PACIFIC REGION TECHNICAL NOTES

NO. 78-021

June 16, 1978

CLOUD COVER, DIFFERENTIAL HEATING AND CONVECTION

Peter Haering, Meteorologist
Pacific Weather Center, Vancouver

INTRODUCTION.

When the air is convectively unstable, differential heating will generally determine where most of the convective activity will take place during the afternoon and evening. On June 14, 1978 a slowly southeastward moving trof covered central and southern B.C., providing an excellent illustration of the effect of differential heating on the location of the convective activity.

DISCUSSION.

The following satellite pictures and 500 mb. analysis are attached:

1. June 14. 1978, 1515Z Visible- 1 mile resolution
2. June 14. 1978, 2215Z Visible- ½ mile resolution
3. June 14. 1978, 1200Z 500 mb. analysis

The first visible picture of the day 1515Z clearly showed that the southern interior of B.C. was cloud free.

The 500 mb. analysis and the relevant tephigrams showed that the air in the vicinity of the trof was unstable.

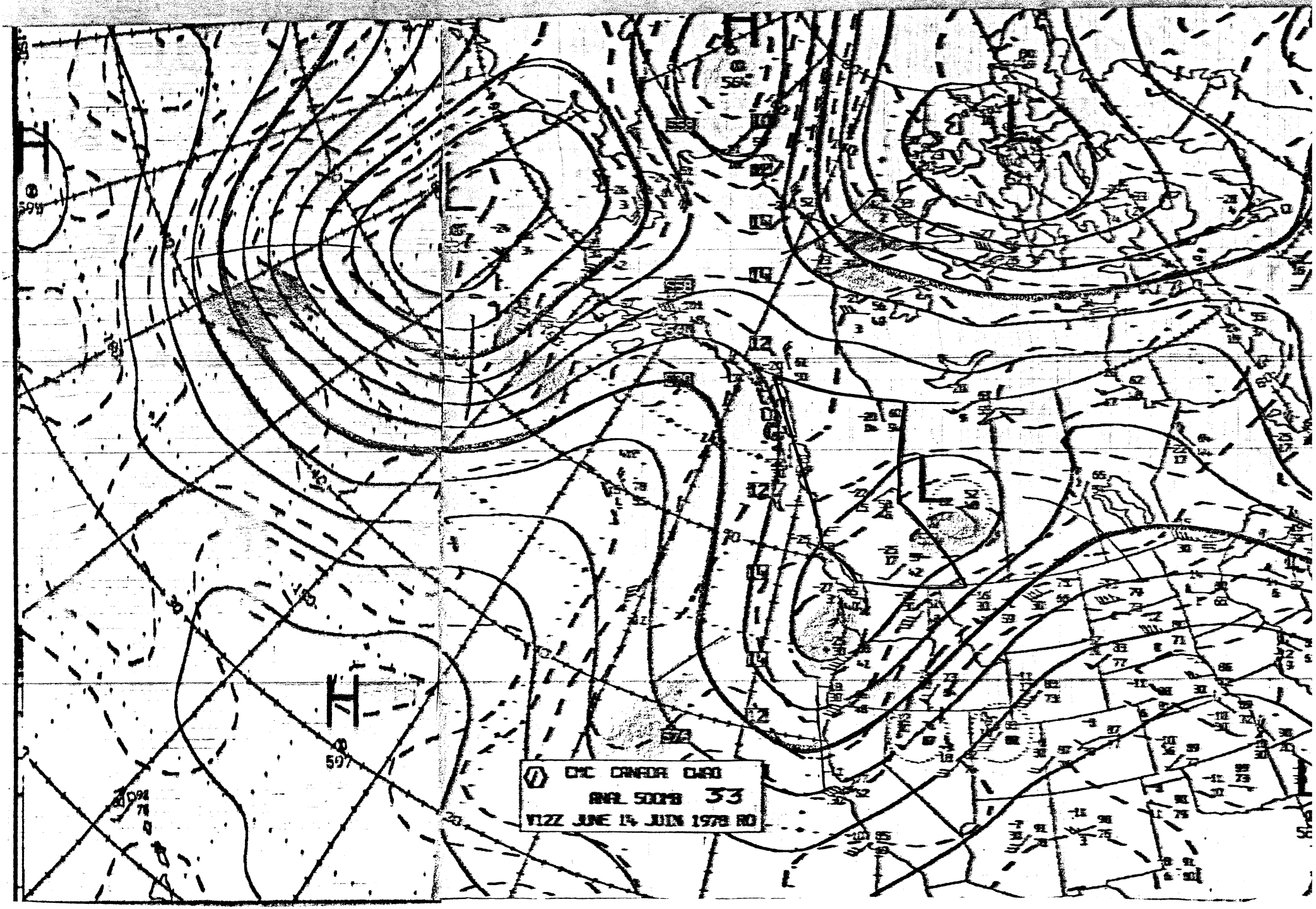
The 1515Z imagery also showed a large area of cloud over central B.C. and less cloud over the Rockies and along the Coast mountains.

