

# CLIMATIC PERSPECTIVES

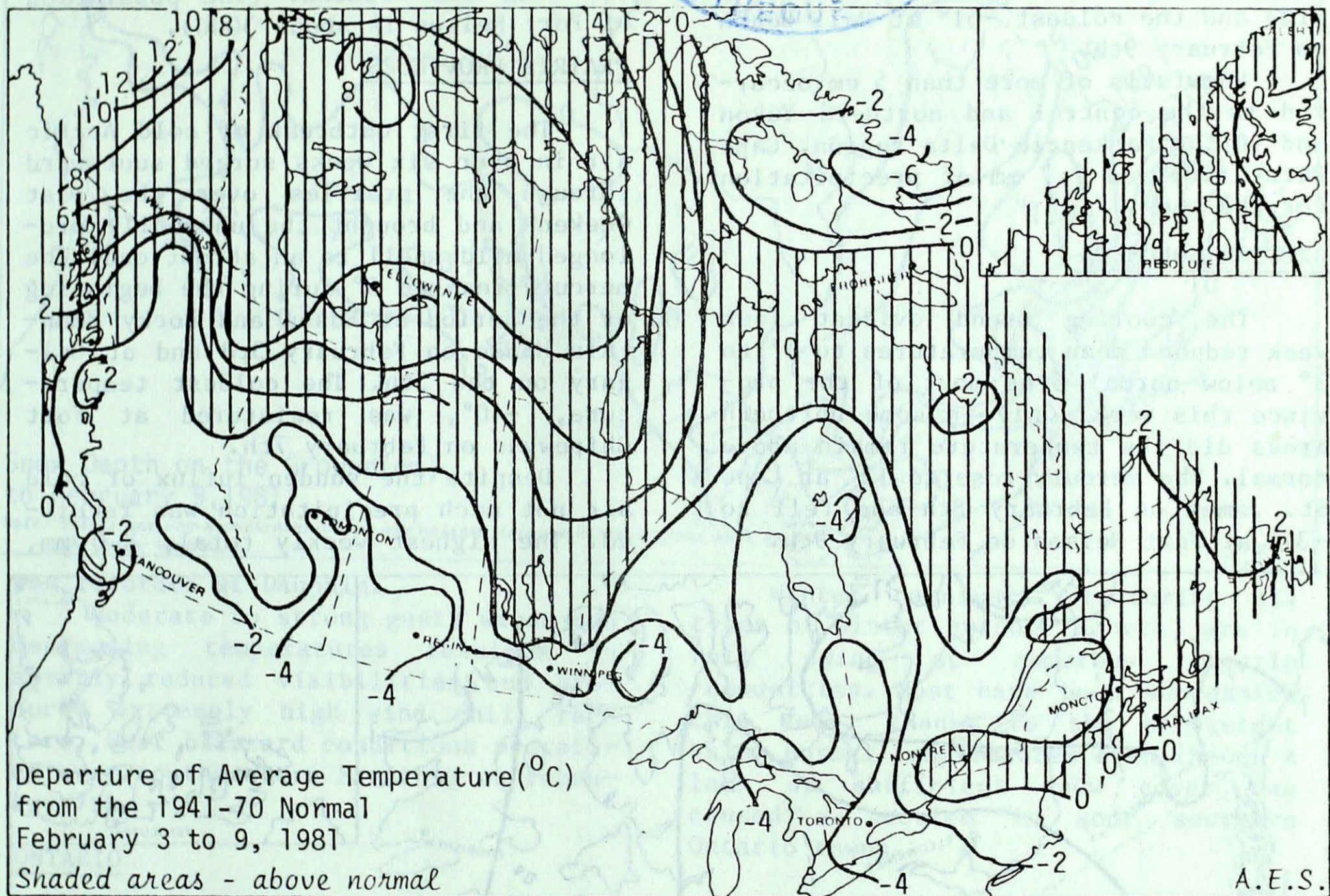
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FEBRUARY 13, 1981

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**WEATHER HIGHLIGHTS FOR THE PERIOD - FEBRUARY 3 TO 9 1981**

**Cold Arctic outbreak ends western mild spell**

Cold Arctic air surged southwards during the latter part of the period bringing the unusually mild weather in the north and west to an abrupt end. Moderate to strong gusty winds resulted in severely reduced visibilities and produced extremely high wind chill factors throughout the prairies. Despite the cold outbreak mean temperatures were more than  $8^{\circ}$  above normal in the Cape Parry region.

Rain and warm weather decimated the snowcover over Nova Scotia. A weekend snowstorm and a civic workers strike combined to bring the city of St. John to a standstill.

Temperatures varied from a maximum of  $13^{\circ}$  at Cape St. James, British Columbia to a minimum of  $-51^{\circ}$  at Hall Beach, Northwest Territories. The highest weekly precipitation total, 99.9 mm, was recorded at Burgeo, Newfoundland.

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

YUKON AND NORTHWEST TERRITORIES

With the exceptions of Baffin and Ellesmere Islands temperatures were still above, but closer to normal. Mean temperatures varied from 6° below normal in eastern Baffin Island to 7° to 10° above normal over the Mackenzie District and Yukon. The warmest reading for the week was 2° (at Burwash, Shingle Point and Inuvik on February 3rd) and the coldest -51° at Hall Beach on February 9th.

Snowfalls of more than 5 cm occurred in the central and northern Yukon and in the Mackenzie Delta region. Cape Parry received 7.7 mm of precipitation for the week.

BRITISH COLUMBIA

The cooling trend evident last week reduced mean temperatures to 1° to 3° below normal over most of the province this week. Only in some northern areas did the temperature remain above normal. The mercury rose to 13° at Cape St. James on February 8th and fell to -31° at Fort Nelson on February 9th.

