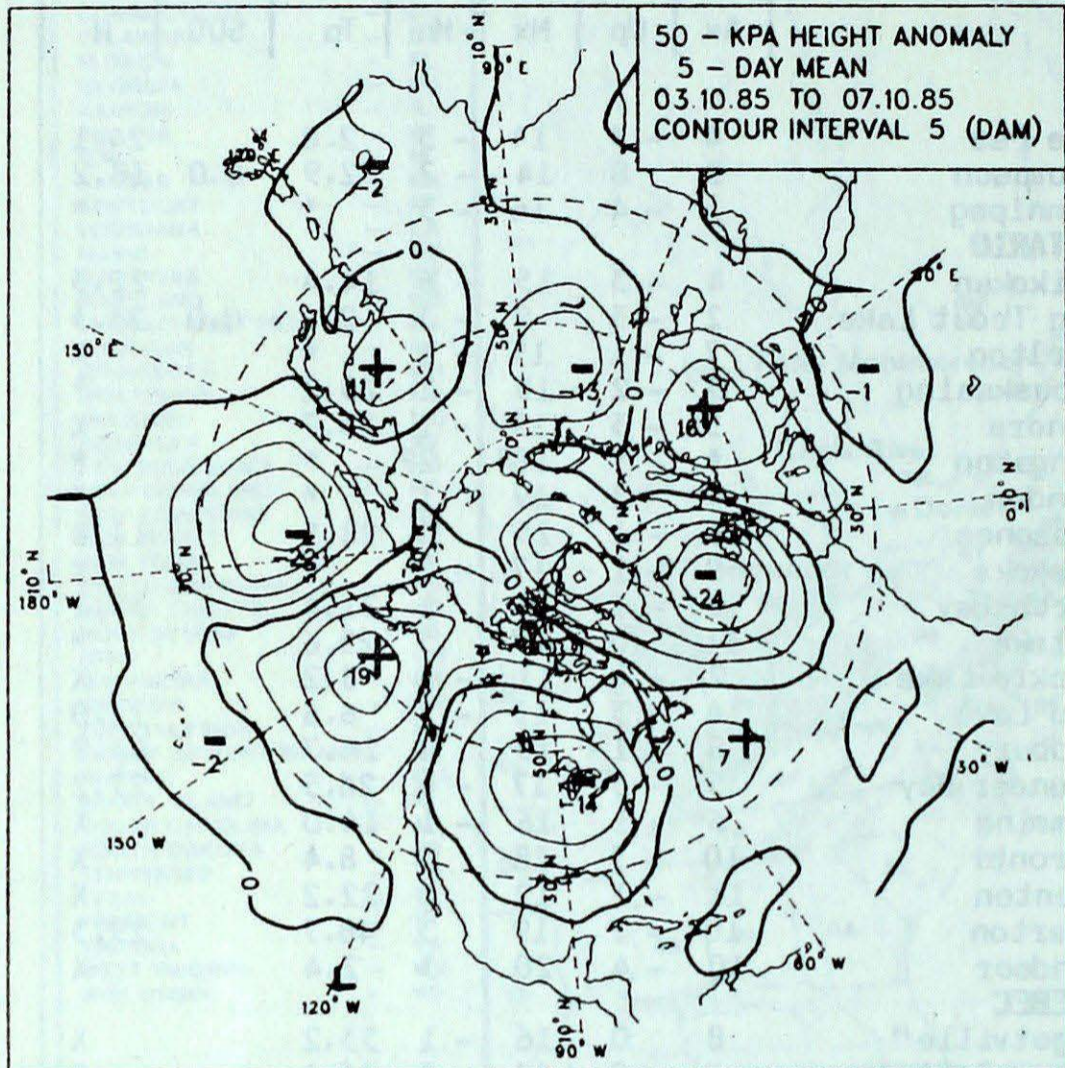
STATION	TEMP				PRECIP		SUN	STATION	TEMP				PRECIP		SUN
	Av	Dp	Mx	Mn	Tp	SOG	H		Av	Dp	Mx	Mn	Tp	SOG	H
<b>YUKON TERRITORY</b>								The Pas	4	-3	14	-3	2.8		24.1
Dawson	1	0	9	-7	*		X	Thompson	2	0	14	-7	2.9	0.0	18.2
Mayo A	3	1	9	-5	9.2		X	Winnipeg	5	-4	16	-3	*		*
Shingle Point	1	4	3	-6	8.4	6.0	*	<b>ONTARIO</b>							
Watson Lake	3	-1	12	-9	11.7		34.4	Atikokan	4	-3	15	-6	14.4		22.3
Whitehorse	3	-1	9	-7	5.2		*	Big Trout Lake	2	-3	9	-3	2.6	0.0	24.3
<b>NORTHWEST TERRITORIES</b>								Earlton	7	-1	15	-1	*		X
Coppermine	-2	1	2	-9	1.8	0.0	8.6	Kapuskasung	5	-2	15	-2	25.2		*
Fort Smith	1	-2	12	-7	3.2		*	Kenora	5	-3	15	-1	15.7		X
Inuvik	1	4	6	-5	1.5		*	Kingston	*	*	18P	2P	*		*
Norman Wells	3	2	11	-4	4.0		*	London	9	-3	19	1	*		*
Yellowknife	1	-1	10	-4	11.6		*	Mosonee	6	-1	15	0	28.5		11.8
Baker Lake	-2	2	5	-9	1.4	0.0	*	Muskoka	9	-1	17	-1	*		X
Coral Harbour	-1	4	3	-6	2.4		*	North Bay	8	-1	15	1	21.4		35.1
Cape Dyer	-5	0	3	-13	3.5	10.0	X	Ottawa	11	0	17	3	25.6		*
Clyde	-5	-1	2	-13	8.2	14.0	8.0	Pickle Lake	2	-4	11	-3	8.2		X
Frobisher Bay	0	2	4	-9	6.2	5.0	3.0	Red Lake	4	-3	13	-2	6.6		21.0
Alert	-22	-6	-10	-29	5.4	7.0	1.9	Sudbury	8	-1	15	0	24.7		43.9
Eureka	-19	-2	-9	-29	0.4	4.0	12.3	Thunder Bay	5	-3	17	-4	26.5		27.2
Hall Beach	-3	2	3	-9	6.1	0.0	X	Timmins	6	-1	16	-1	14.0		X
Resolute	-13	-2	-2	-19	1.2	21.0	23.1	Toronto	10	-3	18	0	8.4		X
Cambridge Bay	-6	0	-1	-12	0.6	1.0	4.7	Trenton	11	-1	19	1	22.2		X
Mould Bay	-13	1	-7	-19	8.9	29.0	*	Warton	10	-1	19	3	48.7		29.3
Sachs Harbour	-8	0	-1	-15	*	6.0	*	Windsor	10	-4	20	3	2.4		X
<b>BRITISH COLUMBIA</b>								<b>QUEBEC</b>							
Cape St. James	11	1	15	8	8.0		20.5	Bagotville	8	0	16	-1	33.2		X
Cranbrook	5	-3	14	-4	21.6		26.3	Blanc-Sablon	6	0	14	-3	16.4		*
Fort Nelson	5	0	17	-6	8.0		28.8	Inukjuak	5	3	10	1	16.2		*
Fort St. John	5	-2	15	-6	0.0	0.0	X	Kuujuuaq	3	1	11	-1	24.2		6.0
Kamloops	9	-2	17	1	6.2		33.6	Kuujuarapik	6	2	15	-3	46.8		12.6
