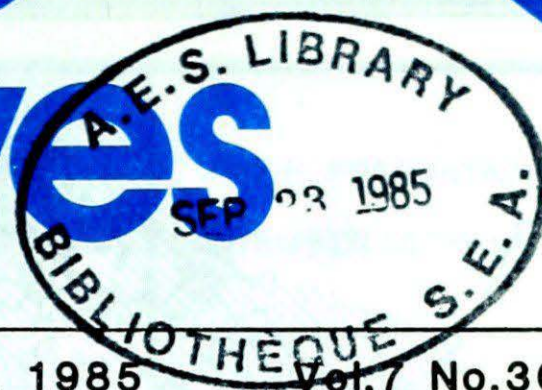


Climatic Perspectives



A weekly review of Canadian climate

September 10 to 16, 1985

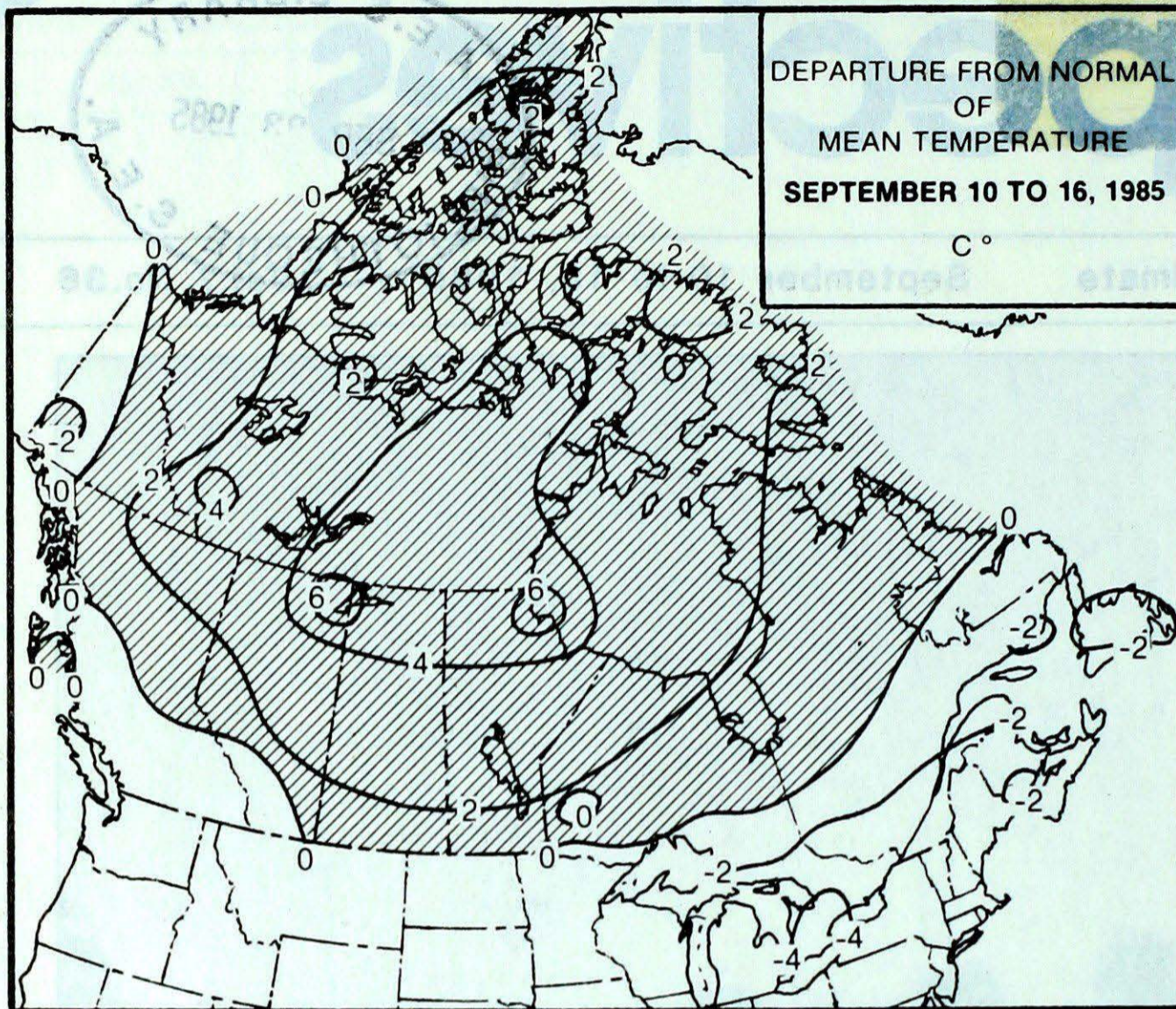
Vol. 7 No. 36



Meteorological records at Toronto date back to January 1840. This building was Canada's first permanent Magnetic and Meteorological Observatory situated approximately three kilometres north of the Lake Ontario shoreline. For more information see page 3.

- ***Widespread frost in New Brunswick***
- ***Excellent harvesting weather in Ontario and Quebec***
- ***Record rainfalls over Southern Alberta***

TEMPERATURE



ACROSS THE COUNTRY...

Yukon and Northwest Territories

Pleasant fall weather was evident across the Yukon and Northwest Territories, with near or above normal temperatures. Overnight readings early in the week dropped well below freezing. A southerly flow allowed temperatures to soar to the mid to high teens over the weekend. Many maximum temperature records were tied or broken in the southern Arctic archipelago. Precipitation amounts were variable. Freeze-up is not expected to begin until the end of the month in the Arctic. This is one of the best navigational seasons in the Arctic. The cruise ship *World Discover* had no difficulty reaching Baffin Bay.

British Columbia

A slow moving area of low pressure gradually encompassed the whole province. The south was primarily cloudy and cool, while above normal temperatures were evident in the north. With the exception of a few locations, rainfalls were substantial, ranging between 30 and 80 millimetres. Many localities have already exceeded their normal September rainfall. Slash burning by the forest industry had to be terminated due to the wet weather. Harvesting has been delayed. Overall it was a dreary week.

Prairies

Weather conditions and temperatures were changeable. A developing disturbance produced heavy rain in southern Alberta on September 12 and central districts on September 13. Two 24-hour September precipitation records were broken at Calgary and Rocky Mountain House, with 93 and 84 millimetres of rain, respectively. Rainfall totals during the middle of the week ranged up to 100 mm. Precipitation elsewhere was very light, and harvesting was progressing well. Maximum temperatures reached the twenties, but there was frost in central districts.

