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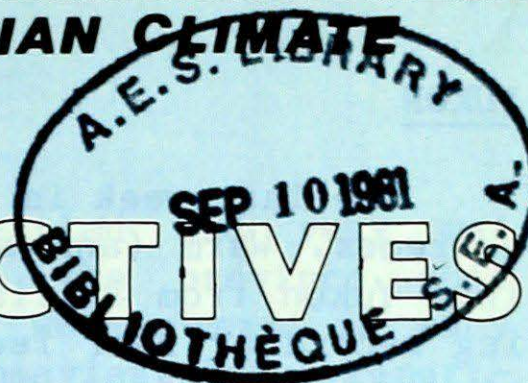
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# A WEEKLY REVIEW OF CANADIAN CLIMATE

# CLIMATIC PERSPECTIVES

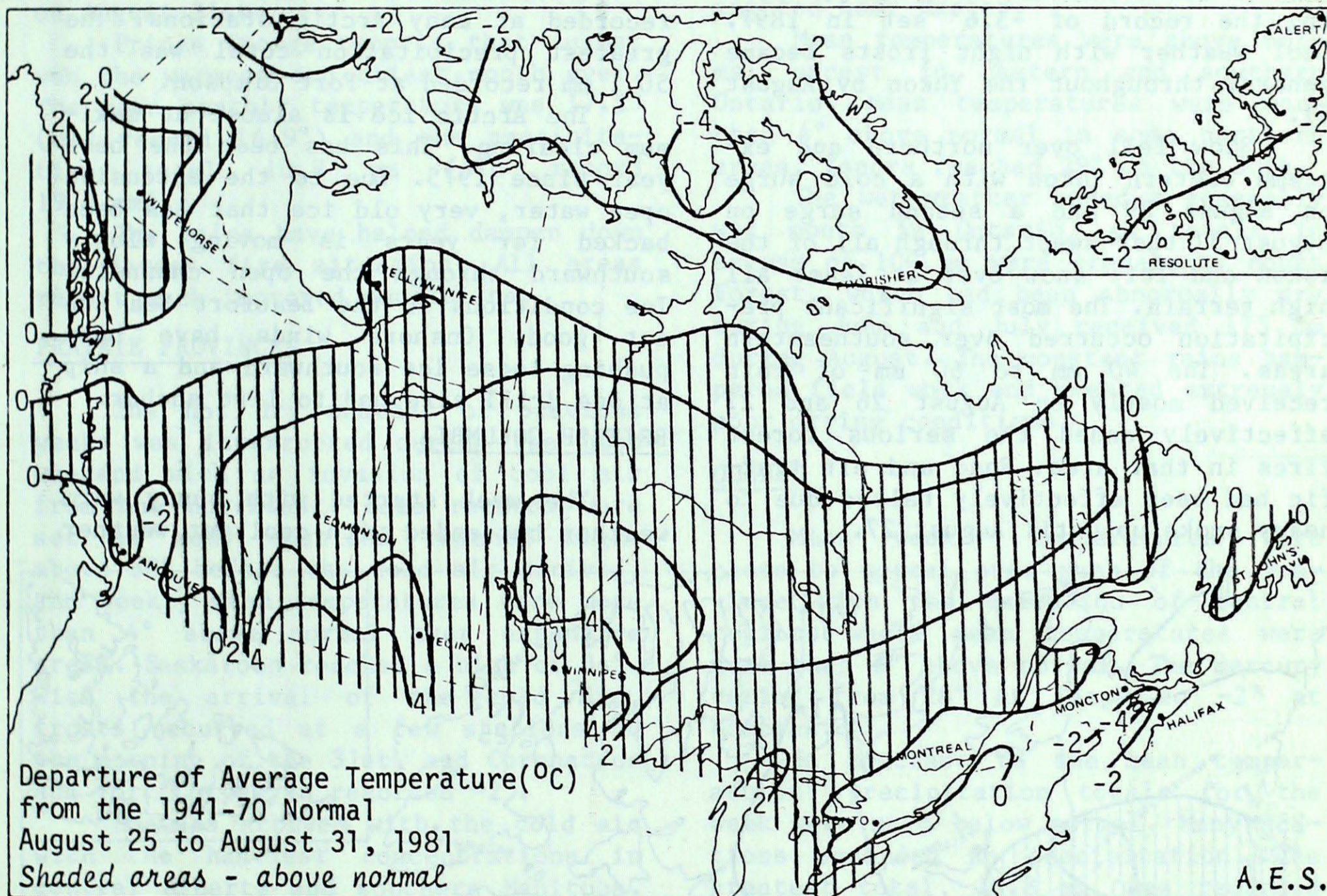


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4905 DUFFERIN ST., DOWNSVIEW, ONTARIO M3H 5T4

SEPTEMBER 4, 1981

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VOL.3 NO.35



## WEATHER HIGHLIGHTS FOR THE PERIOD - AUGUST 25 - 31, 1981

### Arctic air invades western Canada

A surge of cold northern air brought an abrupt end to the warm and dry conditions prevalent in the West. Snowfalls were general across the Northwest Territories and the Yukon. Some areas of northern British Columbia reported snow on the last day of the week.

The widespread precipitation brought relief to fire crews fighting the numerous forest fires in northern Alberta, northern British Columbia and in the lower Mackenzie District.

