Environment Canada Environnement Canada

Climatic Perspectives

une 26 to july 2, 1989 — A weekly review of Canadian climate — Vol. 11 No 27

Seasonal tornado count rises to 11 in Saskatchewan, but none yet in Ontario or Québec

Severe thunderstorms (those capable of destruction due to hail, strong winds, downpours or associated tornadoes) occurred across many parts of the country last week with the most damaging occurring in Saskatchewan. A tornado was sighted at Robin Hood, Saskatchewan on June 29th. The following day, the Poundmaker Indian Reserve was hit by a tornado, damaging 70 of the 100 houses on the reserve. Nine people from the area were taken to hospital at nearby Cutknife, Saskatchewan. At Paynton, on the same day, a tornado destroyed farm yards, while 7 km to the east, cars were blown off the road and buildings damaged by a tornado. This year's 11 tornado reports compare to a 15-year average of 14 reported occurrences per season.

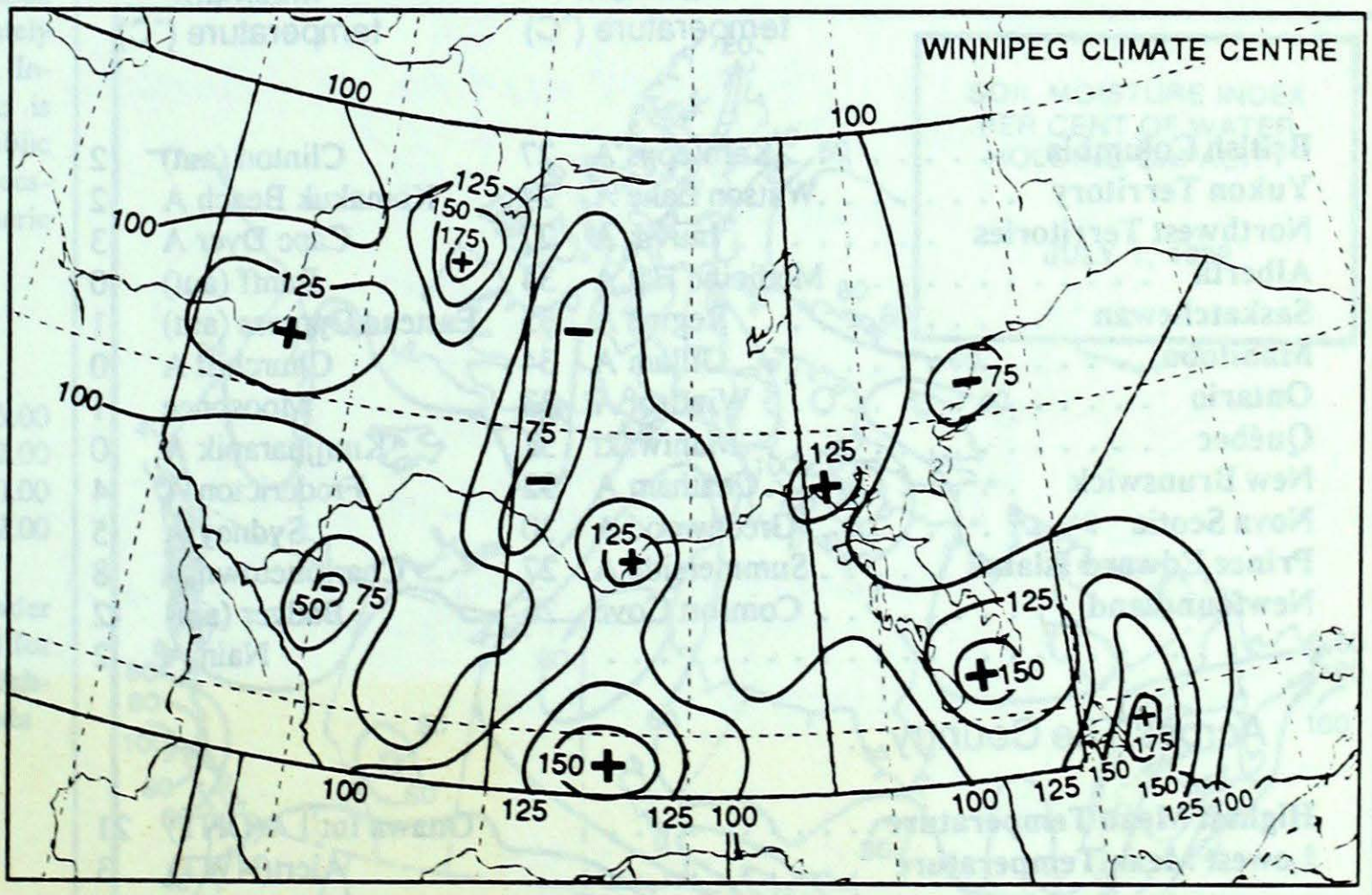
In Manitoba, there has only been a possible tornado sighting so far this year. The most tornado-prone region of the country is Ontario (most notably in the south) where the 10-year average is 24 per year. Not only have there been no tornadoes reported anywhere in the province so far this year, but there have also been few reports of severe thunderstorms. There has also been an absence of tornado reports in Québec this year, but an outbreak of severe thunderstorms caused significant damage at several locations in the southern Québec on the 27th. In the Maritimes, a line of severe thunderstorms caused major power outages as it moved across the provinces on the 28th.

Out west, there were numerous reports of funnel clouds in the Edmonton area on the 27th and one touched down causing some light damage in the northeast part of the city. More damage was caused by a tornado near Lesser Slave Lake and severe thundersorms in east-central Alberta on the 30th. A severe thunderstorm with grape to walnut-sized hail was reported 16 km north of Whitehorse, Yukon on the 29th and a severe thunderstorm produced minor flooding in Kelowna, B.C. on the 30th.