WEEKLY TEMPERATURE EXTREMES (°C)

	MAXIMUM	MINIMUM
YUKON TERRITORY	18.8 Teslin	-6.7 Burwash
NORTHWEST TERRITORIES	25.3 Fort Simpson	-13.1 Alert
BRITISH COLUMBIA	26.7 Lytton	-4.3 Puntzi Mountain
ALBERTA	23.0 Jasper	-1.4 Rocky Mtn. House
SASKATCHEWAN	26.1 Elbow	-1.7 Prince Albert
MANITOBA	24.1 The Pas	-4.2 Thompson
ONTARIO	22.0 Nagagami Windsor	-4.4 Upsala
QUÉBEC	22.7 Bagotville	-3.0 Border
NEW BRUNSWICK	23.2 Chatham	-0.5 Fredericton
NOVA SCOTIA	22.0 Greenwood	0.6 Truro
PRINCE EDWARD ISLAND	20.8 Summerside	4.8 Charlottetown
NEWFOUNDLAND	17.7 Burgeo	-2.0 Churchill Falls

ACROSS THE NATION

Warmest mean temperature	14.8	Lytton, B.C.
Coollest mean temperature	-8.8	Alert, N.W.T.

Ontario

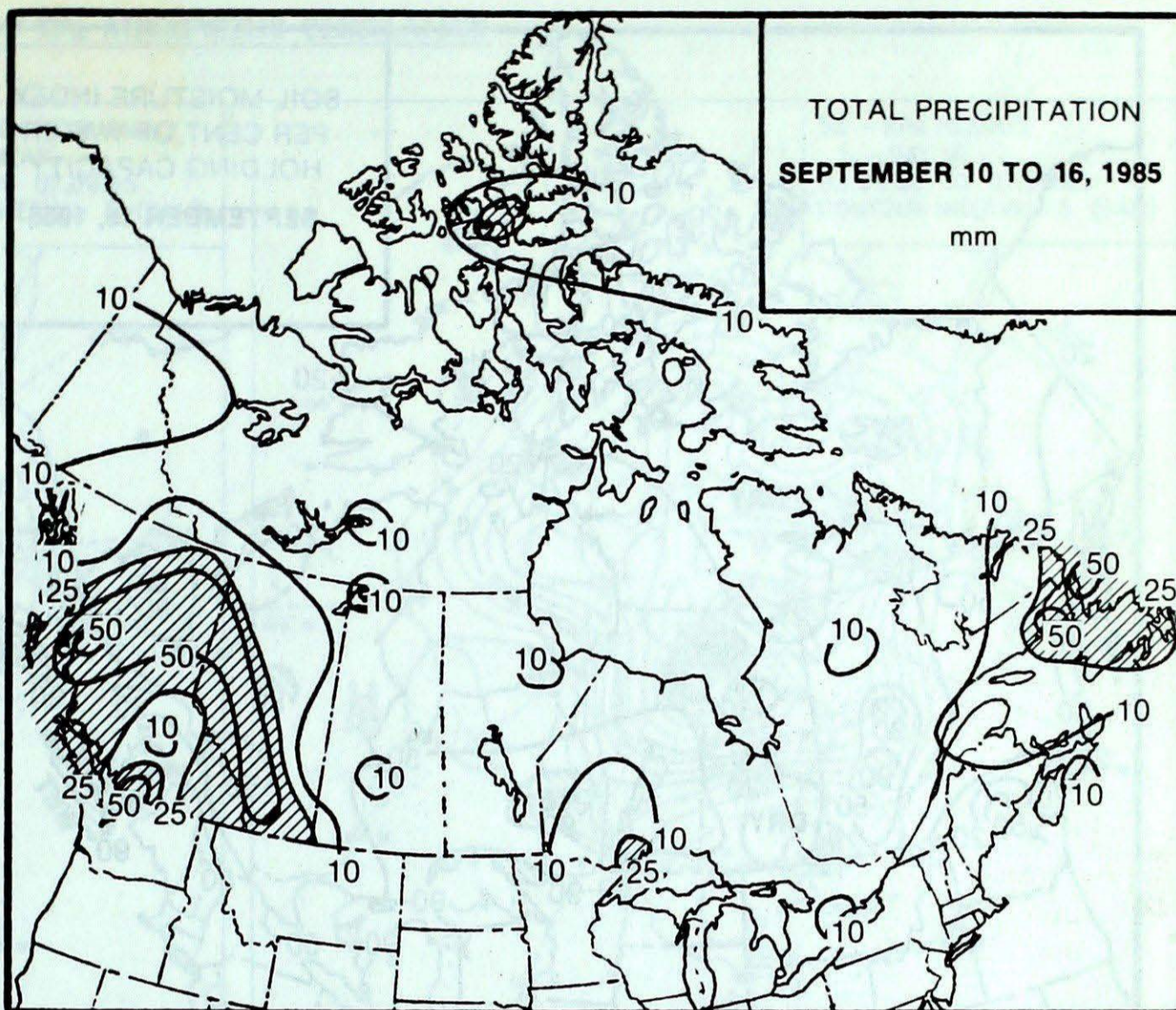
A large area of high pressure slowly encompassed the whole province. After the heat and high humidities experienced last week, the cool, dry weather was a welcome relief to many. It was ideal harvesting weather. In northern and central Ontario during the middle of the week, overnight readings dropped below freezing. Scattered ground frost was experienced in the southern agricultural districts. Numerous low temperature records were tied or broken across the province. The dry weather allowed dangerously high water levels to recede in cottage country. The Trent-Severn Inland Waterway was reopened this week after having been temporarily closed for the first time in eighteen years during the summer months. Many boaters were stranded.

Quebec

Cool temperatures gradually moderated through the week. Only in the north were mean temperatures unseasonably mild. Several daily low temperature records were broken in the south. The corn harvest is approximately two weeks behind schedule. The hay harvest is progressing steadily due to the fine dry weather. Forest fires this year have only burned 2466 hectares compared to a 5-year average of 53,035 hectares.

Atlantic Region

A disturbance moving south of the region brought cloudy and damp conditions at the beginning of the week. St. Anthony received 52.8 mm of rain on September 12. Weather conditions gradually improved, and by the weekend sunny autumn-like weather returned to most areas, allowing farmers to resume harvesting activities. Night-time temperatures dropped to near freezing at inland locations. Frost was reported in many areas of New Brunswick, damaging some crops and gardens. With a few exceptions, daytime temperatures climbed into the teens. A similar weather regime was observed in Labrador.