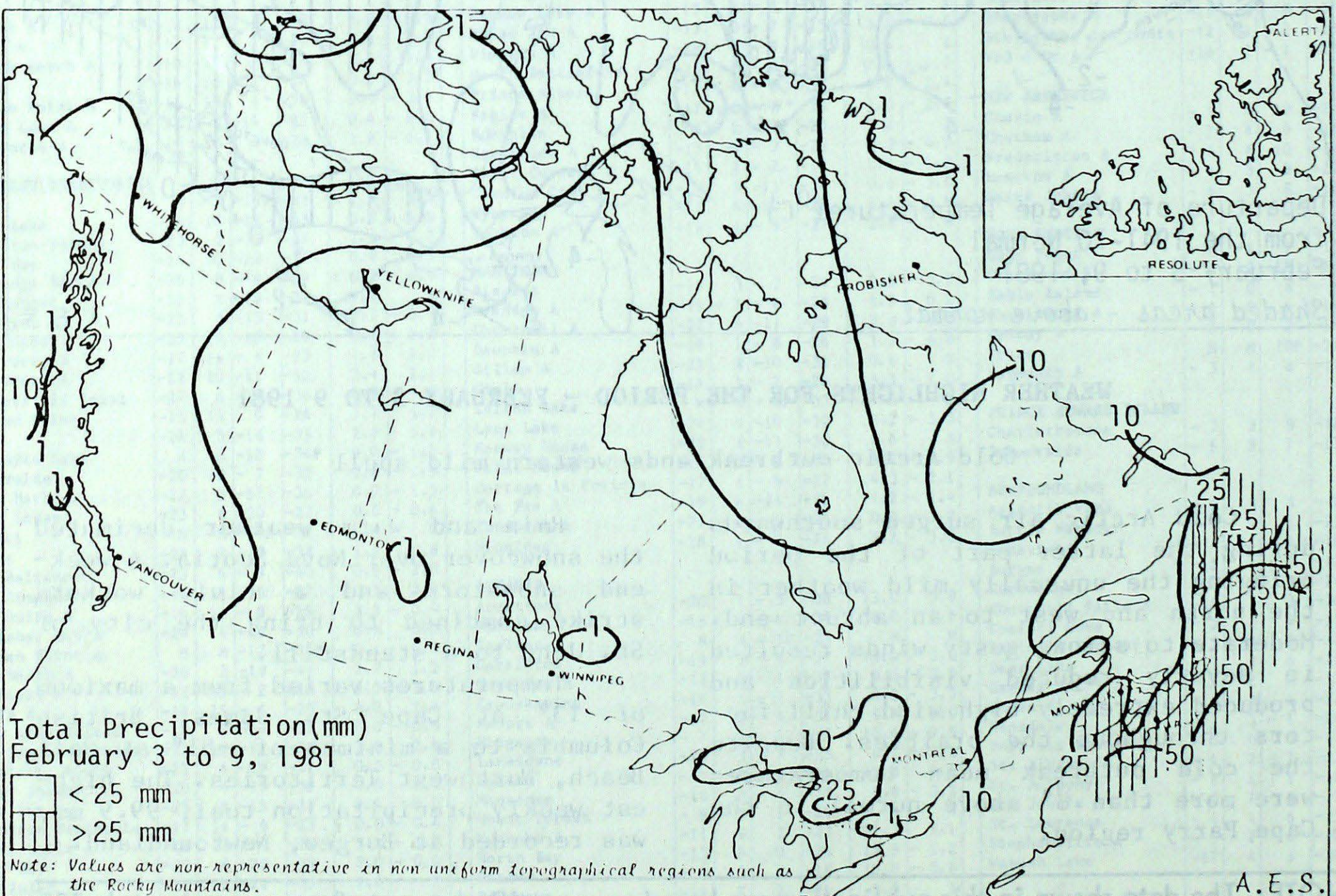
This week was very dry and most weekly precipitation totals were well below normal. The highest weekly total, 13.8 mm, was recorded at Cape St. James.

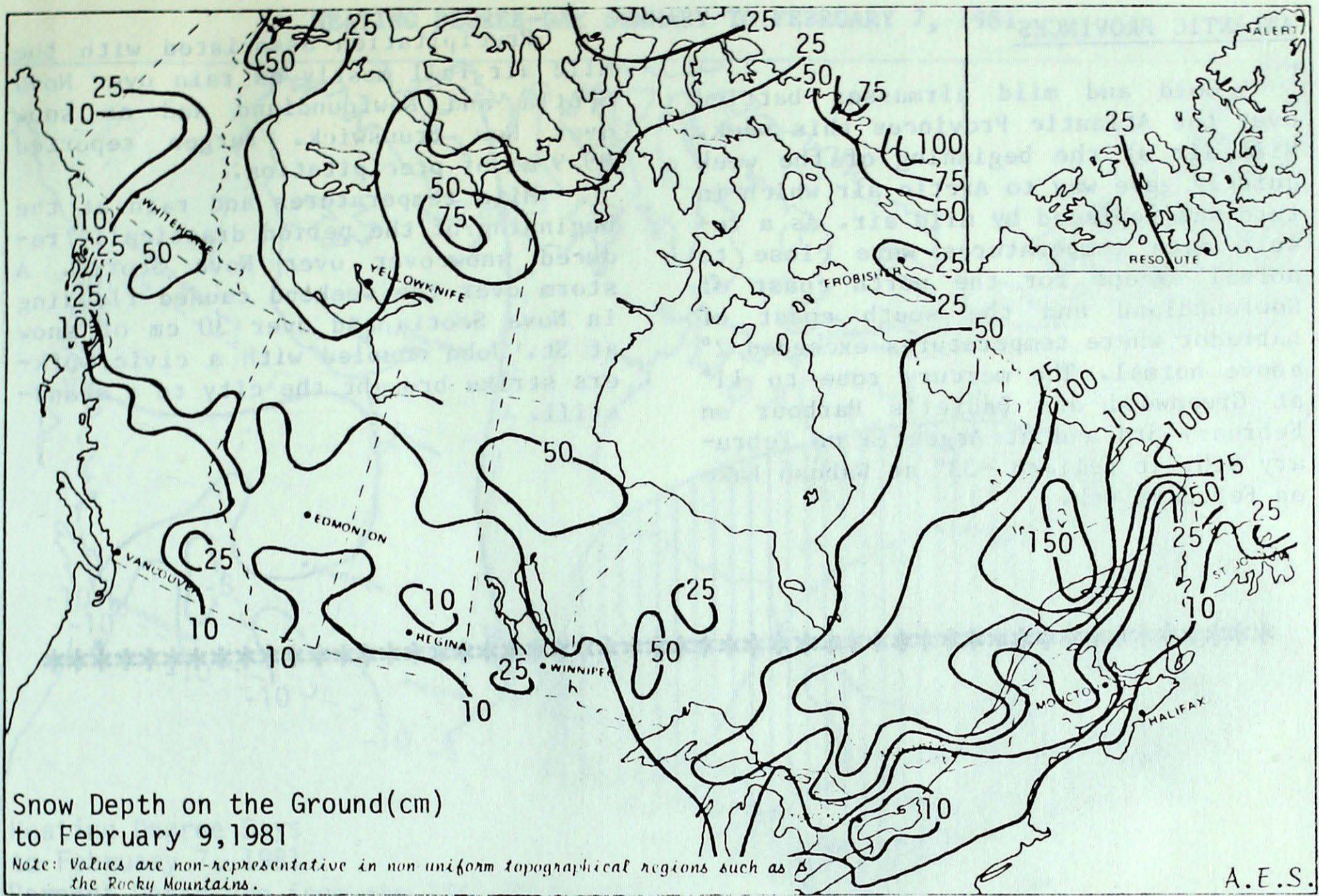
The temperature at Fort Nelson rose 15° above the normal to reach 3° on February 5th. Most children spent the day outdoors and as a result more than 100 children were sick with the flu over the weekend. (The population of Fort Nelson is about 3000).

