



# *ELP High wind event*

*Tuesday December 8 2009*

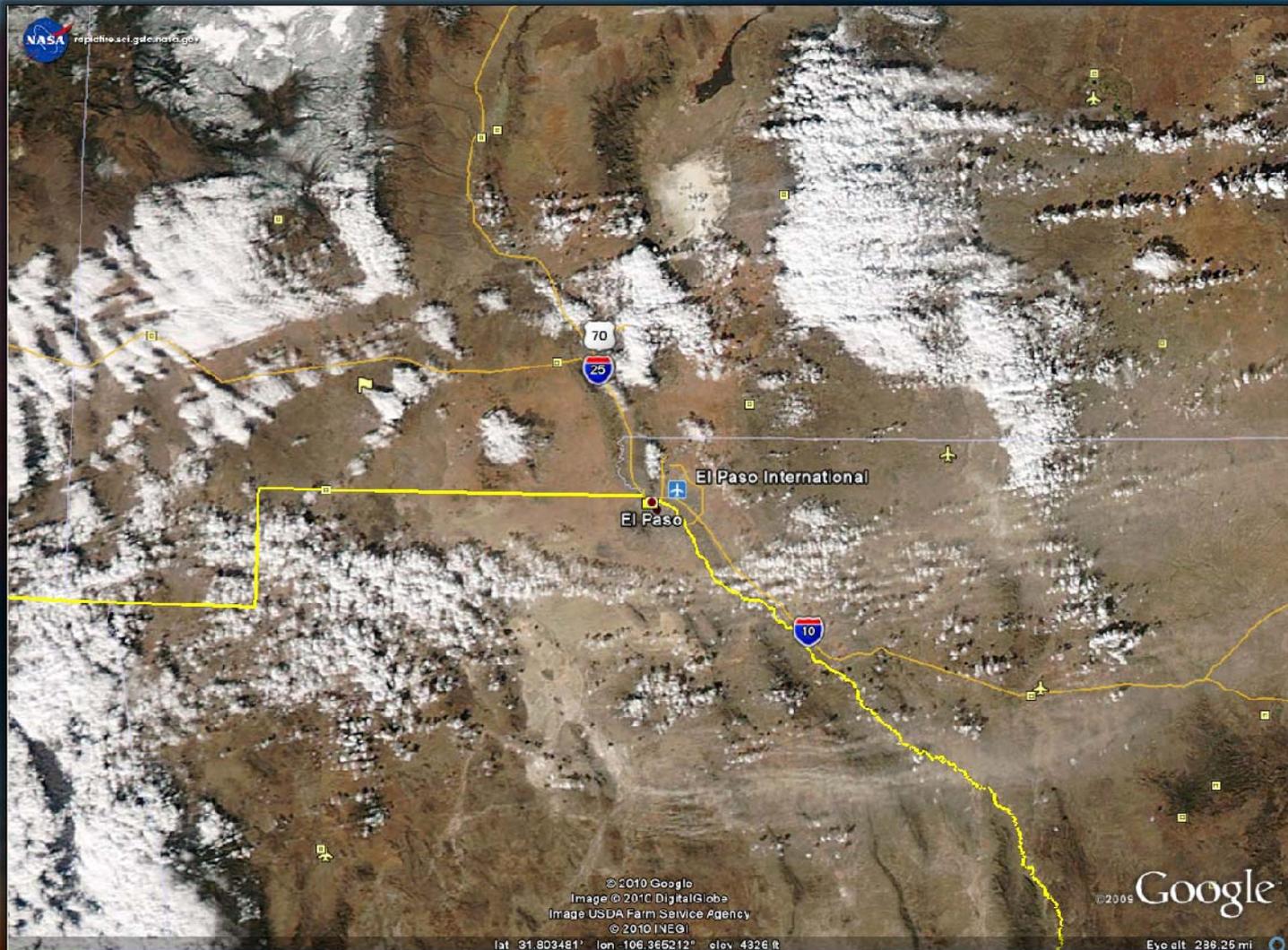
A strong upper trough, deep surface low and 150 knot jet streak combined to produce widespread sustained winds of 45 to 55 mph with gusts in the 70 to 80 mph range, especially in downslope areas and at higher elevations. Highest wind reported at El Paso International Airport was **56 mph** from the southwest. Highest gust was clocked at **68 mph** from the southwest. A few mountain passes had wind gusts of around **100 mph**, with **116 mph** recorded at St. Augustine pass just east of Las Cruces. Total damage area wide was estimated to exceed 10 million dollars.