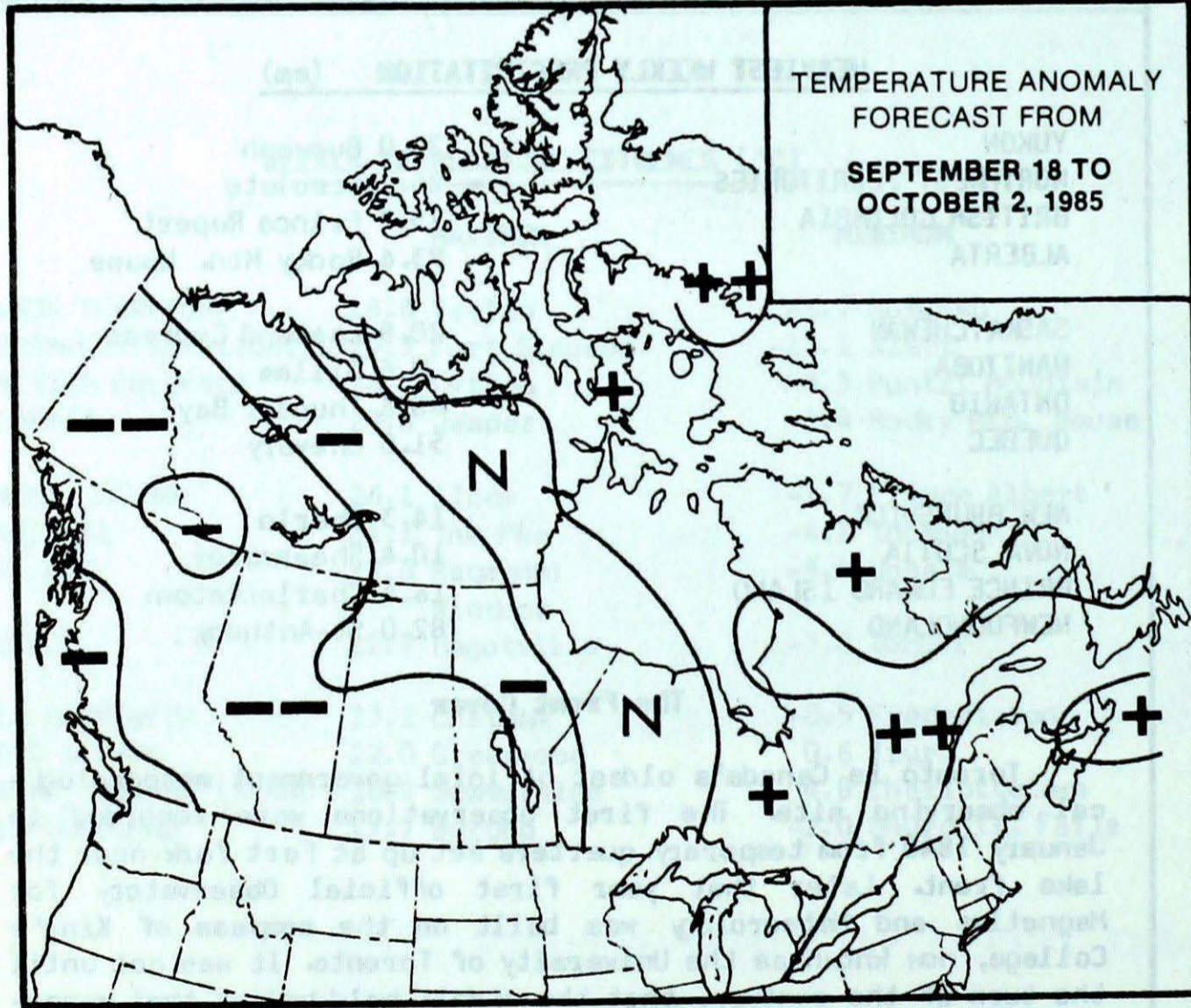
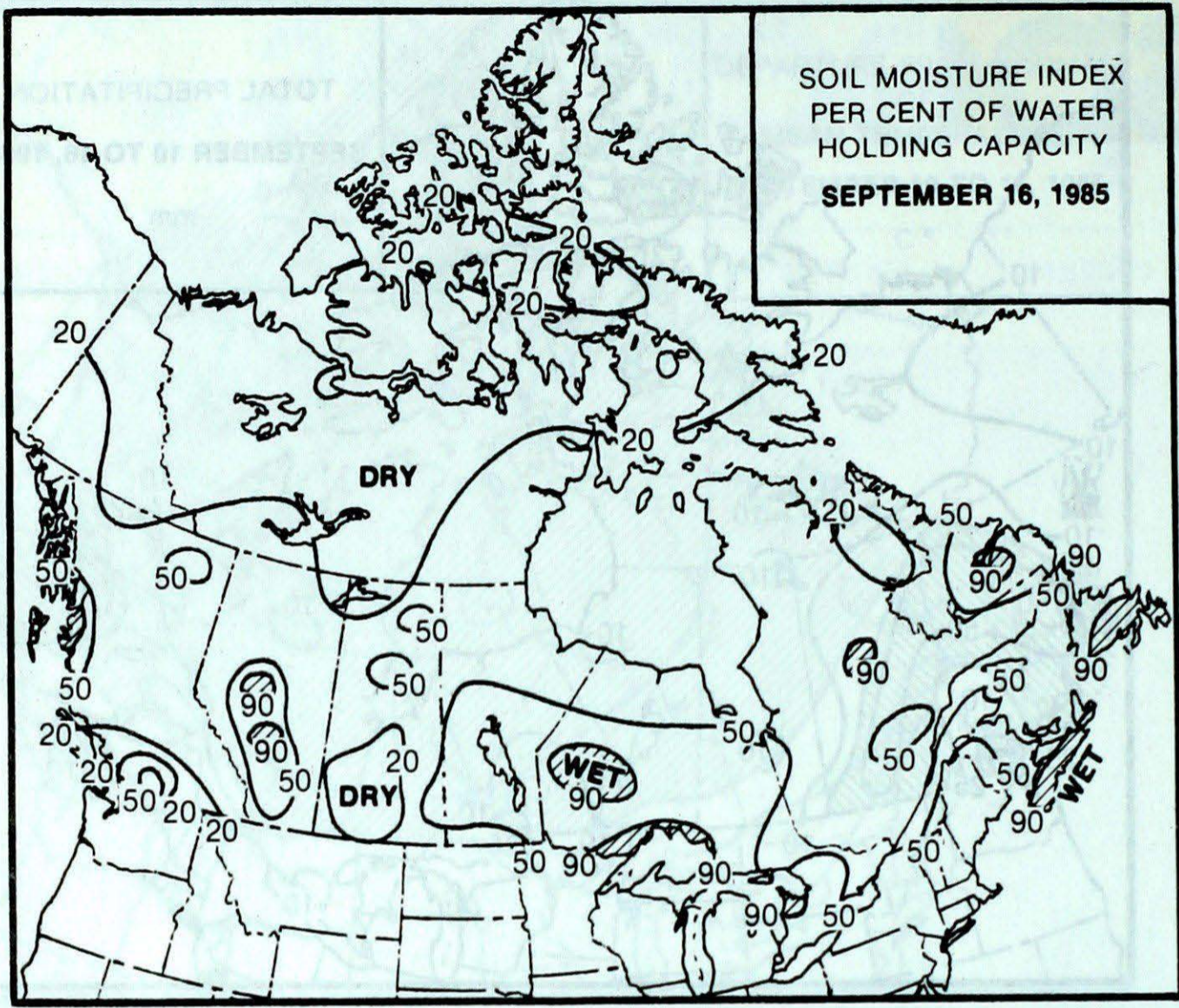
**HEAVIEST WEEKLY PRECIPITATION (mm)**