PRAIRIE PROVINCES

The first outbreak of cold Arctic air in over six weeks surged southward through the prairies over the past weekend and brought the unusually prolonged mild spell to an abrupt end. The mercury reached 5° during the beginning of the period at Edson and Rocky Mountain House on February 3rd and at Calgary on the 5th. The coldest temperature, -40°, was registered at Fort Chipewyan on February 7th.

Despite the sudden influx of cold air not much precipitation was received. The highest weekly total, 8.0 mm,





was recorded at Dauphin.

Moderate to strong gusty winds and decreasing temperatures resulted in severely reduced visibilities and produced extremely high wind chill factors. Near blizzard conditions prevailed over southwestern Manitoba on February 7th.

#### ONTARIO

The first week of February continued the winter trend towards below normal temperatures as record breaking minimum temperatures were set in the province. At Muskoka the mercury fell to  $-34^{\circ}$  on February 5th, breaking the old mark for the day of  $-31^{\circ}$ , set in 1948. The cold spot was Wawa with  $-40^{\circ}$  on February 4th. The mercury reached  $3^{\circ}$  at Trenton on February 7th.

Snowfalls were frequent, but generally light. Exceptions to this were in the lee of the Great Lakes where the persistent northwest winds brought snowshowers to the usual snowbelt areas. Wiarton recorded 25.6 mm of precipitation for the week.

Winter carnivals, featuring all types of winter outdoor sports, are in full swing at numerous Ontario communities. Most have been successful this year, thanks to the persistent below normal temperatures even though a lack of sufficient snow cover has caused a problem in some southern Ontario towns.

#### QUÉBEC

Temperatures were close to normal over most of the province except in extreme western areas where mean temperatures were more than  $4^{\circ}$  below normal. The temperature reached a maximum of  $5^{\circ}$  at Cap-aux-Meules (station Grindstone Island) on February 3rd and a minimum of  $-43^{\circ}$  at Matagami on February 4th.

Precipitation was generally below normal except for the eastern townships (Sherbrooke with 20.9 mm) and the Gaspé peninsula (Gaspé with 21.7 mm).

The near normal temperatures have been favourable for outdoor activities related to the winter carnival.

ATLANTIC PROVINCES

Cold and mild airmasses battled over the Atlantic Provinces this week. Mild air at the beginning of the week quickly gave way to Arctic air which in turn was replaced by mild air. As a result mean temperatures were close to normal except for the north coast of Newfoundland and the south coast of Labrador where temperatures exceeded 2° above normal. The mercury rose to 11° at Greenwood and Daniel's Harbour on February 3rd and at Argentia on February 9th. It fell to -33° at Wabush Lake on February 4th.

Precipitation associated with the mild air fell mostly as rain over Nova Scotia and Newfoundland and as snow over New Brunswick. Burgeo reported 99.9 mm of precipitation.

Mild temperatures and rain at the beginning of the period drastically reduced snowcover over Nova Scotia. A storm over the weekend caused flooding in Nova Scotia and over 30 cm of snow at St. John coupled with a civic workers strike brought the city to a standstill.

