

Environment Environnement

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CLIMATIC PERSPECTIVES

OTM

climatic Perspectives

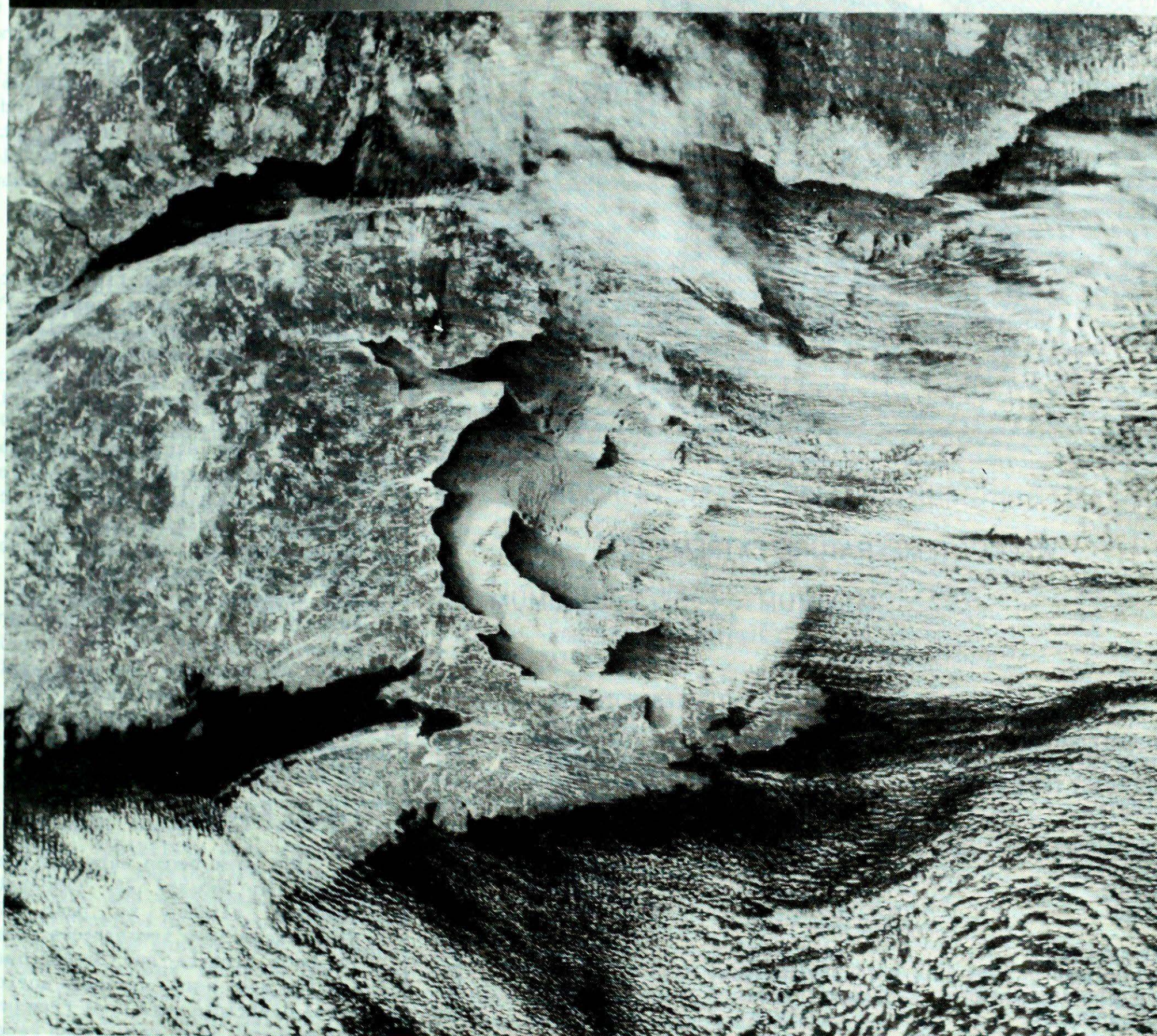


A weekly review of Canadian climate

January 14 to 20, 1986

Vol.8 No.3

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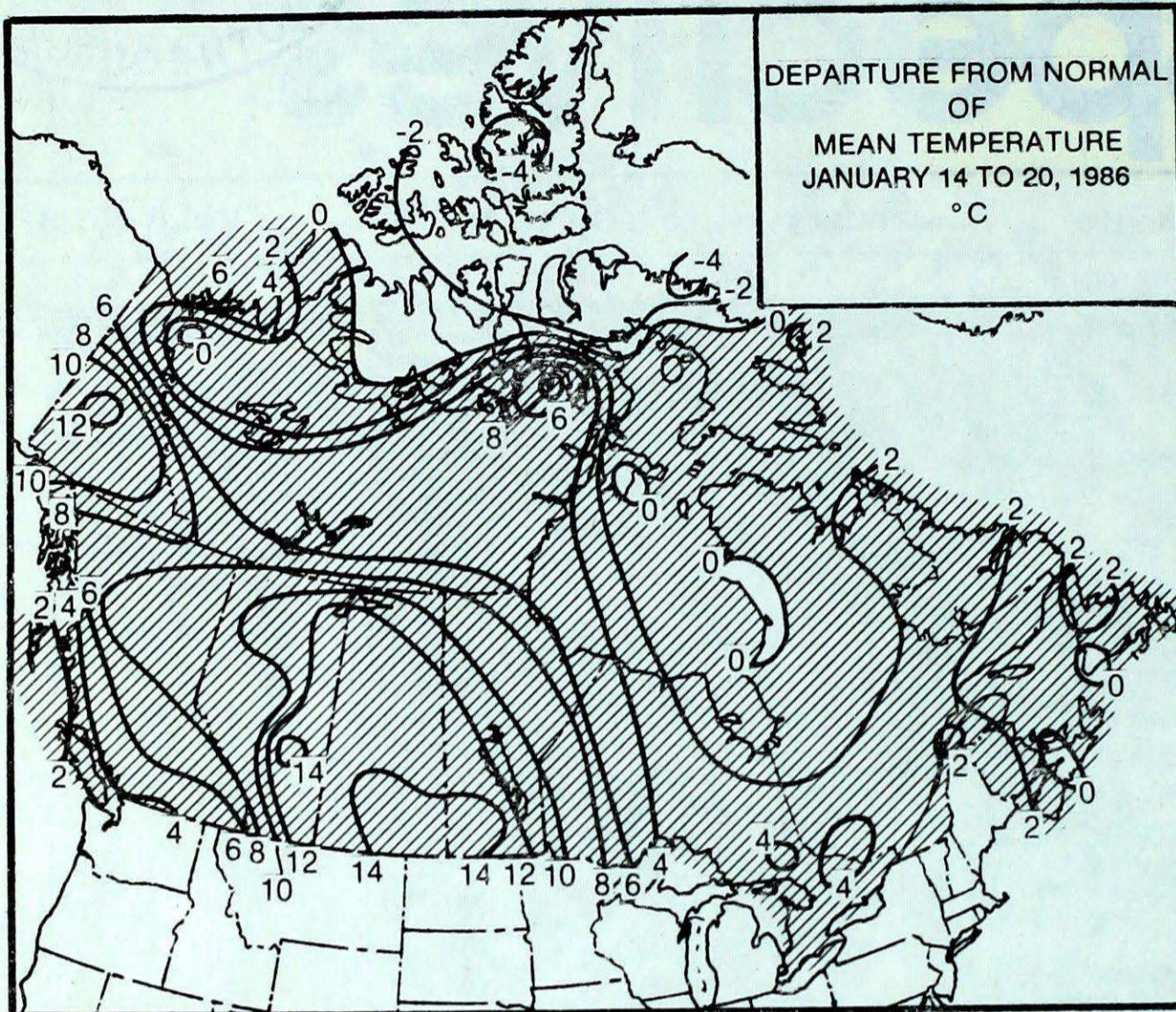


