

*The next few slides will illustrate on the CMC analyses (and forecasts) some of the features mentioned by the forecasters early on Monday:*

SIGNIFICANT WEATHER DISCUSSION ISSUED BY THE PRAIRIE AND ARCTIC STORM PREDICTION CENTRE OF ENVIRONMENT CANADA AT 7:00 AM CST MONDAY JANUARY 9 2017.

SYNOPTIC OVERVIEW... ALOFT THIS MORNING, A LARGE UPPER LOW COMPLEX SITS OVER HUDSON BAY... A HIGH AMPLITUDE UPPER RIDGE SITS OVER ALASKA, AND THE FLOW PATTERN OVER THE FORECAST AREA WILL BECOME VERY MERIDIONAL OVER THE NEXT COUPLE DAYS.

AT THE SURFACE, A 1003 MB LOW HAS FORMED OVER THE IDAHO PANHANDLE AND WILL MOVE SOUTHEASTWARD TODAY ALONG WITH ITS SURFACE FRONTAL WAVE. ON THE CANADIAN SIDE, THE WARM AND MOIST AIR ASSOCIATED WITH THE SYSTEM IS ALOFT AND WRAPPING BACK TO THE PACIFIC LOW, AND IS LEAVING COLDER THAN SEASONAL AIR TRAPPED AT THE SURFACE...

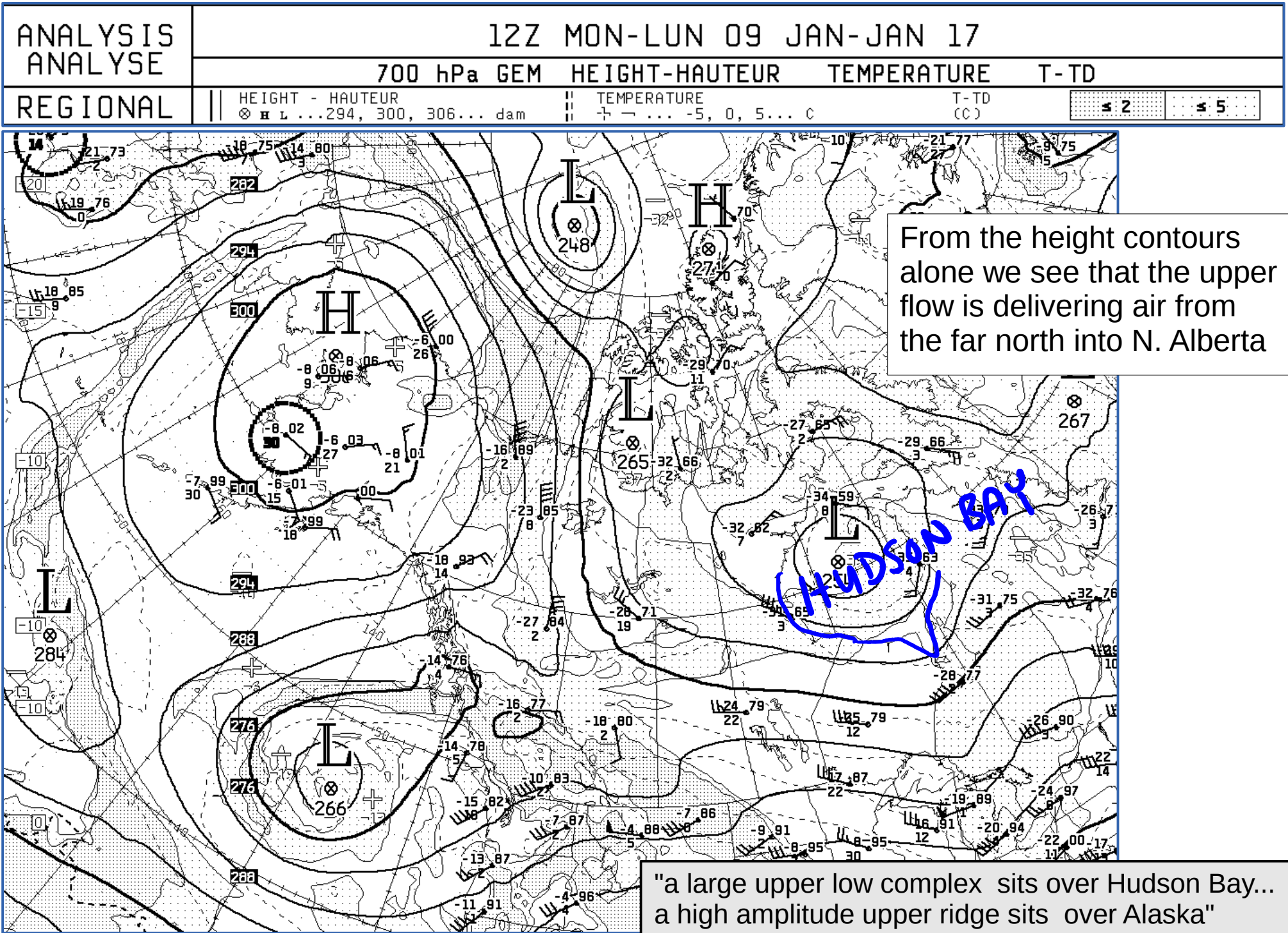
DISCUSSION...

