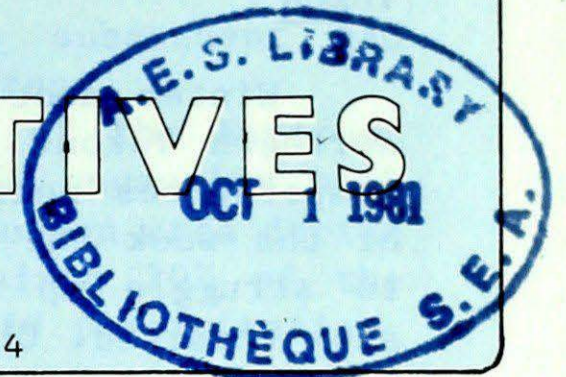


Environment Canada / Environnement Canada

Atmospheric Environment / Environnement atmosphérique

A WEEKLY REVIEW OF CANADIAN CLIMATE

CLIMATIC PERSPECTIVES

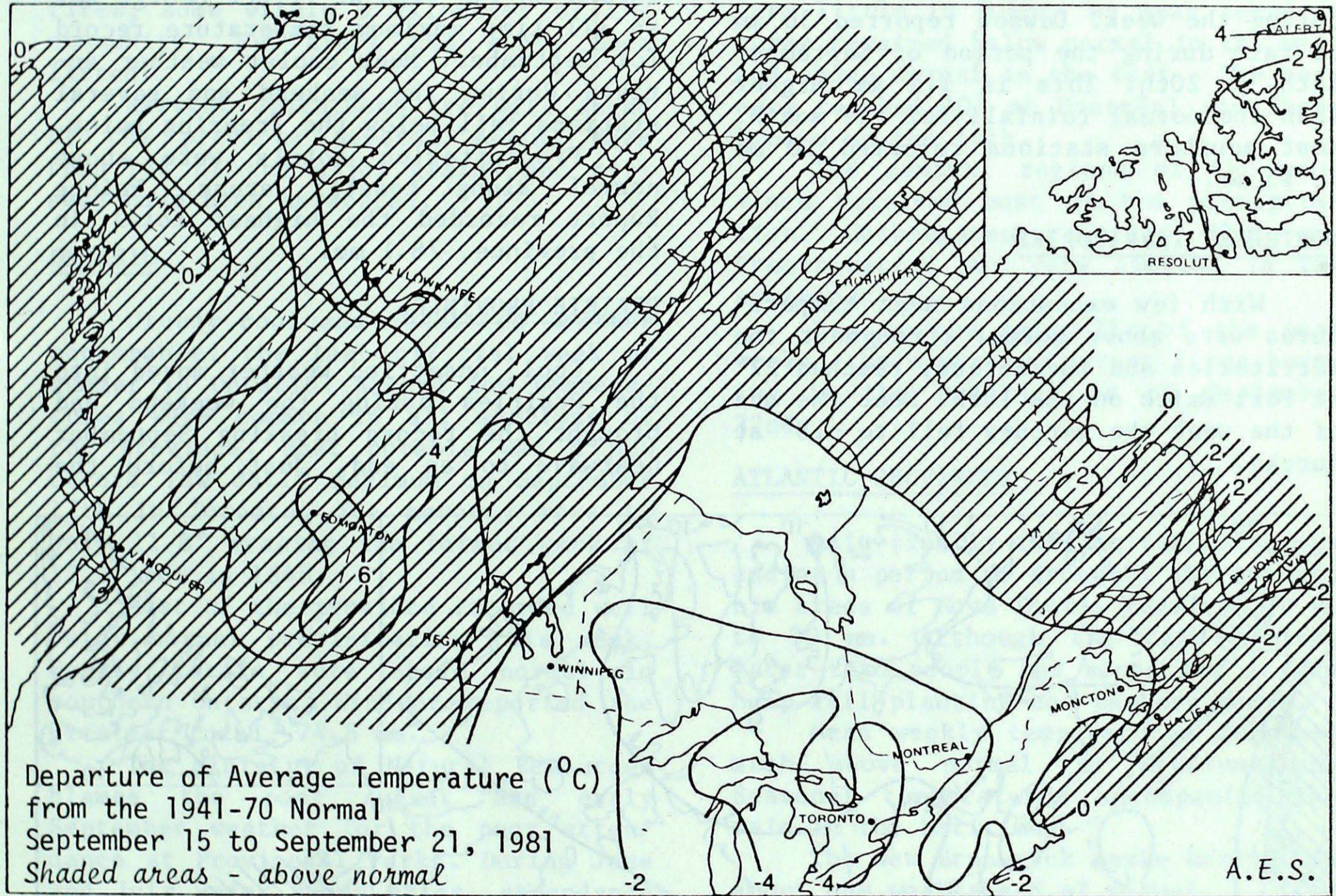


THE CANADIAN CLIMATE CENTRE,
ATMOSPHERIC ENVIRONMENT SERVICE,
4905 DUFFERIN ST., DOWNSVIEW, ONTARIO M3H 5T4

SEPTEMBER 25, 1981

(Aussi disponible en français)

VOL. 3 NO. 38



WEATHER HIGHLIGHTS FOR THE PERIOD - SEPTEMBER 15 - 21, 1981

The heat wave ends in the West

The heat wave in the western provinces continued to produce many temperature records up to the last two days of summer. A cool airmass which marched over the West during the weekend brought unsettled weather but put a damper on the forest fires raging in northern Alberta. The town of Swan Hills was again put on evacuation alert

late in the week as a dry thunderstorm ignited more than 20 fires, some within a kilometer of the community.

Temperatures oscillated between a maximum of 35° at many stations in Alberta to a minimum of -18° on the last day of the week at Eureka. Prince Rupert recorded 78.1 mm of precipitation and Sable Island recorded 78.3 mm.