This NOAA 9 image taken at approximately noon on January 16, 1986 clearly shows the snow covered terrain of the Maritimes.

- **Wind and heavy rain southern B.C. coast**
- **January thaw arrives in Ontario and Quebec**
- **Major storm hits Atlantic Canada**

Canada

TEMPERATURE



ACROSS THE COUNTRY...

Yukon and Northwest Territories

Relatively mild temperatures persisted in the Yukon and the Northwest Territories. In the area north of the Ogilvie Mountains and the northern Mackenzie District temperatures fell to more seasonal values. Blizzards occurred in the coastal region of the southern Arctic, the Keewatin District and Baffin Island. Heaviest snowfalls of up to 10 cm fell in the west and on Baffin Island. Air transportation was hampered all week by low cloud in the southern and central Yukon.

British Columbia

A southwesterly flow kept temperatures well above normal. Precipitation was heavy, especially in southern areas, where more than 100 mm of rain was received. Victoria set a new all-time 24-hour precipitation record on January 18, 92.8 mm. The same storm was associated with damaging winds. There was local flooding along the coast. The combination of melting snow, rain and below freezing overnight temperatures made local roads very icy and treacherous. Freezing rain on January 14 left a one to two centimetre coating of ice near Merritt, south of Kamloops. The warm weather has triggered avalanches in the Coquihalla and Goldbridge Highway districts. Skiing conditions have deteriorated.

Prairie Provinces

The week began warm and mostly sunny. On January 14, temperature readings climbed to near 10°C, breaking maximum temperature records in both Alberta and Saskatchewan. For the most part, southern agricultural districts were snow free until the weekend, when many areas received a dusting of fresh snow. The unusually mild weather of the past few weeks has given farmers a chance to finish harvesting their fields. Due to a lack of a protective snow cover, clouds of dust have been blowing across the Prairies on windy days. Some farmers have plowed their fields, trying to control the unwanted soil erosion.

WEEKLY TEMPERATURE EXTREME (C)

	MAXIMUM	MINIMUM
BRITISH COLUMBIA	ABBOTSFORD 14	FORT NELSON -29
YUKON TERRITORY	STEWART CROSSING 5	SHINGLE POINT A -46
NORTHWEST TERRITORIES	FORT SMITH -3	GLADMAN POINT A -47
ALBERTA	CALGARY INT'L 13	FORT CHIPEWYAN -28
SASKATCHEWAN	MOOSE JAW 8	CREE LAKE -26
MANITOBA	DAUPHIN 5	CHURCHILL -34
ONTARIO	WINDSOR 9	MOOSONEE -38
QUEBEC	SUTTON JUNCTION 11	SCHIEFFERVILLE -43
NEW BRUNSWICK	SAINT JOHN 10	ST STEPHEN -30
NOVA SCOTIA	GREENWOOD 14	TRURO -25
PRINCE EDWARD ISLAND	CHARLOTTETOWN 9	SUMMERSIDE -26
NEWFOUNDLAND	ARGENTIA 11	WABUSH LAKE -42