Conflicting airmasses produced cloudy, unsettled and very wet weather over much of Ontario. Heavy rains were common with some areas reporting over 100 mm for the week. The wet weather hampered field work and created very poor drying conditions.

Temperatures across the country varied from a high of 36° at Cranbrook, British Columbia to a low of -8° at Cape Hooper and Dewar Lakes, Northwest Territories. The greatest weekly precipitation total, 68.6 mm, occurred at Cape Scott, British Columbia.

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

YUKON

The last week in August was one of extremes. Warm (and smokey) air moved into Yukon from British Columbia causing record or near record high temperatures. The 27° at Dawson on the 26th exceeded the previous record of 24° set in 1915 and the 28° on the 27th exceeded the 24° set in 1941. By the 29th, Dawson's minimum fell to -5°, approaching the record of -5.6° set in 1897. Cool weather with night frosts became general throughout the Yukon by August 31.

Snow fell over northern and extreme eastern Yukon with a cold surge on August 29 and a second surge on August 31 that swept through all of the Yukon and left snow over at least all high terrain. The most significant precipitation occurred over southeastern areas. The 40 mm to 60 mm of rain received mostly on August 26 and 27 effectively ended the serious forest fires in that area. Road and air traffic had been effectively halted due to heavy smoke up until August 27.

NORTHWEST TERRITORIES

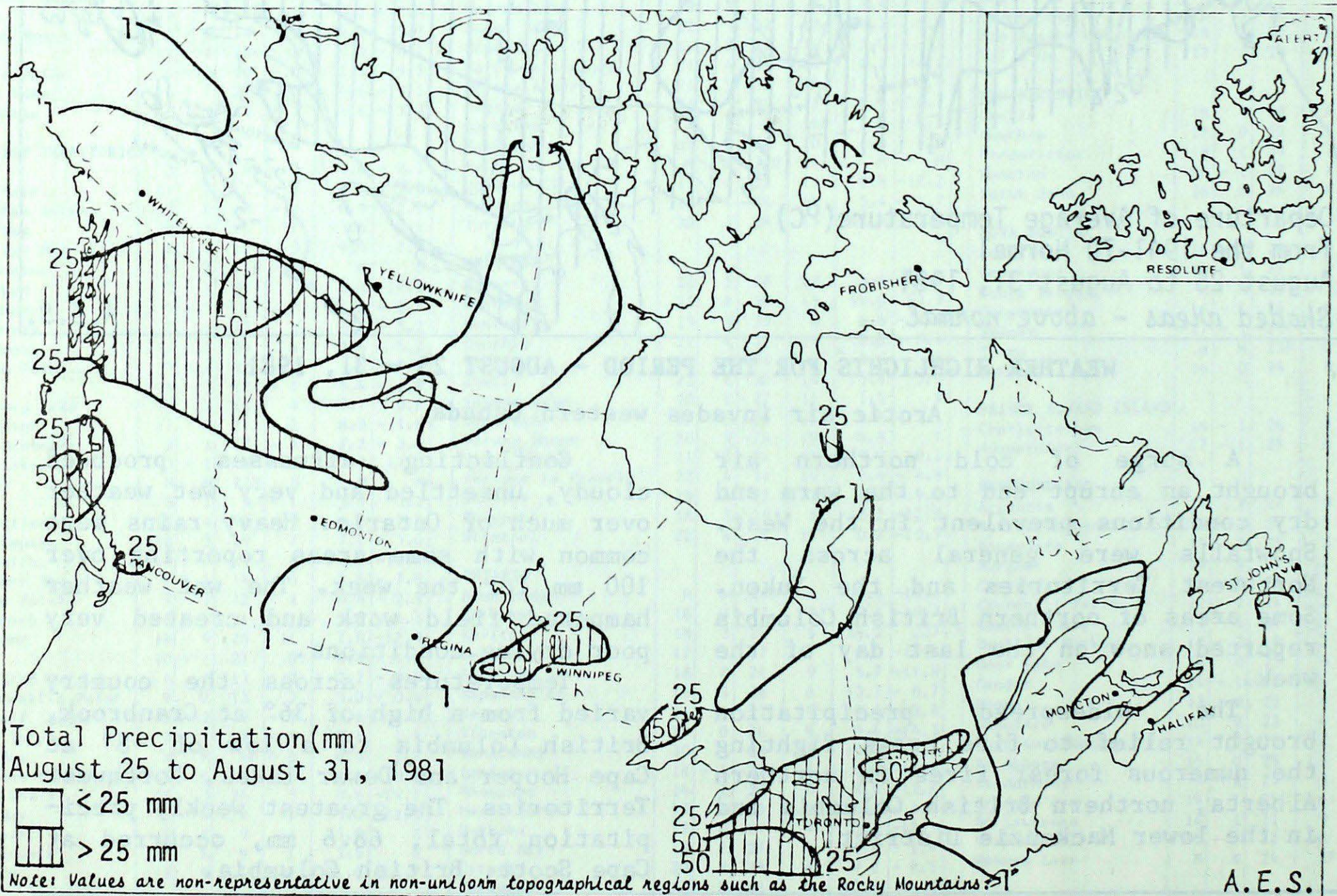
Snow returned to the Arctic as cold air moved in to blanket the Territories by the end of the week. The mercury reached a maximum of 34° at Fort Smith on August 27, but two days later could only struggle up to 9°. Cape Hooper and Dewar Lakes fell to -8° on the 27th and 29th respectively.