NOTE: The data shown in this publication are based on unverified reports from approximately 225 Canadian and 115 northern United States Synoptic stations.

YUKON

Winter made an appearance in the northern Yukon. The week started with temperatures near 10°, but by the end of the week the mercury was only able to struggle up to -1° with moderate snow reported. Clear nights on the 20th and 21st allowed Watson Lake to set record low temperatures on both days of -3° and -5° respectively.

Much of the central Yukon was wet during the week. Dawson reported 30 mm of rain during the period of September 18th to 20th. This is 1.5 mm higher than the normal rainfall for the month. Most southern stations reported 10 mm to 15 mm.

NORTHWEST TERRITORIES

With few exceptions mean temperatures were above normal throughout the Territories and the mercury reached 27° at Fort Smith on the 16th. Near the end of the week the mercury fell to -18° at Eureka.

Precipitation was abundant in south-central areas of the Arctic Archipelago and along the Mackenzie Valley. Gladman Point recorded the greatest weekly total, 22.4 mm.

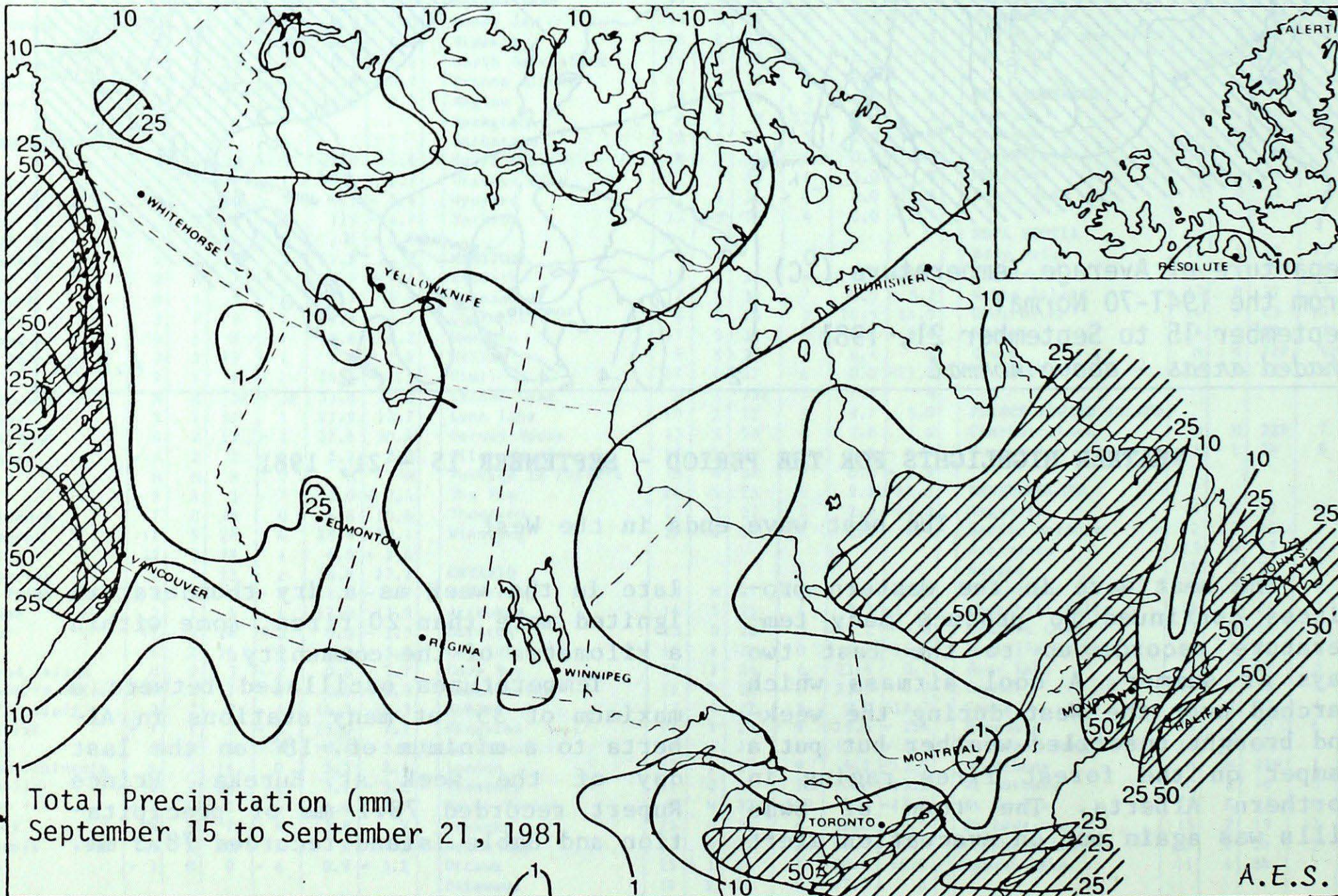
BRITISH COLUMBIA

The week started with very warm weather that set high temperature records at several stations. The 30° recorded on the 17th at Prince George set an all time maximum temperature record for September. Much cooler weather arrived during the weekend and several stations fell below the freezing point.

Precipitation totals were above normal along coastal areas. Prince Rupert recorded the highest total in the province, 78.1 mm.

PRAIRIE PROVINCES

Cool, unsettled weather moved into the Prairies during the weekend and brought the record breaking September heatwave to an end. Just before the



end, on the 17th and 18th, many stations in Alberta reported maximum temperatures of 35°.

The return to cool, showery weather put a damper on Alberta's forest fires. A number of large fires in northern districts, however, were still out of control at the end of the week. The town of Swan Hills was again put on an evacuation alert late in the week as a dry thunderstorm ignited more than 20 fires, some within a kilometer of the community. The alert has since been lifted.