YUKON	24.0 Burwash
NORTHWEST TERRITORIES	25.2 Resolute
BRITISH COLUMBIA	75.7 Prince Rupert
ALBERTA	93.6 Rocky Mtn. House
SASKATCHEWAN	20.8 Eastend Cypress
MANITOBA	9.6 Gillam
ONTARIO	40.6 Thunder Bay
QUEBEC	51.0 Chevery
NEW BRUNSWICK	14.3 Charlo
NOVA SCOTIA	10.4 Shearwater
PRINCE EDWARD ISLAND	16.4 Charlottetown
NEWFOUNDLAND	82.0 St-Anthony

The Front Cover

Toronto is Canada's oldest official government meteorological observing site. The first observations were recorded in January 1840 from temporary quarters set up at Fort York near the lake front. Later that year first official Observatory for Magnetism and Meteorology was built on the campus of King's College, now known as the University of Toronto. It was not until the turn of the century, that the widely held belief that magnetism and meteorology are interrelated was dispelled. Daily observations continued at this site until 1908, when the meteorological instruments were relocated approximately 500 metres north to the new site of the Canadian Meteorological Service. The new Head Office was opened in 1909 and classed as a standard surface weather station until May 1969; after which time the observing program was reduced, and it became a climate station.

FORECAST



- ++ 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 VOLUME 7

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It began in 1978 and in 1985 was expanded to include a monthly supplement (formerly known as the Canadian Weather Review). The purpose of the publication is to make topical information available to the public concerning the Canadian Climate and its socioeconomic 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. Black and white photographs can be used, but not colour. The contents may be reprinted freely with proper credit.

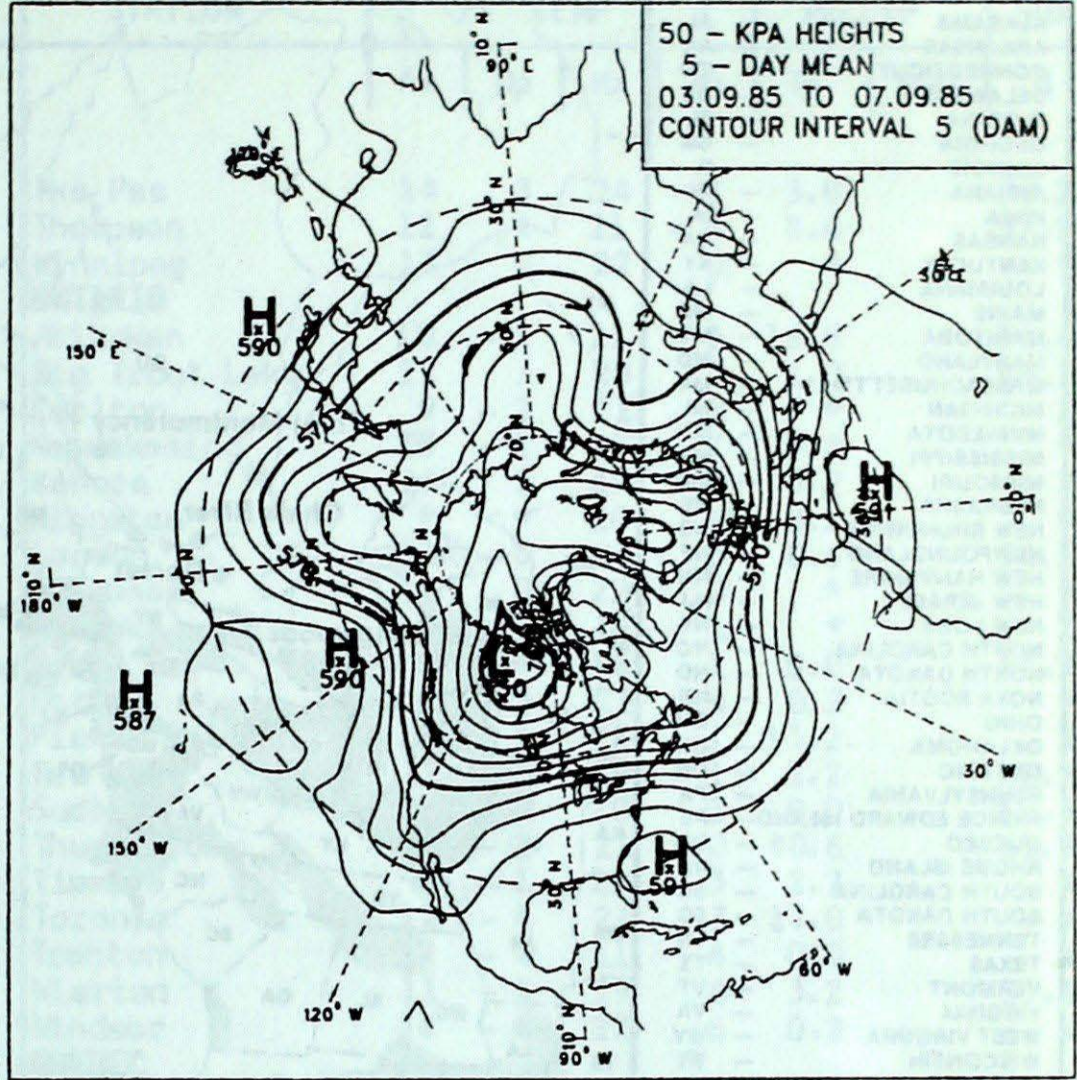
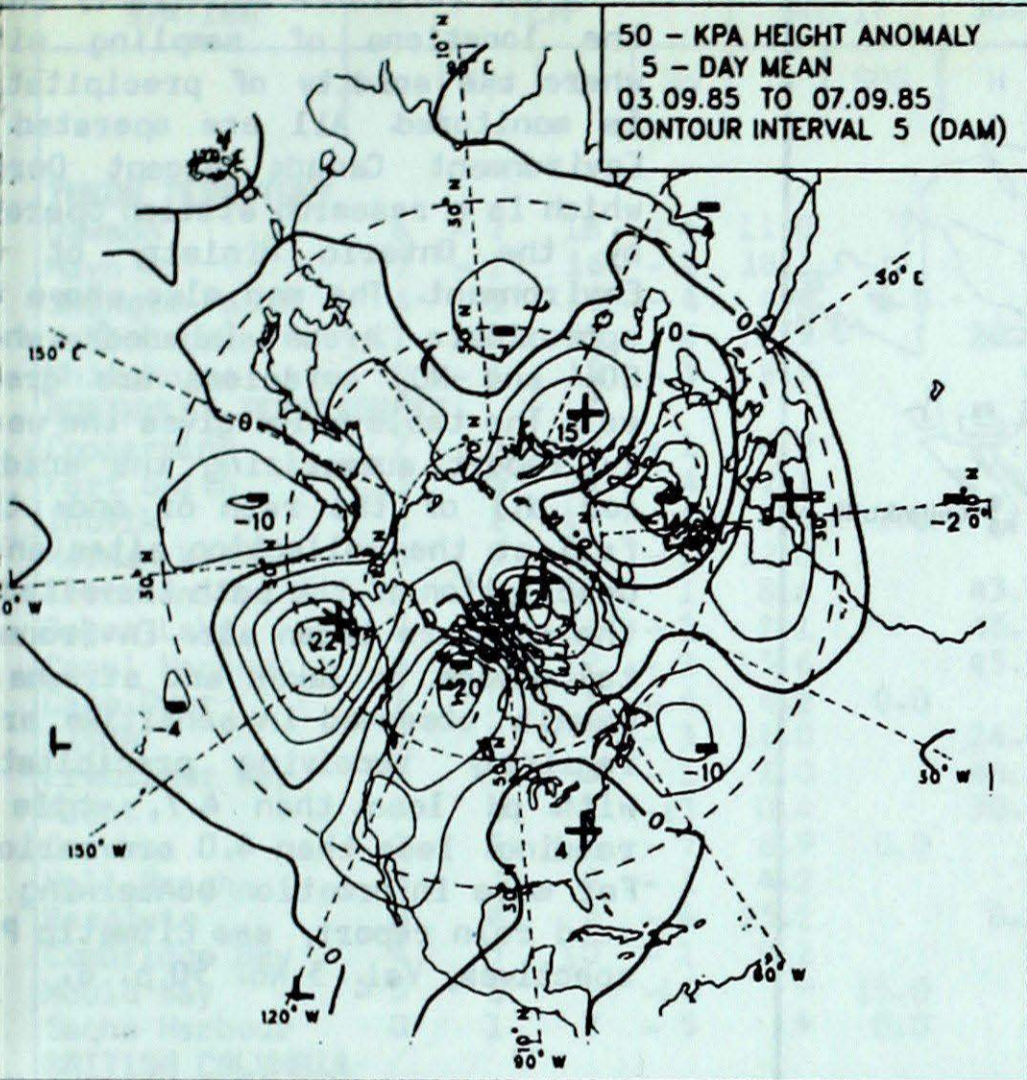
The data shown in this publication are based on unverified reports from approximately 225 Canadian synoptic weather stations. Information concerning climatic impacts is gathered from AES contacts with the public and from the media. Articles do not necessarily reflect the views of the Atmospheric Environment Service.