ACROSS THE NATION

WARMEST MEAN TEMPERATURE	8	SATURNA ISLAND BC
COOLEST MEAN TEMPERATURE	-41	EUREKA NWT

Ontario

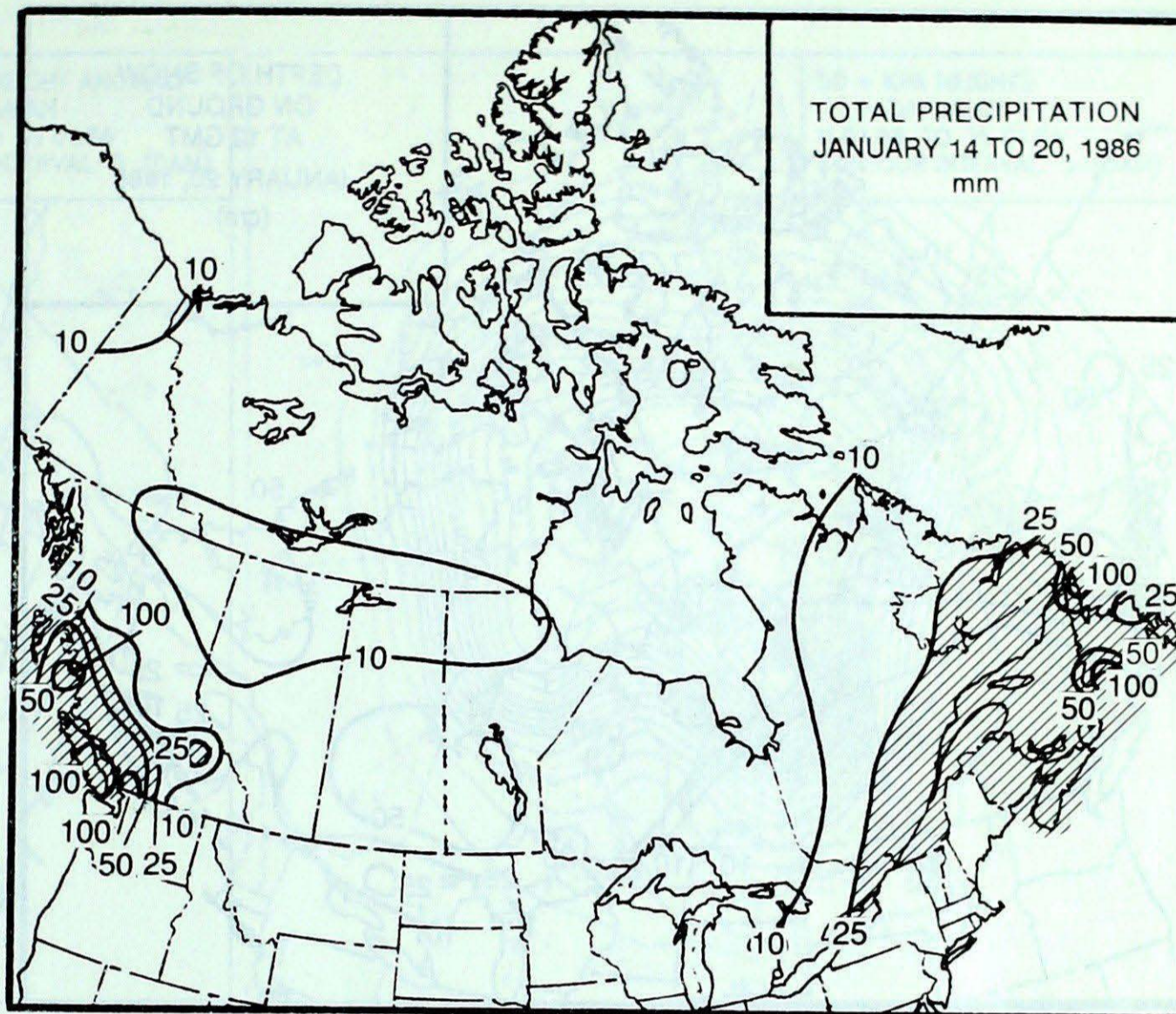
A dome of Arctic air crossed the province early in the week, dropping night-time readings to near record low values. In the south, temperature plunged to the minus twenties. By mid-week a southerly return flow pushed temperatures up to above normal values. The mild weather and rain depleted the snow cover across the south over the weekend. Heavy rain fell in southern and eastern Ontario on January 19.

Quebec

Strong winds and snow affected the north coast early in the period. Elsewhere, a large area of high pressure gave cold, but relatively pleasant weather conditions. Several new daily minimum temperature records were broken. Temperatures began to moderate by mid-week, when a storm system moving across Hudson Bay pumped much milder air northward into the province. Between January 17-19, many daily maximum temperature records were broken. The moderating trend was accompanied with an increased cloud cover and some snow. On January 20, a complex weather system brought another batch of inclement weather to the province.

Atlantic

On the morning of January 14 a major storm struck the Maritimes, giving a mixture of rain, and snow. Nova Scotia and P.E.I. were hardest hit with heavy snow and strong winds. Visibility were reduced to near zero forcing the closure of schools and businesses. Newfoundland received heavy rain, accompanied by winds gusting over 100 km/h. Daniels Harbour recorded gusts to 148 km/h. Goose Bay received 28 cm of snow in a 24 hour period. Frigid air swept in behind this system breaking or tying daily low temperature records. During the latter half of the week temperatures moderated to above seasonal values, setting several new daily temperature records. Another area of heavy precipitation moved into the region on January 20, causing rivers to overflow their banks near Truro.