Presentation by Meteorologists  
Lance Tripoli and John Park,  
NWS El Paso

Abstract forward by David Novlan,  
Meteorologist NWS El Paso and Lance Tripoli

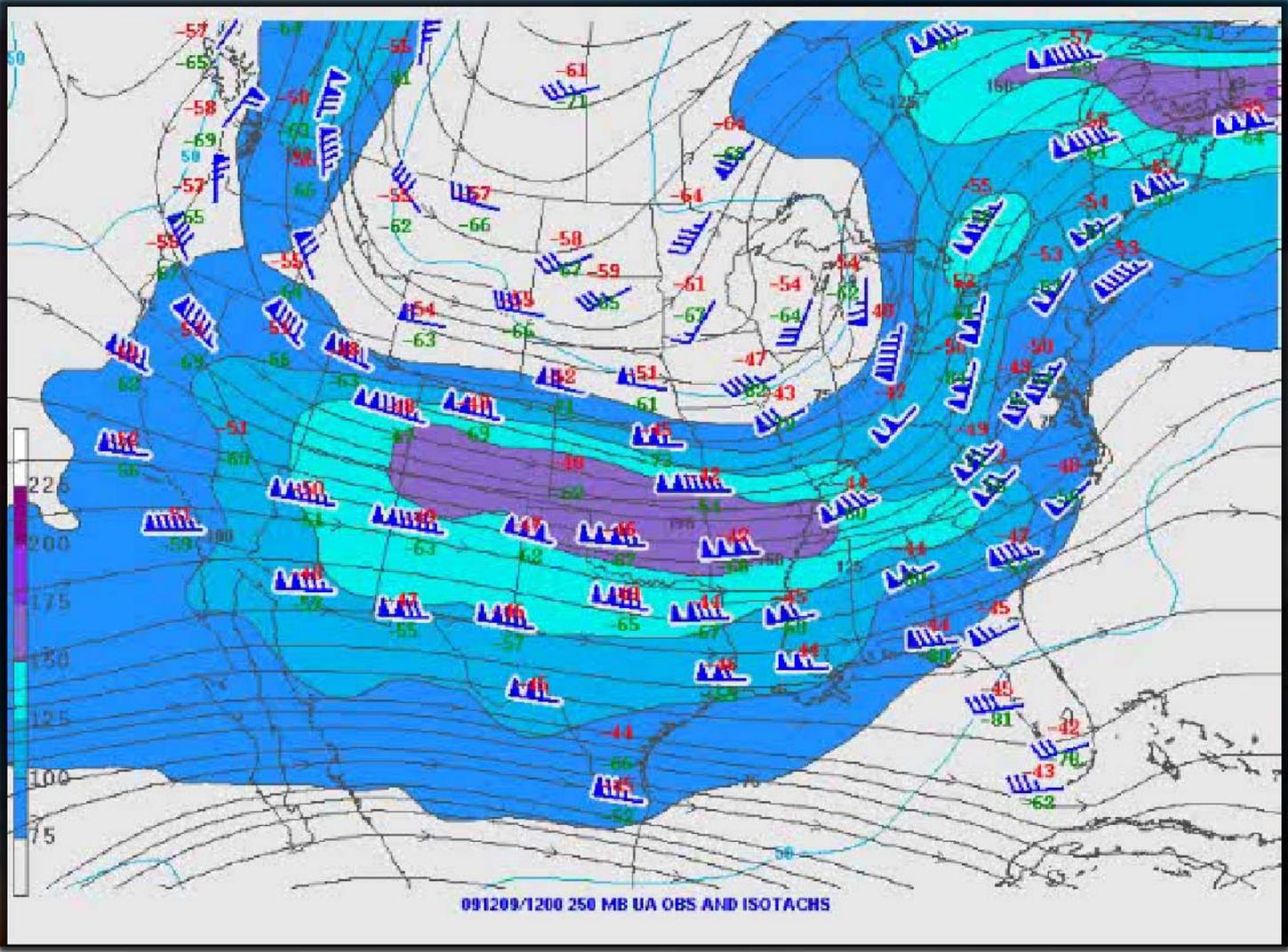


# 08/1955Z MODIS AQUA METSAT Image of southern NM and far west TX

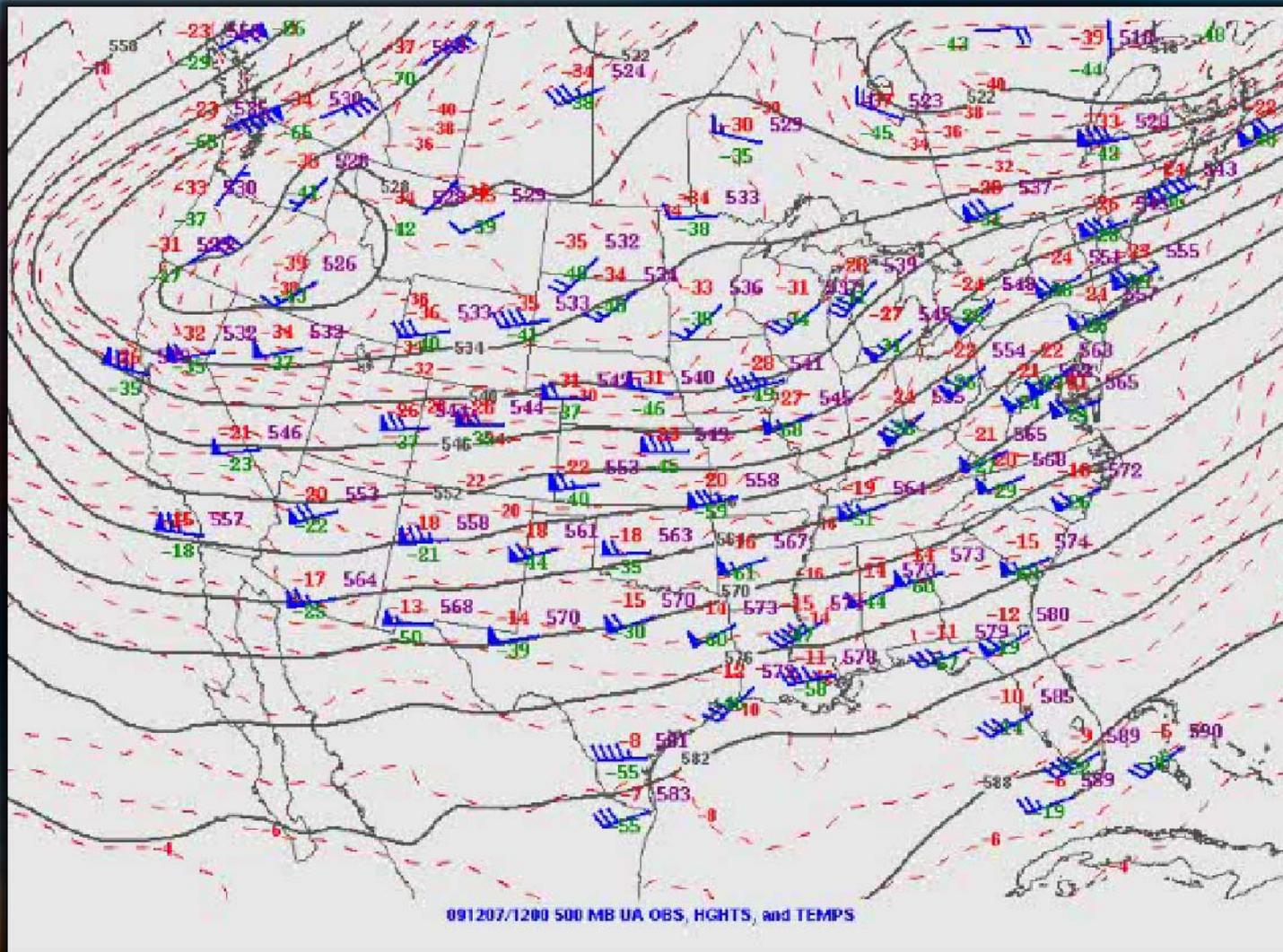


Supporting the Nation's commerce with information for safe, efficient, and environmentally sound transportation.