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CLIMATIC PERSPECTIVES

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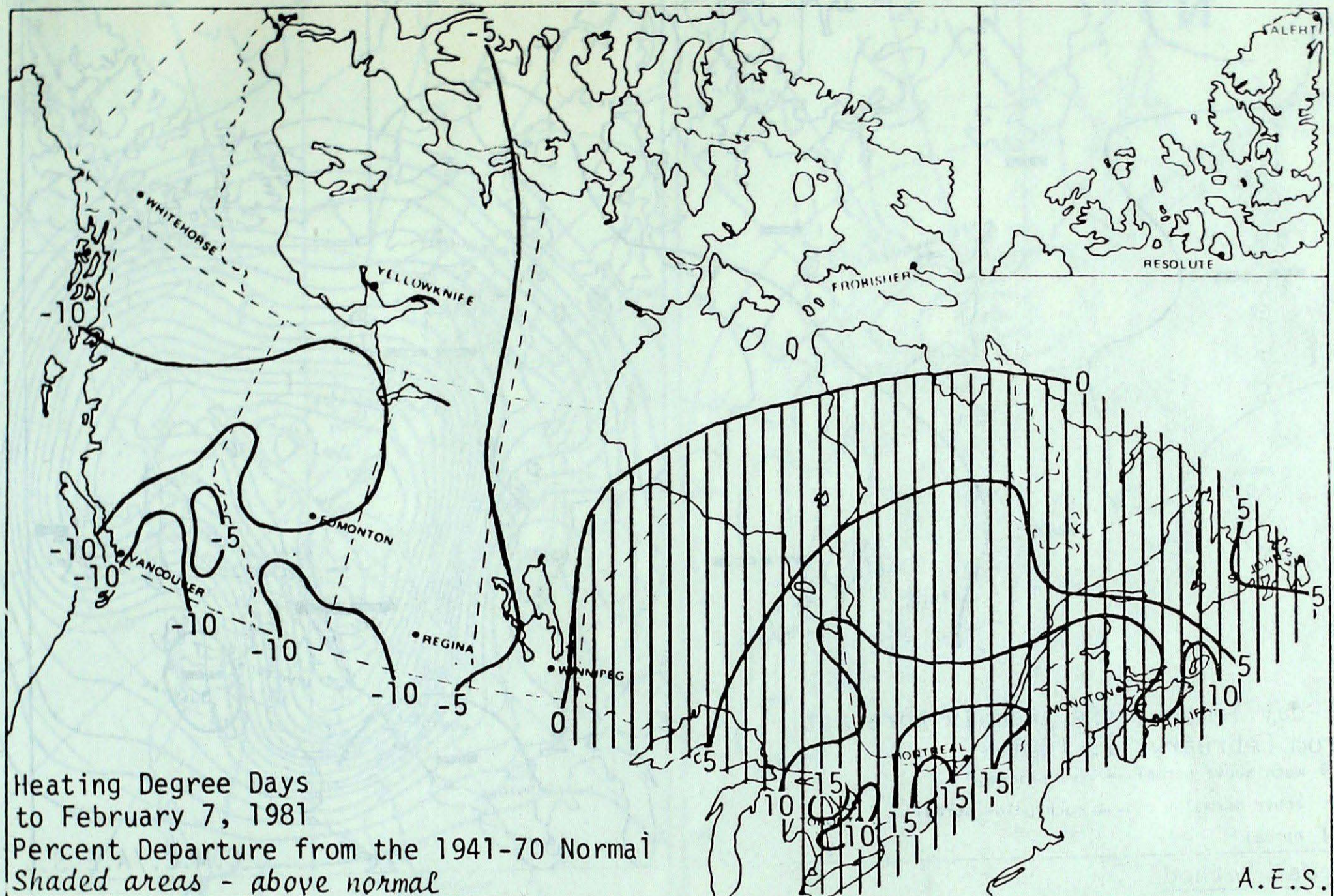
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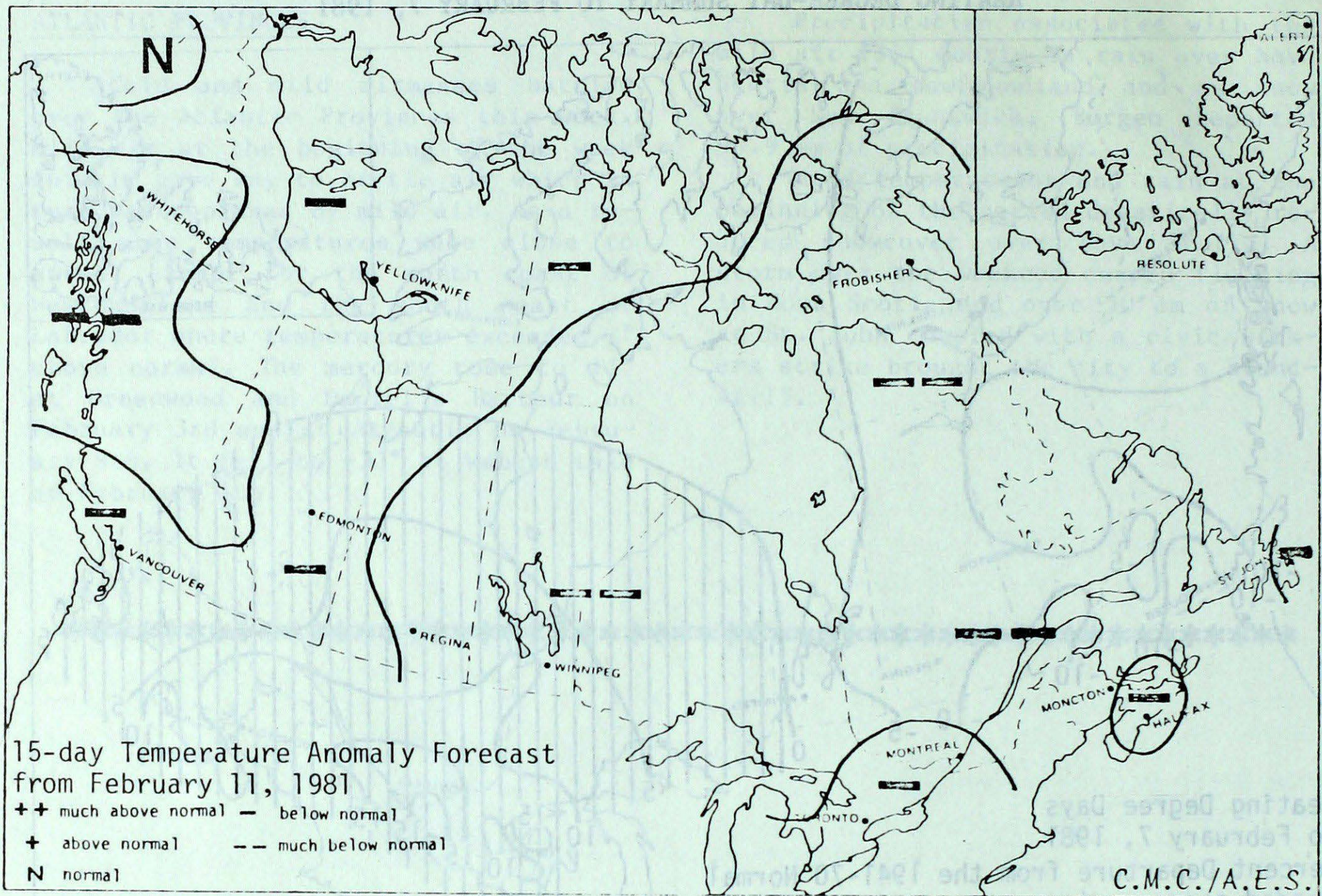
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## HEATING DEGREE-DAY SUMMARY TO FEBRUARY 7, 1981