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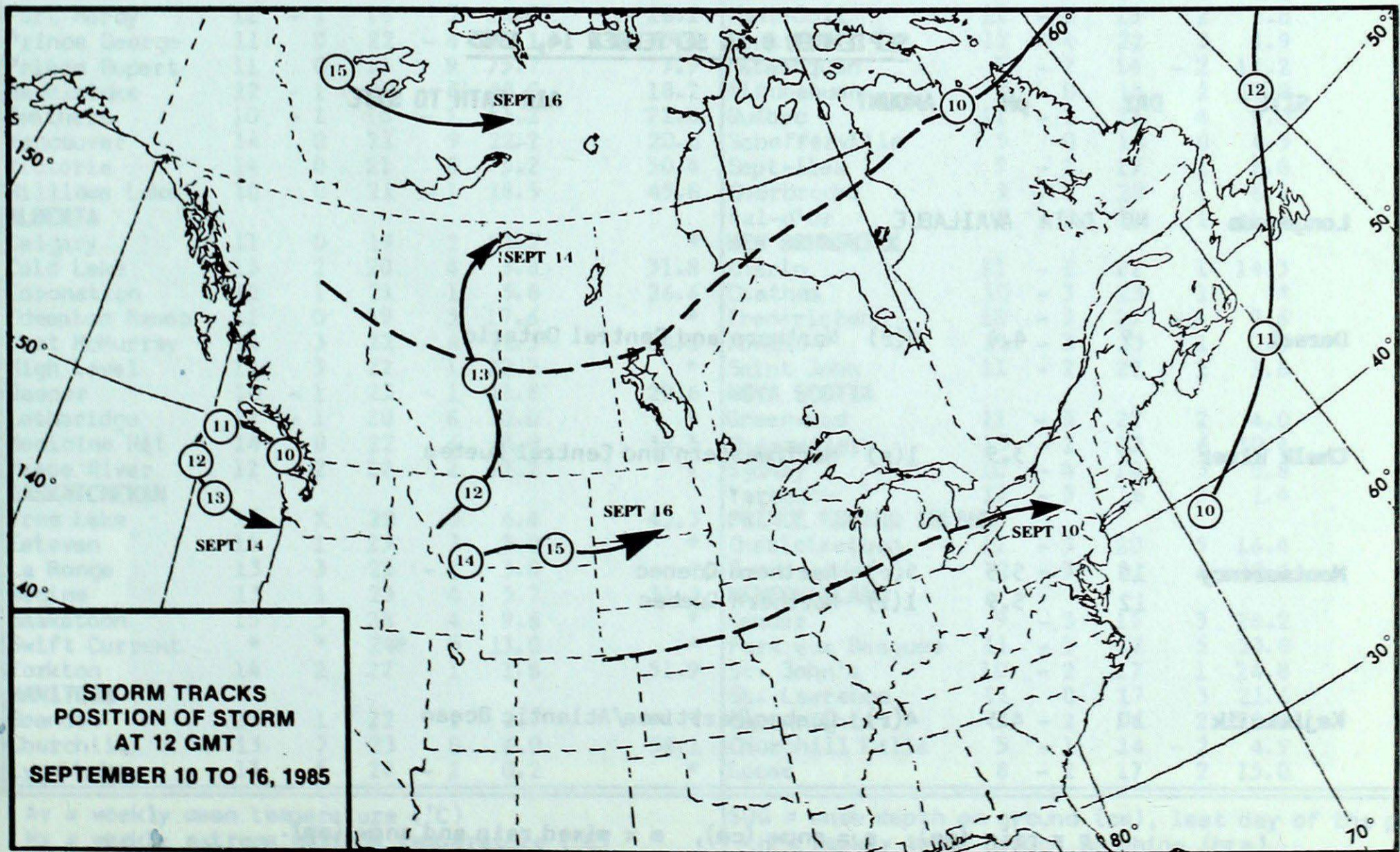
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50 KPa ATMOSPHERIC CIRCULATION