A look ahead

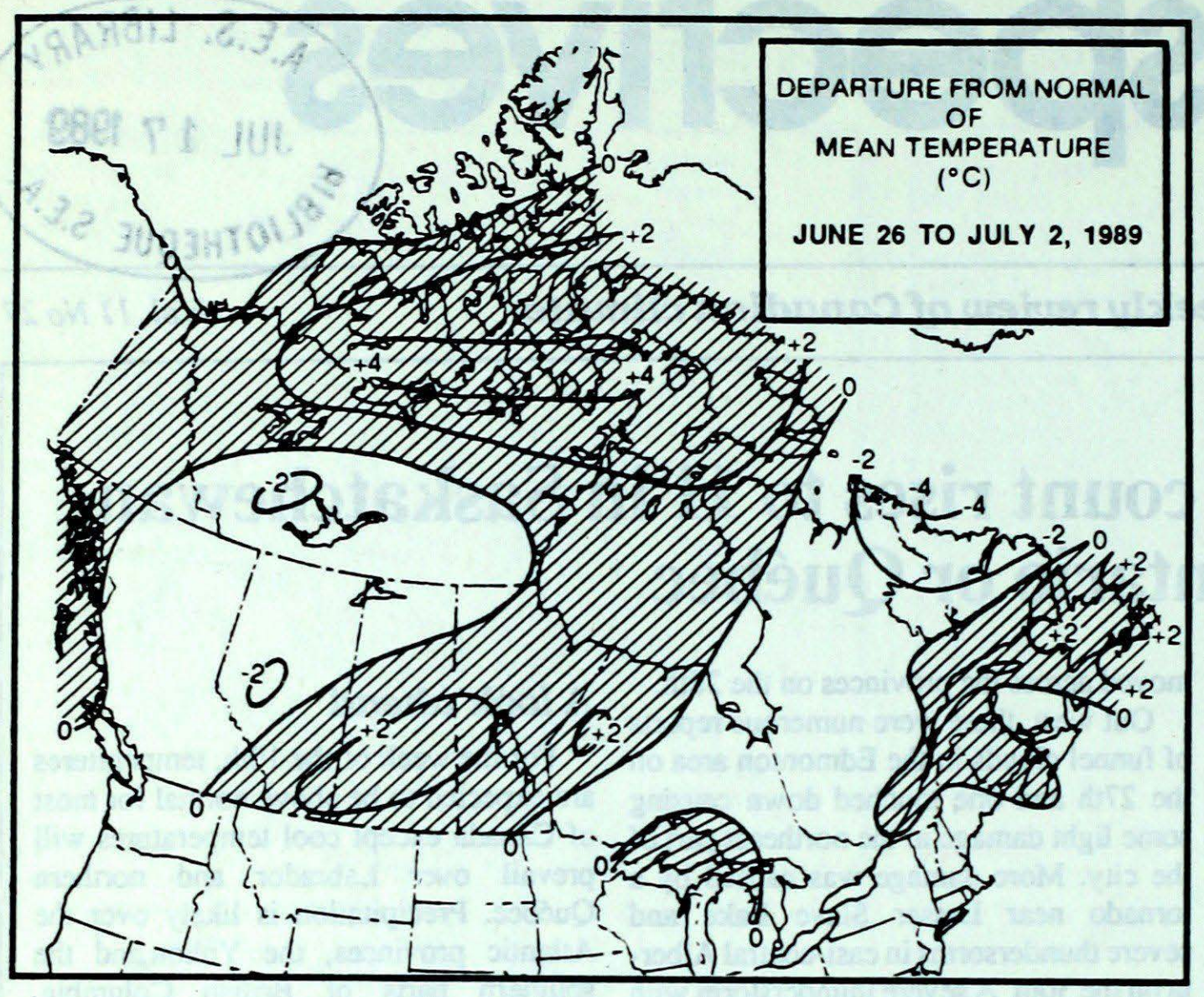
For the week of the 10th, temperatures are expected to be above normal for most of Canada except cool temperatures will prevail over Labrador and northern Québec. Precipitation is likely over the Atlantic provinces, the Yukon,and the southern parts of British Columbia, Alberta and Saskatchewan.
Elsewhere, a dry northwest flow will dominate the week.

Aaron Gergye,
Canadian Climate center



Percent of normal precipitation for the period April 1 to July 2, 1989. Heavy spring rain marked an abrupt end to the prolonged dry weather in the southern Prairies. An area south of Calgary, however, received less than 75% of its normal precipitation.

Canada



Elsewhere ...

Dramatic end to heat-wave in Labrador and northern Québec

Cool temperatures with rain dominated the weather in Labrador and northern Québec this week. On June 26, daytime temperature failed to climb above 8°C at Goose Bay setting a record for the day. On July 1, the mercury plunged to a record low of 2°C at Baie Comeau and on June 29, a low pressure system crossing the East Coast deposited 48 mm of precipitation at Nain in Labrador which included a 22 cm snowfall. The cool and damp weather helped to bring forest fires from the previous week under control.

A.G. Earl
Newfoundland Weather Centre

Weekly temperature and precipitation extremes

	Maximum temperature (°C)		Minimum temperature (°C)		Heaviest precipitation (mm)	
British Columbia	Kamloops A	27	Clinton (aut)	2	Estevan Point (aut)	52
Yukon Territory	Watson Lake A	24	Komakuk Beach A	-2	Whitehorse A	21
Northwest Territories	Inuvik A	27	Cape Dyer A	-3	Cape Dorset A	14
Alberta	Medicine Hat A	34	Banff (aut)	0	Edson A	96
Saskatchewan	Regina A	35	Eastend Cypress (aut)	1	Nipawin A	40
Manitoba	Gillam A	34	Churchill A	0	The Pas A	56
Ontario	Windsor A	33	Moosonee	1	Cobourg (aut)	240
Québec	Maniwaki	31	Kuujjuarapik A	0	Québec A	56
New Brunswick	Chatham A	32	Fredericton A	4	Chatham A	20
Nova Scotia	Greenwood A	30	Sydney A	5	Sydney A	26
Prince Edward Island	Summerside A	27	Charlottetown A	8	Summerside A	22
Newfoundland	Comfort Cove	26	Badger (aut)	-2	St Lawrence	147
			Nain A	-2		

Across The Country...