STATION	MONTHLY CUMULATIVE TOTAL	MONTHLY DIFF. FROM 1941-70 NORMAL	SEASONAL TOTAL	SEASONAL DIFF. FROM 1941-70 NORMAL	SEASONAL PERCENT OF NORMAL
Resolute	316.5	-47.5	7012.5	-247.5	97
Inuvik	250.0	-93.0	5551.5	-514.5	92
Whitehorse	175.0	-63.0	4055.0	-331.0	92
Vancouver Int'l A	107.5	6.5	1690.0	-127.0	93
Edmonton Mun A	187.0	-22.0	3091.5	-421.5	88
Calgary Int'l A	164.0	-31.0	2848.5	-423.5	87
Regina	244.5	3.5	3391.0	-267.0	93
Winnipeg Int'l A	239.0	-13.0	3573.0	-52.0	99
Thunder Bay	244.0	14.0	3545.0	96.0	103
Windsor	176.0	15.0	2400.0	240.0	111
Toronto Int'l A	189.5	14.5	2757.5	341.5	114
Ottawa Int'l A	197.5	-5.5	3257.5	409.5	114
Montreal Int'l A	192.0	-8.0	3252.0	549.0	120
Quebec	206.5	-6.5	3532.0	490.0	116
Saint John, N.B.	180.5	-8.5	3060.5	329.5	112
Halifax	161.5	0.5	2590.5	346.5	115
Charlottetown	173.5	-13.5	2888.5	337.5	113
St. John's, Nfld.	164.0	-3.0	2791.5	206.5	108

## 15 DAY TEMPERATURE ANOMALY FORECAST

Forecast Method

Analogue technique based on point prediction at 70 Canadian stations.

Temperature Scale

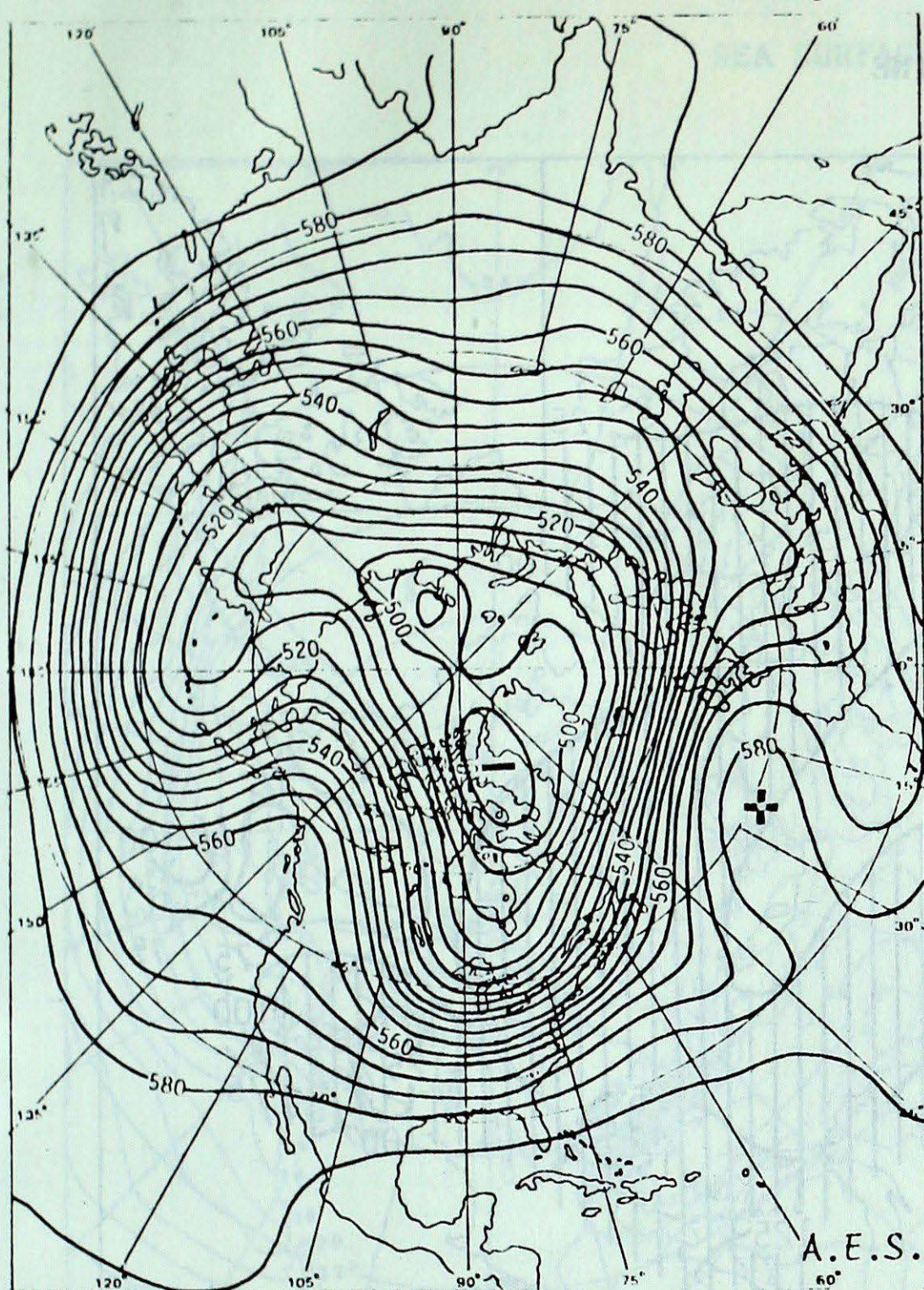
Each temperature class is designed to contain 20% of the historically observed 15 day means pertinent to specific location and time of year:

StationCurrent Temperature Anomaly Forecast

Whitehorse	Much Below Normal	More than 5.0° below Normal
Victoria	Below Normal	From 0.5° to 1.6° below Normal
Vancouver	Below Normal	From 0.5° to 1.8° below Normal
Edmonton	Below Normal	From 1.3° to 4.3° below Normal
Regina	Much Below Normal	More than 4.1° below Normal
Winnipeg	Much Below Normal	More than 3.8° below Normal
Thunder Bay	Much Below Normal	More than 3.0° below Normal
Toronto	Below Normal	From 0.7° to 2.3° below Normal
Ottawa	Below Normal	From 0.8° to 2.6° below Normal
Montreal	Below Normal	From 0.8° to 2.6° below Normal
Quebec	Much Below Normal	More than 2.8° below Normal
Fredericton	Much Below Normal	More than 2.8° below Normal
Halifax	Below Normal	From 0.6° to 2.1° below Normal
Charlottetown	Below Normal	From 0.7° to 2.5° below Normal
St. John's	Below Normal	From 0.7° to 2.2° below Normal
Goose Bay	Much Below Normal	More than 4.3° below Normal
Frobisher Bay	Much Below Normal	More than 5.1° below Normal
Inuvik	Below Normal	From 1.2° to 4.0° below Normal

Note: Anomaly denotes departure from the 1949-73 mean.