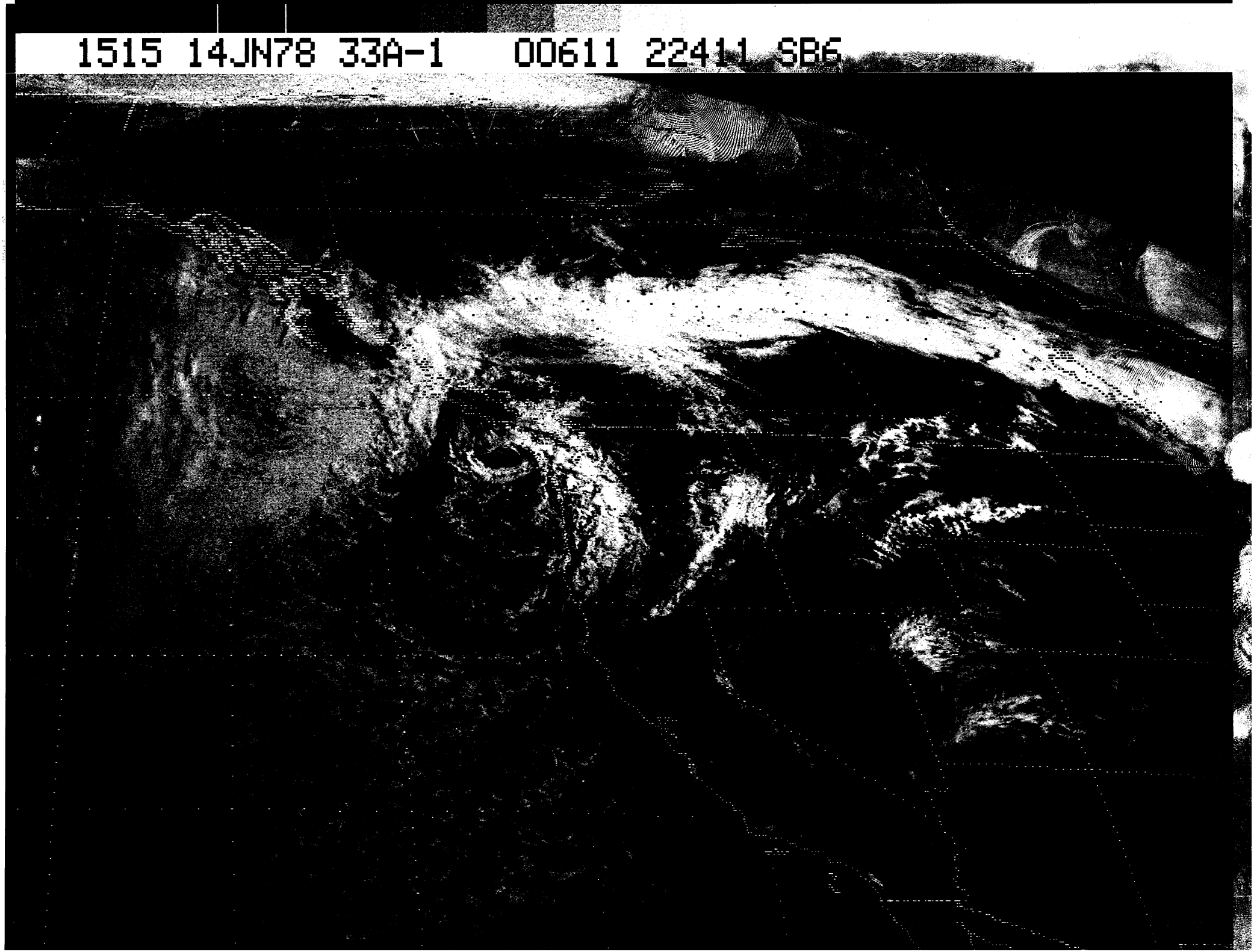
One would expect that omitting orographic effects the maximum heating would occur in the morning cloud free areas and this in turn would then produce the most likely location for convective activity.