Highest Mean Temperature	Ottawa Int'l A(ONT)	21
Lowest Mean Temperature	Alert(NWT)	3

89/06/26-89/07/02

CLIMATIC PERSPECTIVES
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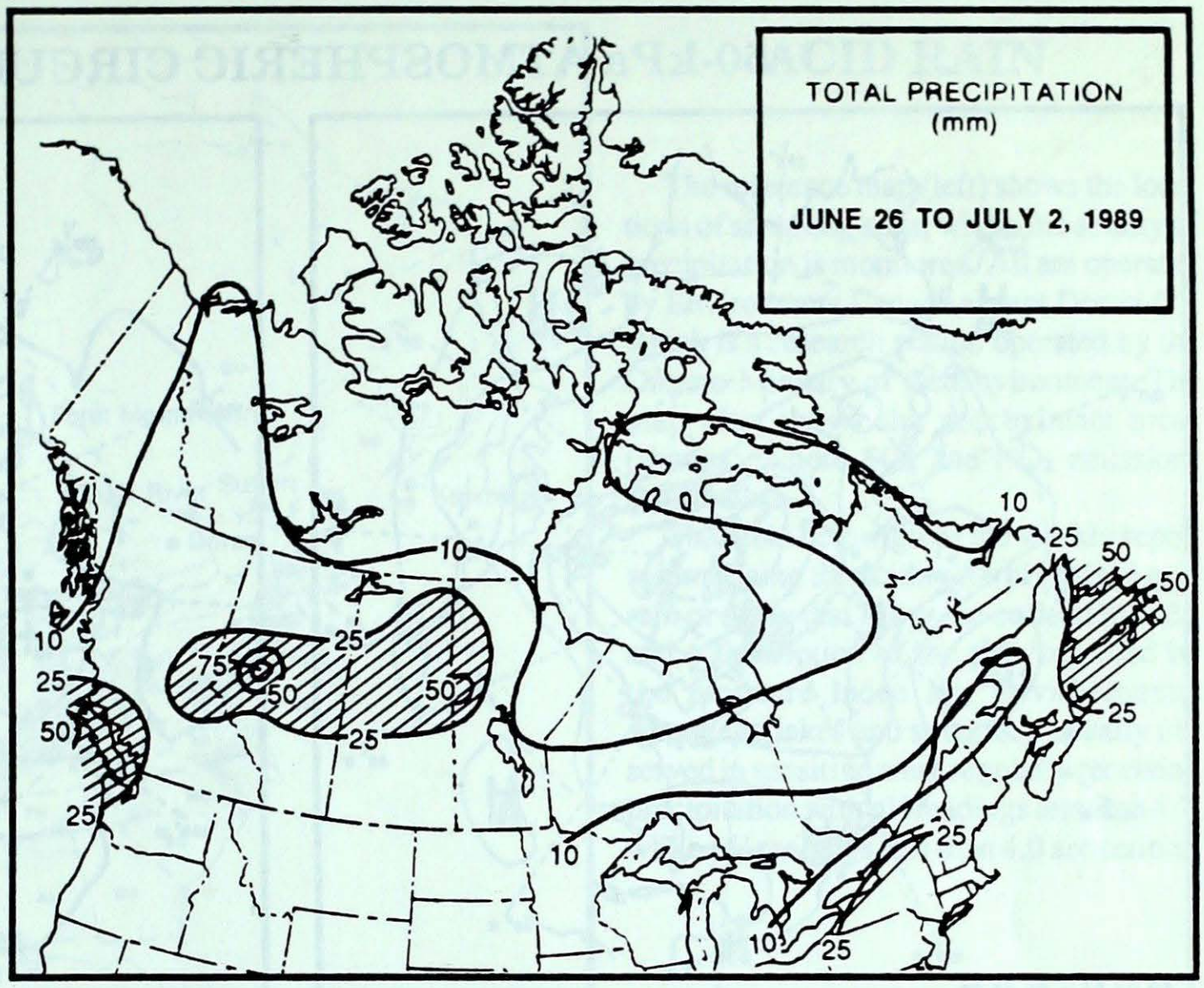
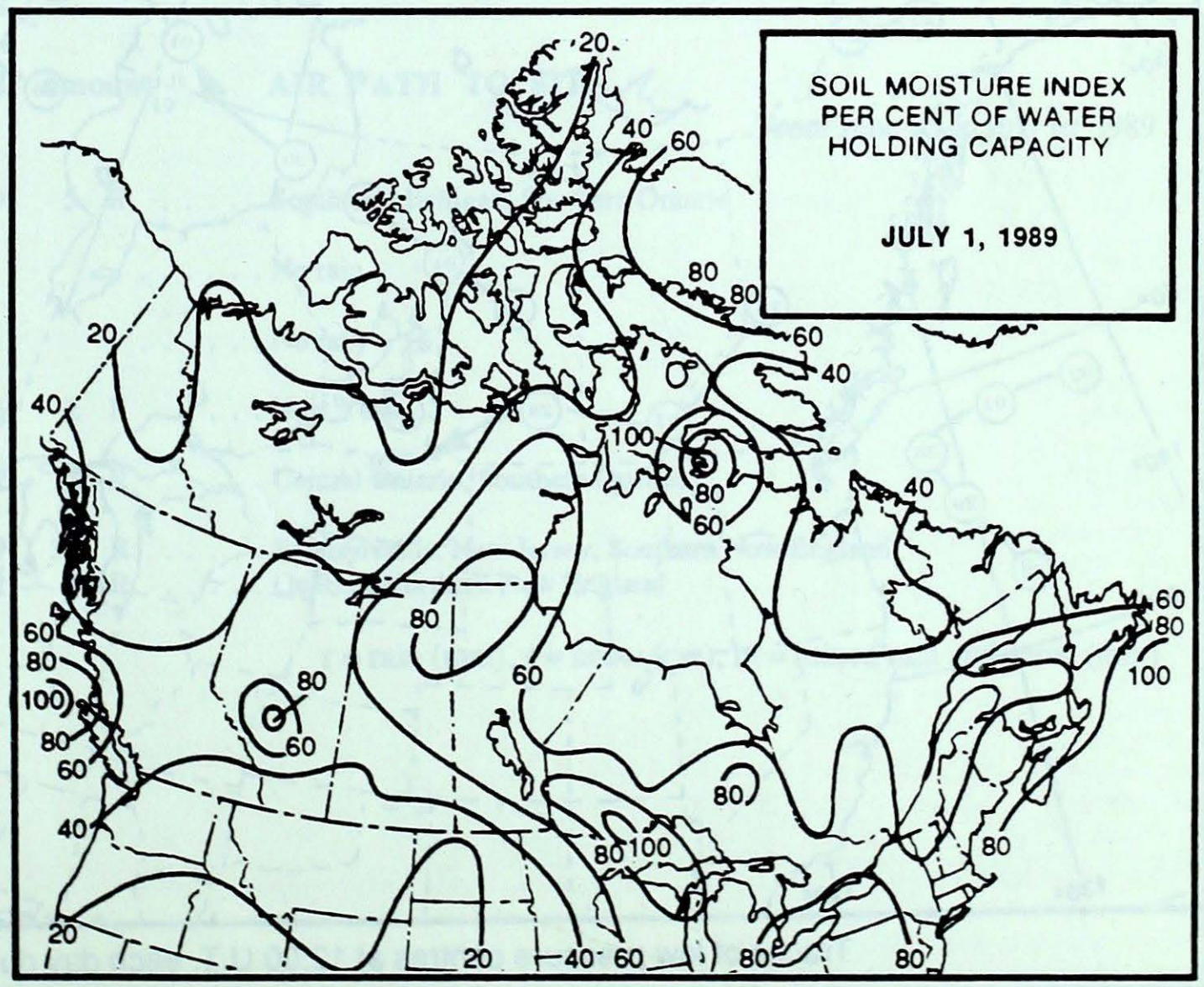
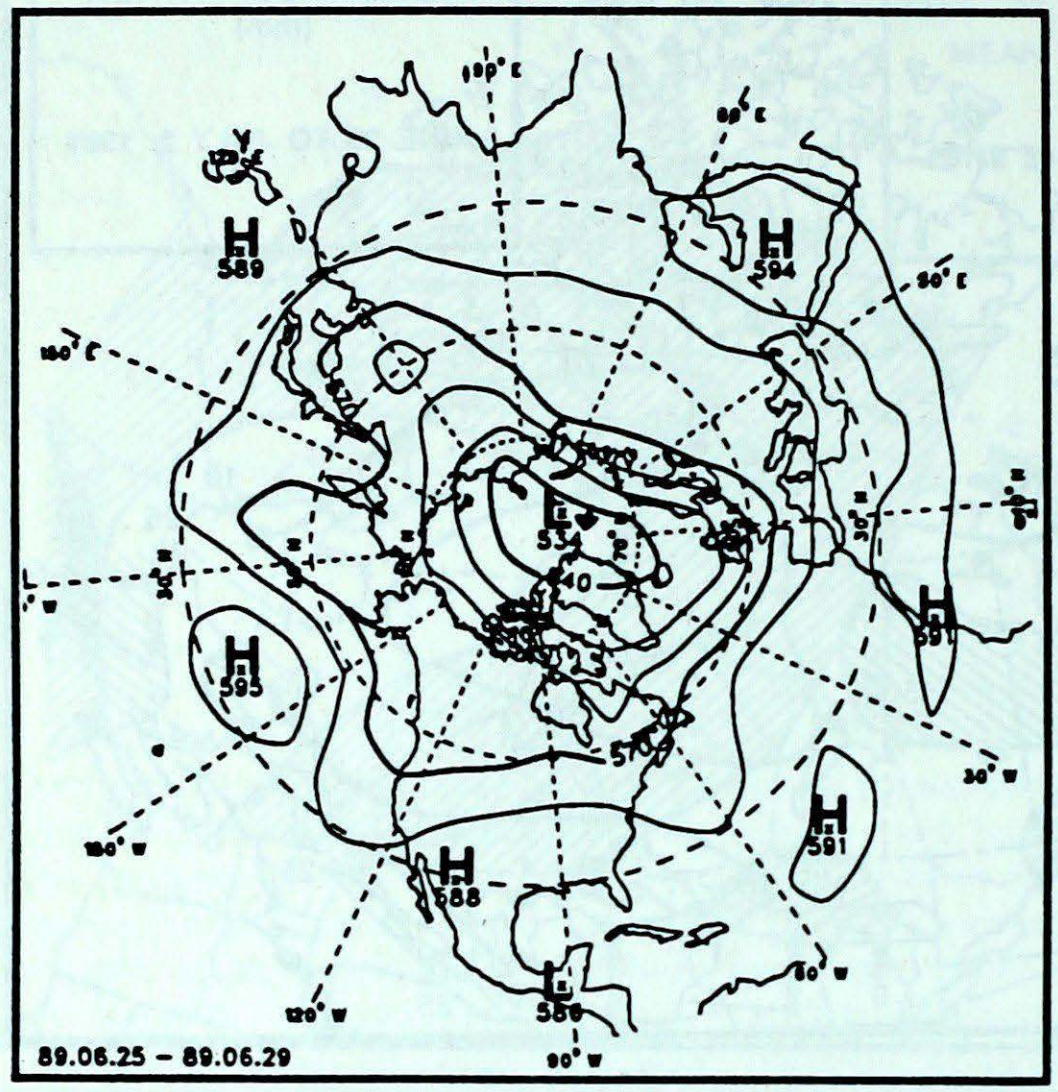
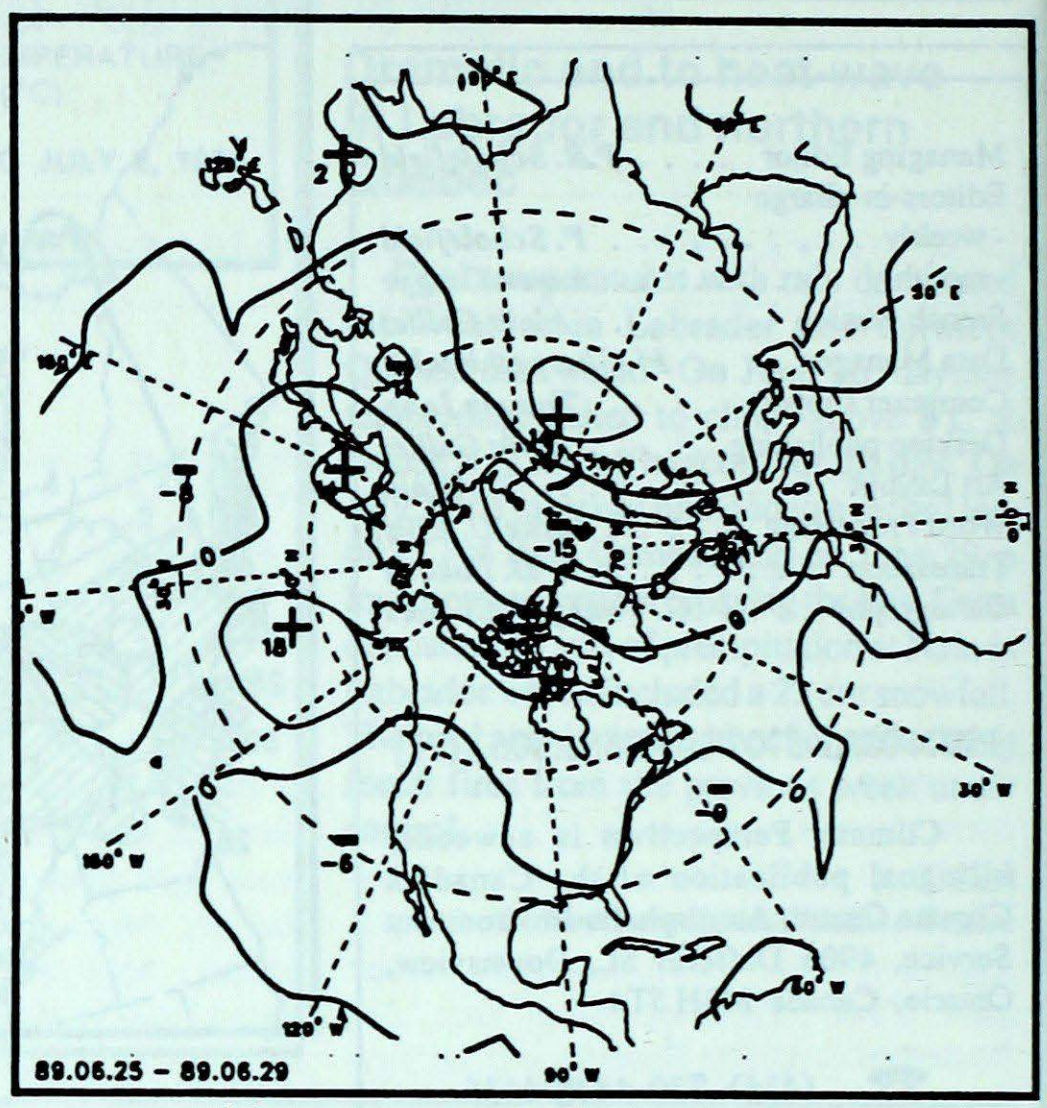