## Atmospheric Circulation

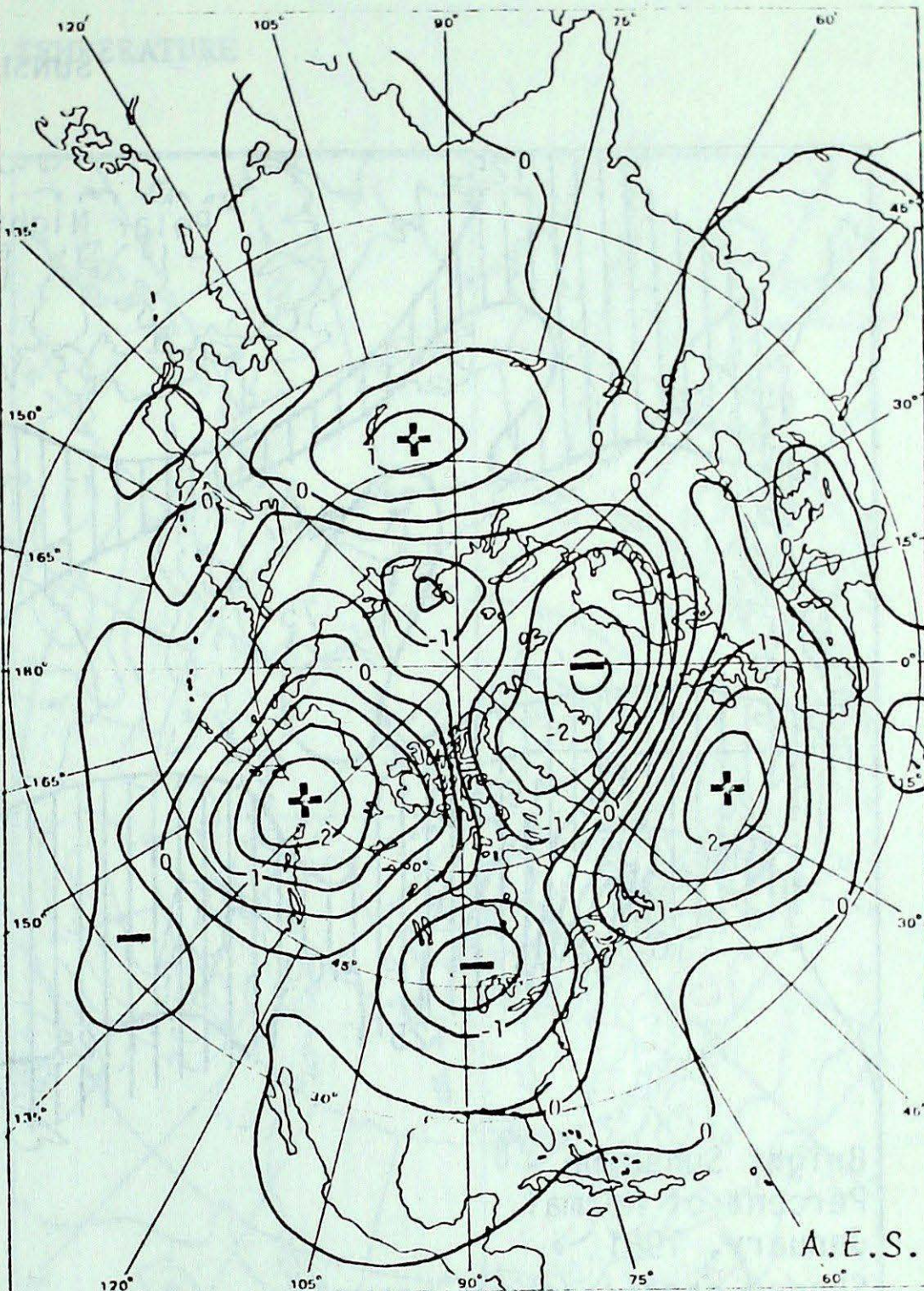


7-day Mean 50 kPa Height Map (in dam)  
February 2 to 8, 1981

The mean 50 kPa ridge and long wave trough increased in amplitude from the previous week. The mean upper ridge is now positioned slightly more to the west, permitting a mean northwesterly upper circulation to cross the western provinces. The mean 50 kPa trough is now centered over the Great Lakes.

Much above normal temperatures still continue in northwestern Canada and Alaska. Height anomalies in these areas are more than 20 dam above the normal. A southwesterly flow continues to pump mild Pacific air inland.

Arctic air dominates the rest of the country. The leading edge of cold Arctic air has sunk southwards encompassing all of western Canada. After