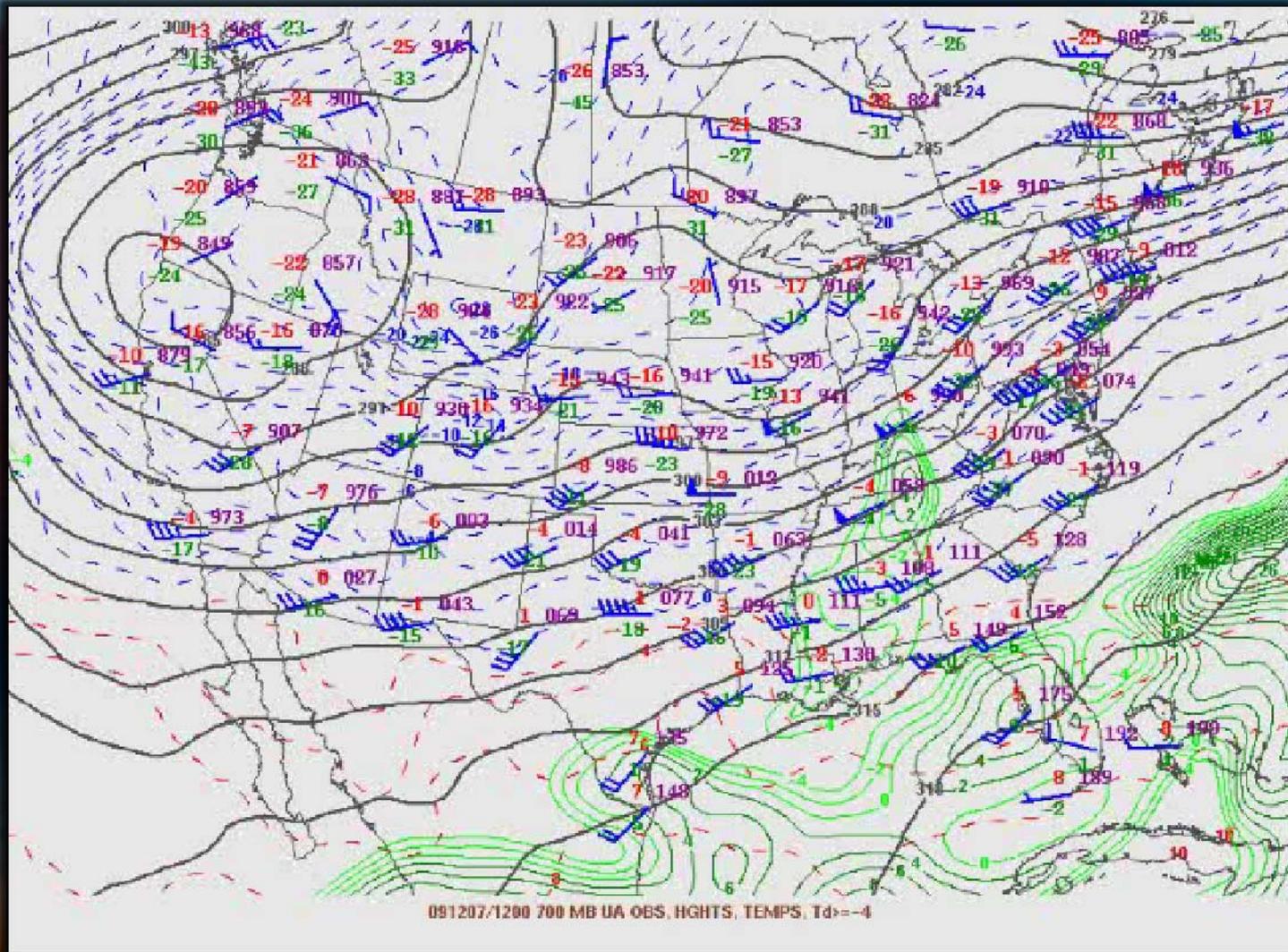
# SPC 250mb analysis loop 07/12Z to 09/12Z



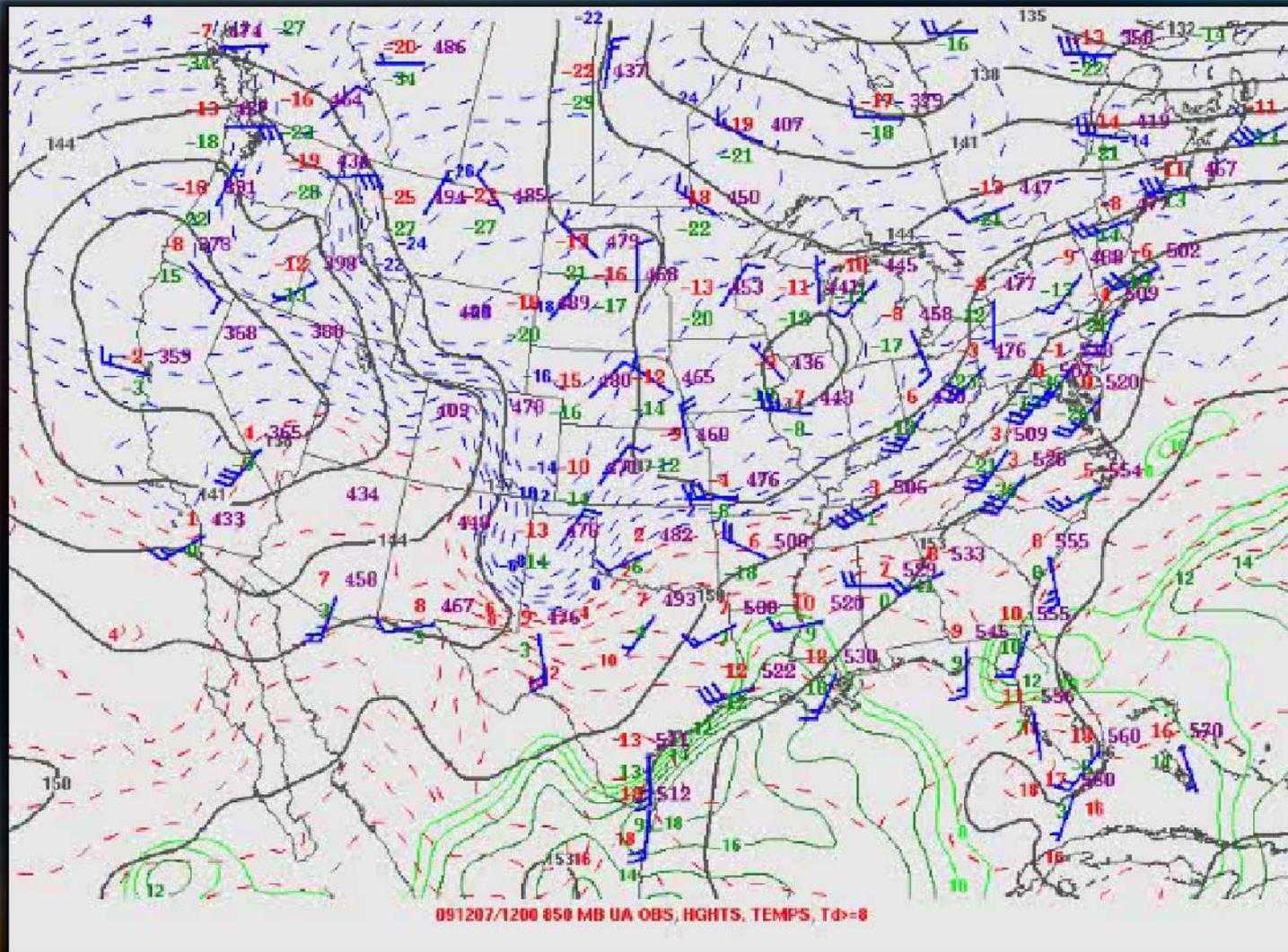
# SPC 500mb analysis loop 07/12Z to 09/12Z