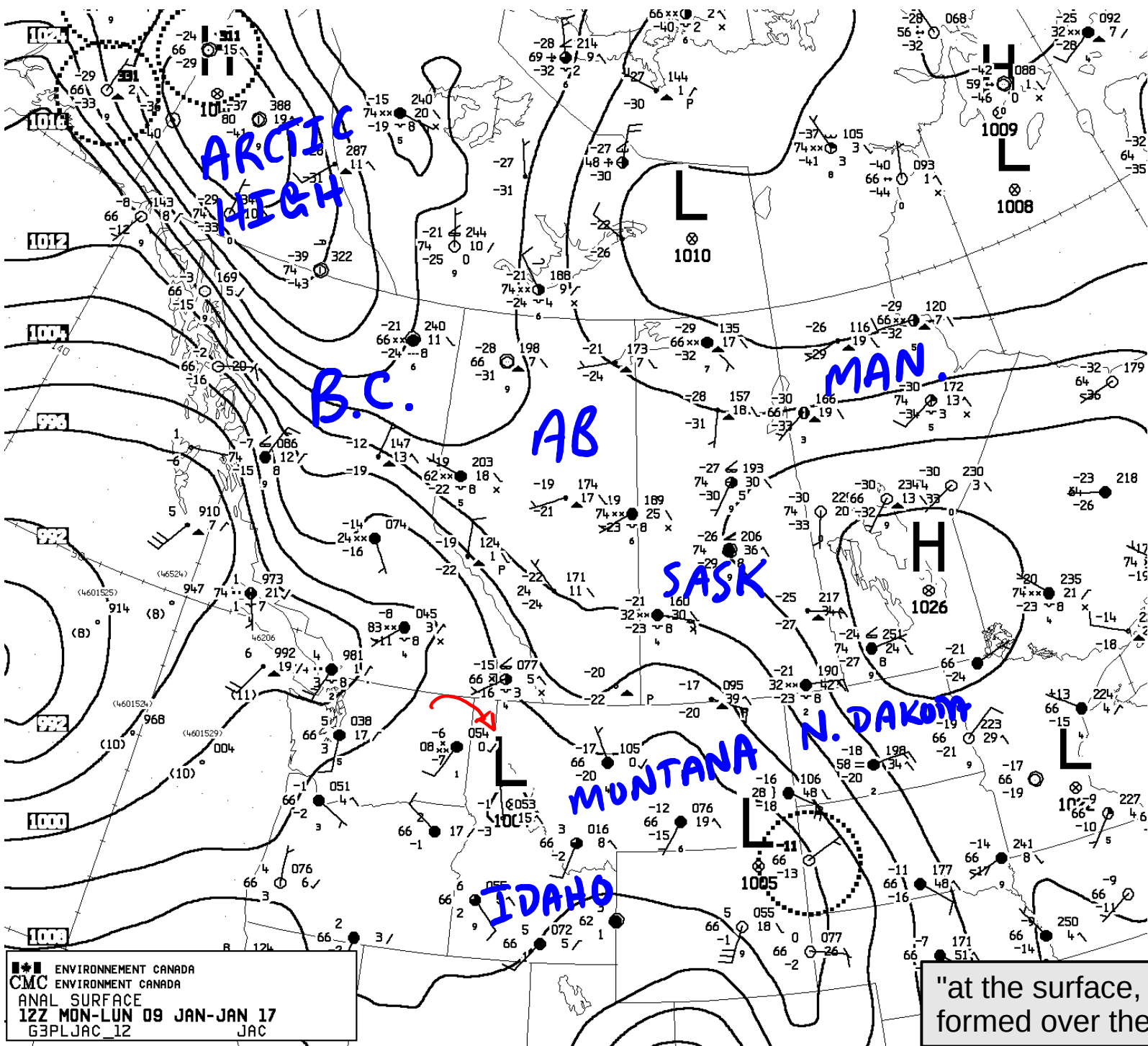
WRN PRAIRIES...A CLASSIC ALBERTA HEAVY SNOWFALL PATTERN WAS IN PLACE OVERNIGHT AS PACIFIC MOISTURE STREAMING NORTH OUT OF THE DEVELOPING LEE LOW OVERTOP OF THE ARCTIC AIRMASS THAT IS CURRENTLY ENTRENCHED OVER ALBERTA.

... THE LOW NOW FAR OUT OVER THE ARCTIC OCEAN ALSO SWINGS SOUTH THROUGH THE PRAIRIES ON WEDNESDAY, AND THERE IS POTENTIAL FOR SLIGHTLY COLDER AIR STILL IN BEHIND, AND MORE WIDESPREAD EXTREME COLD THROUGH THE END OF THE WEEK. BEYOND THAT, **MOST MODELS ARE CONTINUING TO POINT TO A SIZABLE WARM-UP STARTING SOMETIME ON THE WEEKEND OR EARLY NEXT WEEK...**