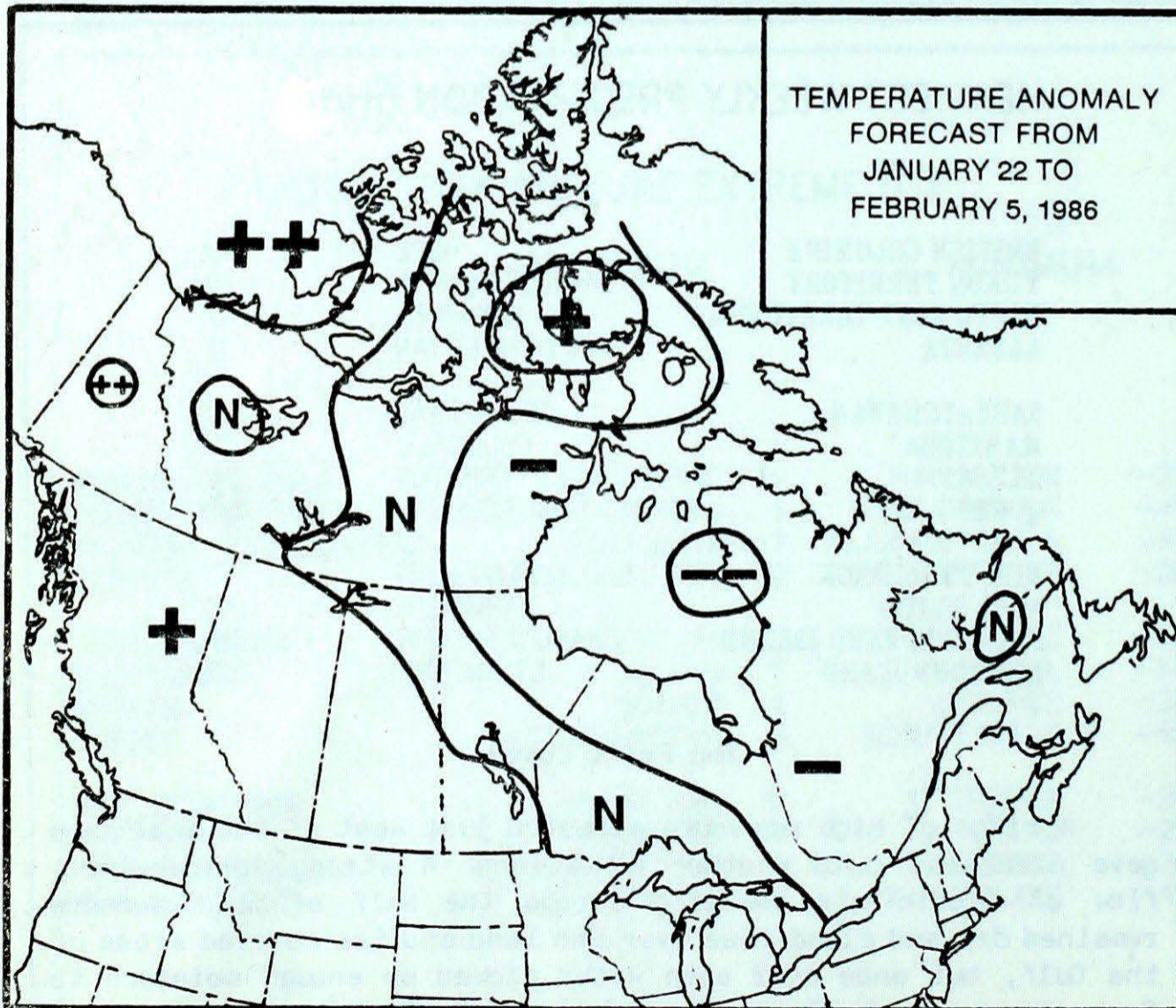
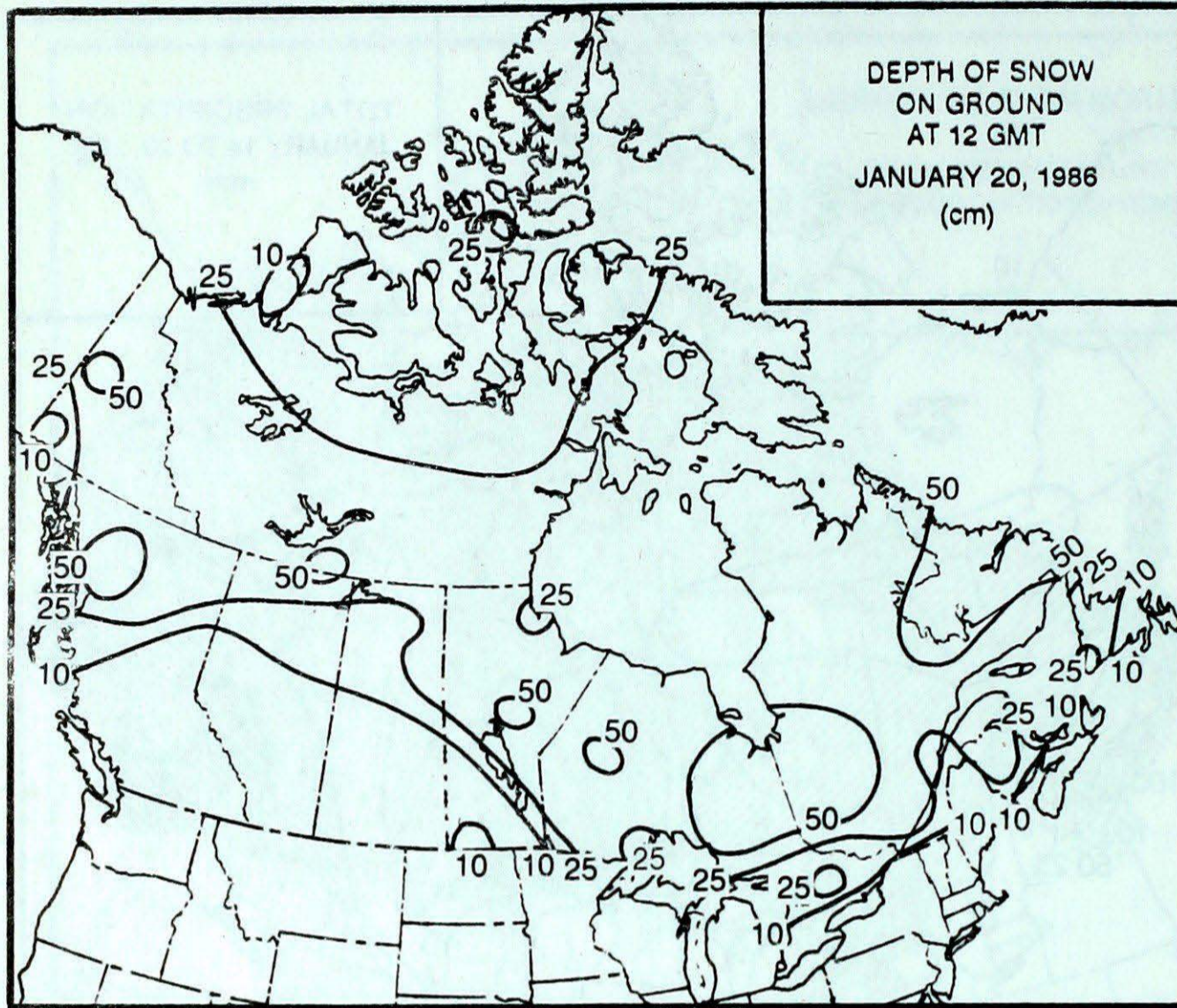
**HEAVIEST WEEKLY PRECIPITATION (mm)**

BRITISH COLUMBIA	HOPE	198
YUKON TERRITORY	SHINGLE POINT A	20
NORTHWEST TERRITORIES	HAY RIVER	12
ALBERTA	FORT CHIPEWYAN	12
SASKATCHEWAN	COLLINS BAY	10
MANITOBA	CHURCHILL	11
ONTARIO	TRENTON	34
QUEBEC	NATASHQUAN	54
NEW BRUNSWICK	SAINT JOHN	42
NOVA SCOTIA	YARMOUTH	47
PRINCE EDWARD ISLAND	CHARLOTTETOWN	39
NEWFOUNDLAND	ST ANTONY	105

The Front Cover

A ridge of high pressure situated just west of the Maritimes gave clear but cold weather conditions. A strong northwesterly flow of Arctic air sweeping across the Gulf of St. Lawrence remained dry and cloud-free over the land and ice covered areas of the Gulf, but once over open water picked up enough moisture to form streamers of cloud. The island of Newfoundland can be just barely made out through the broken cloud cover on the right hand side of the photo. Fast ice can be seen along the shoreline of the St. Lawrence River; further upstream the river is mostly ice covered. Chaleur Bay, south of the Gaspé Peninsula, is covered with ice. An extensive area of ice is evident in the southwestern Gulf, especially in the vicinity of Prince Edward Island.