Penticton	9	-2	20	0	11.2		25.5	Maniwaki	9	0	17	-1	28.0		*
Port Hardy	10	0	16	0	4.0		34.0	Mont-Joli	9	1	17	2	31.2		34.4
Prince George	5	-2	15	-8	1.0		52.8	Montréal	12	0	20	4	17.7		33.8
Prince Rupert	9	-1	15	0	36.6		28.6	Natashquan	7	1	14	-2	33.6		42.7
Revelstoke	7	-1	16	0	7.2		22.9	Nitchequon	-2	-4	12	*	13.2		72.3
Smithers	5	-2	13	-5	0.7		34.1	Québec	10	1	18	2	47.6		*
Vancouver	11	0	16	4	4.2		40.5	Schefferville	3	2	11	4	18.2		21.4
Victoria	12	0	20	3	3.2		39.0	Sept-Iles	7	1	13	1	57.2		39.0
Williams Lake	5	-3	13	-7	10.2		36.7	Sherbrooke	10	2	22	1	33.4		18.7
<b>ALBERTA</b>								Val-d'Or	6	-1	14	-3	20.4		*
Calgary	4	-3	16	-7	4.4	2.0	*	<b>NEW BRUNSWICK</b>							
Cold Lake	4	-3	16	-5	2.7		31.6	Charlo	9	1	16	0	24.7		36.6
Coronation	2	-5	16	-9	3.4		*	Chatham	11	1	18	1	13.0		37.6
Edmonton Namao	5	-3	16	-7	2.2		*	Fredericton	12	2	21	0	13.0		*
Fort McMurray	3	-2	16	-5	*	1.0	*	Moncton	12	2	22	3	4.6		37.3
High Level	2	-1	15	-7	9.0		22.7	Saint John	12	3	20	3	17.0		35.5
Jasper	4	-3	15	-5	5.0	4.0	34.4	<b>NOVA SCOTIA</b>							
Lethbridge	6	-4	16	-7	20.9	11.0	*	Greenwood	13	3	26	4	8.0		X
Medicine Hat	6	-4	17	-6	10.0	2.0	23.3	Shearwater	14	2	20	8	7.3		19.8
Peace River	4	-2	16	-4	3.7		X	Sydney	12	1	21	2	20.8		27.0
<b>SASKATCHEWAN</b>								Yarmouth	15	4	24	7	11.8		30.6
Cree Lake	1	X	13	-7	3.6	4.0	12.7	<b>PRINCE EDWARD ISLAND</b>							
Estevan	5	-5	16	-3	23.8	1.0	23.6	Charlottetown	12	2	20	4	1.4		*
La Ronge	2	-3	14	-6	15.6	0.0	*	Summerside	13	2	21	6	5.0		30.0
Regina	4	-4	17	-6	9.2		18.7	<b>NEWFOUNDLAND</b>							
Saskatoon	4	-3	16	-5	2.6		*	Gander	8	0	16	0	9.0		38.8
Swift Current	*	*	14P	-6	6.4	2.0	*	Port aux Basques	10	1	15	3	23.8		29.8
Yorkton	4	-4	15	-6	1.4	0.0	26.9	St. John's	9	0	18	1	13.8		30.0
<b>MANITOBA</b>								St. Lawrence	10	1	16	2	38.0		X
Brandon	4	-4	17	-7	4.1		*	Cartwright	6	0	12	1	11.8		30.7
Churchill	2	0	13	-4	3.2	1.0	32.8	Churchill Falls	4	2	14	-3	17.4		25.5
Lynn Lake	1	-1	14	-7	6.8	0.0	*	Goose	6	0	14	-3	11.0		37.0