Snowfalls from 4 cm to 16 cm were recorded at many Arctic stations. The greatest precipitation total was the 50.1 mm recorded at Fort Simpson.

The Arctic ice is almost at maximum clearing. This has been the best year since 1975. Due to the extensive open water, very old ice that has been backed for years is moving slowly southward through the open channels. Ice conditions in the Beaufort Sea are not good. Onshore winds have been pushing loose ice southward and a ship at one drill site had to lift anchor.

BRITISH COLUMBIA

The week started with sunny warm weather but ended with cool wet weather



as an Arctic airmass moved over this province. Many northern stations recorded minimum temperatures below 5° (Prince George fell to the freezing point). Early in the week Cranbrook reached 36°.

Precipitation was general and most stations recorded above normal amounts. Cape Scott recorded 68.6 mm for the week. Fort Nelson reported a snowfall on August 31st.

Prince George reports that August was the warmest and driest month ever. The mean monthly temperature was 17.2° (old record 16.9°) and the precipitation total 10.8 mm (old record 19.2 mm).

The rains have helped dampen down the forest fire situation. All areas report much improved conditions.

#### PRAIRIE PROVINCES

The hot dry weather of previous weeks was interrupted during the past weekend with an invasion of cool air from the northwest. Some records were set as many stations reached highs above 30° before the cold air arrived, and weekly mean temperatures were more than 4° above normal over extensive areas. Saskatoon reached a high of 34°. With the arrival of the cold air, frosts occurred at a few stations on the morning of the 31st, and Coronation and Fort Chipewyan recorded -2°.

Showers arrived with the cold air with the heaviest concentrations in central Alberta and southern Manitoba. Heavy thunderstorms occurred in the Brandon area, and Brandon recorded 55.4 mm of rain. Some areas to the north-east of Brandon reported 50 cm hail.

The return to cooler temperatures, higher humidities and spotty showers brought welcome to weary crews fighting the province's numerous forest fires in Alberta. By mid-week, 1800 men were engaged in fighting 72 forest fires of which 30 were listed as out of control. A total of 405 000 hectares consumed by 1184 fires costing the forest service nearly 20 million dollars had been tabulated by mid-week. This was about 200 000 hectares less than the record amount of burned forest land for the same period last season.

#### ONTARIO

Cloudy, unsettled and very wet weather dominated the province this week. Heavy rains were common in many regions with the heaviest being reported at Princeton, 13 km west of Brantford, where 140 mm fell in three hours on the morning of August 30th. During this same morning a funnel cloud was sighted near Exeter.

Mean temperatures were above normal except in eastern and southern Ontario. Mean temperatures were more than 4° above normal in some northern areas. Kenora reached 29° on the 30th.

The wet weather ended a generally wet month in Ontario, as totals in excess of 100 mm were prevalent. Mount Forest, which had been abnormally dry during June and July received 173 mm during August. The constant rains hampered field work and created extremely poor drying conditions.

#### QUÉBEC

Mean weekly temperatures were close to normal over much of the province with the exception of central regions where mean temperatures were more than 3° above normal. The mercury varied from 28° at Gaspé to -2° at Koartak.

In contrast to the mean temperatures, precipitation totals for the week were much below normal. Many stations recorded no precipitation. The greatest total, 26.8 mm, was recorded at St. Agathe-des-Monts.