END/KNIGHT/FOUGERE

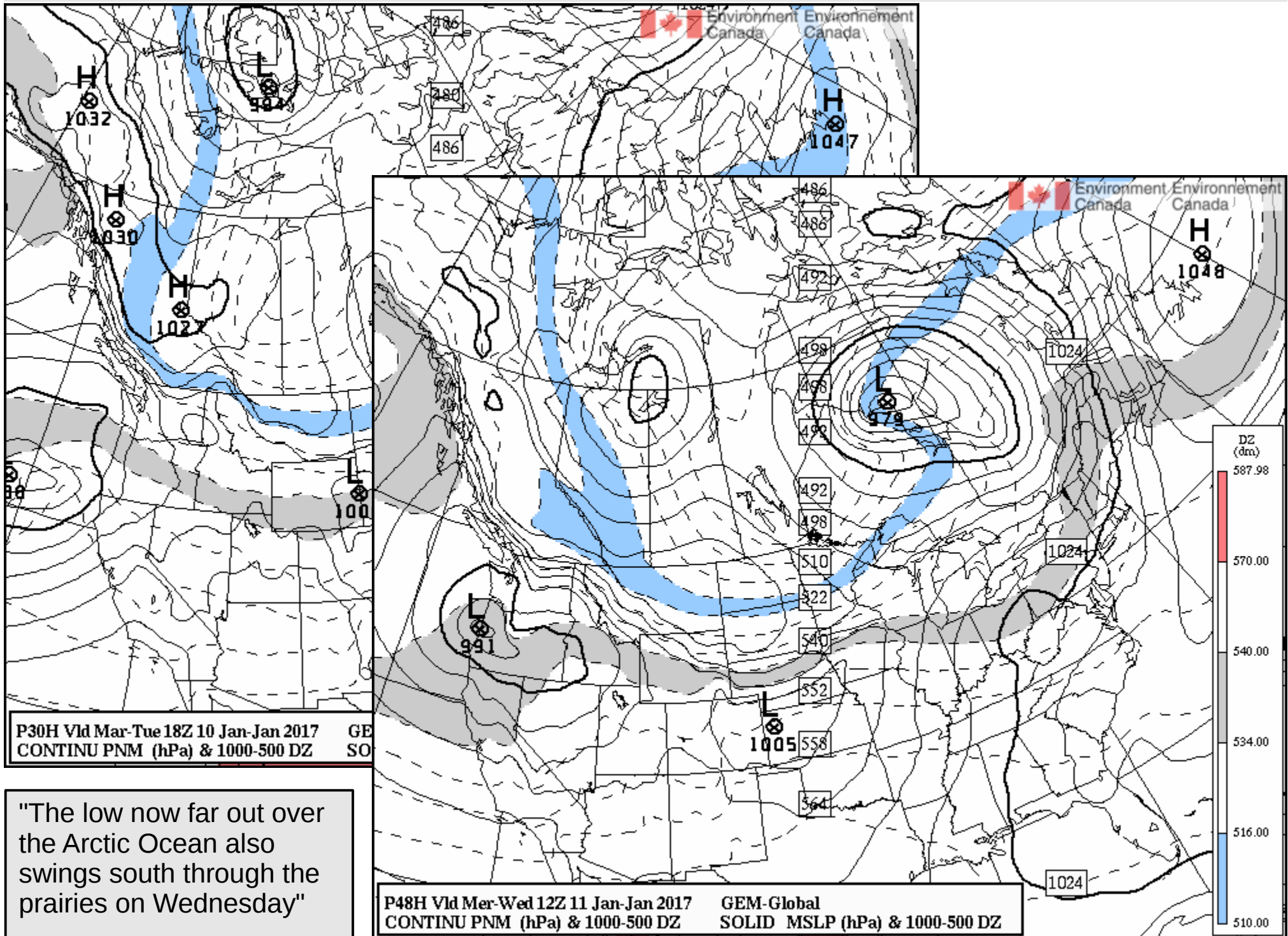
The winds aloft – highly meridional. Low off the coast attempting to shove mild air our way 2