FORECAST



Temperature Anomaly Forecast

- ++ much above normal
- + above normal
- N normal
- below normal
- much below normal

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 8

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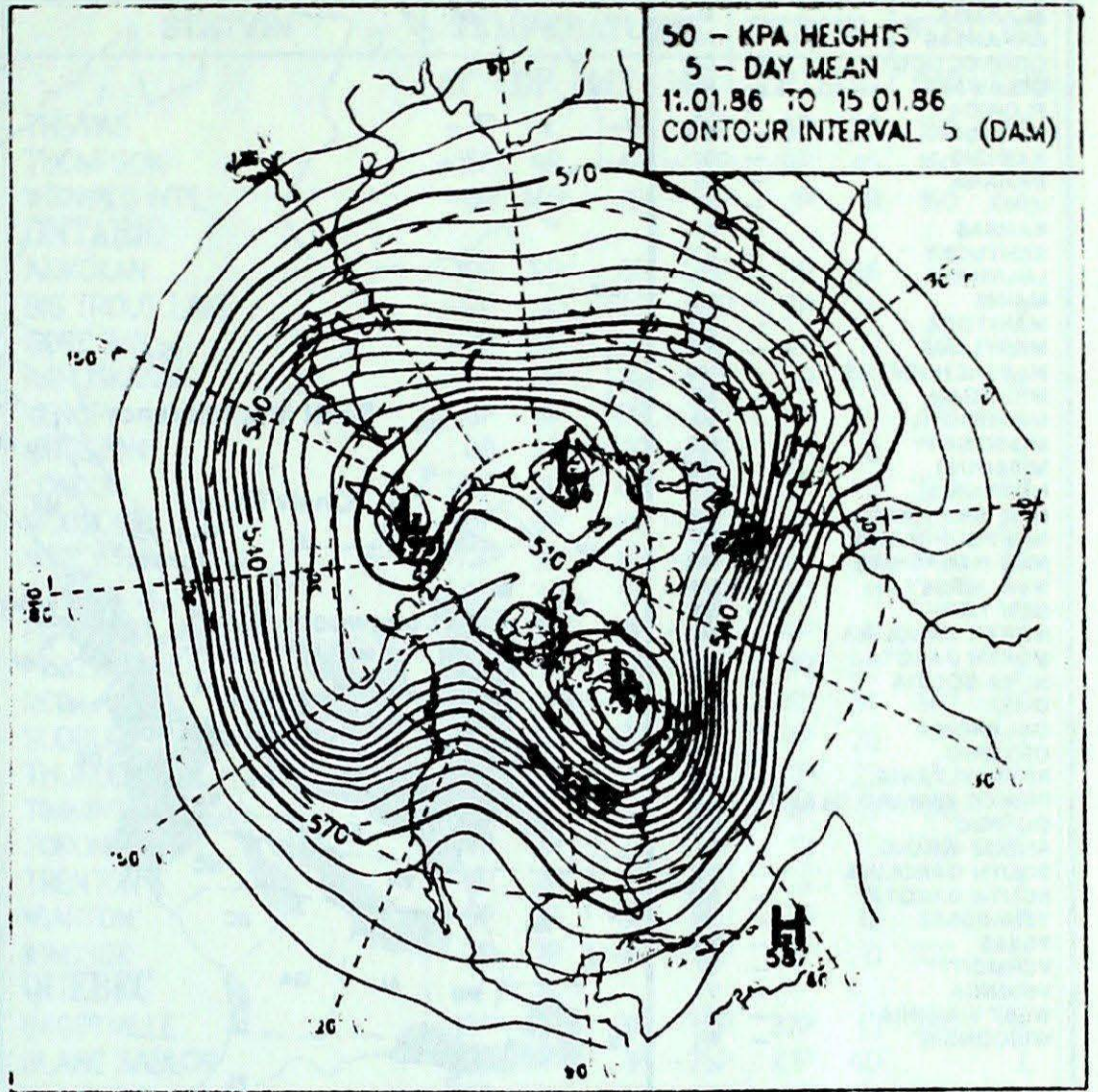