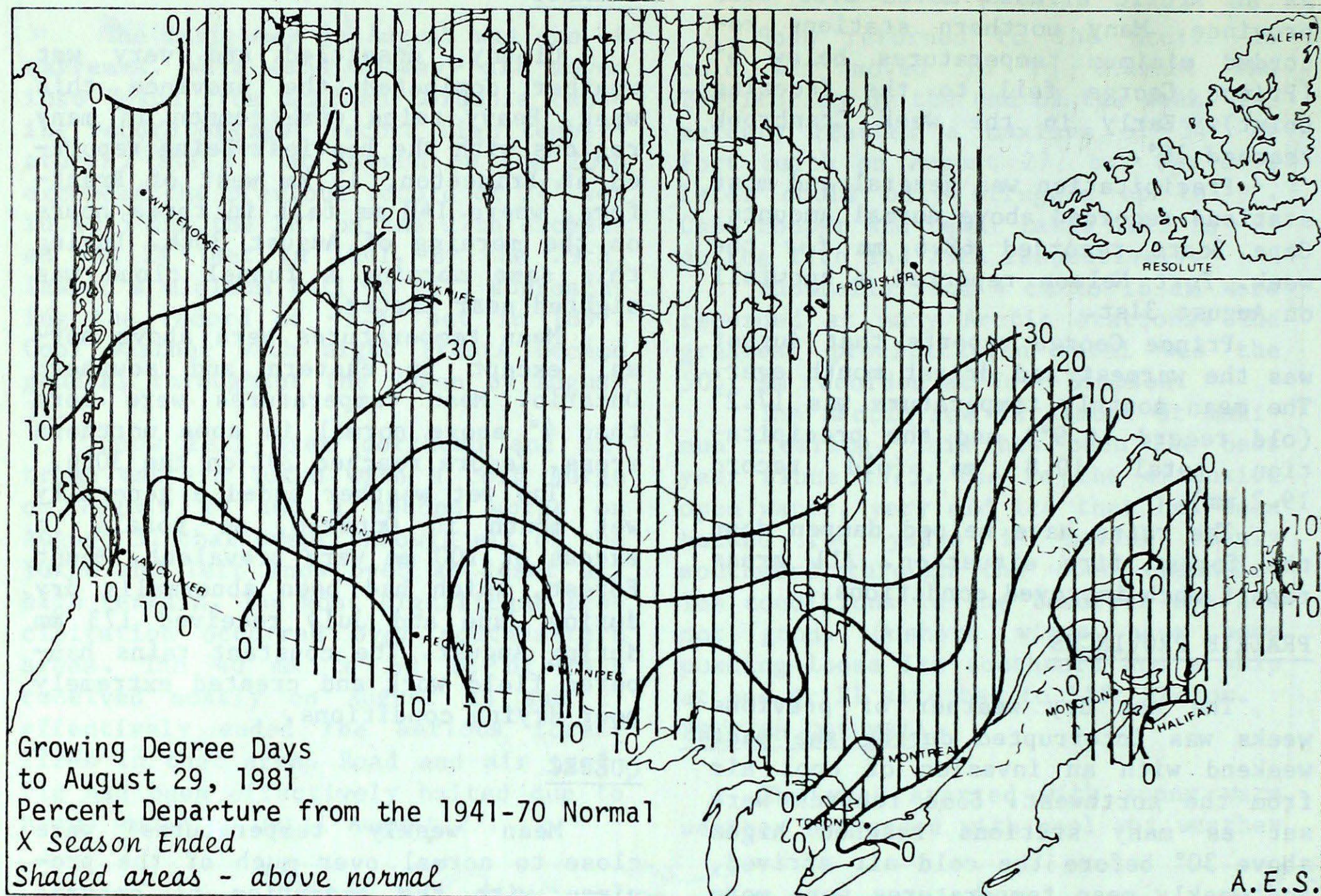
There were 29 forest fires still active as of the 31st of August. There have been 1000 forest fires burning over 2374 hectares this year compared to the normal for the past 5 years of 932 fires burning over 18069 hectares.

#### ATLANTIC PROVINCES

Cool, but dry weather prevailed throughout most regions with the exception of Labrador. Many low temperature records were set or equaled in the Maritimes and Newfoundland. Sydney tied the old record of 5° set in 1884. In contrast, many high temperature records were established in Labrador on August

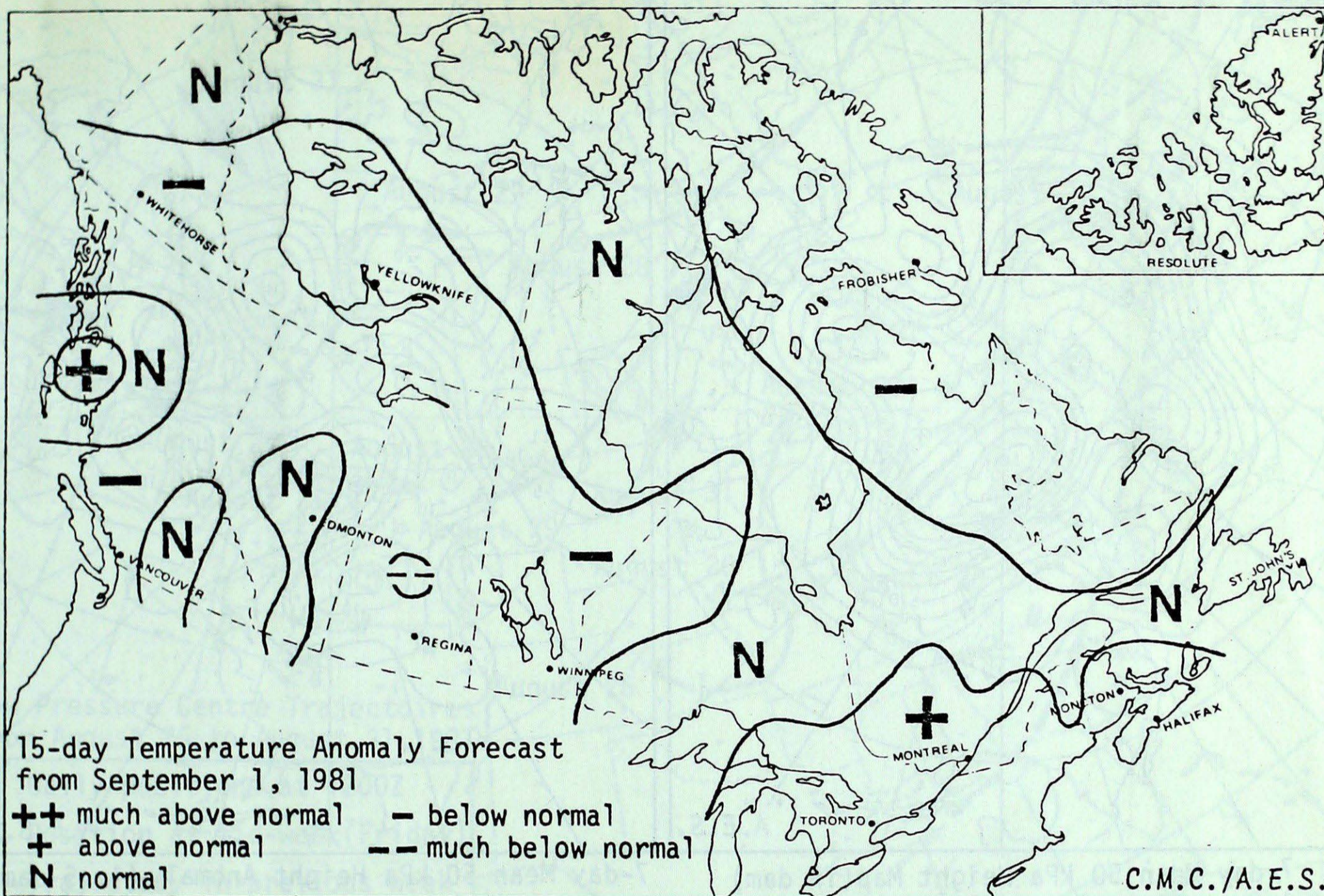
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## GROWING DEGREE-DAY SUMMARY TO AUGUST 29, 1981