# SPC 700mb analysis loop 07/12Z to 09/12Z

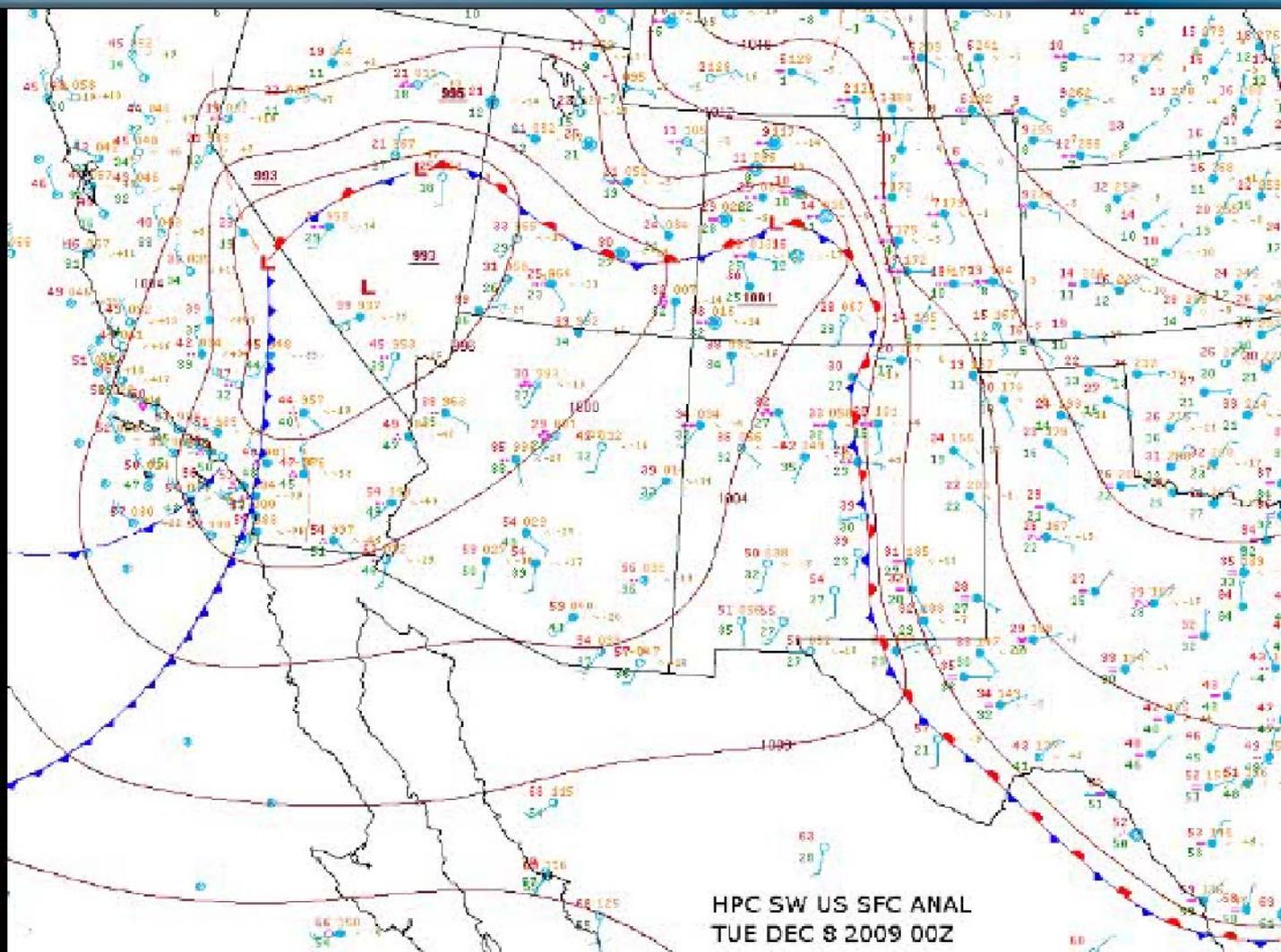


# SPC 850mb analysis loop 07/12Z to 09/12Z

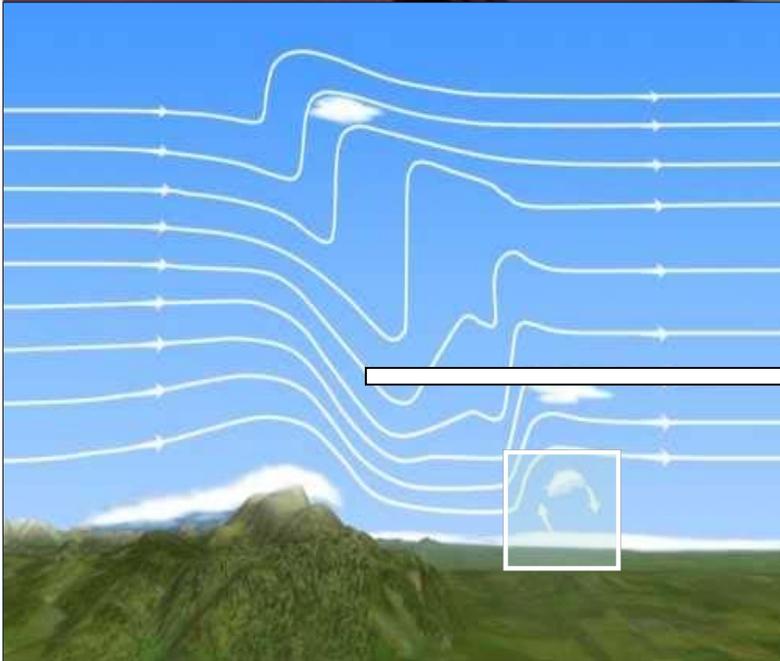




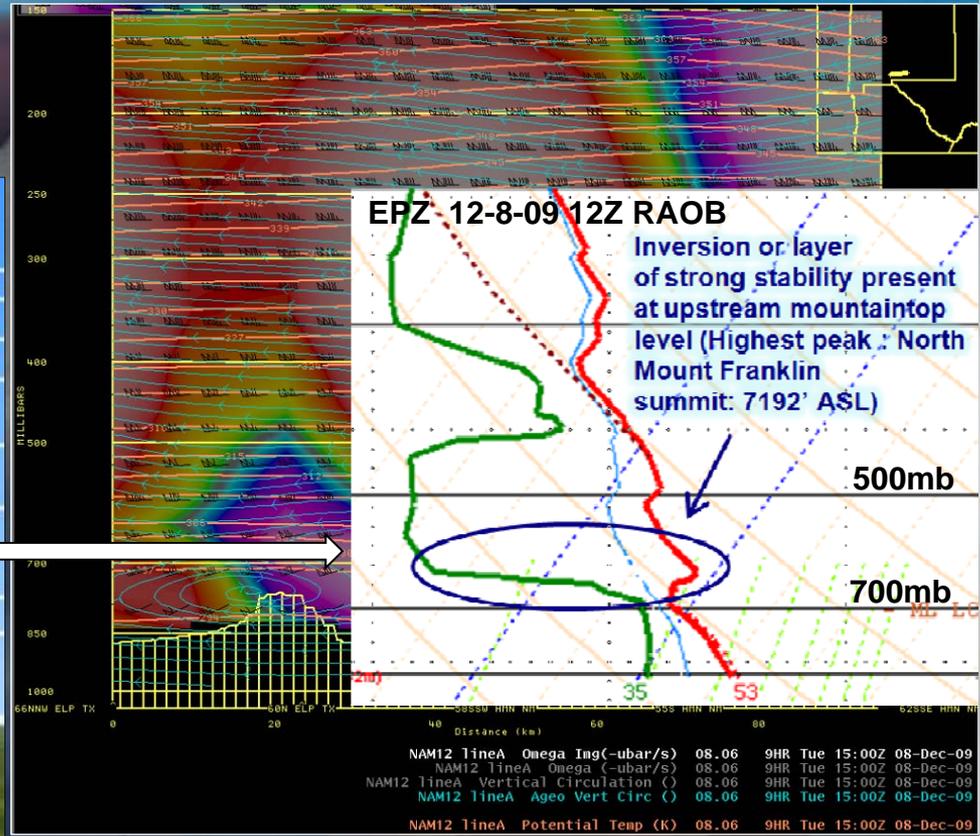
## HPC SW US SFC analysis loop 8/00Z to 9/06Z



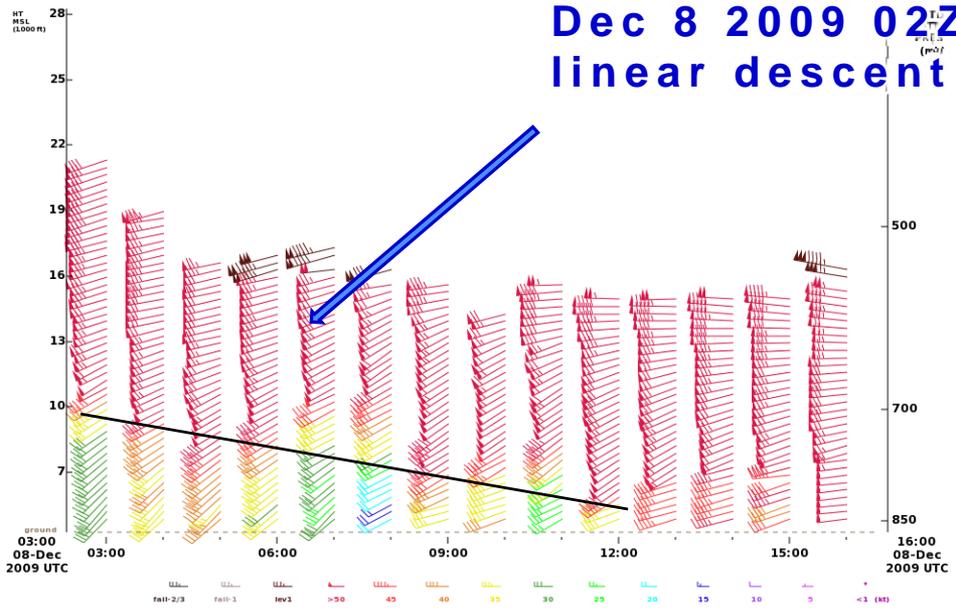