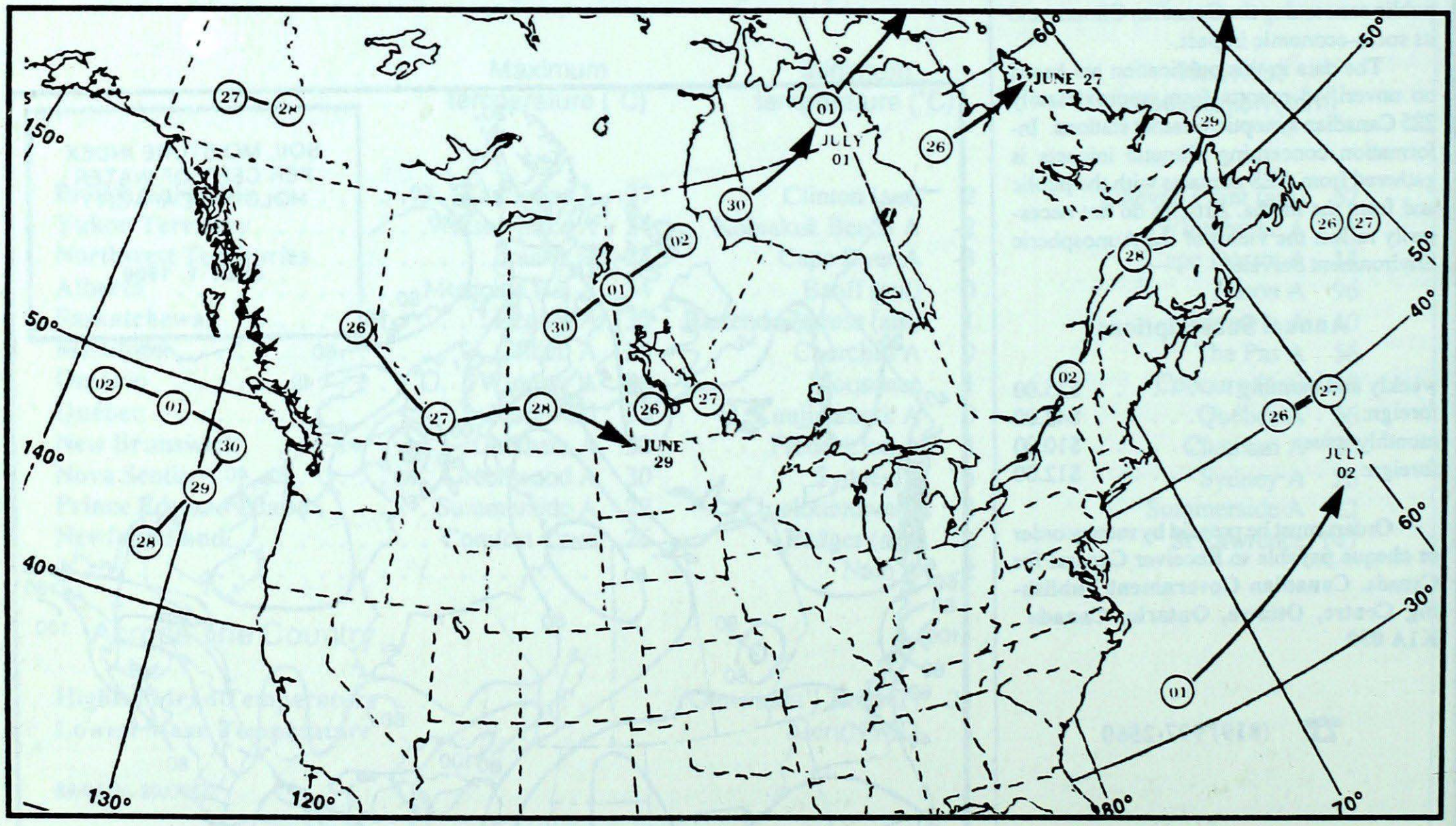
50-kPa ATMOSPHERIC CIRCULATION



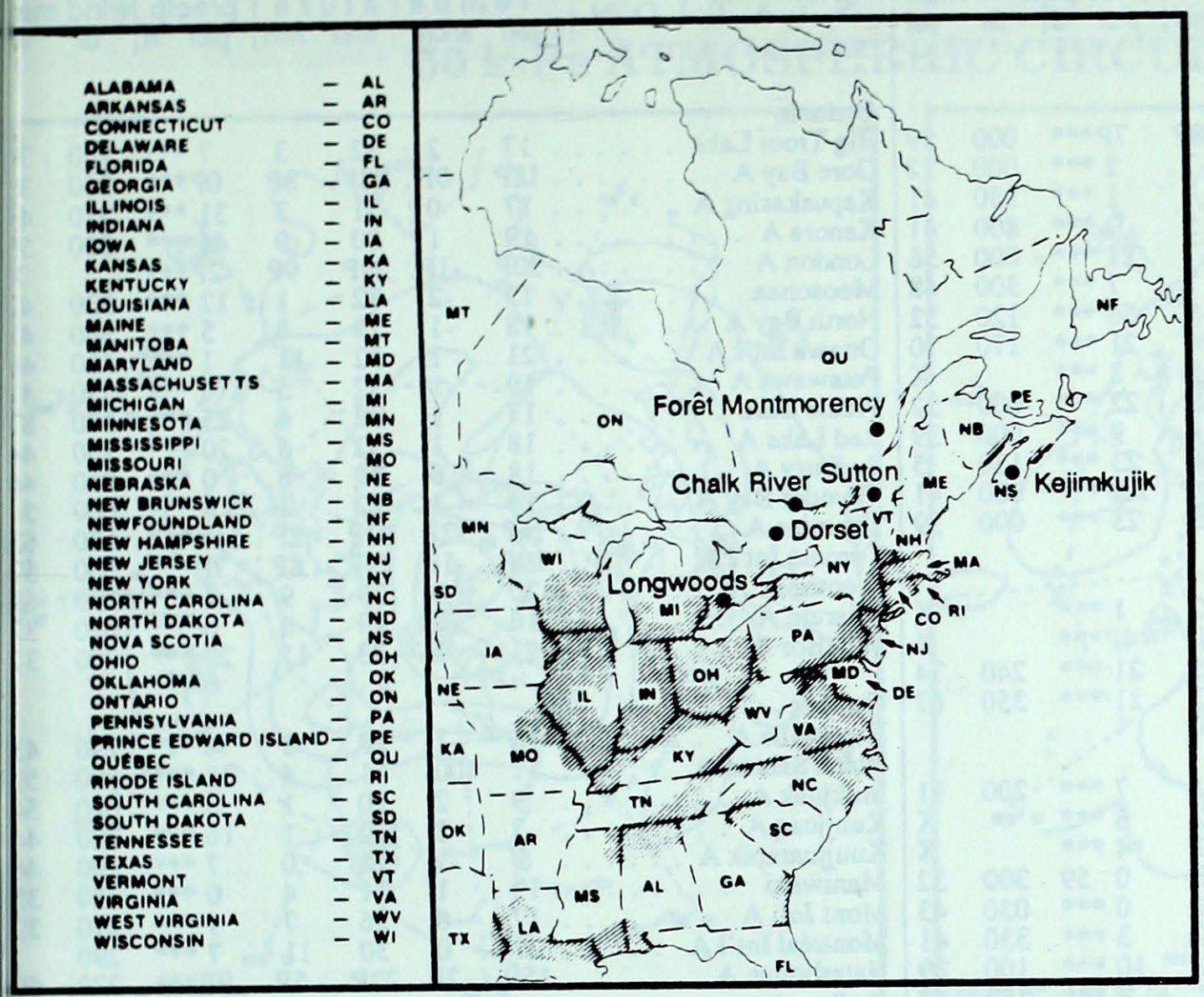
Mean geopotential height
50-kPa level (10 decametre intervals)



Mean geopotential height anomaly
50-kPa level (10 decametre intervals)



Tracks of low pressure centres at 12:00 U.T. each day during the period.



ACID RAIN

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 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.

SITE	day	pH	amount		AIR PATH TO SITE
					From June 25 to July 1st, 1989
Longwoods	26	3.9	5	R	. . . . . Southern Michigan, Southern Ontario
Dorset *					. . . . . No rain
Chalk River					. . . . . No rain
Sutton	28	5.6	2	R	. . . . . New York
Montmorency	27	4.2	3	R	. . . . . Central Ontario, Southern Quebec
Kejimkujik	28	3.7	34	R	. . . . . Pennsylvania, New Jersey, Southern New England
	1	4.1	1	R	. . . . . Québec, Northern New England

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

STATION	temperature mean	anom	max	min	precip. ptot	st	wind max dir	vel
British Columbia								
Cape St James	12P	1P	17P	8P	7P***		000	59
Cranbrook A	16	1	25	7	2 ***		000	72
Fort Nelson A	15	-1	26	7	1 ***		330	41
Fort St John A	13	-1	21	5	9 ***		800	41
Kamloops A	16	-2	27	7	21 ***		000	56
Penticton A	17	-1	27	7	7 ***		300	48
Port Hardy A	13	0	17	5	56 ***		120	32
Prince George A	13	-1	20	4	21 ***		170	70
Prince Rupert A	12	1	18	5	8 ***			X
Revelstoke A	15	-1	26	9	22 ***		000	52
Smithers A	12	-1	24	4	9 ***		000	39
Vancouver Int'l A	15	-1	21	8	23 ***		130	5
Victoria Int'l A	14P	-1P	19P	9P	12P***		000	41
Williams Lake A	11	-2	21	3	23 ***		000	39
Yukon Territory								