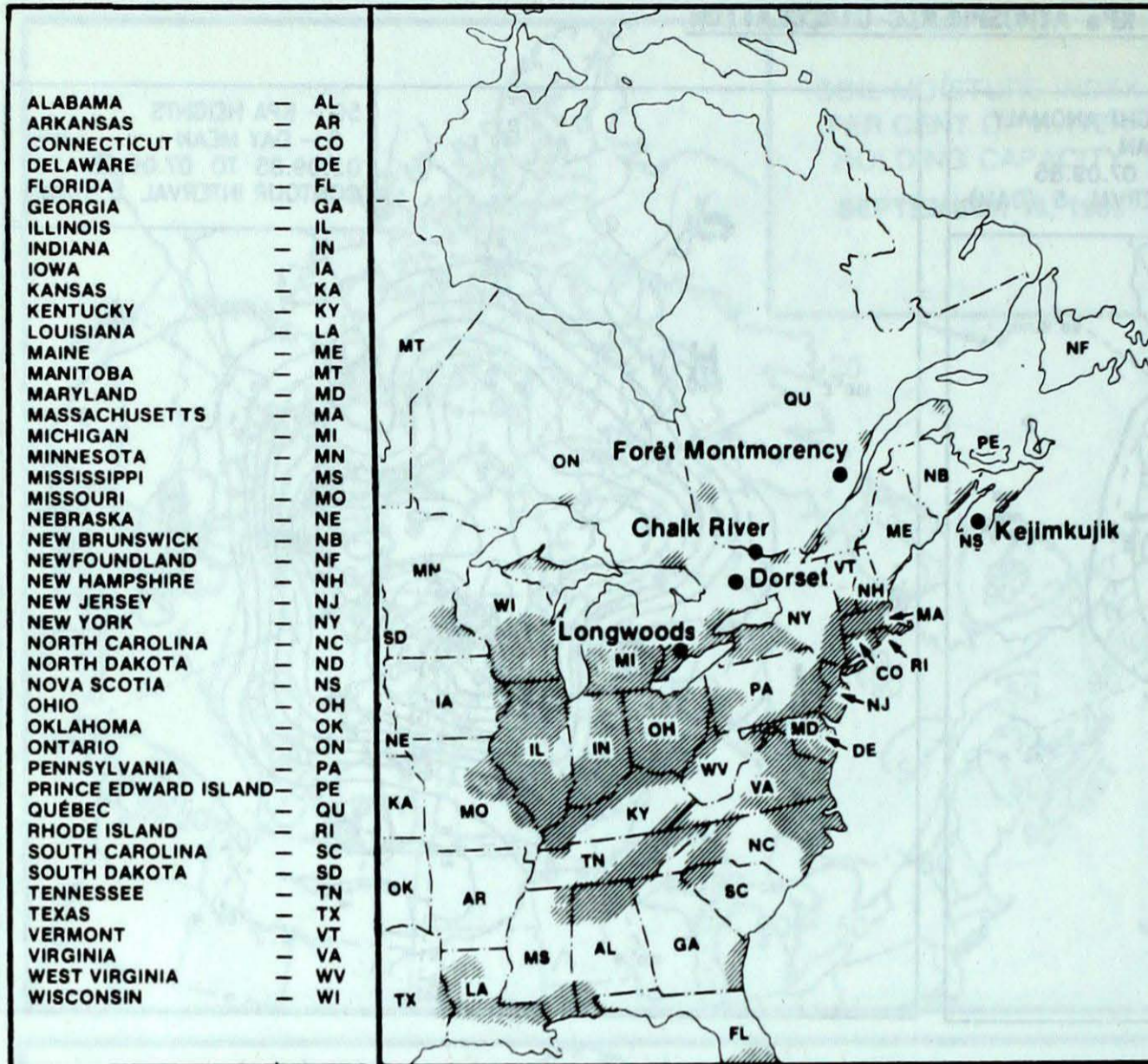
MEAN 50 KPa HEIGHT ANOMALY (dam)
September 3 to September 7, 1985

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



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.

SEPTEMBER 8 to SEPTEMBER 14, 1985

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	NO DATA AVAILABLE			
Dorset	9	4.4	3(r)	Northern and Central Ontario
Chalk River	9	3.9	1(r)	Northwestern and Central Quebec
Montmorency	10	5.5	5(r)	Northern Quebec
	12	5.9	1(r)	Northern Quebec
Kejimikujik	10	4.5	4(r)	Quebec/Maritimes/Atlantic Ocean