On the morning of December 8<sup>th</sup>, model forecasts identified a classic Mountain Wave Signature (MWS) east of the Organ Mountains.



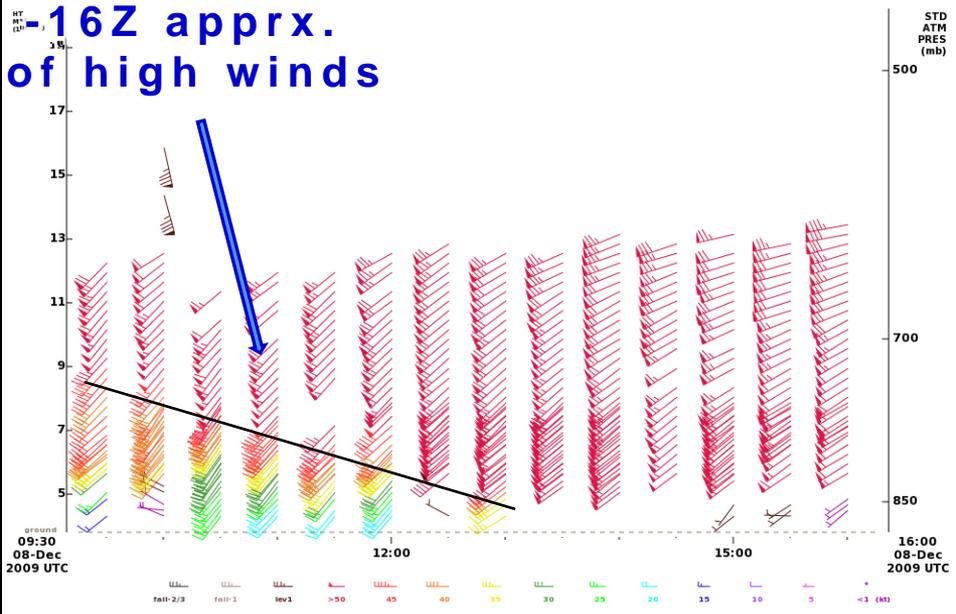
Mountain Wave Model



12 km NAM "Mountain Wave Signature"