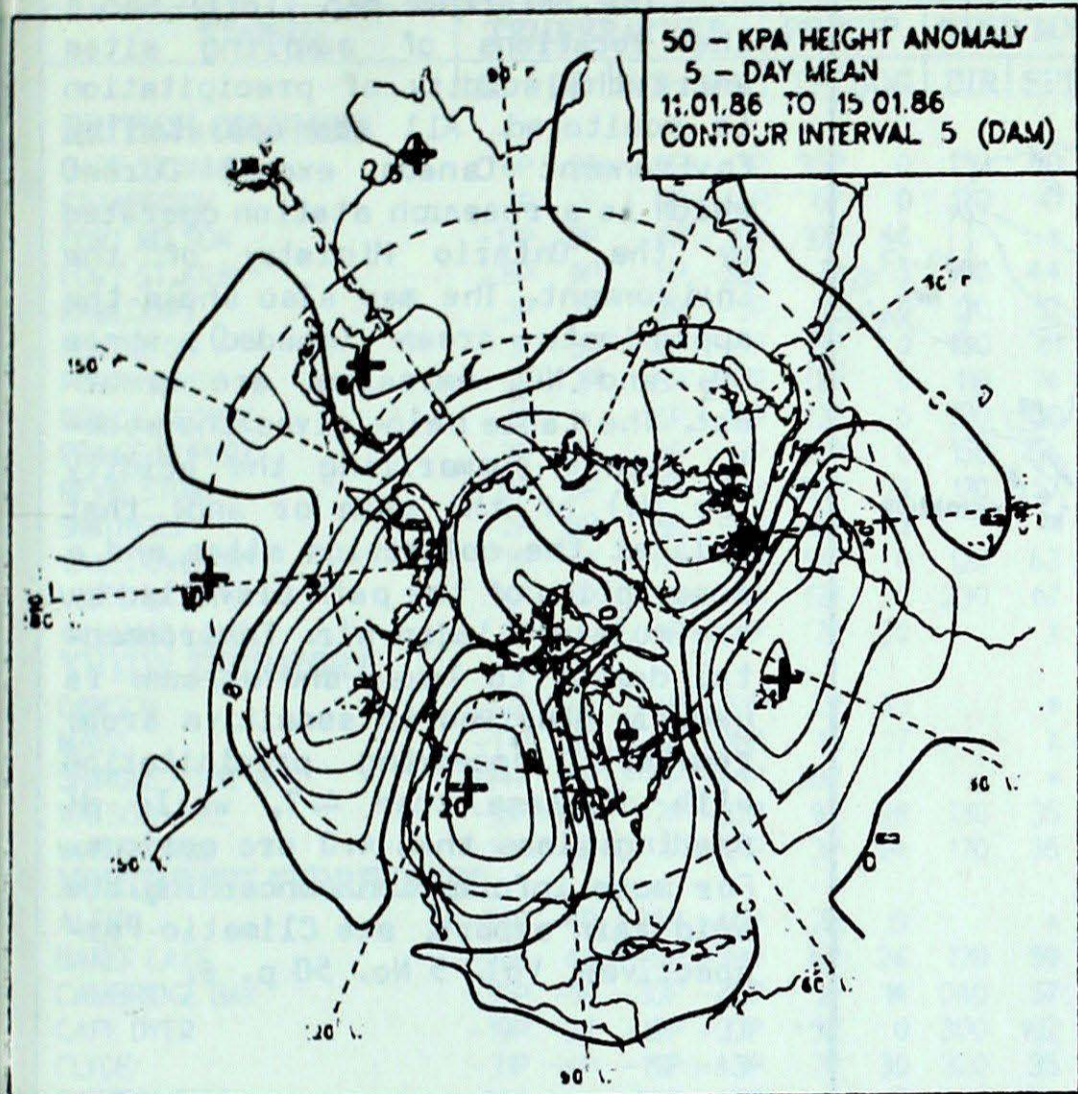
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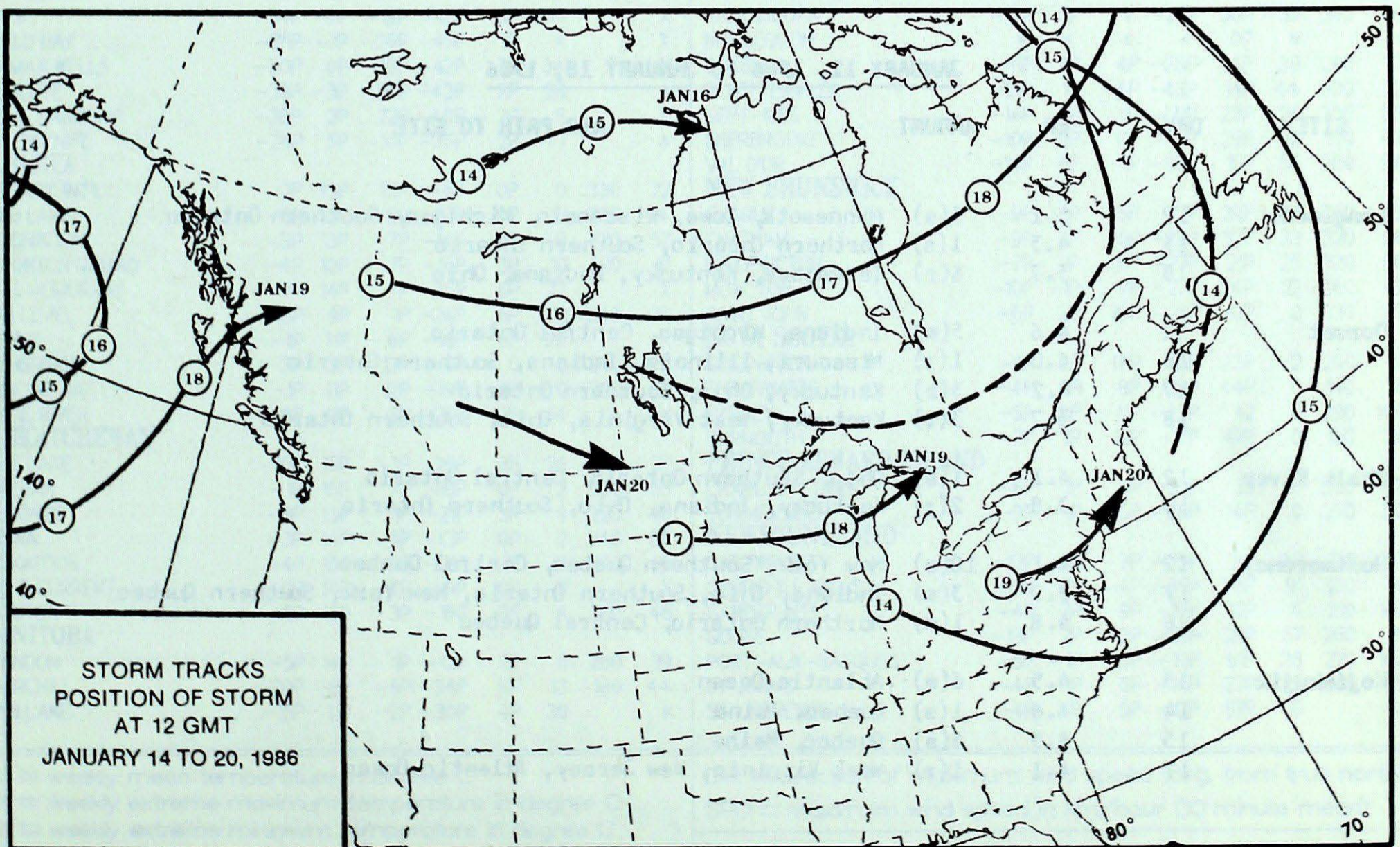
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50 KPa ATMOSPHERIC CIRCULATION