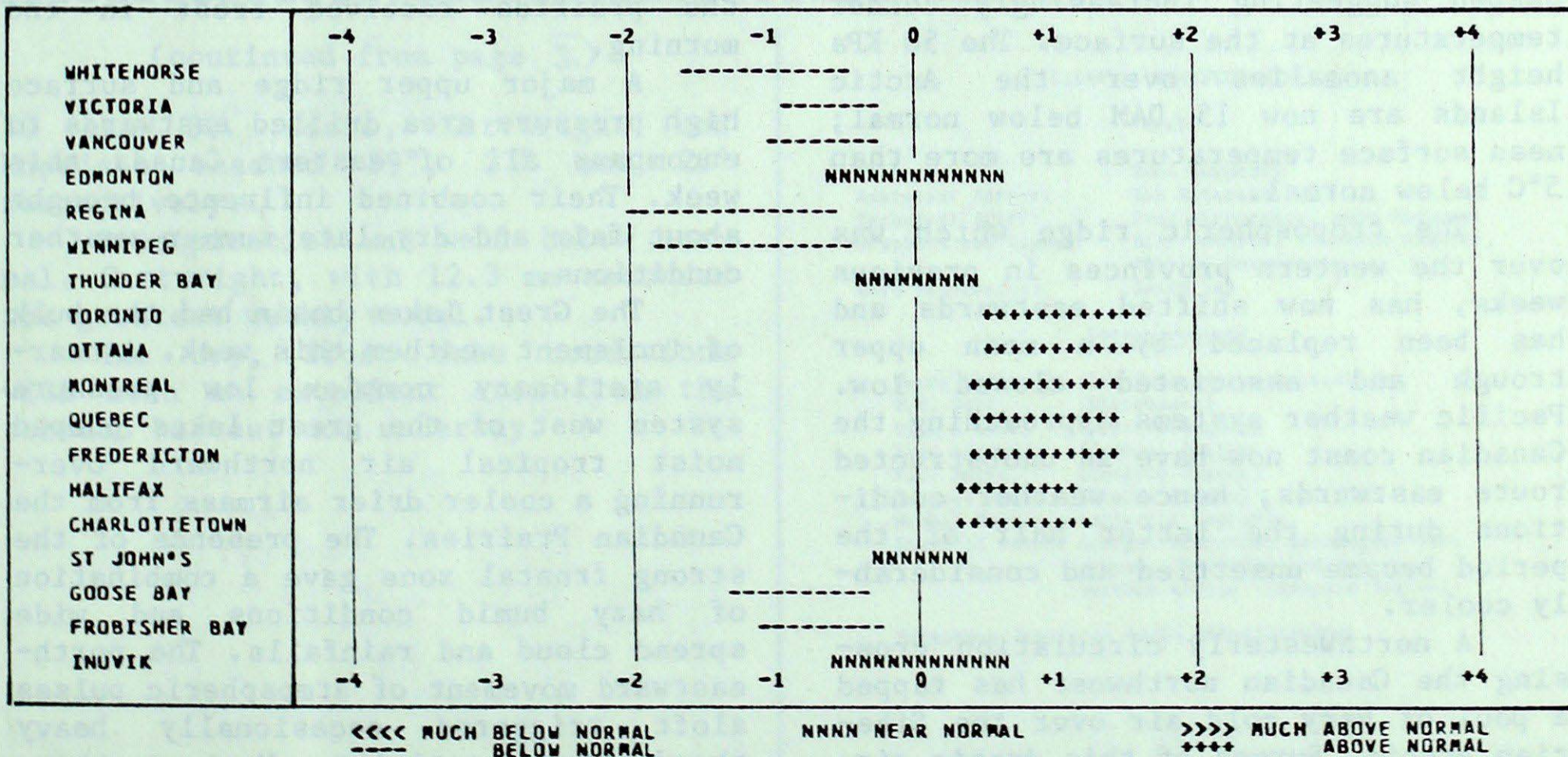


CITY	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Whitehorse	237.5	21.5	828.0	46.0	106
Penticton	505.0	89.0	1636.5	-6.5	100
Vancouver	406.0	54.0	1525.0	90.0	106
Edmonton	461.0	157.0	1454.0	347.0	131
Calgary	380.0	79.0	1140.0	82.0	108
Regina	456.0	77.0	1528.0	212.0	116
Saskatoon	469.5	104.5	1501.5	201.5	116
Winnipeg	439.5	40.5	1476.0	76.0	105
Thunder Bay	372.0	37.0	1179.0	71.0	106
Windsor	476.5	1.5	1934.0	78.0	104
Toronto	411.0	-26.0	1497.5	-115.5	93
Ottawa	414.5	-3.5	1573.0	1.0	100
Montreal	407.0	-27.0	1570.0	-48.0	97
Quebec	354.5	-17.5	1335.0	-4.0	100
Fredericton	389.0	9.0	1406.0	65.0	105
Halifax	357.0	-19.0	1182.0	-10.0	99
Charlottetown	362.0	-13.0	1255.0	93.0	108
St John's	292.0	-14.0	913.5	95.5	112