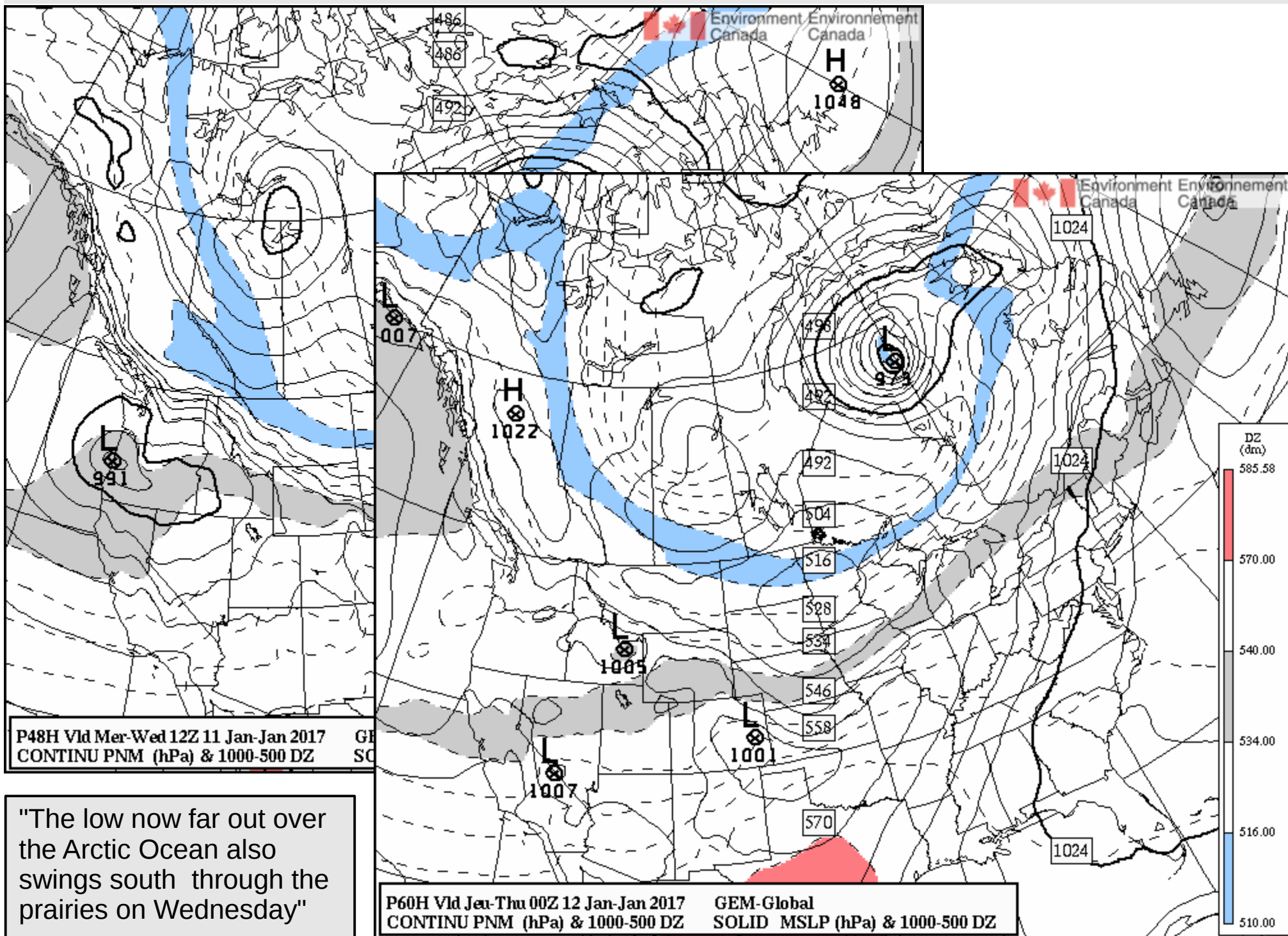


ENVIRONNEMENT CANADA  
CMC ENVIRONMENT CANADA  
ANAL SURFACE  
12Z MON-LUN 09 JAN-JAN 17  
G3PLJAC\_12 JAC

"at the surface, a 1003 mb low has formed over the Idaho panhandle"



"The low now far out over the Arctic Ocean also swings south through the prairies on Wednesday"



"The low now far out over the Arctic Ocean also swings south through the prairies on Wednesday"

SIGNIFICANT WEATHER DISCUSSION ISSUED BY THE PRAIRIE AND ARCTIC STORM PREDICTION CENTRE OF ENVIRONMENT CANADA AT 7:00 AM CST TUESDAY JANUARY 10 2017.

SYNOPTIC OVERVIEW...ALOFT THIS MORNING, THE **UPPER FLOW IS HIGHLY MERIDIONAL** AS A LARGE UPPER LOW COMPLEX CONTINUES TO LINGER OVER WESTERN HUDSON STRAIT COUPLED WITH A HIGH AMPLITUDE RIDGE OVER ALASKA.

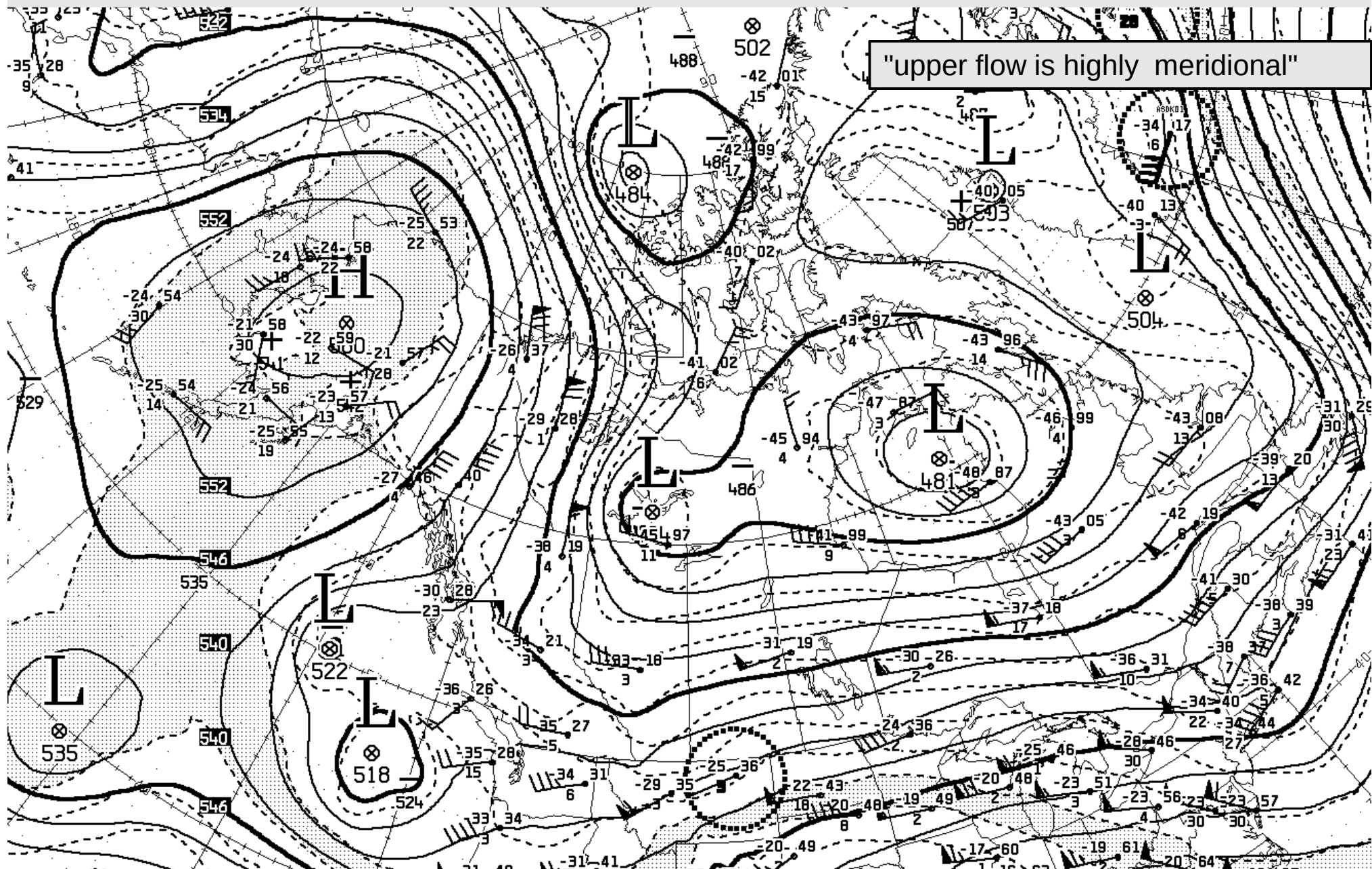
AT THE SURFACE, FLOW OVER THE PRAIRIES PROVINCES IS RATHER SLACK AT THE MOMENT. 1010 MB LOW NEAR SLAVE LAKE. THE 997 MB LOW RESPONSIBLE FOR THE PRECIPITATION IN THE SOUTH YESTERDAY IS NOW IN IOWA AND WILL TRACK NORTHEASTWARDS THROUGH ONTARIO TONIGHT AND INTO NORTHERN QUEBEC LATE WEDNESDAY. **ANOTHER 993 MB LOW OVER VICTORIA ISLAND IS DESCENDING SOUTHWARDS... AND WILL REACH NORTHERN ALBERTA BY WEDNESDAY MORNING.**

DISCUSSION...