Harvest operations are well ahead of the previous several years. More than 75% of the major grains and oilseed have been harvested.

ONTARIO

Cloudy cool and unsettled weather accompanied the last official week of summer in Ontario. Record low temperatures were common in all sections of the province. Most notable was a new record low daily maximum on September 17th in Toronto. The mercury rose to only 11.8° erasing the former mark of 12.8° set in 1848.

Most of the province recorded well below normal precipitation this week. Weekly totals were above normal in southern Ontario. Windsor reported the greatest total, 74.8 mm.

The Ministry of Natural Resources blames the poor August and early September weather for the poor attendance at Provincial Parks. During June and July under sunny skies, attendance

was up 10%, but the subsequent bad weather stopped this trend.

The Ministry and of the Environment reported that the unusually high rainfalls in the Haliburton area during the late summer contained 20% of the 'normal' one year's acid precipitation.

QUÉBEC

The temperature regime changed very little in Québec as mean temperatures remained below normal in the west and above normal in the east. The mercury reached 20° at Montréal and Sherbrooke on the 15th.

The central regions of the province received most of the precipitation. Chibougamau recorded 52.8 mm. Precipitation was very limited in the southwest.

Due to the rainfalls of the past weeks, there were no forest fires burning in the province as of September 22nd.

ATLANTIC PROVINCES

Rain finally fell on the Maritimes ending a period of drought. The hardest hit areas of Nova Scotia received 20 mm to 30 mm. Although the rain arrived later than people had hoped for it did help fall planting and pasture crops.

Mean weekly temperatures remained much above normal in Newfoundland. Seasonal temperatures accompanied the rain in the Maritimes.

The New Brunswick apple harvest is about one week ahead of normal.

CLIMATIC PERSPECTIVES

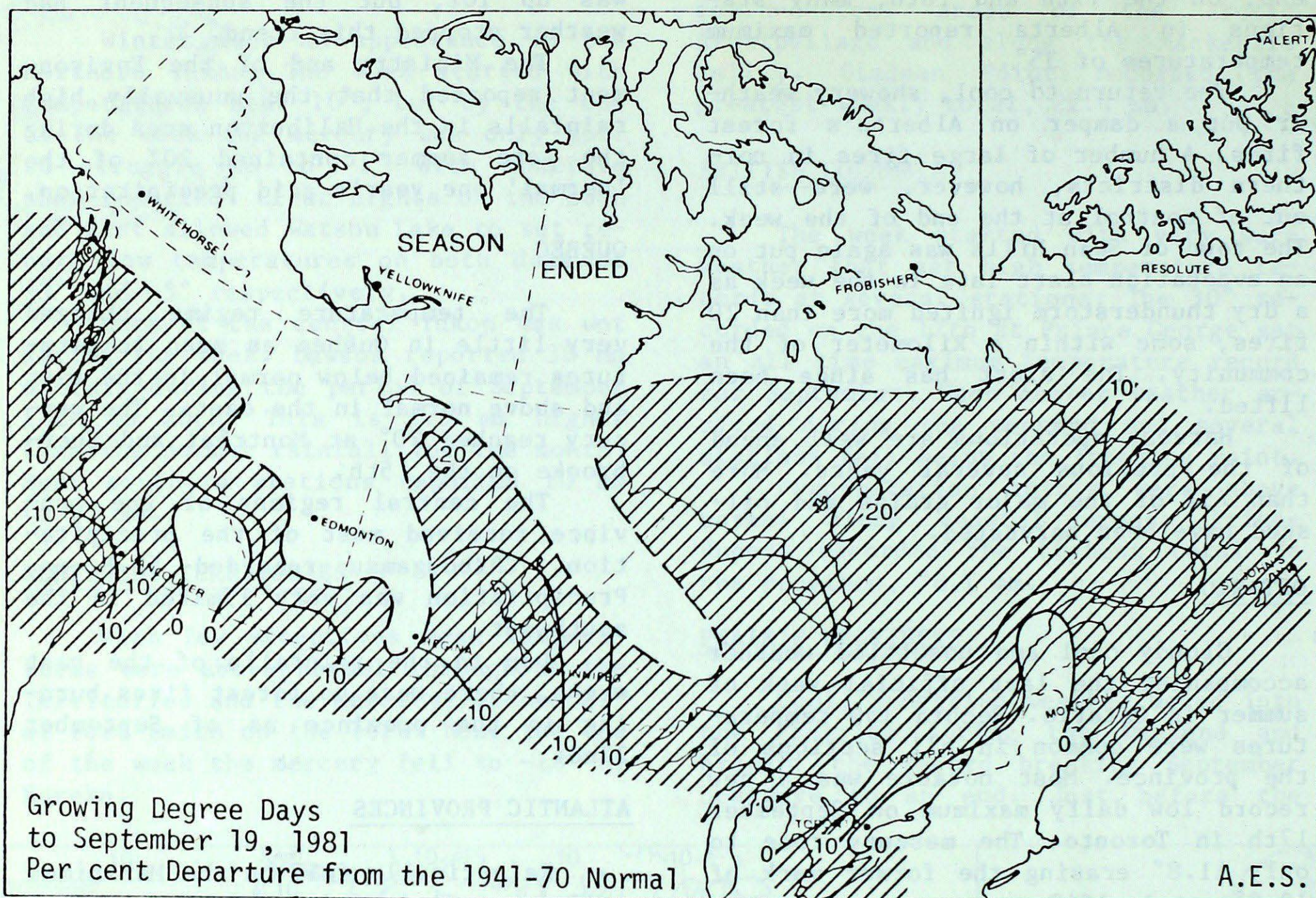
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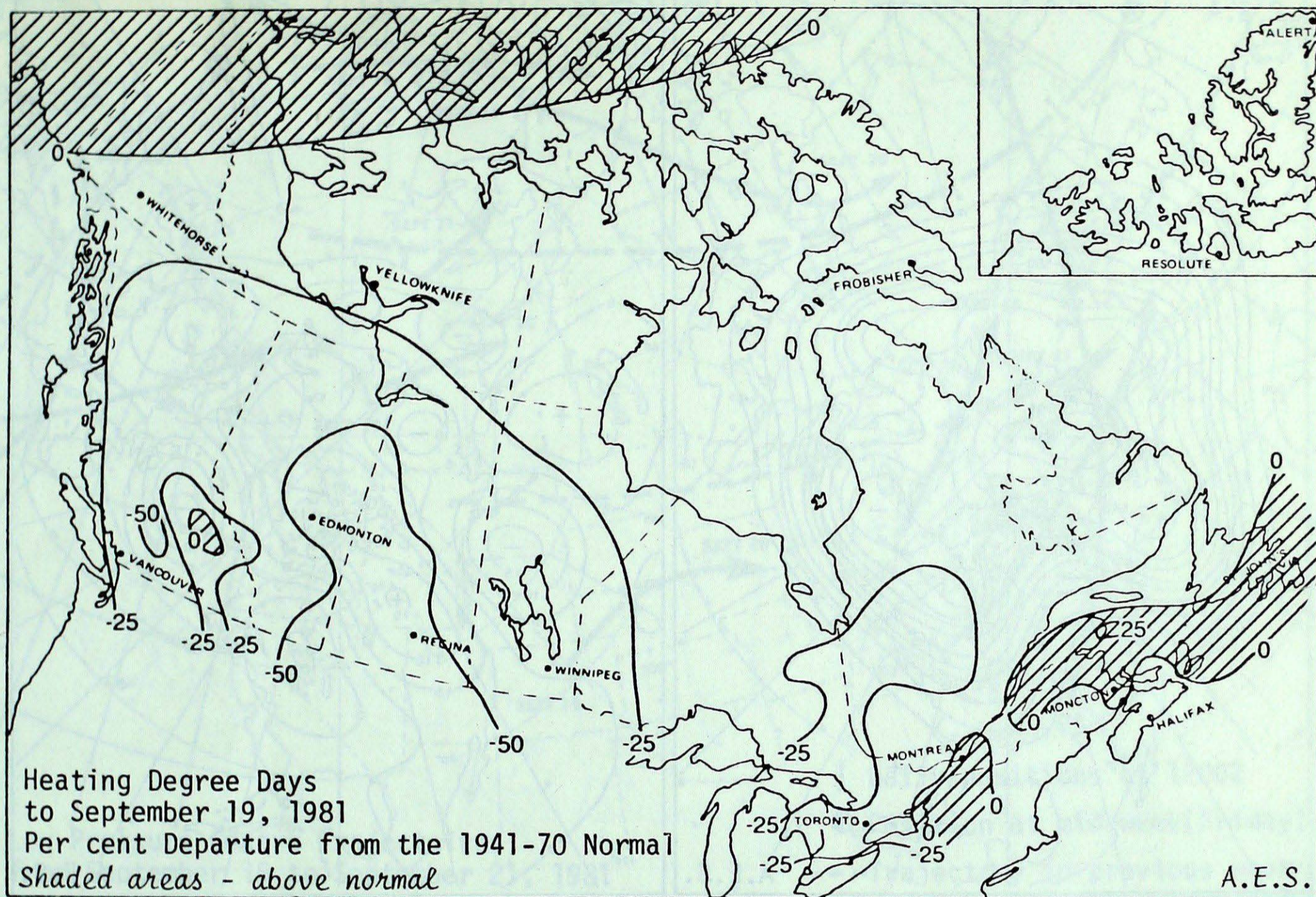
GROWING DEGREE-DAY SUMMARY TO SEPTEMBER 19, 1981