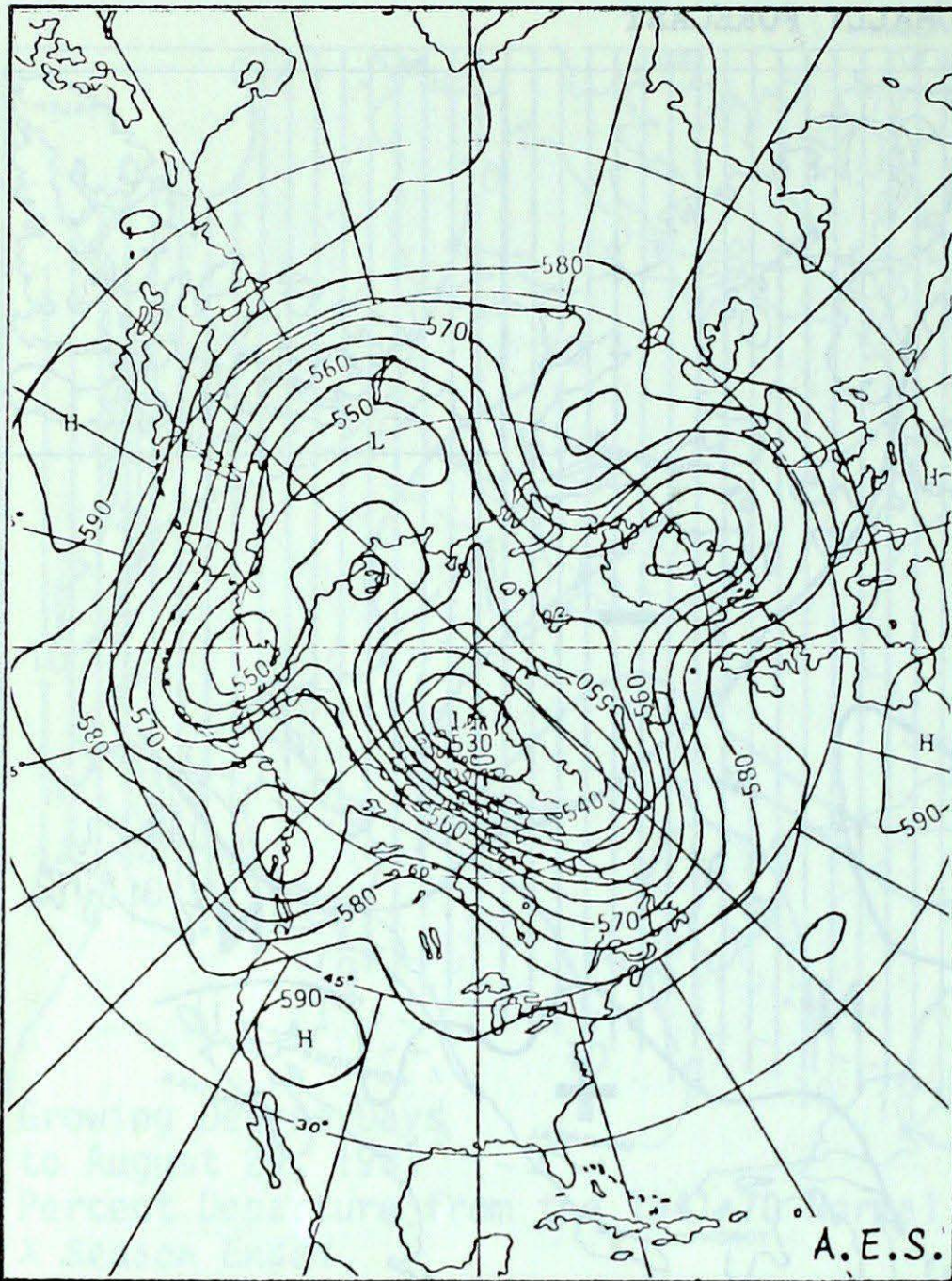
TEMPERATURE ANOMALLY FORECAST



TEMPERATURE ANOMALY FORECAST FOR SEP 1 1981 TO SEP 15 1981



## Atmospheric Circulation

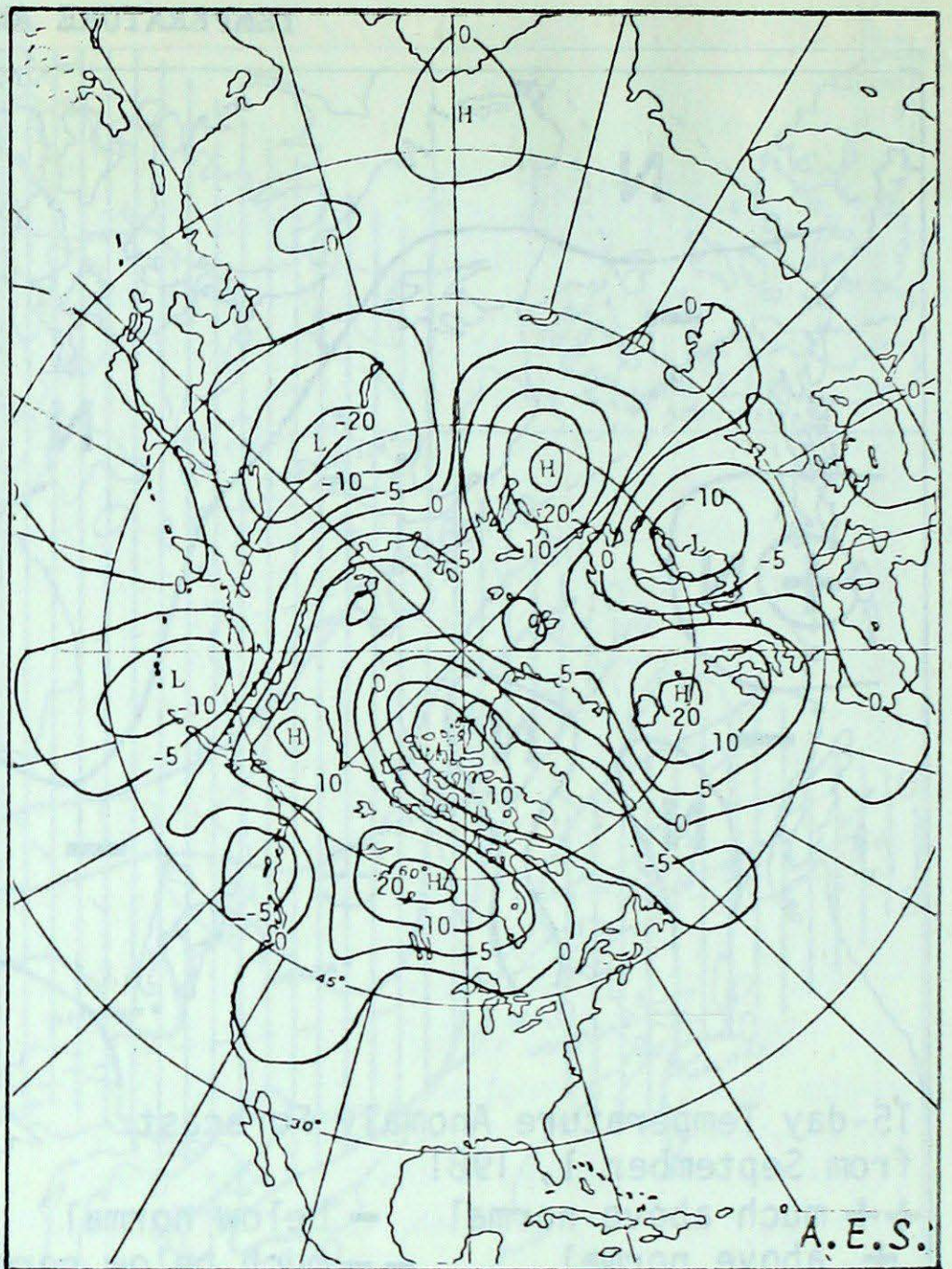


7-day Mean 50 kPa Height Map (in dam)  
August 24 to August 30, 1981

The Arctic vortex continued to deepen suggesting increasingly colder temperatures at the surface. The 50 KPa height anomalies over the Arctic Islands are now 15 DAM below normal; mean surface temperatures are more than 5°C below normal.

The tropospheric ridge which was over the western provinces in previous weeks, has now shifted eastwards and has been replaced by a mean upper trough and associated closed low. Pacific weather systems approaching the Canadian coast now have an unobstructed route eastwards; hence weather conditions during the latter half of the period became unsettled and considerably cooler.