WRN PRAIRIES...SLAVE LAKE LOW PRODUCING A COUPLE CM OF SNOW AS IT PUSHES SOUTHWARDS TODAY. AS WELL, SHORT LIVED WIND GUSTS OVER CENTRAL AB UP TO 80 KM/H ARE EXPECTED TO LAST INTO THE AFTERNOON AS THE LOW MOVES ACROSS. THE STRONGER LOW MOVING THROUGH TOMORROW WILL BRING SIMILAR WEATHER WITH WARMING MOVING IN FROM NORTHWEST TO SOUTHEAST. BUT BEFORE THEN EXTREME COLD CONDITIONS ARE EXPECTED OVER PARTS OF THE PROVINCE THIS MORNING, MOST LIKELY IN THE NORTH WHERE WARNINGS ARE IN EFFECT. TONIGHT INTO WEDNESDAY THERE IS A CHANCE PARTS OF EASTERN ALBERTA AND NORTHERN SK WILL SEE EXTREME COLD CONDITIONS.

END/KNIGHT/ROMBOUGH

# The flow aloft

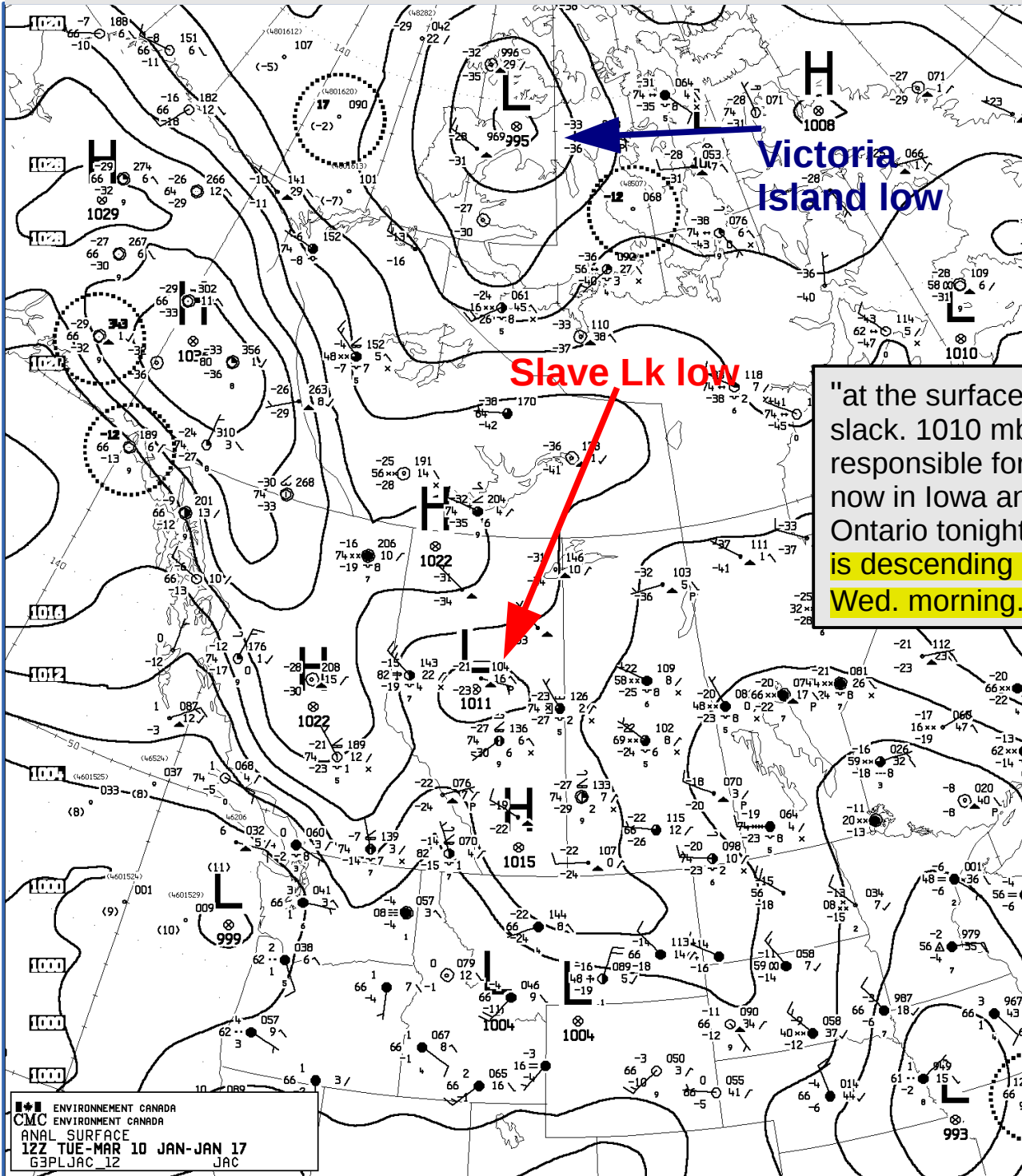


"upper flow is highly meridional"