CITY	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Whitehorse*	0.0	-74.0	853.5	-14.5	98
Penticton	237.0	34.0	1896.0	24.0	101
Vancouver	219.0	29.0	1765.0	118.0	107
Edmonton	213.0	97.0	1679.0	440.0	136
Calgary	191.5	55.5	1343.0	133.0	111
Regina*	16.0	-139.0	1566.0	73.0	105
Saskatoon	215.0	68.0	1731.0	263.0	118
Winnipeg	183.5	7.5	1688.5	88.5	106
Thunder Bay	150.5	7.5	1355.5	82.5	106
Windsor	251.5	-11.5	2221.0	70.0	103
Toronto	227.0	-1.0	1756.0	-113.0	94
Ottawa	205.0	2.0	1809.0	8.0	100
Montreal	212.0	-7.0	1815.0	-50.0	97
Quebec	192.5	19.5	1561.5	25.5	102
Fredericton	179.5	10.5	1612.0	78.0	105
Halifax	210.0	20.0	1416.5	10.5	101
Charlottetown	195.0	7.0	1476.5	102.5	107
St John's	131.0	-15.0	1066.0	84.0	109

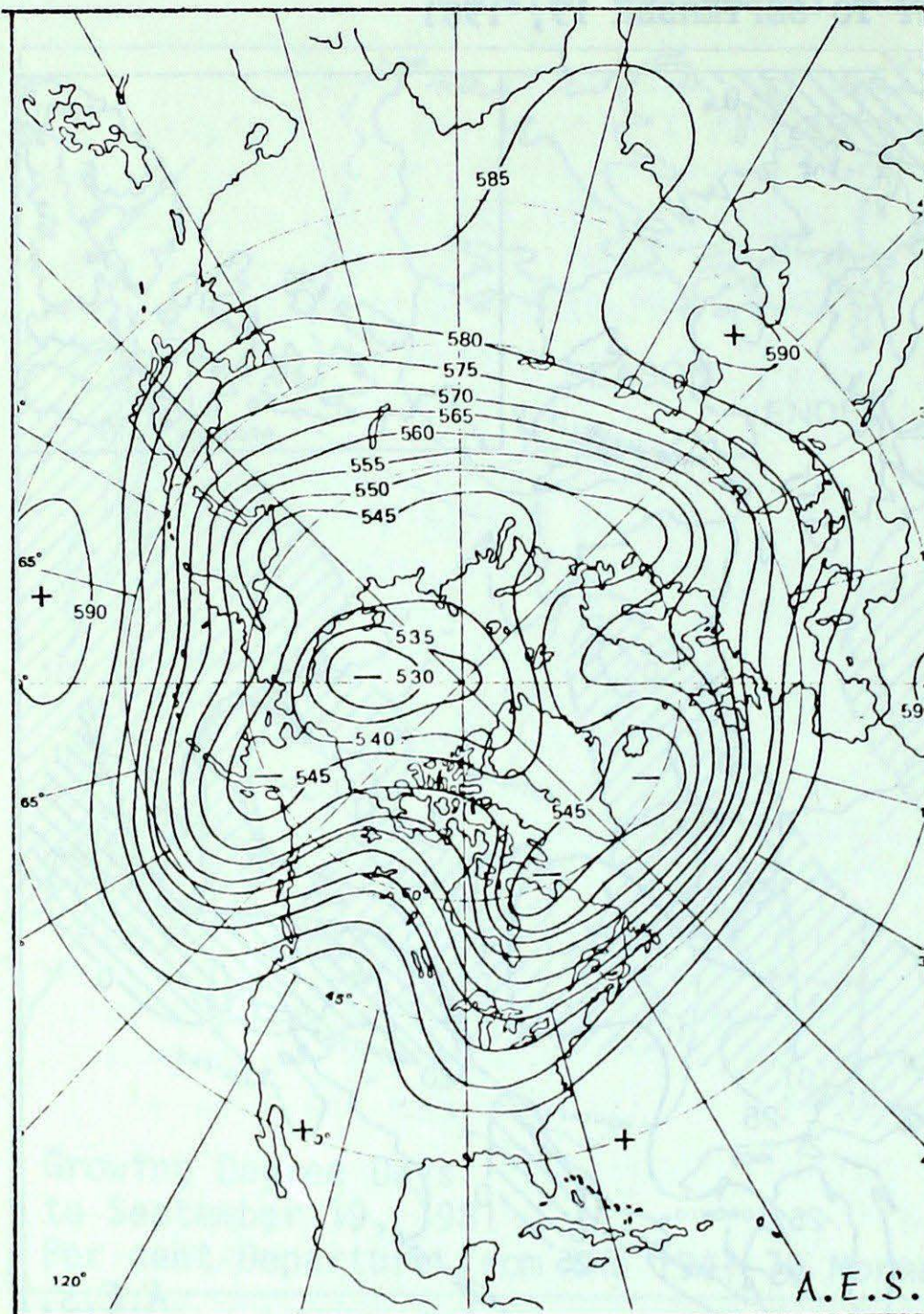
* Season ended

HEATING DEGREE-DAY SUMMARY TO SEPTEMBER 19, 1981

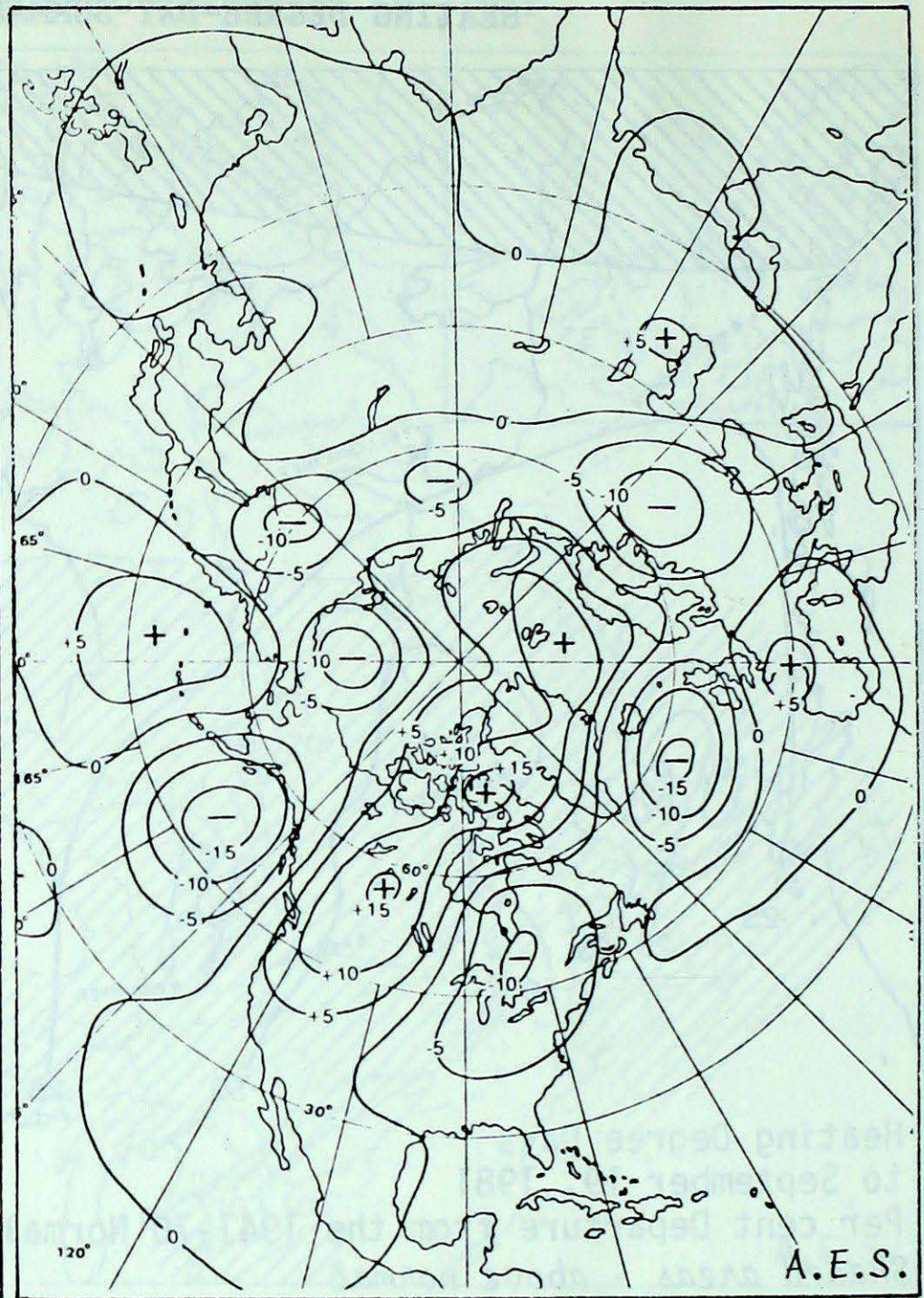


STATION	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Resolute	386.5	-15.5	1326.0	25.0	102
Inuvik	268.0	9.0	692.0	55.0	109
Whitehorse	188.5	14.5	447.5	-27.5	94
Vancouver	31.5	-28.5	87.5	-47.5	65
Edmonton Mun	53.5	-57.5	113.5	-126.5	47
Calgary	68.0	-52.0	204.0	-78.0	72
Regina	56.5	-44.5	77.0	-99.0	44
Winnipeg	68.5	-22.5	95.0	-55.0	63
Thunder Bay	96.5	-7.5	176.5	-45.5	80
Windsor	25.0	-5.0	27.0	-14.0	66
Toronto	40.0	-6.0	64.5	-10.5	86
Ottawa	53.0	-9.0	77.5	-22.5	78
Montreal	48.5	2.5	78.5	5.5	108
Quebec	64.0	-12.0	134.5	-8.5	94