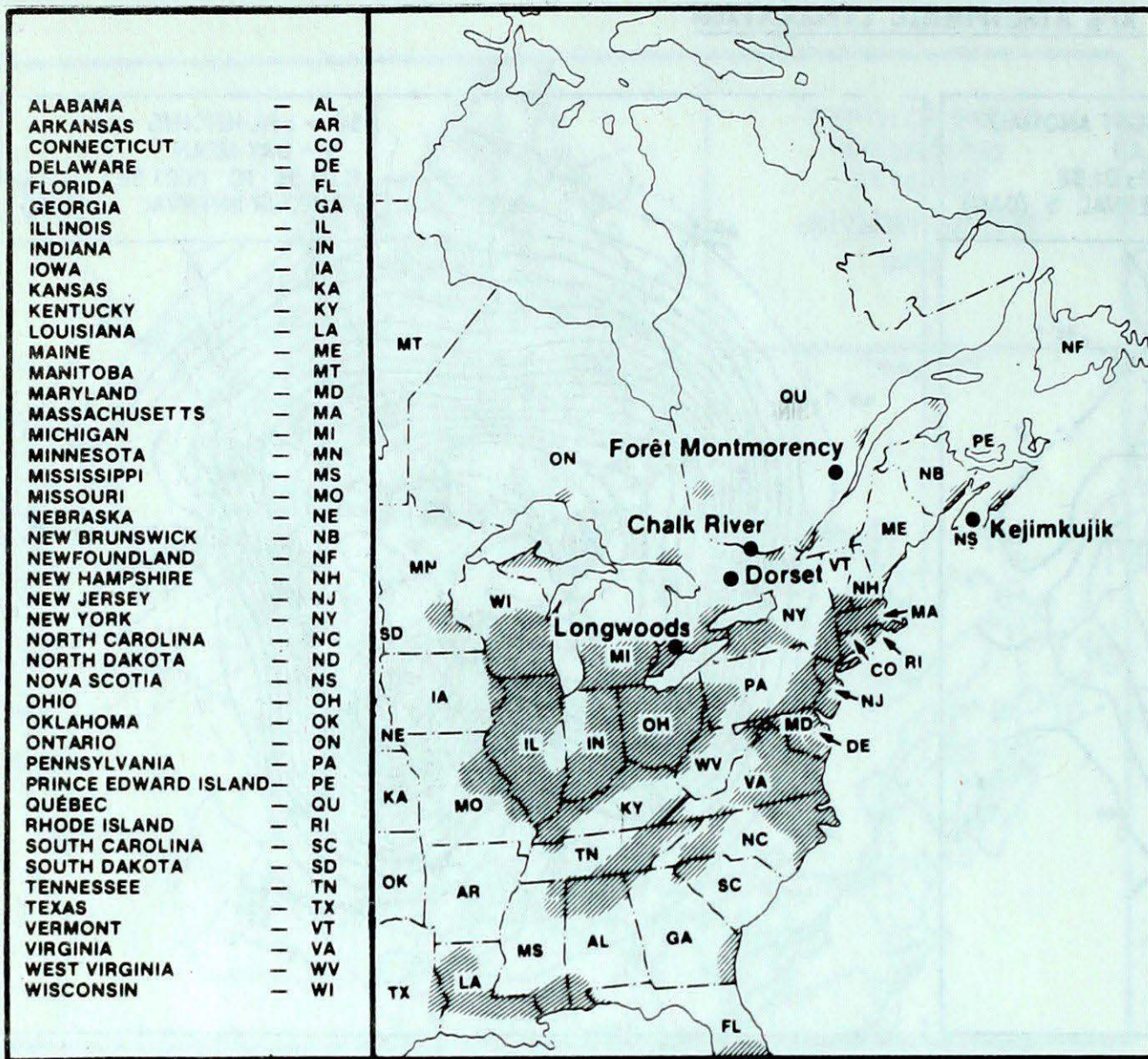


MEAN 50 KPa HEIGHT ANOMALY (dam)
January 11 to January 15, 1986

MEAN 50 KPa HEIGHTS (dam)
January 11 to January 15, 1986



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 SO₂ 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.

JANUARY 12, 1986 to JANUARY 18, 1986

SITE	DAY	pH	AMOUNT	AIR PATH TO SITE
Longwoods	12	5.1	3(s)	Minnesota, Iowa, Wisconsin, Michigan, Southern Ontario
	13	4.3	1(s)	Northern Ontario, Southern Ontario
	18	3.7	6(r)	Tennessee, Kentucky, Indiana, Ohio
Dorset	12	4.6	5(m)	Indiana, Michigan, Central Ontario
	16	4.0	1(r)	Missouri, Illinois, Indiana, Southern Ontario
	17	4.2	3(r)	Kentucky, Ohio, Southern Ontario
	18	3.7	3(r)	Kentucky, West Virginia, Ohio, Southern Ontario
Chalk River	12	4.1	1(s)	Ohio, Southern Ontario, Central Ontario
	18	3.8	2(r)	Kentucky, Indiana, Ohio, Southern Ontario
Montmorency	12	4.1	10(s)	New York, Southern Quebec, Central Quebec
	17	3.9	3(m)	Indiana, Ohio, Southern Ontario, New York, Southern Quebec
	18	4.8	1(m)	Northern Ontario, Central Quebec
Kejimikujik	13	4.5	6(m)	Atlantic Ocean
	14	4.6	1(s)	Quebec, Maine
	15	4.9	4(s)	Quebec, Maine
	17	4.1	1(r)	West Virginia, New Jersey, Atlantic Ocean