Komakuk Beach A	5	0	15	-2	1 ***			X
Teslin (aut)	14P	400P	24P	4P	4P***			X
Watson Lake A	14	0	24	5	21 ***		240	74
Whitehorse A	14	1	23	7	21 ***		350	67
Northwest Territories								
Alert	2	0	7	-1	7 ***		200	91
Baker Lake A	8	-1	18	2	6 ***			X
Cambridge Bay A	10	4	20	1	4 ***			X
Cape Dyer A	5	2	14	-3	0	59	300	52
Clyde A	7	4	19	1	0 ***		030	43
Coppermine A	11	5	24	2	3 ***		330	41
Coral Harbour A	8	2	18	2	10 ***		100	39
Eureka	3	-2	6	-1	3 ***		180	87
Fort Smith A	15	-1	24	5	4 ***			X
Hall Beach A	8	4	19	2	0 ***		190	48
Inuvik A	12	0	27	0	10 ***		310	33
Iqaluit A	9	3	20	2	0 ***		330	43
Mould Bay A	3	-1	8	-1	1 ***		250	43
Norman Wells A	16	0	25	7	14 ***		000	48
Resolute A	3	0	6	0	8	1	180	54
Yellowknife A	14	-2	22	8	7 ***		030	43
Alberta								
Calgary Int'l A	16	2	26	6	12 ***		280	48
Cold Lake A	15P	-1P	22P	7P	28P***		310	35
Edmonton Namao A	14	-1	23	6	44 ***		700	54
Fort McMurray A	14	-1	22	6	51 ***		270	35
High Level A	14	-2	24	4	15 ***		330	39
Jasper	12	0	22	2	21 ***			X
Lethbridge A	18	2	30	6	0 ***		270	67
Medicine Hat A	20	3	34	8	1 ***		270	80
Peace River A	14	0	22	7	10 ***		900	46
Saskatchewan								
Cree Lake	13	-2	22	4	22 ***		000	52
Estevan A	20	2	32	9	16 ***		000	57
La Ronge A	16	0	26	7	48 ***		240	37
Regina A	21	4	35	7	22 ***		000	69
Saskatoon A	19	3	34	7	2 ***		290	67
Swift Current A	19	3	33	4	1 ***		240	65
Yorkton A	19	2	31	9	9 ***		000	50
Manitoba								
Brandon A	19	1	33	6	29 ***		000	69
Churchill A	11	2	22	0	1 ***		170	37
Lynn Lake A	15	0	23	5	32 ***		110	41
The Pas A	19	2	33	10	56 ***		230	67
Thompson A	15P	0P	28P	5P	11P***		700	50
Winnipeg Int'l A	21P	2P	31P	12P	12P***		130	44