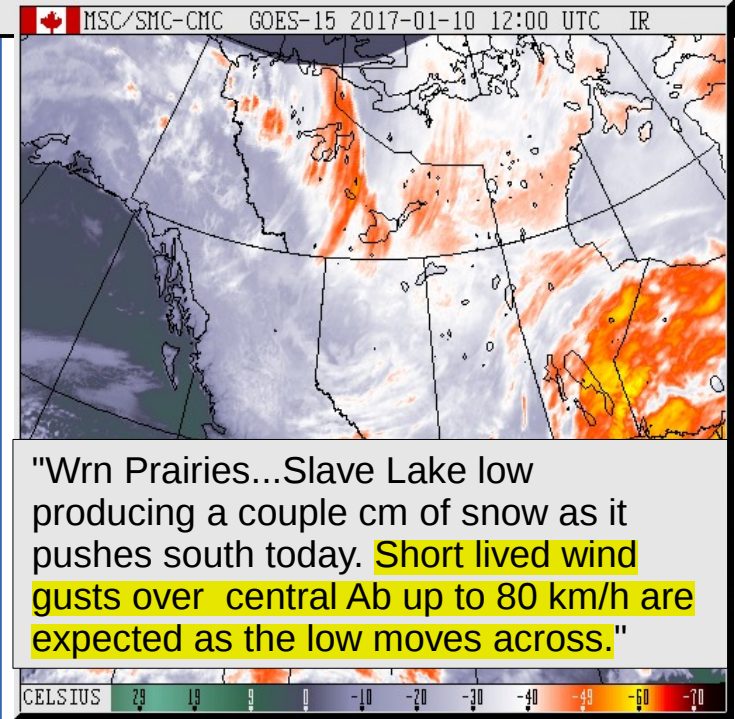
ANALYSIS ANALYSE	00Z TUE-MAR 10 JAN-JAN 17	
	500 hPa GEM HEIGHT-HAUTEUR / 1000-500 hPa THICKNESS-EPAISSEUR	
REGIONAL	HEIGHT - HAUTEUR ⊗ H L ... 540, 546, 552... dam	THICKNESS - EPAISSEUR + - ... 534, 540, 546... da

534 ≤ ΔZ ≤ 540

# Identifying the "Victoria Island low" and "Slave Lake" low














"at the surface, flow over the prairies provinces is rather slack. 1010 mb low near Slave Lake. The 997 mb low responsible for the precipitation in the south yesterday is now in Iowa and will track north-eastwards through Ontario tonight... **Another 993 mb low over Victoria Island is descending southwards... and will reach N. Alberta by Wed. morning.**"



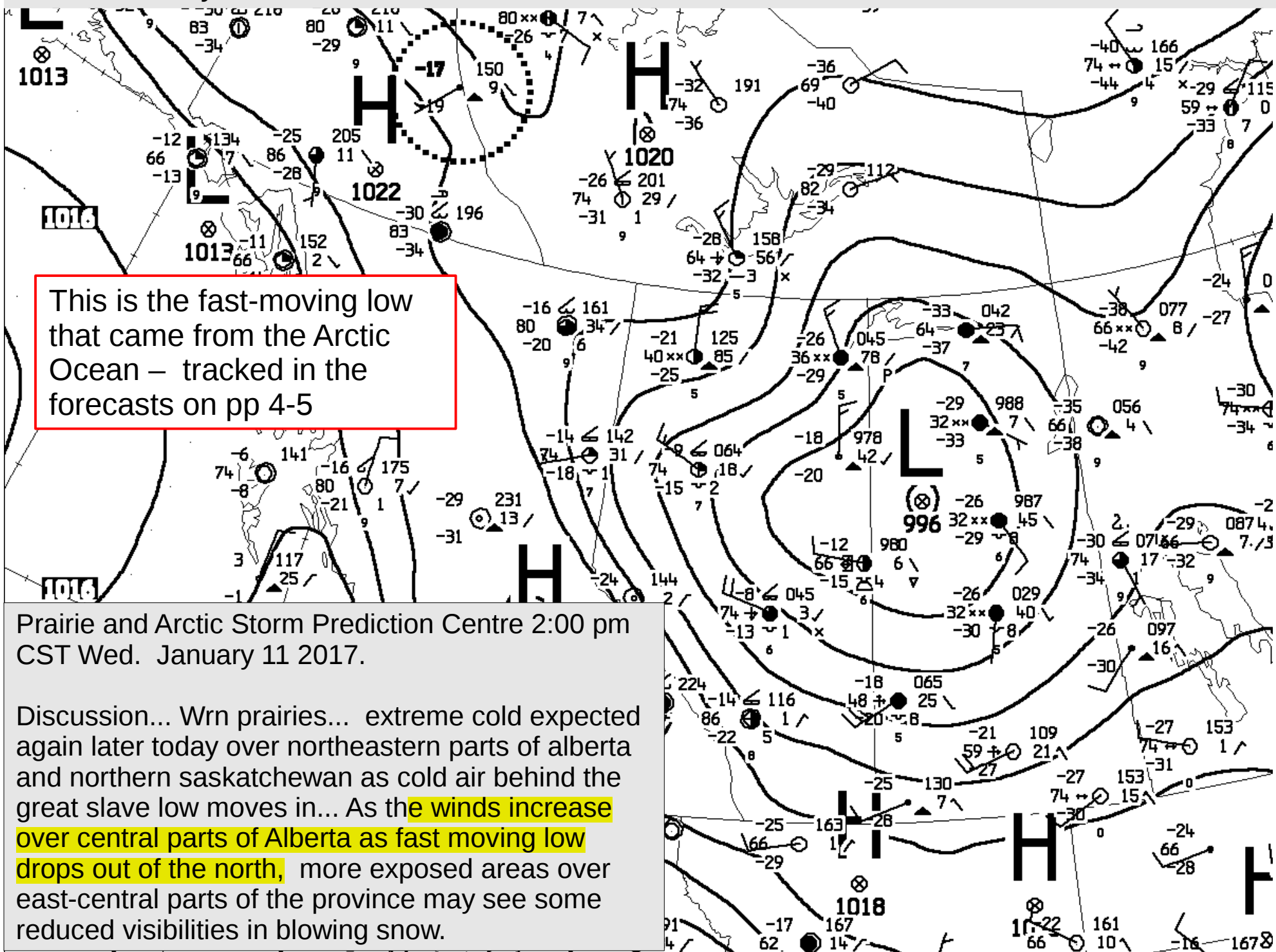
"Wrn Prairies...Slave Lake low producing a couple cm of snow as it pushes south today. **Short lived wind gusts over central Ab up to 80 km/h are expected as the low moves across.**"