Saint John, N.B.	64.0	-21.0	161.0	-35.0	82
Halifax	38.5	-7.5	109.5	-3.5	97
Charlottetown	53.0	-9.0	122.5	-3.5	97
St. John's, Nfld.	116.0	15.0	323.5	33.5	112

Atmospheric Circulation



7-day Mean 50 kPa Height Map (in dam)
September 14 to September 20, 1981



7-day Mean 50 kPa Height Anomaly (in 5 dam
intervals) September 14 to September 20, 1981

The atmospheric circulation sported a much stronger north-south component over North America this week; a not uncommon feature for this time of year.

A strong major 50 kPa ridge dominated the western half of the country throughout the first half of the period. The very warm and dry condition of the previous week continued. An approaching low pressure trough from the Pacific gradually displaced this upper ridge eastward. As a result significantly cooler, unsettled weather conditions prevailed during the latter half of the period.

The eastern half of the country was under the influence of a nearly stationary, sharp upper trough; generally unsettled showery weather was the result. A strong northwesterly circulation pumped cold Arctic air southeastwards dropping temperatures to below normal values throughout the Great Lakes Basin. As this cold unstable air-

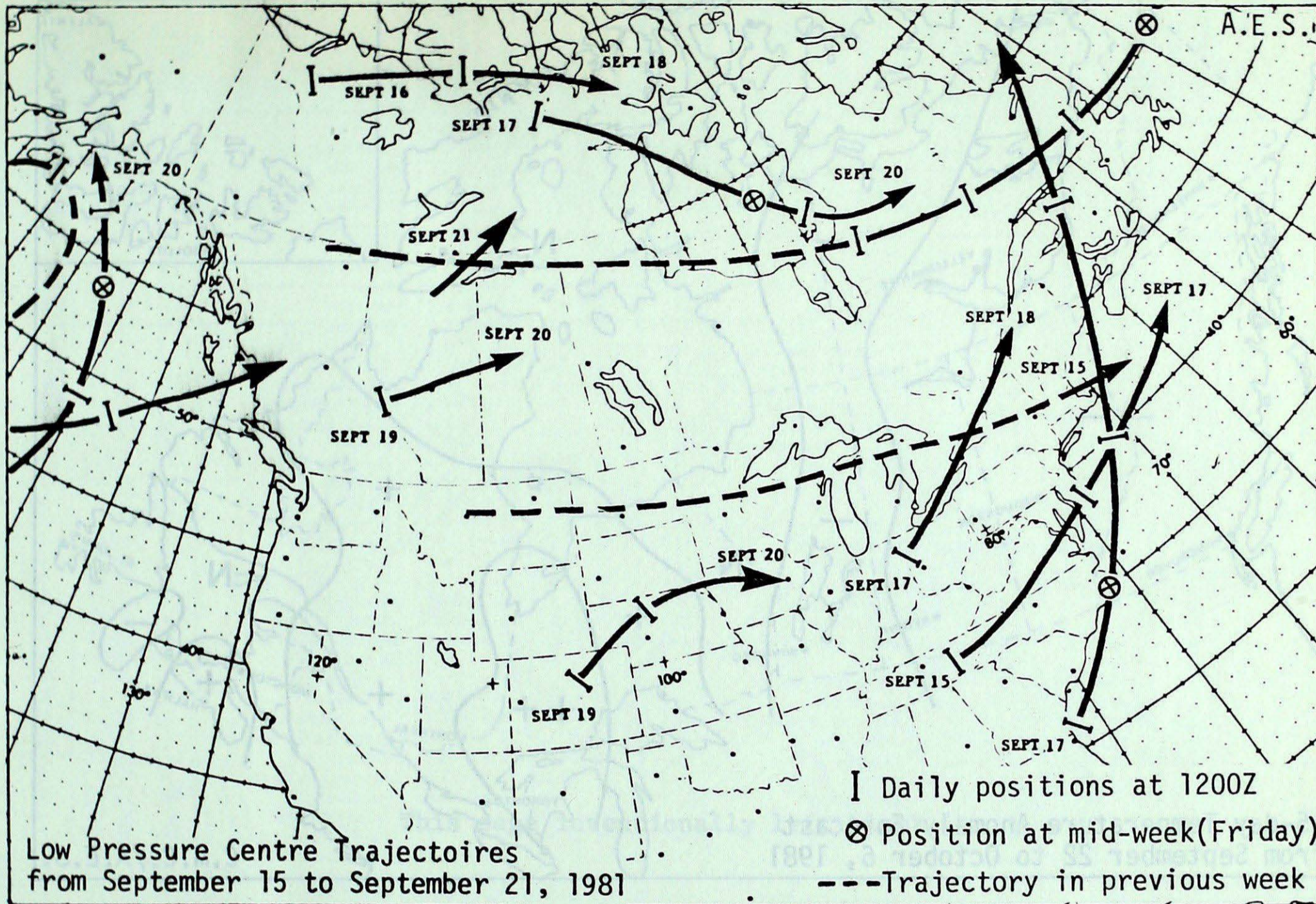
mass crossed the relatively warm waters of the great lakes, strong thermal heating from below resulted in waterspout or cold air funnel sightings.