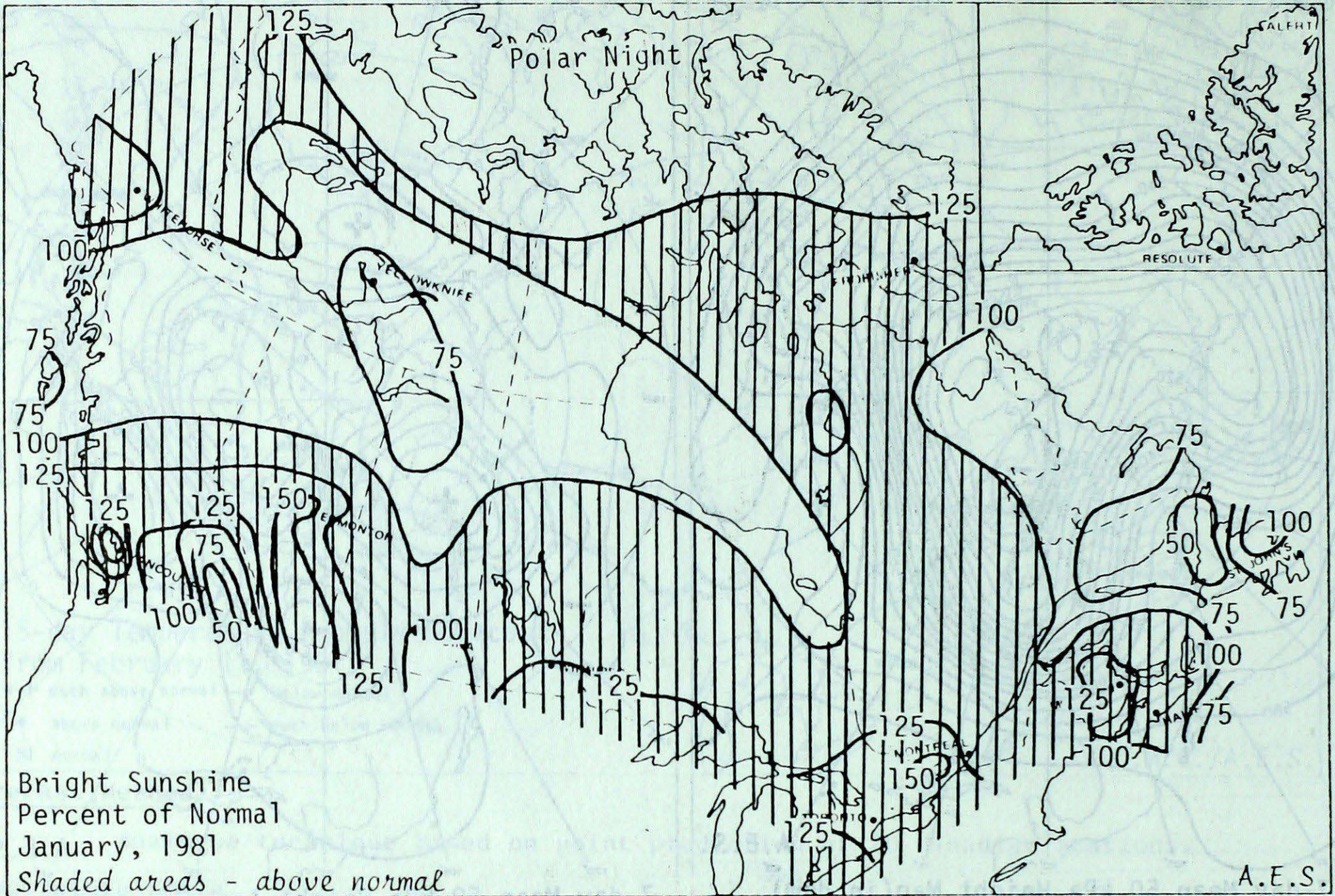
7-day Mean 50 kPa Height Anomaly  
(in 5 dam intervals) February 2 to 8, 1981

many weeks of above normal values, mean temperatures in the southern half are now below normal. A northwesterly circulation crossing central Canada let temperatures drop to below normal values as far east as Québec.

A lack of precipitation is quite evident across the country. Only the Atlantic provinces had amounts exceeding 25 mm. Most precipitation was received from two well developed low pressure systems early and towards the end of the period. Temperature contrasts were sharp this week. Surges of mild air pushed northward for short periods of time with the approach of each disturbance, only to be rapidly replaced by very cold air in the wake of each system.

Andy Radomski

SUNSHINE



February 2 to 8, 1981

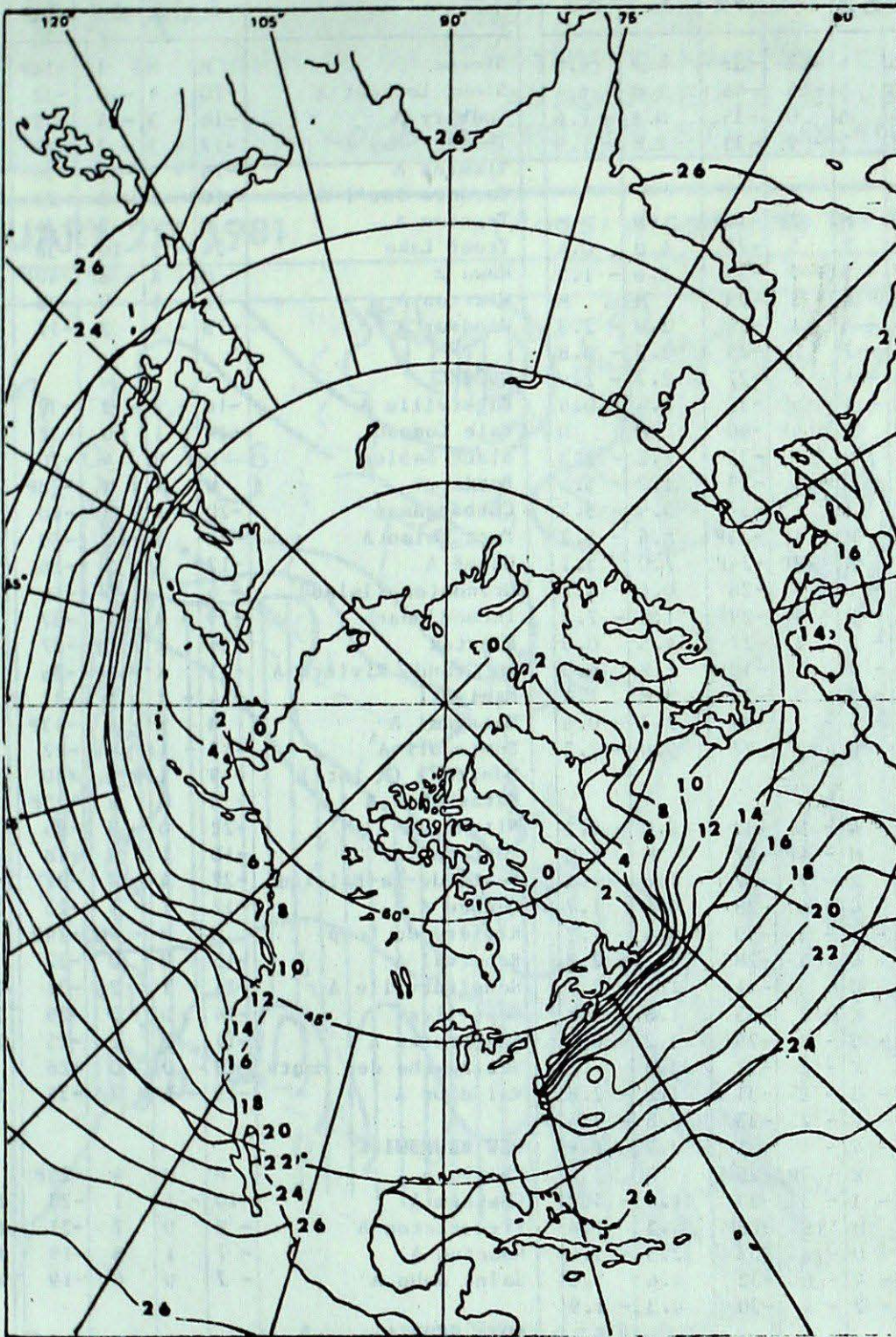
The mean 50 kPa ridge and low wave trough increased in amplitude from the previous week. The mean upper ridge is now positioned slightly more to the west, penetrating a mean northwesterly upper circulation to cross the western provinces. The mean 50 kPa trough is now centered over the Great Lakes, such as above normal temperatures still continue in northwestern Canada and Alaska. Higher anomalies in these areas are more than 20 days above normal. A southeasterly flow continues to pump mild Pacific air inland, Arctic air dominates the rest of the country. The leading edge of cold Arctic air has moved southward through passing aloft western Canada. After a cold wave, the mean 50 kPa ridge moved 0.4 of 2.1 days.