A northwesterly circulation crossing the Canadian northwest has tapped a pool of very cold air over the Siberian Arctic. Surges of this Arctic air-mass penetrated southeastwards across the Yukon and Northwest Territories. A general snow cover has been reported in



7-day Mean 50 kPa Height Anomaly (in 5 dam intervals) August 24 to August 30, 1981

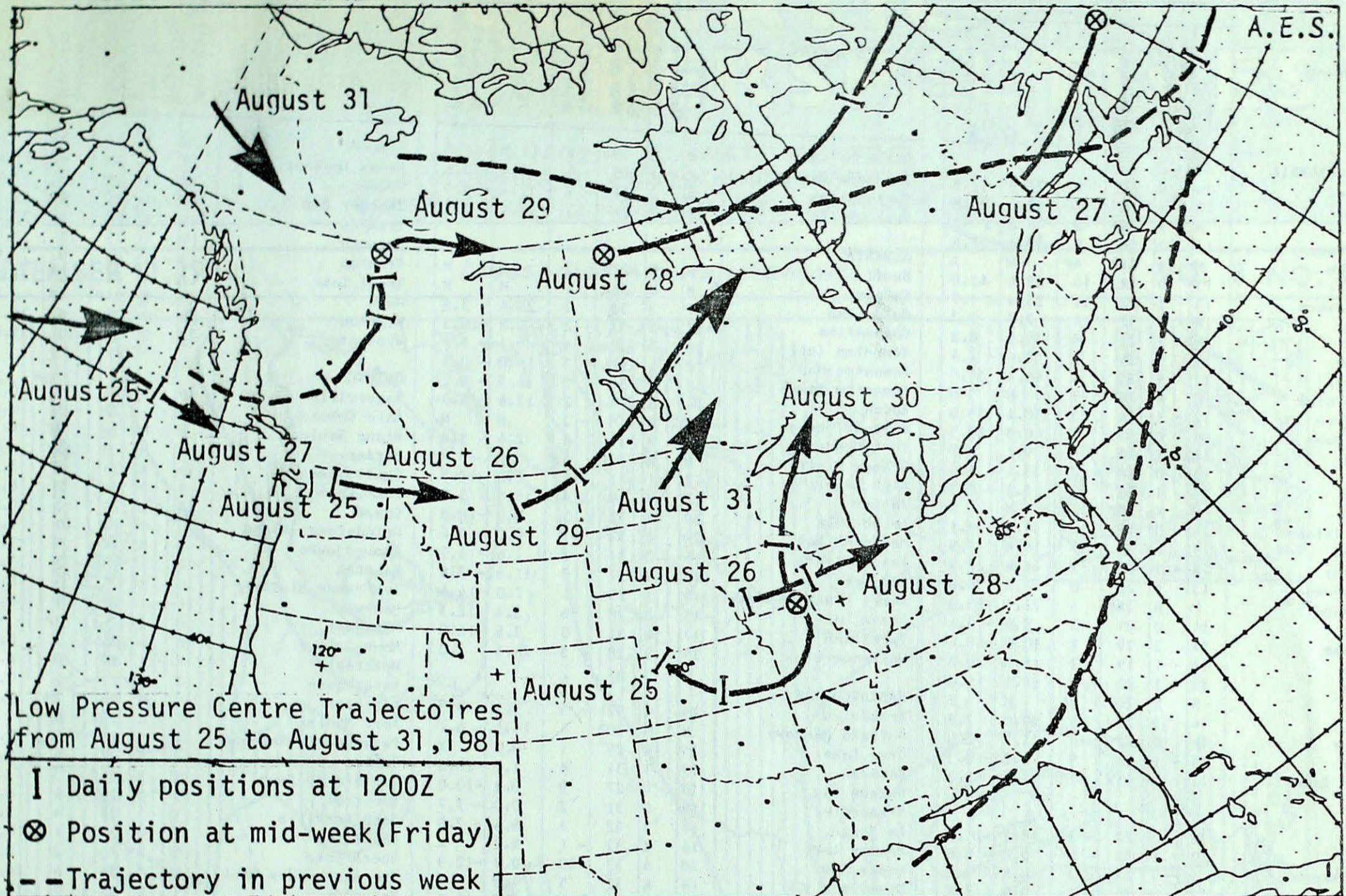
many communities. The northern parts of the prairies received frost in the morning.

A major upper ridge and surface high pressure area drifted eastwards to encompass all of eastern Canada this week. Their combined influence brought about fair and dry late summer weather conditions.

The Great Lakes basin had the bulk of inclement weather this week. A nearly stationary complex low pressure system west of the great lakes pumped moist tropical air northward overrunning a cooler drier airmass from the Canadian Prairies. The presence of the strong frontal zone gave a combination of hazy humid conditions and wide spread cloud and rainfalls. The north-eastward movement of atmospheric pulses aloft triggered occasionally heavy thunderstorm activity. Many southern Georgian Bay communities received well in excess of a 100 mm of rain.

Andy Radomski

## LOW PRESSURE CENTRE TRAJECTORIES



(continued from page 3,)

30 and 31. Goose, Cartwright and Hopedale reached 29°, 27° and 26° respectively.

Precipitation was well below normal. Cartwright, with 12.3 mm recorded the greatest weekly total.

The dry, frost free conditions will mean an excellent crop from the tobacco harvest now underway.

## CLIMATIC PERSPECTIVES

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TEMPERATURE AND PRECIPITATION DATA FOR THE WEEK ENDING 0600 G.M.T. SEPTEMBER 1, 1981

Table with columns: Station, Temperature (°C) (Average, Departure from Normal, Extreme Maximum, Extreme Minimum), Precip. (mm) (Total, Departure from Normal). Rows include stations from BRITISH COLUMBIA to Resolute.

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Table with columns: Station, Temperature (°C) (Average, Departure from Normal, Extreme Maximum, Extreme Minimum), Precip. (mm) (Total, Departure from Normal). Rows include stations from SIMCOE to Wabush Lake.

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