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

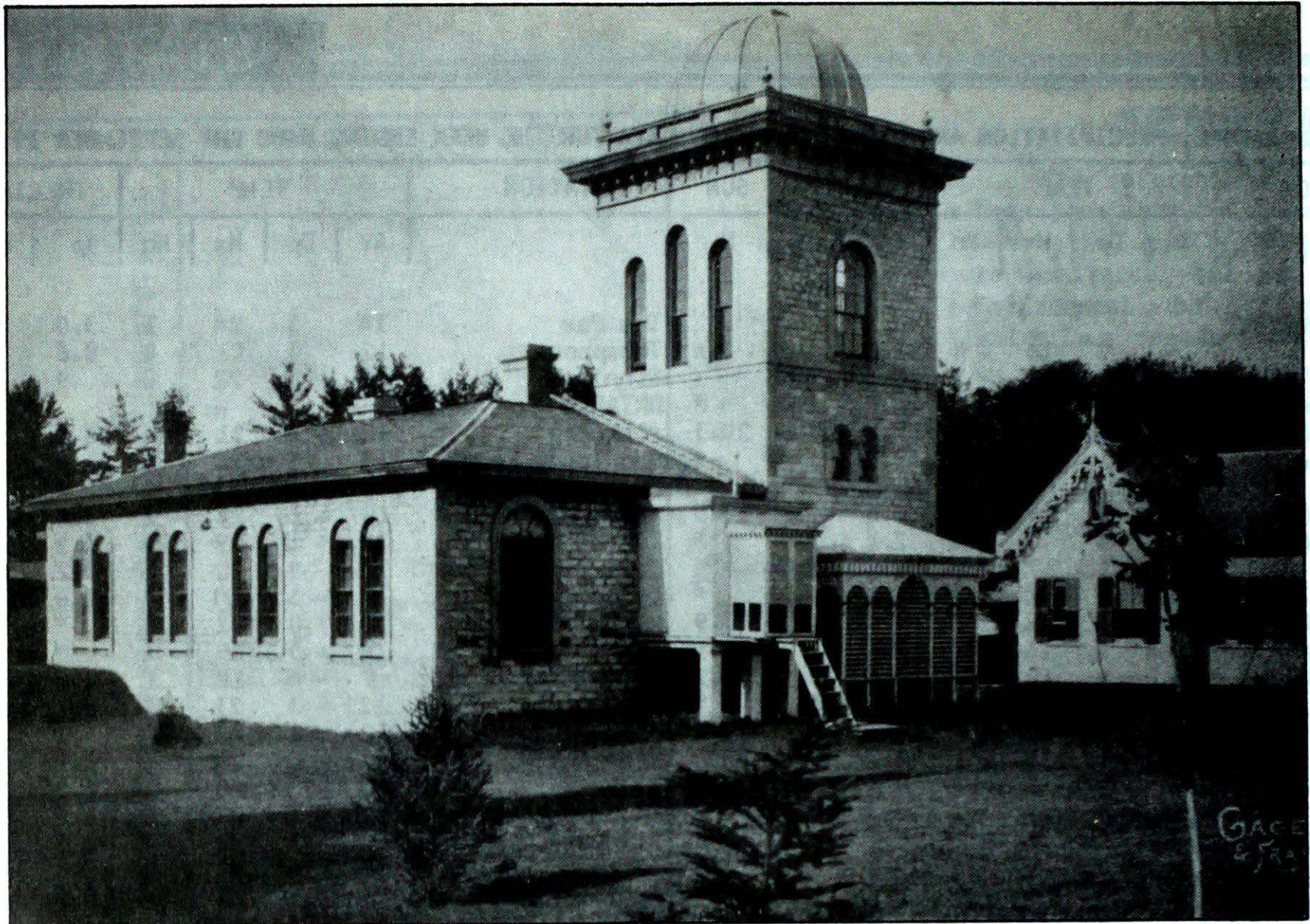
STATISTICS

TEMPERATURE, PRECIPITATION AND BRIGHT SUNSHINE DATA FOR THE WEEK ENDING 0600 GMT SEPTEMBER 17, 1985

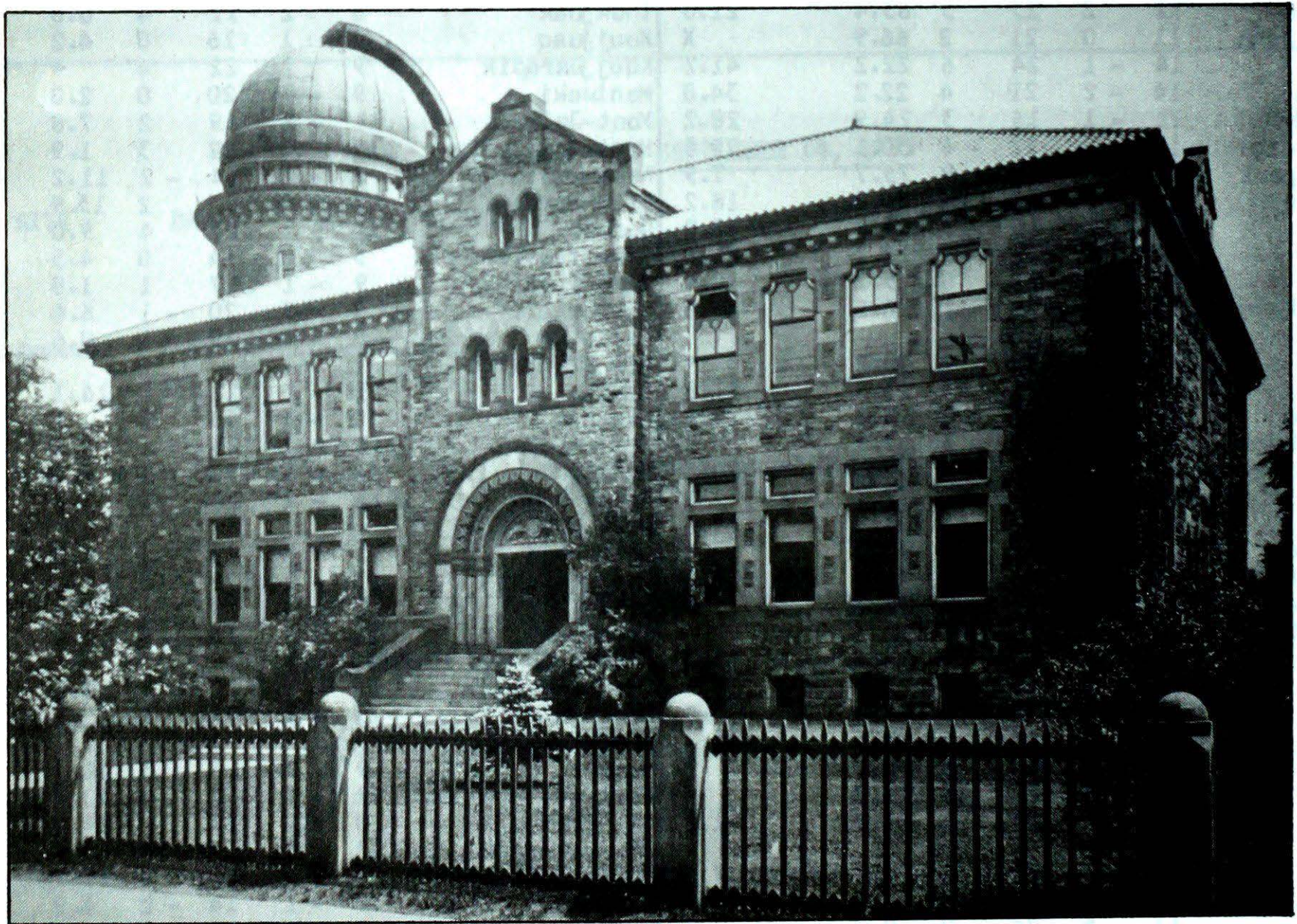
STATION	TEMP				PRECIP		SUN	STATION	TEMP				PRECIP		SUN
	Av	Dp	Mx	Mn	Tp	SOG	H		Av	Dp	Mx	Mn	Tp	SOG	H
YUKON TERRITORY															
Dawson	6	-2	16	-4	11.0		X	The Pas	14	3	24	-1	3.0		59.2
Mayo A	7	-1	16	-2	18.1		X	Thompson	12	4	21	-4	8.6		52.9
Shingle Point	4	1	13	-4	4.4	1.0	*	Winnipeg	13	0	22	0	*		*
Watson Lake	11	2	18	4	15.9		20.3	ONTARIO							
Whitehorse	8	-1	18	-3	8.9		*	Atikokan	10	-1	21	-5	16.8		54.4
NORTHWEST TERRITORIES															
Coppermine	7	3	19	-1	6.2		27.5	Big Trout Lake	12	3	20	2	1.0		48.3
Fort Smith	13	5	22	4	2.1		*	Earlton	9	-2	21	0	*		X
Inuvik	6	1	17	-4	6.6	1.0	*	Kapuskasing	10	-1	22	-2	3.8		*
Norman Wells	8	0	20	-2	12.0		*	Kenora	13	1	19	5	3.2		X
Yellowknife	11	3	17	1	8.6		43.9	Kingston	*	*	20	4P	0.2		*
Baker Lake	7	4	16	-2	2.1		43.1	London	11	-5	20	3	0.6		54.2
Coral Harbour	5	3	12	-2	13.6		45.2	Mosonoo	10	0	22	0	*		*
Cape Dyer	1	2	8	-4	4.2	0.0	X	Muskoka	9	-5	19	1	*		X
Clyde	2	2	9	-3	11.0		24.6	North Bay	9	-4	18	1	0.0		54.3
Frobisher Bay	4	1	9	-1	1.0		44.0	Ottawa	12	-3	21	4	0.2		*
Alert	-9	1	-1	-13	0.4		30.6	Pickle Lake	12	1	22	1	13.2		X
Eureka	-2	5	2	-7	8.9	0.0	*	Red Lake	11	0	19	-1	1.2		40.2
Hall Beach	3	3	9	-1	4.2		X	Sudbury	10	-2	20	1	0.0		60.8
Resolute	0	4	5	-4	25.2		0.0	Thunder Bay	11	-1	21	0	40.6		63.3
Cambridge Bay	4	3	10	-1	9.2		*	Timmins	9	-1	21	-3	2.2		X
Mould Bay	-5	0	5	-10	*	15.0	*	Toronto	12	-4	21	3	17.0		X
Sachs Harbour	0	1	7	-5	*	0.0	*	Trenton	12	-4	21	4	0.0		X
BRITISH COLUMBIA															
Cape St. James	13	0	18	10	19.4		21.1	Warton	11	-4	19	4	3.2		57.6
Cranbrook	12	0	22	4	25.6		27.2	Windsor	14	-4	22	6	0.2		X
Fort Nelson	12	2	23	3	63.4		22.0	QUEBEC							
Fort St. John	11	0	21	2	66.9		X	Bagotville	10	-2	23	1	4.6		X
Kamloops	14	-1	24	6	22.2		41.2	Blanc-Sablon	8	-2	12	-1	17.0		*
Penticton	14	-2	21	4	22.2		34.8	Inukjuak	8	2	12	4	0.8		28.4
Port Hardy	11	-1	16	3	24.9		28.2	Kuujuuaq	6	1	16	0	4.2		35.8
Prince George	11	0	22	-4	30.1		25.3	Kuujuarapik	9	1	22	4	*		*
Prince Rupert	11	0	15	9	75.7		7.9	Maniwaki	9	-3	20	0	2.0		*
Revelstoke	12	-1	20	6	48.0		18.2	Mont-Joli	11	-2	19	2	7.8		44.5
Smithers	10	-1	18	-1	53.2		22.8	Montréal	12	-4	22	3	1.9		55.6