**Dec 8 2009 02Z -16Z apprx.  
 linear descent  
 of high winds**



**KDMN ASOS**

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METAR KDMN 080753Z AUTO 24017G23KT 10SM BKN060 OVC075 52/38 A2964 RMK AO2
METAR KDMN 080853Z AUTO 24019G36KT 10SM -RA FEW047 BKN060 OVC085 51/39 A2964
RMK AO2 PK WND 25036/0847
METAR KDMN 080953Z AUTO 22024G33KT 10SM -RA BKN055 OVC080 50/37 A2963
RMK AO2 PK WND 22033/0952
METAR KDMN 081053Z AUTO 23024G38KT 10SM -RA BKN055 BKN075 BKN090
50/37 A2960 RMK AO2 PK WND 23040/1041
METAR KDMN 081153Z AUTO 23021G36KT 10SM SCT065 BKN080 50/36 A2958
RMK AO2 PK WND 23038/1115
METAR KDMN 081253Z AUTO 24027G41KT 10SM BKN050 OVC065 51/35 A2958
RMK AO2 PK WND 24041/1252
METAR KDMN 081353Z AUTO 24026G40KT 8SM FEW070 SCT090 50/35 A2960
RMK AO2 PK WND 25044/1309
METAR KDMN 081453Z AUTO 24022G38KT 9SM -RA BKN038 49/38 A2965 RMK
AO2 PK WND 24047/1400
METAR KDMN 081538Z AUTO 26024G35KT 1 3/4SM +RA BR BKN025 OVC034
45/41 A2969 RMK AO2 PK WND 26038/1512
METAR KDMN 081544Z AUTO 26029G40KT 3SM RA BR SCT025 OVC032 45/41
A2970 RMK AO2
METAR KDMN 081553Z AUTO 27025G33KT 6SM -RA BR BKN028 OVC035 45/41 A2971
RMK AO2
METAR KDMN 081653Z AUTO 29017G26KT 10SM -RA OVC023 41/36 A2977
RMK AO2 PK WND 29037/1605
METAR KDMN 081753Z AUTO 29022G28KT 10SM OVC027 40/32 A2981
RMK AO2 PK WND 30036/1714
METAR KDMN 081819Z AUTO 28022G34KT 10SM OVC031 41/30 A2981
RMK AO2 PK WND 28034/1817
METAR KDMN 081853Z AUTO 28024G33KT 10SM OVC033 44/32 A2982
RMK AO2 PK WND 29034/1817
METAR KDMN 081953Z AUTO 28026G40KT 10SM SCT037 BKN048 45/31 A2981
RMK AO2 PK WND 29040/1946
  
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**KELP ASOS**

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METAR KELP 081151Z AUTO 23010KT 10SM SKC 51/34 A2963 RMK AO2
METAR KELP 081251Z AUTO 22009KT 10SM FEW080 49/35 A2964 RMK AO2
METAR KELP 081351Z AUTO 24011KT 10M SCT070 50/35 A2965 RMK AO2
PK WND 22026/1254
METAR KELP 081451Z AUTO 24021G28KT 10SM SCT060 53/36 A2966
RMK AO2 PK WND 25034/1441
METAR KELP 081551Z AUTO 25037G48KT 3SM BLDU SCT060 57/36 A2967
RMK AO2 PK WND 24050/1535
METAR KELP 081651Z AUTO 24051G59KT 2SM BLDU SCT060 59/34 A2968
RMK AO2 PK WND 24059/1651
METAR KELP 081705Z AUTO 24043G57KT 1SM BLDU SCT060 59/34 A2969
RMK AO2 PK WND 25057/1702
METAR KELP 081727Z AUTO 25044G55KT 3SM -RA BLDU BKN065 59/34 A2970
RMK AO2 PK WND 25059/1711
METAR KELP 081751Z AUTO 25031G56KT 3SM BLDU BKN065 60/33 A2971
RMK AO2 PK WND 25059/1711
METAR KELP 081820Z AUTO 25042G58KT 2SM BKN065 61/30 A2971
RMK AO2 PK WND 25058/1817
METAR KELP 081851Z AUTO 27030G55KT 4SM FEW025 BKN065 57/33 A2970
RMK AO2 PK WND 25058/1817
METAR KELP 081951Z AUTO 28025G39KT 10SM FEW025 SCT065 53/36 A2972
RMK AO2 PK WND 28051/1910
METAR KELP 082051Z AUTO 28026G36KT 10SM FEW040 53/34 A2975
RMK AO2 PK WND 30042/2031
METAR KELP 082151Z AUTO 29019G31KT 10SM FEW040 54/33 A2977
RMK AO2 PK WND 29035/2107
METAR KELP 082251Z AUTO 29022G31KT 10SM FEW040 53/31 A2980
RMK AO2 PK WND 29035/2153
  
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AIRMETS and SIGMETs issued by AWC early on Dec 8 2009.



# *Potential Impacts on Flight Operations*



- **TURBULENCE**
- **CROSS-WIND LIMITATIONS**
- **VISIBILITY – BLOWING DUST**
- **WIND SHEAR**
- **FOREIGN OBJECT DAMAGE (F.O.D.)**



# WFO El Paso Airport Wind Advisory



## AIRPORT WIND ADVISORY

ADVISORY CRITERIA EXPECTED FOR ≥ 1 HR { 1. WIND (SUSTAINED) ≥ 20KTS **AND** GUSTS ≥ 30KTS  
2. WIND (SUSTAINED) ≥ 30KTS

GIVE THE FOLLOWING WHEN POSSIBLE, AND STATE VALID PERIOD COVERED BY ADVISORY:

WIND DIRECTION, MAX GUSTS EXPECTED AND ANY VISIBILITY RESTRICTIONS

December 7 2009 / 1935 LST / JAH  
Month/Day/Year Time

Valid Time

1500 UTC 12/08 - 0300 UTC 12/09

Text

WUUS84 KPZ 080235  
ANNELP  
TXZ055 (081500-)  
AIRPORT WEATHER WARNING  
NATIONAL WEATHER SERVICE EL PASO TX/SANTA TERESA NM  
735 PM MST MON DEC 7 2009

...AIRPORT WEATHER WARNING FOR EL PASO INTERNATIONAL AIRPORT...

VALID 12/08/1500Z - 12/09/0300Z

SOUTHWEST TO WEST WINDS WILL INCREASE AND INTENSIFY DURING THE MORNING HOURS ON TUESDAY. WINDS OF 15 TO 25 KNOTS CAN BE EXPECTED DURING THE EARLY MORNING HOURS...INCREASING TO 25 TO 35 KNOTS BY MIDDAY...WITH PEAK GUSTS BETWEEN 50 AND 55 KNOTS. WINDS ARE EXPECTED TO DECREASE DURING THE LATE AFTERNOON...BUT REMAIN AT ADVISORY LEVELS THROUGH THE EARLY EVENING.

Ver

WIND SPEEDS MAY BE ERRATIC AT TIMES DURING THE OVERNIGHT HOURS TONIGHT. LOW LEVEL WIND SHEAR IS LIKELY DURING ANY PERIODS WITH SIGNIFICANT DECREASES IN SURFACE WIND SPEED.