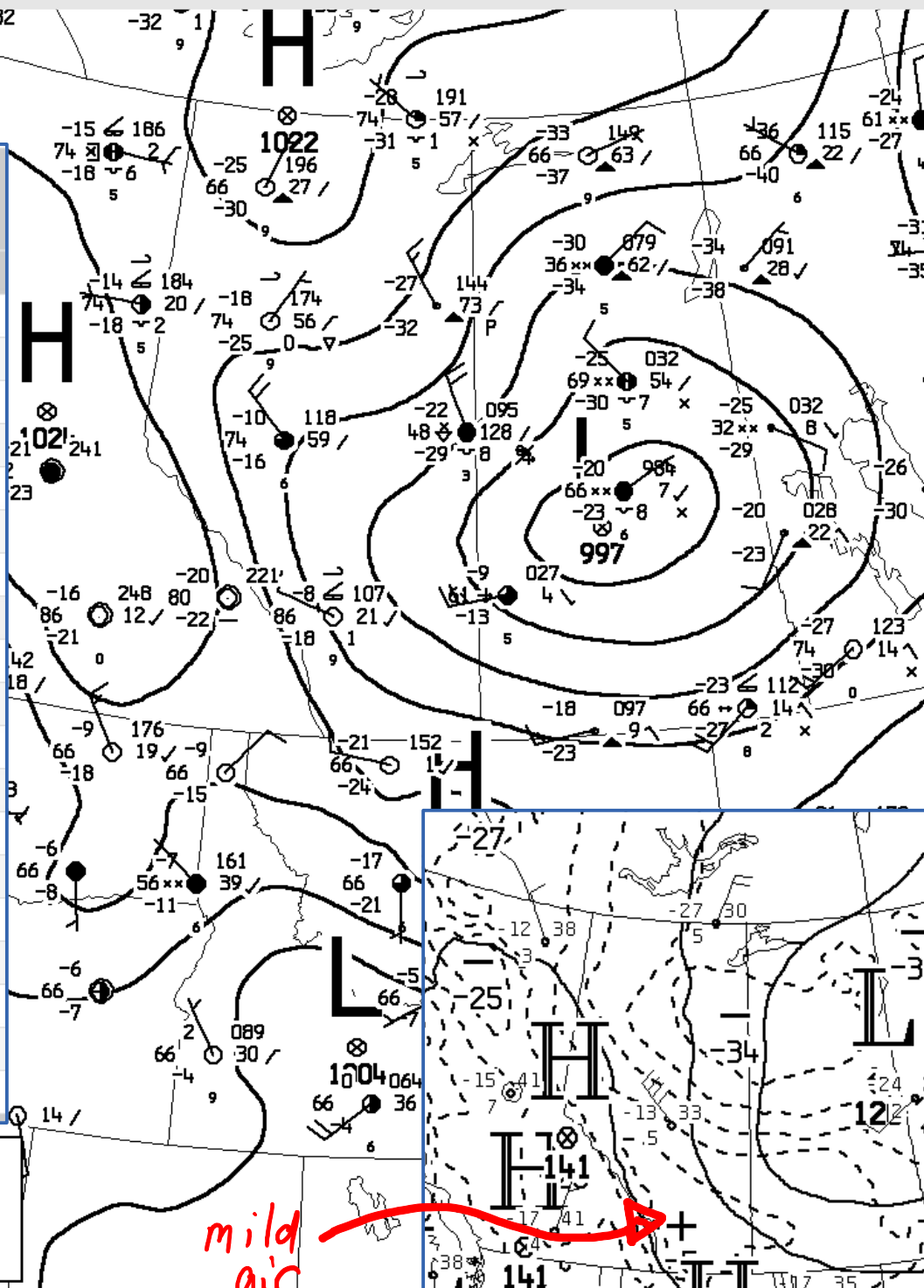
10 January 2017		(Edmonton International Airport, "YEG")	
23:00	 Light Snow	-19 (-19.4)	WSW 16
22:00	 Light Snow	-24 (-23.8)	WSW 9
21:00	 Partly Cloudy	-28 (-27.8)	SW 15
20:00	 Mainly Clear	<b>-33 (-32.5) ↓</b>	SSW 10
19:00	 Clear	-27 (-27.0)	WSW 10
18:00	 Mainly Clear	-25 (-25.4)	W 8
17:00	 Mainly Clear	-23 (-22.9)	WNW 10
16:00	 Mostly Cloudy	-21 (-21.2)	NW 13
15:00	 Mostly Cloudy	-21 (-21.3)	NNW 11
14:00	 Light Snow	-21 (-20.9)	NNW 20
13:00	 Light Snow and Blowing Snow	-20 (-20.4)	NNW 36 gust 51

"Wrn Prairies...Slave Lake low producing a couple cm of snow as it pushes south today. **Short lived wind gusts over central Ab up to 80 km/h are expected as the low moves across.**"