Vancouver	14	0	21	9	22.2		20.8	Natashquan	7	-2	14	-2	11.2		*
Victoria	14	0	21	8	5.2		30.4	Nitchequon	7	0	15	2	13.9		*
Williams Lake	10	0	21	-1	18.5		45.8	Québec	11	-2	23	4	9.0		58.0
ALBERTA															
Calgary	11	0	19	2	93.2		*	Schefferville	5	0	14	0	4.5		23.3
Cold Lake	13	2	20	4	3.8		31.8	Sept-Iles	9	-1	17	1	1.8		40.3
Coronation	12	1	21	1	5.8		26.6	Sherbrooke	9	-3	20	-1	6.4		*
Edmonton Namao	11	0	19	3	17.6		*	Val-d'Or	9	-2	19	-1	0.6		47.4
Fort McMurray	14	3	22	4	12.3		24.8	NEW BRUNSWICK							
High Level	12	3	22	1	22.7		*	Charlo	11	-1	22	1	14.3		43.0
Jasper	10	-1	23	-1	21.8		29.6	Chatham	10	-3	23	1	*		*
Lethbridge	12	-1	20	6	70.0		*	Fredericton	10	-3	23	-1	8.6		*
Medicine Hat	14	0	22	6	26.9		34.5	Moncton	11	-3	23	1	2.0		46.1
Peace River	12	2	22	2	62.2		X	Saint John	11	-2	22	2	3.8		56.8
SASKATCHEWAN															
Cree Lake	13	X	20	5	6.4		43.3	NOVA SCOTIA							
Estevan	14	1	23	7	3.0		*	Greenwood	11	-3	22	2	4.0		X
La Ronge	13	3	23	-1	3.0		*	Shearwater	13	-2	22	6	10.4		*
Regina	13	1	23	4	5.7		31.3	Sydney	10	-4	18	3	8.8		48.2
Saskatoon	15	3	24	4	9.6		*	Yarmouth	11	-3	16	5	1.4		59.7
Swift Current	*	*	24P	5	11.0		*	PRINCE EDWARD ISLAND							
Yorkton	14	2	22	1	1.8		51.9	Charlottetown	11	-3	20	5	16.4		*
MANITOBA															
Brandon	13	1	22	1	2.7		*	Summerside	12	-3	21	6	12.6		47.7
Churchill	13	7	23	0	6.0		58.1	NEWFOUNDLAND							
Lynn Lake	13	5	24	-2	0.2		*	Gander	9	-3	15	3	28.2		26.6
								Port aux Basques	11	-1	17	5	23.8		*
								St. John's	10	-2	17	1	24.8		31.4
								St. Lawrence	11	0	17	3	21.6		X
								Cartwright	7	-2	14	2	25.1		25.9
								Churchill Falls	5	-1	14	-2	4.9		27.7
								Goose	8	-2	17	2	15.0		36.1

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



In 1855 a stone building, situated exactly on the same site, replaced the log observatory at Toronto; the observation dome was not added until 1882. In 1872 the Canadian Meteorological Service was formed.



This was the Meteorological Office, occupied from September 1909 to July 1971. In 1971 the current A.E.S. headquarters building was occupied and the University of Toronto took over the downtown Head Office at 315 Bloor Street, and the daily reporting of climatological information for "Toronto City". In 1972 the weather instruments had to be once again relocated, this time positioned very close to the original 1840-1907 site.