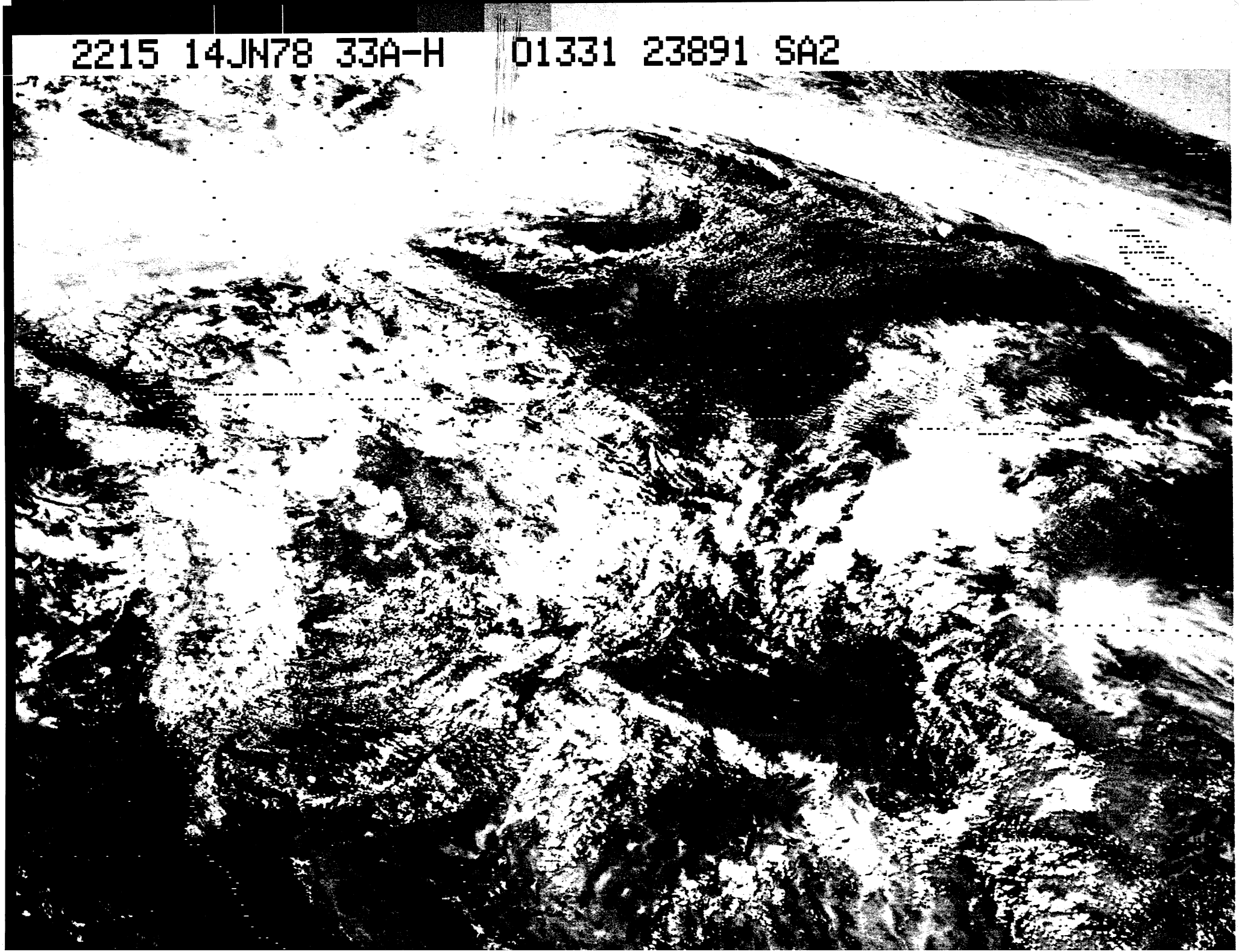
The satellite picture of 2215Z shows that this is what actually happened with most of the activity occurring along the U.S.-Canadian border.

CONCLUSION.

1. When assessing convective activity that may likely occur during the afternoon and evening, early morning cloud cover should be taken into consideration.


CMC CANADA CARD
ANAL 500MB 33
V12Z JUNE 14 JUIN 1978 RO


1515 14JN78 33A-1 00611 22411 SB6


2215 14JN78 33A-H 01331 23891 SA2