

The sunspot influence on temperature is reflected in earlier dates of freeze-up at sunspot maximum than at minimum, the records of "first ice", 1910-37, for Quebec and Montreal, harbours showing a range of 7 days in the smoothed mean December dates, being as follows:—

Year.....	0	1	2	3	4	5	6	7	8	9	10	11	Range F.
<i>First Ice, December Dates, Quebec, 1910-1937</i>													
	8.0	8.3	6.7	3.3	2.8	2.6	1.9	2.4	3.7	3.4	2.6	8.1	6.4
<i>First Ice, December Dates, Montreal, 1911-1937</i>													
	12.5	11.8	9.4	6.2	5.6	4.4	4.6	8.2	9.0	7.6	7.9	10.6	8.1
<i>Mean, Quebec and Montreal</i>													
	10.3	10.1	8.1	4.8	4.2	3.5	3.3	5.3	6.4	5.5	5.3	9.4	7.0

Precipitation in Canada follows, in general, a direct phase response to the sunspot cycle in coastal regions (oceanic or aquene type) and an inverse phase for the interior (inland type or terrene type). Intermediate regions show various blends of the two, sometimes exhibiting two pulses in the eleven-year cycle. Direct and inverse types are given in the following statement:—

PRECIPITATION, SMOOTHED MEAN ELEVEN-YEAR CYCLES (INCHES)

Year.....	0	1	2	3	4	5	6	7	8	9	10	11	Range p. c.
OCEANIC TYPE (AQUENE)													
<i>St. John's, Newfoundland, 1874-1920</i>													
	49.2	48.8	51.4	55.5	57.6	57.8	55.8	54.7	55.5	55.3	52.8	18	
<i>Victoria, British Columbia, 1891-1925</i>													
	26.4	26.9	28.2	29.9	31.1	29.3	27.7	29.9	31.4	30.0	28.8	27.5	18
INLAND TYPE (TERRENE)													
<i>Montreal, Quebec, 1874-1925</i>													
	44.6	41.1	38.9	38.9	39.5	39.5	40.3	40.3	39.4	39.6	42.0	45.2	16
<i>Toronto, Ontario, 1874-1925</i>													
	33.1	33.2	33.0	32.3	32.2	31.7	30.1	29.9	30.9	30.5	29.5	31.2	10
<i>Prince Albert, Saskatchewan, 1885-1925</i>													
	17.0	15.6	15.0	14.8	13.9	13.5	15.0	16.8	16.6	16.0	18.3	19.1	41
<i>Qu'Appelle, Saskatchewan, 1884-1935</i>													
	19.6	19.7	19.8	20.6	19.5	16.6	15.8	16.7	17.7	18.6	18.6	18.6	30
<i>Regina, Saskatchewan, 1896-1936</i>													
	14.8	14.8	15.3	16.7	16.1	13.9	13.1	13.9	14.7	15.5	15.8	14.8	27
<i>Swift Current, Saskatchewan, 1895-1936</i>													
	15.3	15.3	15.4	16.2	15.8	14.6	13.3	13.4	15.2	16.8	16.3	15.3	26
<i>Edmonton, Alberta, 1883-1925</i>													
	20.5	20.1	19.7	18.4	16.8	15.9	16.2	15.4	13.8	14.9	19.5	21.7	57
<i>Calgary, Alberta, 1885-1924</i>													
	20.0	20.5	17.2	13.0	12.0	12.8	14.0	14.8	14.3	15.4	18.7	19.7	71
<i>Kamloops, British Columbia, 1895-1925</i>													
	10.7	11.1	11.2	10.4	10.3	10.0	9.0	8.9	9.3	9.2	10.2	10.9	26

Increased ionization at sunspot maximum causes increased cloudiness and greater precipitation near the ocean where water vapour is plentiful. At sunspot minimum the greater clarity of the atmosphere causes greater heating of the inland