STATION	temperature mean	anom	max	min	precip. ptot	st	wind max dir	vel
Ontario								
Big Trout Lake	17	2	32	3	7 ***		170	70
Gore Bay A	18P	0P	28P	8P	0P***		360	33
Kapuskasing A	17	0	31	3	31 ***		210	41
Kenora A	19	1	30	9	45 ***		000	59
London A	20P	-1P	29P	9P	2P***			X
Moosonee	13	-2	32	1	12 ***		330	41
North Bay A	18	-1	29	6	5 ***		360	41
Ottawa Int'l A	21	1	32	11	1 ***		300	44
Petawawa A	19	1	32	5	0 ***		330	41
Pickle Lake	17	1	32	4	25 ***		280	87
Red Lake A	18	1	32	6	20 ***		260	44
Sudbury A	18	0	30	6	0 ***		010	46
Thunder Bay A	14	-3	22	3	8 ***		000	54
Timmins A	16P	-2P	31P	2P	11P***		180	63
Toronto Int'l A	19P	-1P	29P	8P	7P***		360	57
Trenton A	20	0	29	9	4 ***		290	61
Wiarton A	16	-2	29	6	0 ***		020	32
Windsor A	21	-1	33	11	20 ***		000	37
Québec								
Bagotville A	16	-1	28	8	4 ***		290	43
Blanc Sablon A	11	400	21	4	31 ***		800	59
Inukjuak A	9	2	20	1	3 ***		010	54
Kuujjuaq A	7	-2	22	1	16 ***		320	44
Kuujjuarapik A	8	-1	26	0	7 ***		100	46
Maniwaki	19	1	31	4	0 ***		320	35
Mont Joli A	17	0	26	7	1 ***		270	39
Montréal Int'l A	21	0	30	11	7 ***		290	
Natashquan A	15P	2P	22P	5P	9P***		270	50
Québec A	18	0	29	9	56 ***		000	89
Schefferville A	9P	-2P	20P	1P	32P***		330	46
Sept-Îles A	14	0	22	5	17 ***		310	52
Sherbrooke A	17	0	28	5	7 ***		270	54
Val-d'Or A	17	0	29	5	7 ***		000	48
New Brunswick								
Charlo A	17	0	29	5	5 ***		310	52
Chatham A	18	0	32	7	20 ***		290	48
Fredericton A	18	0	31	4	9 ***		290	44
Moncton A	17	0	28	6	17 ***		270	44
Saint John A	17P	2P	26P	9P	14P***		300	41
Nova Scotia								
Greenwood A	18	0	30	6	16 ***		280	39
Shearwater A	17	1	26	10	8 ***		240	37
Sydney A	15	-1	25	5	26 ***		300	43
Yarmouth A	16	1	23	9	4 ***		210	56
Prince Edward Island								
Charlottetown A	16	-1	26	8	15 ***		220	37
Summerside A	17	-1	27	9	22 ***		290	39
Newfoundland								
Cartwright	9P	-2P	20P	3P	25P***			X
Churchill Falls A	12	-1	21	3	15 ***		310	4
Gander Int'l A	15	1	25	7	5 ***		230	54
Goose A	11	-2	24	3	41 ***		330	43
Port Aux Basques	13	2	20	6	28 ***		270	56
St John's A	15	2	26	5	24 ***		250	56
St Lawrence	13	3	20	4	28 ***			X
Wabush Lake A	13P	1P	22P	3P	0P***		010	33