No

- 1. ELP Intl Airport Tower...915-774-9408 CG/1943
- 2. ELP Arpt Ops.....915-780-4749/4750 JT/1946
- 3. Biggs AAF Ops.....915-744-8088 leave msg aft hrs JD/1948  
(duty hrs 6 am to 10 pm M-F)
- 4. ABQ CWSU Ops.....505-856-4690 leave msg aft hrs JA/1950  
(duty hrs 6:15 am to 10 pm 7 days/week)

Lead Time for this advisory was 12 hours 16 minutes

METAR KELP 081351Z 24011KT 10SM SCT070 10/02 A2965 RMK A02 PK WND 22026/1254 SLP004 T01000017  
METAR KELP 081451Z 24021G28KT 10SM SCT060 12/02 A2966 RMK A02 PK WND 25034/1441 SLP002 T01170022 51007  
METAR KELP 081551Z 25037G48KT 3SM HLDU SCT060 14/02 A2967 RMK A02 PK WND 24050/1535 SLP004 T01390022  
METAR KELP 081651Z 24051G59KT 2SM BLDU SCT060 15/01 A2968 RMK A02 PK WND 24059/1651 SLP006 VIS 1V3 VIS N-E 1 MTNS OBSCD SW-NW T01500011  
SPECI KELP 081705Z 24043G57KT 1SM BLDU SCT060 15/01 A2969 RMK A02 PK WND 25057/1702 VIS 1/2V2 MTNS OBSCD SW-NW SKT PTLY OBSCD  
SPECI KELP 081727Z 25044G55KT 3SM -RA BLDU BKN065 15/01 A2970 RMK A02 PK WND 25059/1711 RAB27 VIS 2V4 MTNS OBSCD SW-NW PCPN VRY LCT P0000  
METAR KELP 081751Z 25031G56KT 3SM BLDU BKN065 16/01 A2971 RMK A02 PK WND 25059/1711 RAB27R36 SLP014 VIS 2V4 MTNS OBSCD SW-NW P0000 60000 T01560006  
METAR KELP 081844Z 27041G55KT 3SM -RA BLDU BKN065 16/M01 A2971 RMK A02 PK WND 27026/0022 SLP076 T01001006  
SPECI KELP 081944Z 27011G55KT 3SM -RA BLDU FEW030 BKN065 15/00 A2970 RMK A02 PK WND 27026/0022 SLP076 T01001006  
METAR KELP 082051Z 28026G36KT 10SM FEW040 12/01 A2975 RMK A02 PK WND 30042/2031 SLP037 60000 T01170011 53013  
METAR KELP 081951Z 28025G39KT 10SM FEW025 SCT065 12/02 A2972 RMK A02 PK WND 28051/1910 RAE185Z SLP027 CLDS TPG MTNS NW T01170022  
METAR KELP 082051Z 28026G36KT 10SM FEW040 12/01 A2975 RMK A02 PK WND 30042/2031 SLP037 60000 T01170011 53013  
METAR KELP 082151Z 29019G31KT 10SM FEW040 12/01 A2977 RMK A02 PK WND 29035/2107 SLP047 T01220006  
METAR KELP 082251Z 29022G31KT 10SM FEW040 12/M01 A2980 RMK A02 PK WND 29035/2153 SLP059 T01171006  
METAR KELP 082351Z 28015G20KT 10SM FEW045 11/M01 A2983 RMK A02 PK WND 29031/2308 SLP068 60000 T01061006 10161 20106 53023  
METAR KELP 090051Z 27015G22KT 10SM FEW045 10/M01 A2985 RMK A02 PK WND 27026/0022 SLP076 T01001006  
METAR KELP 090151Z 27012G22KT 10SM CLR 09/M01 A2987 RMK A02 SLP086 T00941006  
METAR KELP 090251Z 00000KT 10SM CLR 08/M01 A2989 RMK A02 SLP092 T00831011 51019  
METAR KELP 090351Z 31007KT 10SM FEW090 07/M01 A2990 RMK A02 SLP094 T00721011

# Impacts on ELP operations



➤ RWY 8L "X" knocked over by wind.

➤ T-Hangar UU7 doors blown off track.

➤ Fabric at seasonal parking fence torn down because of high winds.

➤ AA – inbound/outbound flights, CAL – 2 flights cancelled, SWA – 9 flights cancelled.

➤ Tree knocked over by wind onto parked car

➤ Escort Alpha Southwest off property, work stopped due to high winds.

➤ Truck lost bed cover due to high winds

➤ Continuous F.O.D. surveillance due to high winds

➤ West patio locked due to high winds

## *Impacts around the area*



➤ **116 mph gust measured at San Augustin Pass**

➤ **97 mph gust measured 3 miles ESE of Organ, NM**

➤ **Widespread damage reported across northeast El Paso. Roofs partially blown off...trees and branches blown down. Car windows broken by blowing debris.**

➤ **Trans Mountain road closed due to winds and small rocks blowing.**

➤ **79 mph gust measured at Chapin HS in NE El Paso.**

➤ **Awning/false store front collapsed from building on Burro Street. Reports of trees and power lines down. Homes damaged throughout Cloudcroft area.**

➤ **Roof damage at WSMR police station.**

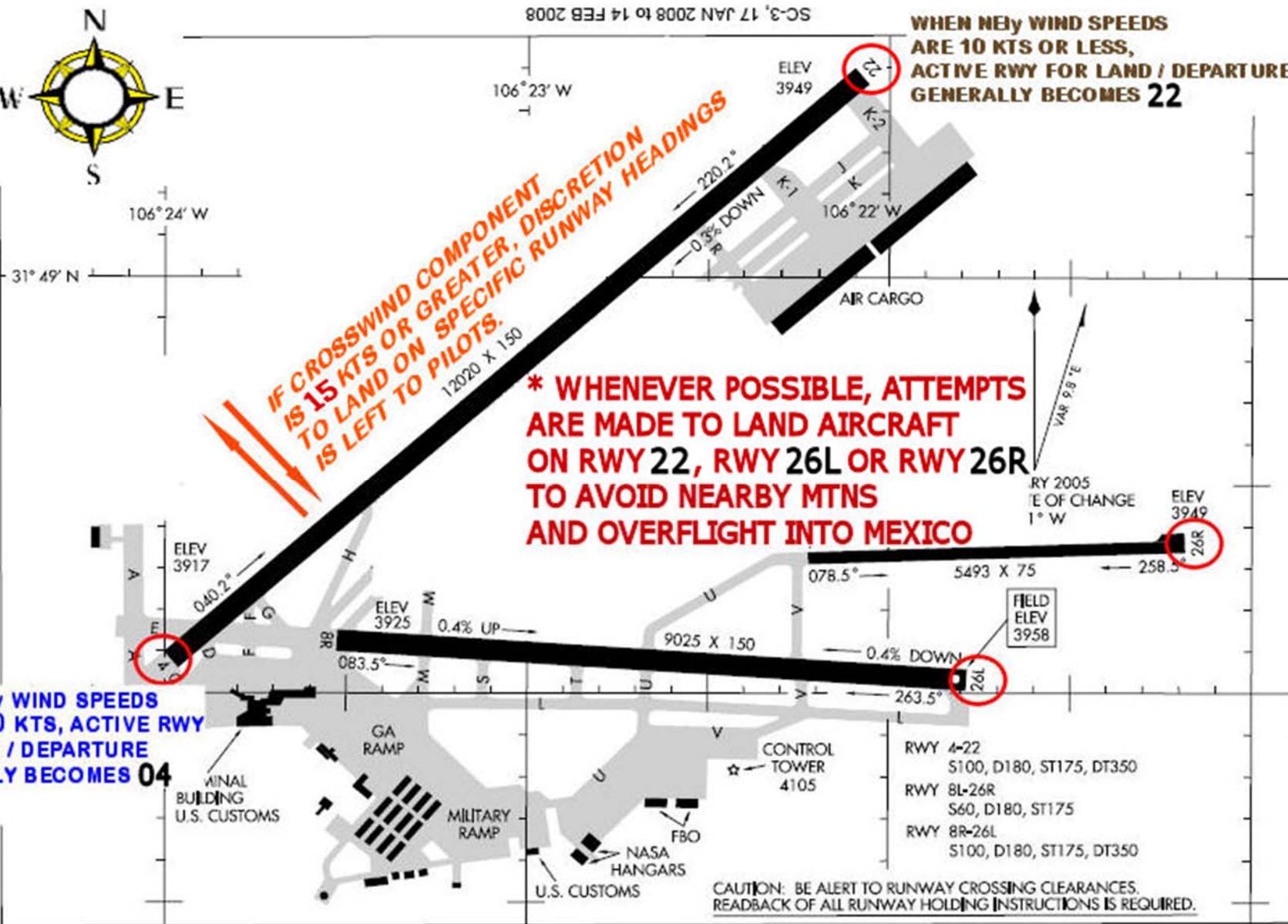
➤ **83 mph gust measured at White Sands Space Harbor.**