Andy Lubinski

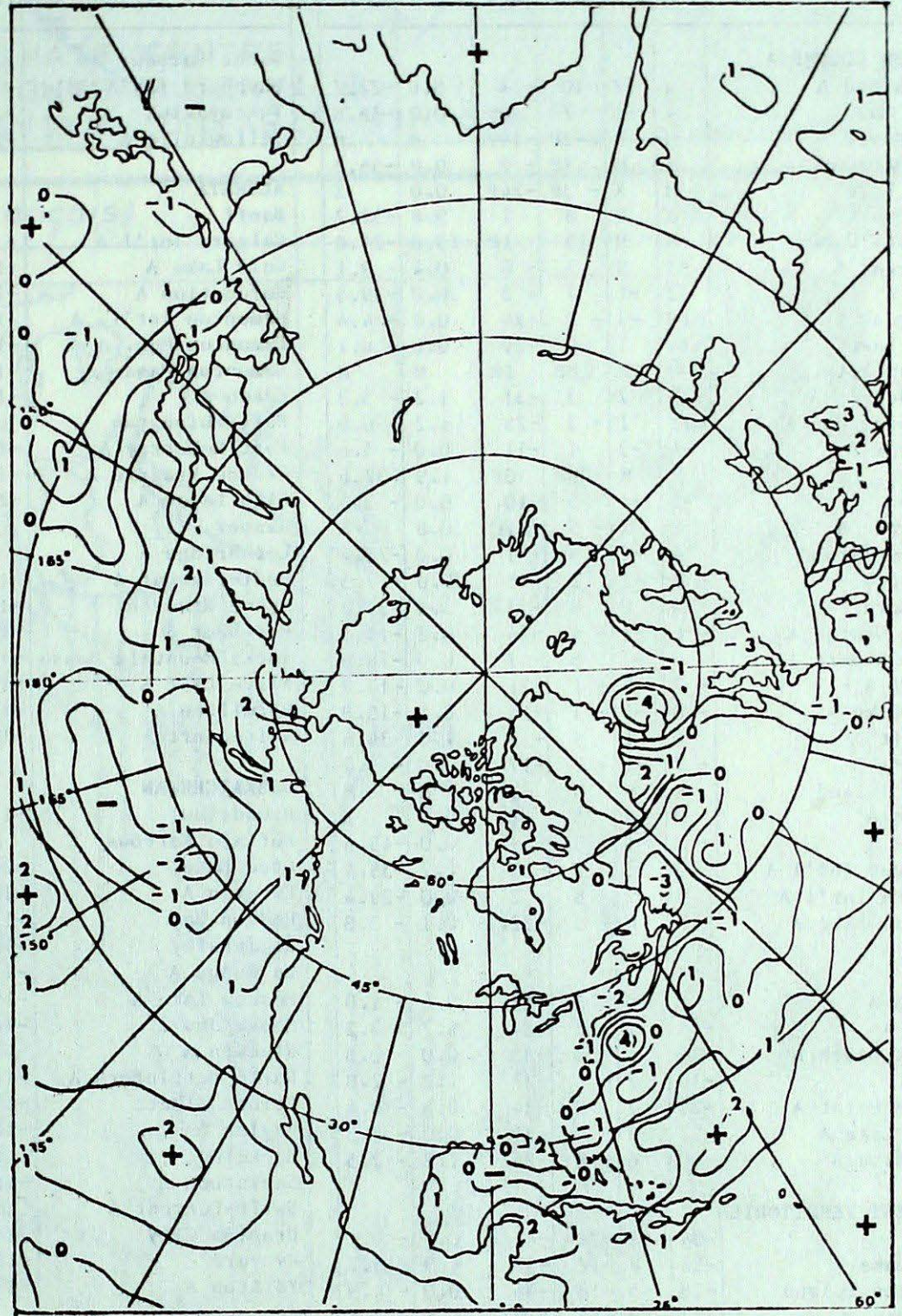
1981-1982



### SEA SURFACE TEMPERATURE



Monthly Mean Sea Temperature  
January 1981



Sea Surface Temperature Anomalies  
January 1981

NOTES: The data shown in this chart were derived from the monthly mean sea surface temperature data for January 1981. The contour interval is 2 degrees Celsius. The data were obtained from the National Oceanic and Atmospheric Administration (NOAA) and the International Geophysical Year (IGY) data sets.