Date / Time (MST)	Conditions	Temperature (°C)	Wind (km/h)
11 January 2017 <b>Edmonton</b>			
18:00	n/a	-15 (-14.8)	N 35 gust 48
17:00	n/a	-12 (-12.4)	N 39 gust 62
16:00	n/a	-7 (-7.2)	NW 31 gust 57
15:00	n/a	-7 (-6.7)	WNW 26 gust 46
14:00	n/a	-6 (-6.2)	WNW 36 gust 54
13:00	n/a	-6 (-5.6) ↑	WNW 32 gust 41
12:00	n/a	-6 (-6.4)	WNW 26 gust 36
11:00	n/a	-7 (-7.4)	WNW 26 gust 43
10:00	n/a	-8 (-8.0)	WNW 28 gust 40
09:00	n/a	-9 (-8.5)	W 25
08:00	n/a	-9 (-8.8)	WNW 24
07:00	n/a	-9 (-8.8)	WNW 30 gust 40
06:00	n/a	-11 (-11.0)	W 22 gust 33
05:00	n/a	-14 (-13.6)	WSW 11
04:00	n/a	-15 (-15.1)	WSW 15
03:00	n/a	-15 (-15.4)	WSW 10
02:00	n/a	-16 (-16.3)	W 15
01:00	n/a	-22 (-22.4)	WSW 8
00:00	n/a	-23 (-22.7)	SW 9

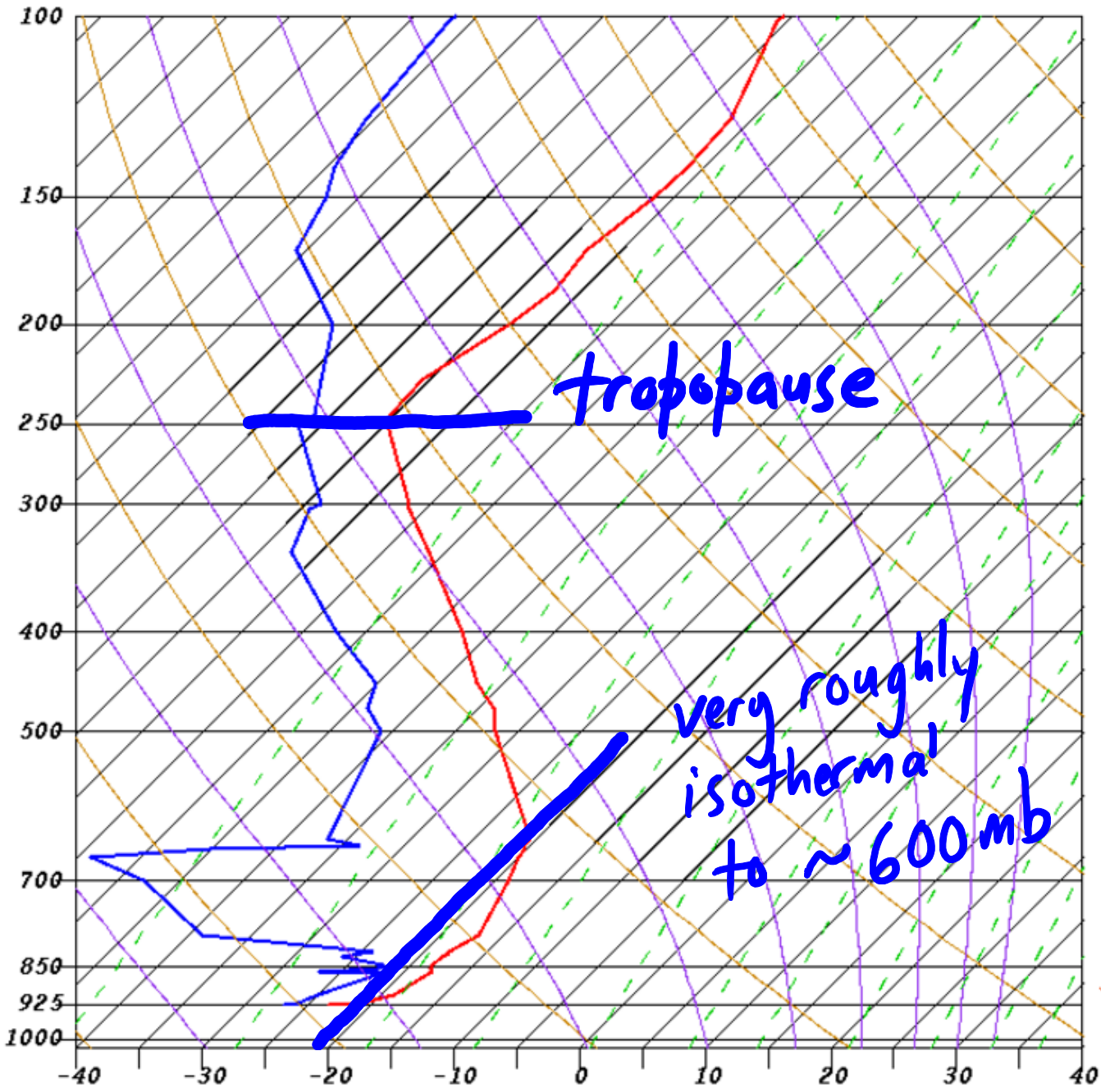
*Tight isobar spacing explains the strong winds*



■ ■ ■ ENVIRONNEMENT CANADA  
 CMC ENVIRONMENT CANADA  
 ANAL SURFACE  
 00Z THU-JEU 12 JAN-JAN 17  
 G3PLJAC\_00 JAC

*mild air* →

170112/1200 71119 WSE SHOW: 20 LIFT: 23 SHET: 55 VTOT: 14 ;  
CAPE: 0 EQLV: -9999 SELV: 766 CINS: 0 1  
LCLT: 246 LCLP: 872



Very stable atmosphere

tropopause

very roughly isothermal to ~600 mb