Even though temperatures in the Atlantic Provinces continued above normal the dry summer weather came to an end. Numerous weak disturbances formed on the lea side of the upper trough and tracked northeastwards across eastern Canada.

A significant cyclonic storm system tracked up the eastern-sea-board and brought wide spread rain during the weekend. This combined with an Arctic system approaching from Hudson Bay to form a large nearly stationary low pressure system over Labrador. Strong westerly winds and modified but still cold Arctic air encompassed all of eastern Canada by the end of the period.

Andy Radomski

LOW PRESSURE CENTRE TRAJECTORIES

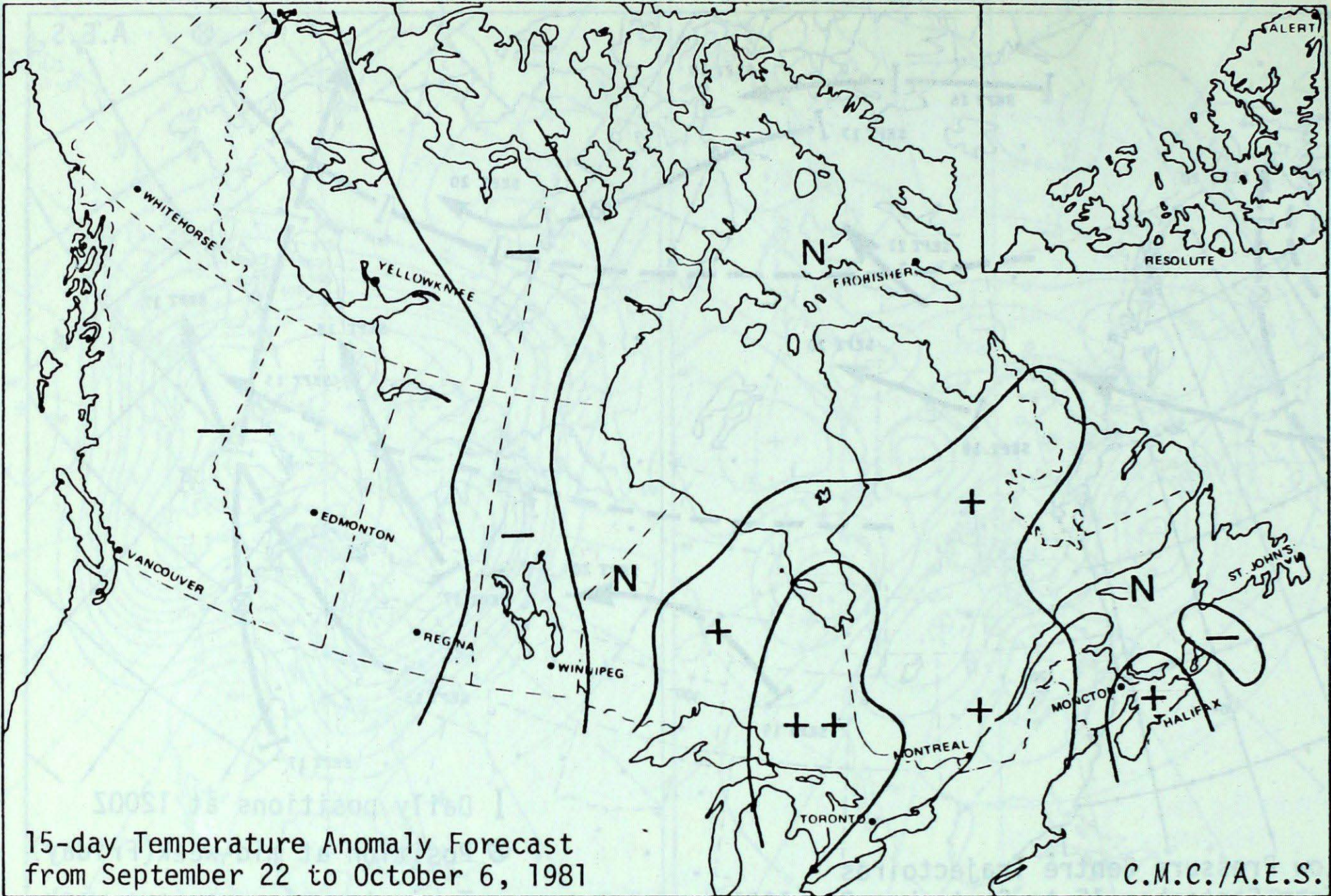


TEMPERATURE ANOMALY FORECAST FOR SEP 22 1981 TO OCT 4 1981

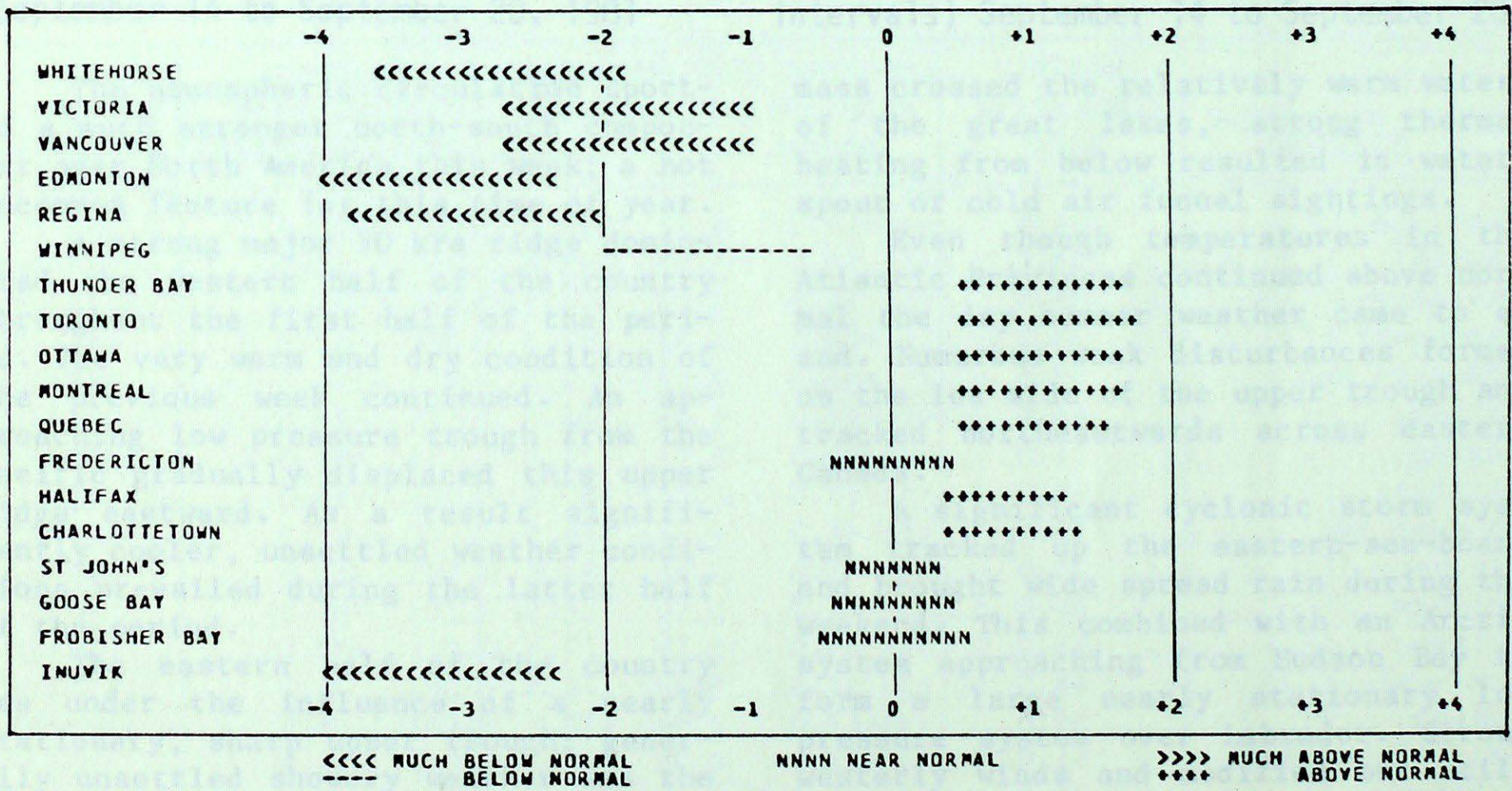
STATION	22	23	24	25	26	27	28	29	30	1 OCT	2 OCT	3 OCT	4 OCT
WILMINGTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ATLANTA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MEMPHIS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HOUSTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MIAMI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NEW YORK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHOENIX	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PORTLAND	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SALT LAKE CITY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SEATTLE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SPRINGFIELD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ST. LOUIS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TAMPA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WASHINGTON	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WICHITA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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TEMPERATURE ANOMALY FORECAST



TEMPERATURE ANOMALY FORECAST FOR SEP 22 1981 TO OCT 6 1981



REVIEW OF CANADIAN CLIMATE

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NOTE: The data shown in this table are based on uncorrected observations.

TEMPERATURE AND PRECIPITATION DATA FOR THE WEEK ENDING 0600 G.M.T. SEPTEMBER 22, 1981

Main data table with columns for Station, Temperature (°C), and Precip. (mm). It is organized into three large sections: BRITISH COLUMBIA, ALBERTA, and QUEBEC, with sub-sections for YUKON, NORTHWEST TERRITORIES, MANITOBA, ONTARIO, and NEW BRUNSWICK. Each entry includes specific temperature and precipitation values for the week.

P = extreme value based on less than 7 days X = no normal due to short period M = not available at press time