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

TEMPERATURE, PRECIPITATION AND MAXIMUM WIND DATA FOR THE WEEK ENDING 0600 GMT JANUARY 21, 1988

STATION	TEMPERATURE				PRECIP.		WIND MX		STATION	TEMPERATURE				PRECIP.		WIND MX	
	AV	DP	MX	MN	TP	SOG	DIR	SPD		AV	DP	MX	MN	TP	SOG	DIR	SPD
BRITISH COLUMBIA									THE PAS	-7P	*	-1P	-14P	6P	20	150	61
CAPE ST. JAMES	6P	2P	8P	3P	35P	0	130	80	THOMPSON	-15P	9P	-4P	-32P	9P	45	160	37
CRANBROOK	-1P	7P	8P	-14P	6P	0	170	41	WINNIPEG INT'L	-6P	14P	-1P	-13P	1P	8	160	54
FORT NELSON	-17P	8P	-6P	-29P	10P	46		*	ONTARIO								
FORT ST. JOHN	-8P	9P	5P	-26P	7P	5	350	44	ATIKOKAN	-10P	8P	0P	-28P	1P	36		*
KAMLOOPS	2P	7P	9P	-3P	9P	0	120	52	BIG TROUT LAKE	-17P	*	-4P	-35P	2P	38		*
PENTICTON	1P	3P	8P	-5P	8P	0	180	61	GORE BAY	-7P	3P	3P	-23P	4P	17	170	46
PORT HARDY	5P	2P	8P	-1P	82P	0	110	74	KAPUSKASING	-17P	2P	-3P	-32P	2P	65		*
PRINCE GEORGE	-1P	*	6P	-10P	12P	5	180	50	KENORA	-8P	11P	-3P	-20P	1P	34	170	44
PRINCE RUPERT	3P	2P	8P	-2P	55P	0	150	54	KINGSTON	0P	9P	7P	-16P	1P	0		X
REVELSTOKE	0P	6P	2P	-3P	36P	29	170	57	LONDON	-4P	3P	6P	-25P	15P	2	320	59
SMITHERS	-2P	8P	3P	-9P	5P	15		*	MOOSONEE	-20P	0P	-4P	-38P	1P	99	280	46
VANCOUVER INT'L	7P	4P	11P	1P	81P	0	120	63	NORTH BAY	-10P	3P	4P	-28P	10P	20	010	46
VICTORIA INT'L	6P	3P	13P	-1P	122	0	230	67	OTTAWA INT'L	-8P	3P	5P	-25P	27P	11		X
WILLIAMS LAKE	0P	*	5P	-8P	7P	20		X	PETAWAWA	-10P	5P	5P	-30P	14P	11		X
YUKON TERRITORY									PICKLE LAKE	-16P	5P	-3P	-32P	3P	53		*
DAWSON	-17P	*	-4P	-31P	2P	53		*	RED LAKE	-11P	9P	-4P	-28P	4P	34	140	33
MAYO	-17P	12P	0P	-28P	1P	27		X	SUDBURY	-11P	4P	2P	-28P	4P	26		X
SHINGLE POINT A	-24P	5P	-19P	-46P	20P	*		*	THUNDER BAY	-10P	5P	2P	-21P	1P	22	130	31
WATSON LAKE	-16P	10P	-7P	-32P	9P	38	130	35	TIMMINS	-15P	3P	-1P	-32P	9P	57	170	37
WHITEHORSE	-10P	11P	1P	-21P	3P	24	170	35	TORONTO INT'L	-4P	3P	7P	-21P	15	0	340	85
NORTHWEST TERRITORIES									TRENTON	-5P	2P	8P	-23P	34	0		X
ALERT	-35P	-4P	-28P	-40P	2P	19		*	WIARTON	-5P	3P	5P	-22P	7P	12		X
BAKER LAKE	-29P	4P	-15P	-39P	6P	24	120	59	WINDSOR	-3P	2P	9P	-18P	12P	0	320	50
CAMBRIDGE BAY	-35P	-1P	-30P	-40P	3P	14	040	57	QUEBEC								
CAPE DYER	-19P	2P	-12P	-32P	5P	0	300	102	BAGOTVILLE	-13P	3P	3P	-33P	37P	13	280	59
CLYDE	-31P	-4P	-19P	-43P	2P	30	320	35	BLANC SABLON	-10P	*	1P	-25P	41P	40		X
COPPERMINE	-30P	*	-22P	-39P	3	17	240	50	INUKJUAK	-26P	-2P	-13P	-37P	2P	31	230	39
CORAL HARBOUR	-30P	-1P	-19P	-41P	3P	33		X	KUUJJUAQ	-20P	3P	-13P	-41P	22P	45	360	96
EUREKA	-41P	-5P	-33P	-46P	2P	13	020	30	KUUJJUARAPIK	-24P	-1P	-4P	-41P	*	26	190	35
FORT SMITH	-17P	9P	-3P	-28P	8P	61		X	MANIWAKI	-9P	5P	6P	-32P	14P	13	010	35
FROBISHER BAY	-25P	0P	-19P	-35P	5P	26	340	78	MONT JOLI	-10P	2P	4P	-27P	27P	0	290	70
HALL BEACH	-33P	-2P	-23P	-44P	1P	21	300	31	MONTREAL INT'L	-8P	2P	5P	-25P	48P	0	040	59
INUVIK	-34P	-4P	-19P	-47P	6P	34		X	NATASHQUAN	-12P	0P	1P	-27P	50P	35	360	80
MOULD BAY	-35P	-1P	-26P	-45P	1P	*		X	NITCHEQUON	*	*	*	*	0P	*		*
NORMAN WELLS	-30P	0P	-18P	-42P	3P	34		X	QUEBEC	-11P	2P	4P	-28P	24P	38	240	57
RESOLUTE	-35P	-3P	-24P	-43P	2P	28		*	SCHEFFERVILLE	-21P	1P	-4P	-43P	14P	44	300	72
SACHS HARBOUR	-28P	2P	22P	-40P	2P	8		X	SEPT-ILES	-14P	0P	1P	-31P	23P	24	300	83
YELLOWKNIFE	-24P	5P	-10P	-36P	2P	43		*	SHERBROOKE	-10P	3P	11P	-32P	29P	10	270	43
ALBERTA									VAL D'OR	-14P	4P	1P	-35P	15P	56	280	54
CALGARY INT'L	2P	13P	13P	-6P	0P	0	330	72	NEW BRUNSWICK								
COLD LAKE	-5P	13P	6P	-22P	9P	12	280	44	CHARLO	-9P	5P	5P	-27P	29P	49	280	65
CORONATION	-3P	13P	7P	-14P	0P	0	320	57	CHATHAM	-9P	1P	6P	-29P	32P	23	320	56
EDMONTON NAMAO	-4P	10P	7P	-16P	3P	10	270	41	FREDERICTON	-7P	2P	8P	-27P	21P	25	320	50
FORT MCMURRAY	-7P	14P	7P	-25P	6P	22		X	MONCTON	-10P	-1P	7P	-27P	24P	22	260	67
HIGH LEVEL	-15P	9P	1P	-24P	6P	41	340	37	SAINT JOHN	-6P	2P	10P	-25P	42P	0	330	65
JASPER	-1P	11P	6P	-10P	6P	20		X	NOVA SCOTIA								
LETHBRIDGE	3P	13P	12P	-4P	0	0	240	78	GREENWOOD	-4P	2P	14P	-21P	23P	2	290	81
MEDICINE HAT	-1P	11P	12P	-19P	0P	0	300	74	SHEARWATER	-4P	0P	8P	-20P	44P	0	140	76
PEACE RIVER	-8P	11P	3P	-26P	12P	14		*	SYDNEY	-5P	0P	11P	-23P	42	0	290	109
SASKATCHEWAN									YARMOUTH	-2P	1P	12P	-17P	47P	0	150	74
CREE LAKE	-10P	15P	-1P	-26P	8P	29	290	37	PRINCE EDWARD ISLAND								
ESTEVAN	-1P	15P	7P	-8P	0P	2	300	65	CHARLOTTETOWN	-6P	1P	9P	-25P	39	6	320	83
LA RONGE	-8P	13P	1P	-21P	3P	9	220	48	SUMMERSIDE	-9P	-1P	5P	-26P	16P	0	270	80
REGINA	-3P	14P	5P	-13P	0P	2	340	50	NEWFOUNDLAND								
SASKATOON	-4P	15P	6P	-21P	1P	8	300	46	CARTWRIGHT	-12P	1P	-3P	-25P	21P	93	210	107
SWIFT CURRENT	0P	14P	7P	-9P	0P	0		X	CHURCHILL FALLS	-19P	3P	-4P	-36P	23P	91	300	74
YORKTON	-5P	15P	3P	-15P	3P	9	290	46	GANDER INT'L	-4P	2P	9P	-19P	16P	4	210	107
MANITOBA									GOOSE	-13P	2P	-2P	-25P	28P	67	260	81
BRANDON	-5P	14P	1P	-12P	3P	8	280	39	PORT-AUX-BASQUES	-5P	-1P	6P	-19P	61P	28	270	102
CHURCHILL	-20P	8P	-6P	-34P	8P	13	180	44	ST JOHN'S	-4P	1P	6P	-14P	27P	5	260	96
LYNN LAKE	-15P	11P	-2P	-30P	4P	30		*	ST LAWRENCE	-4P	0P	9P	-17P	67P	6		X

AV = weekly mean temperature in degree C
 MX = weekly extreme maximum temperature in degree C
 MN = weekly extreme minimum temperature in degree C
 TP = weekly total precipitation in mm
 DP = departure of mean temperature from normal in degree C
 SOG = snow depth on ground in cm, last day of the period

DIR = direction of maximum wind speed (deg. from true north)
 SPD = maximum wind speed in km/hour (10 minute mean)

X = not observed

P = value based on less than 7 days

* = missing