89/06/26-89/07/02

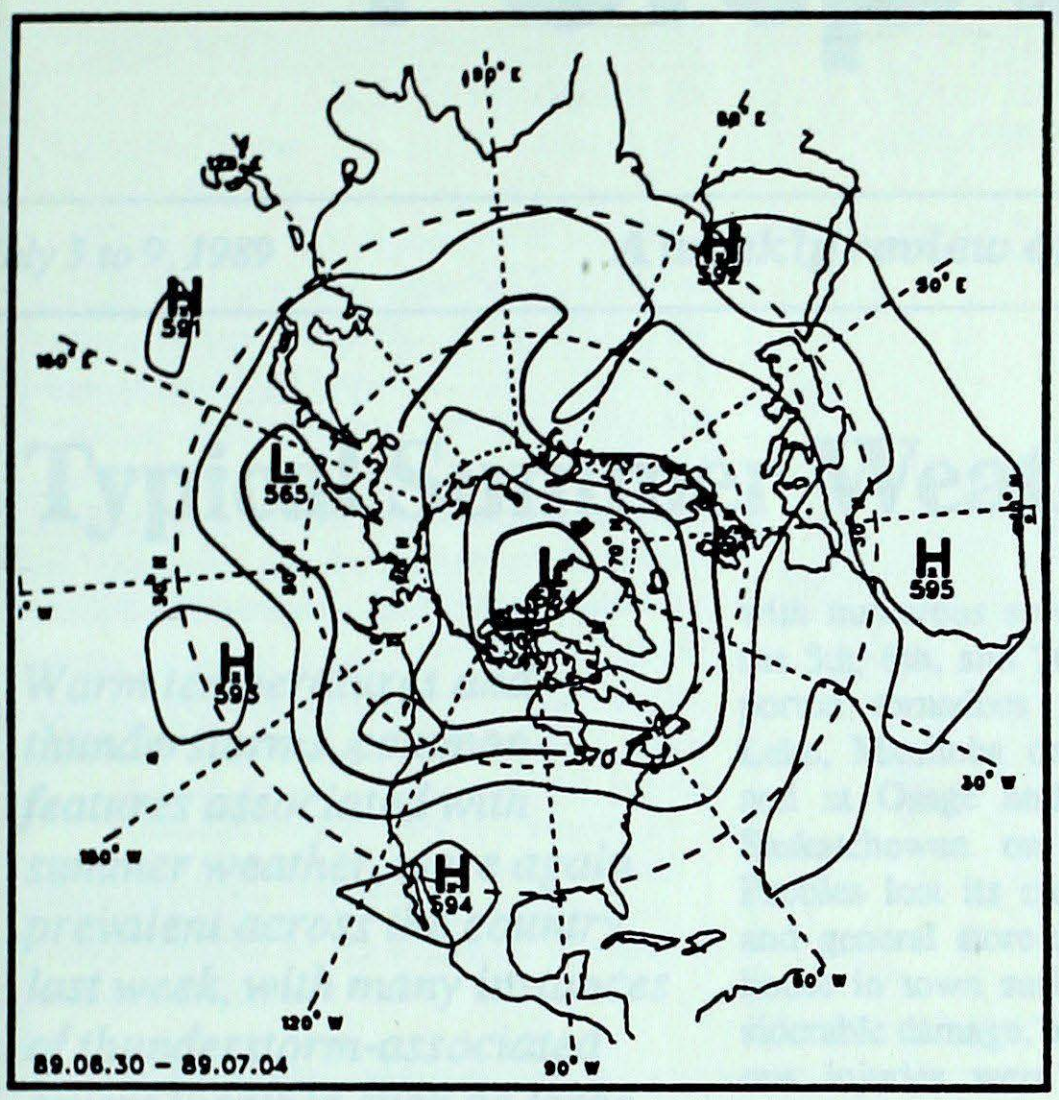
mean = mean weekly temperature, °C
max = maximum weekly temperature, °C
min = minimum weekly temperature, °C
anom = mean temperature anomaly, °C

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

— Annotations —

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

50 k-Pa ATMOSPHERIC CIRCULATION



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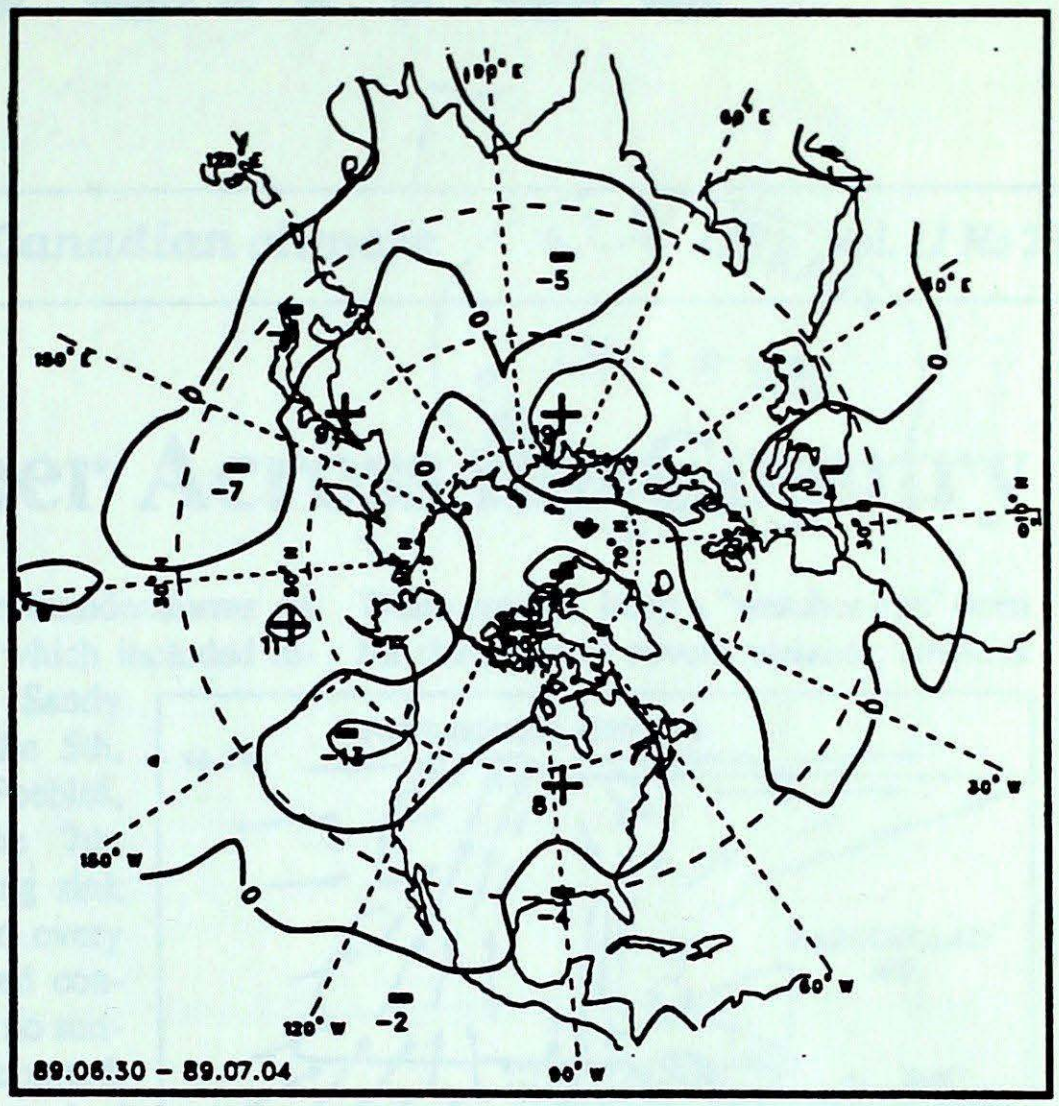

Mean geopotential height anomaly
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