# KELP ARRIVAL/DEPARTURE WIND CONSIDERATIONS

SC-3, 17 JAN 2008 to 14 FEB 2008

AIRPORT DIAGRAM  
07018

AIRPORT DIAGRAM  
07018



AI-134 (FAA)

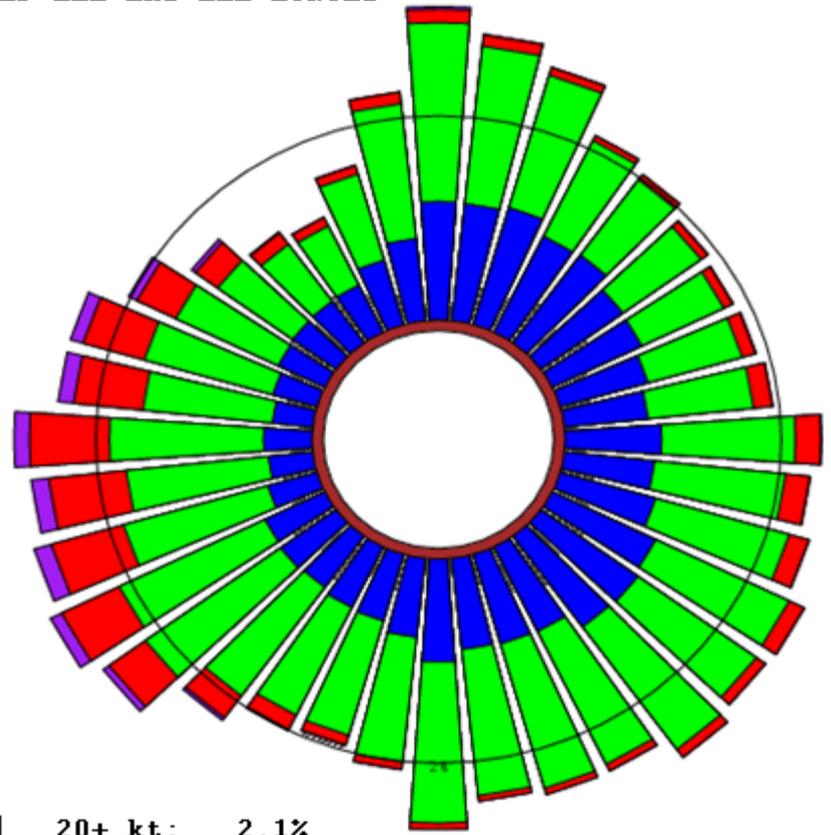
EL PASO INTL (ELP)  
EL PASO, TEXAS

SC-3, 17 JAN 2008 to 14 FEB 2008

EL PASO, TEXAS  
INTL (ELP)



### KEEP ALL HRS ALL MONTHS



	20+ kt:	2.1%
	15-20 kt:	12.5%
	5-12 kt:	53.8%
	0-5 kt:	22.2%
	variable:	2.0%
	calm:	9.4%

years: 1973-2007  
total hours: 301675.5



## *KEPZ - Windy city south*

### WIND EVENT STATISTICS JAN 1996 – MAR 2010

- 47 HIGH WIND EVENTS TOTAL
- 28 TSTM – PEAK GUST 66 KTS
- 19 GRADIENT – PEAK GUST 73 KTS
- MAX WIND SINCE 1950 – 73 KTS (84 mph)  
(MAR 10 1977 and MAR 26 2010)
- $\geq 30$ KTS.....AVERAGE 128 DAYS/YR
- $\geq 30$ KTS.....20 DAYS NOV – JAN
- $\geq 30$ KTS.....42 DAYS FEB – APR
- OUR LONGEST CONTINUOUS PERIOD  
WITH PEAK WINDS  $\geq 30$ KTS LASTED 8 DAYS



## *Our aviation program includes..*

- **Terminal Aerodrome Forecasts (TAFs)** are produced 4 times daily at: 6 am MDT(5 am MST) and 12 pm MDT(11 am MST) 6 pm MDT(5 pm MDT) and 12 am MDT( 11 pm MST) for 4 airports in our County Warning Forecast Area (CWFA) including:
  - El Paso International Airport (ELP)
  - Deming Regional Airport (DMN)
  - Truth Or Consequences Regional Airport (TCS)
  - Las Cruces International Airport (LRU)
  
- **WFO EPZ Airport Wind Advisories:** Issued when we expect **either** of the following criteria are expected to persist for **1 hour or more:**
  - ❖ Sustained Winds **20 kts(23 mph)** AND gust spread of at least **10 kts(11 mph)**
  - ❖ Sustained Winds **30 kts(34 mph)** or greater
  
- **Aviation Forecast Discussions** : Routinely produced twice daily, and updated as needed for changing weather. Discussions address **L**ow and **H**igh pressure systems, fronts, thunderstorms and their expected impacts on winds, ceilings and visibilities across southwest New Mexico and far west Texas.
  
- When time allows, we like to give ELP ATCT a courtesy 'heads up' call for weather expected to impact the airport within the next 2 hrs.



# Questions?



Just ask the weatherman

**Thank you all  
for your time today!**