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)

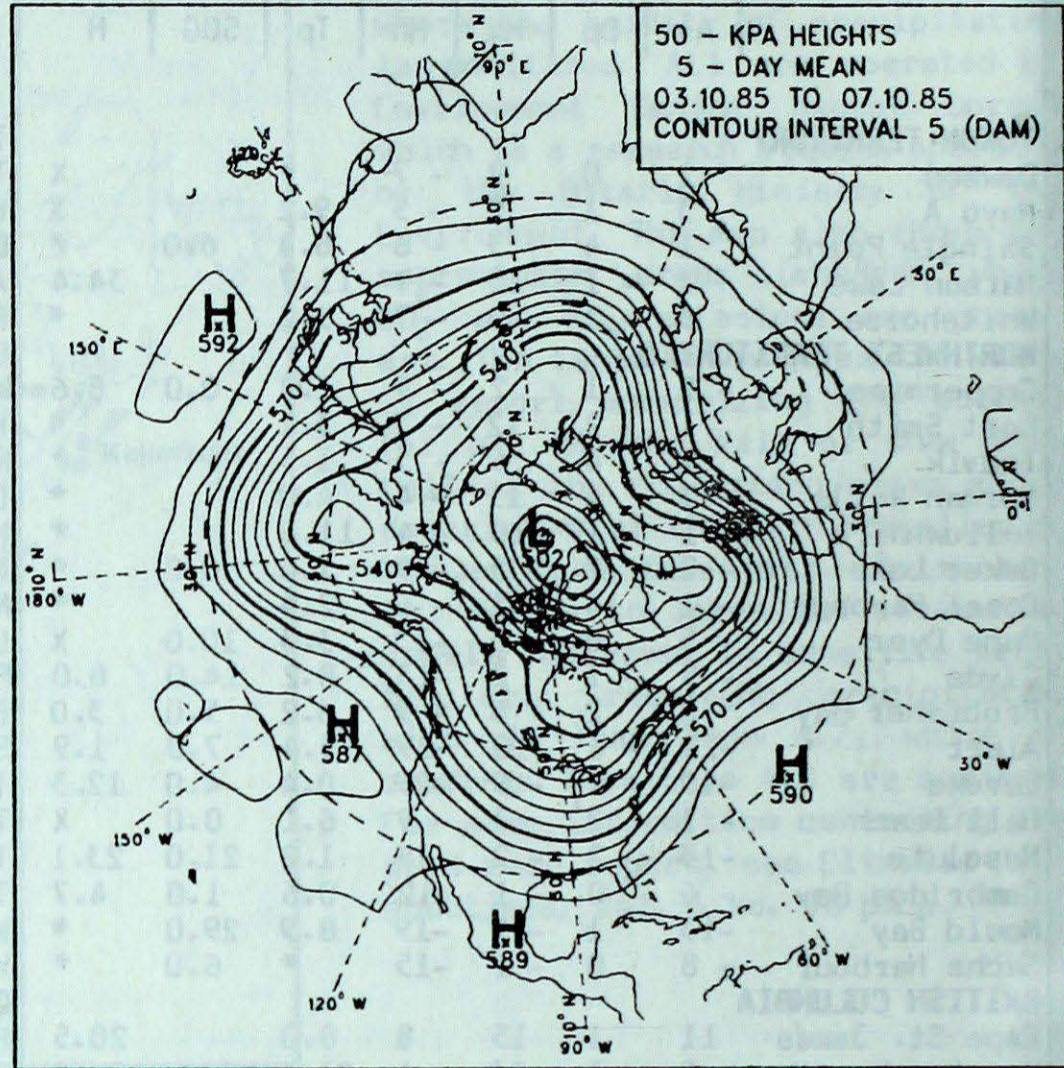
SOG = snow depth on ground (cm), last day of the period  
H = weekly total bright sunshine (hrs)  
X = not observed  
P = extreme value based on less than 7 days  
\* = missing

# CIRCULATION

## 50 KPa ATMOSPHERIC CIRCULATION



MEAN 50 KPa HEIGHT ANOMALY (dam)  
October 3 to October 7, 1985



MEAN 50 KPa HEIGHTS (dam)  
October 3 to October 7, 1985

