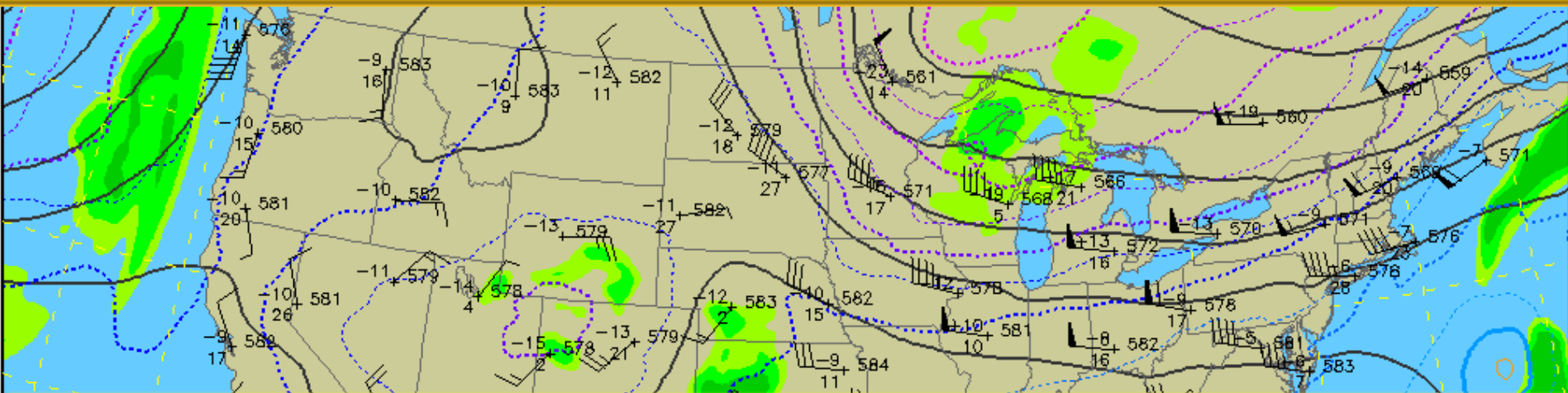


Weather, Climate, and Climate Change...

What the Data Say

Up to the present...Weather Briefing



Bob Endlich

bendlich@msn.com

4 October 2017

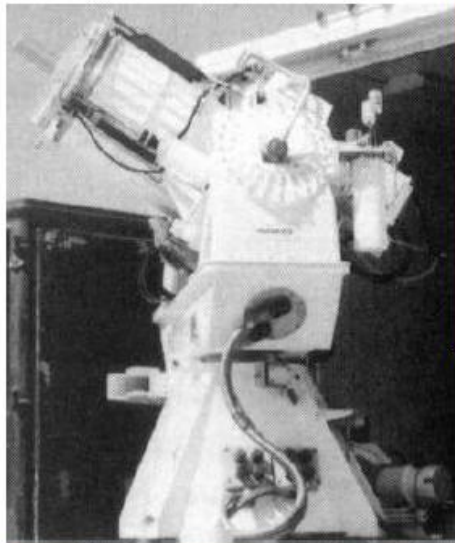
<http://casf.diskstation.me/wordpress/>

Apologies for web page Technical Difficulties.

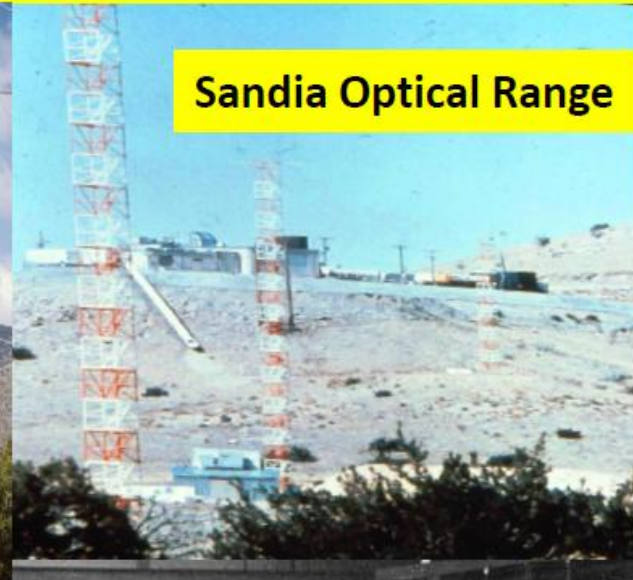
45 Years ago in Albuquerque...

High Energy Laser Propagation Measurements

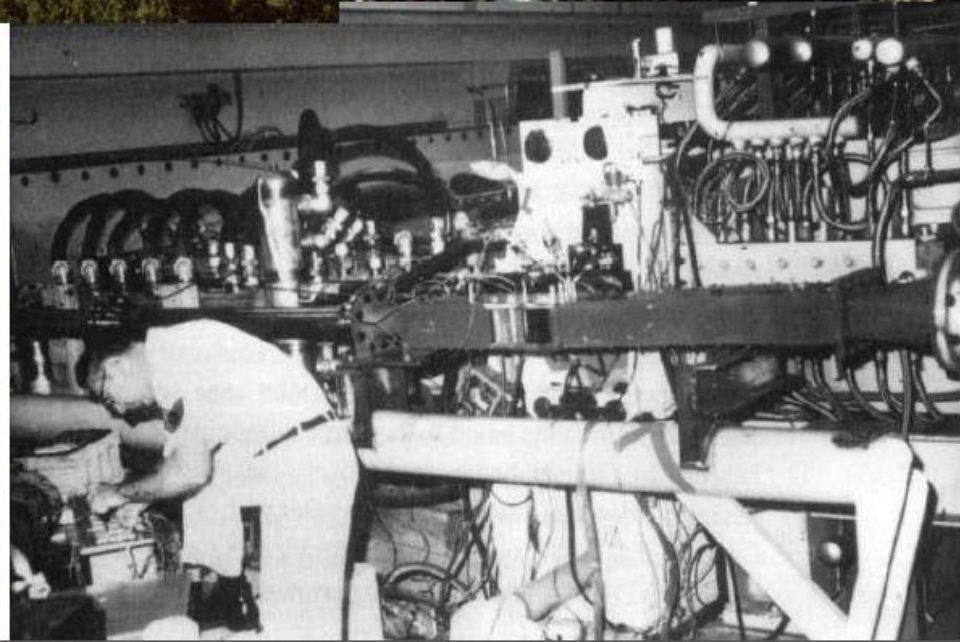
Staff Meteorologist, AFWL, 4 Years



CO2 Gas Dynamic
Laser
Field Test Telescope
Meteorological
Towers,
Instruments



Sandia Optical Range



Below:
Sandia Optical Range, Kirtland AFB, 1972.

I had to learn the science of atmospheric effects on High Energy Lasers from theory to sensor to collection, to processing to analysis.

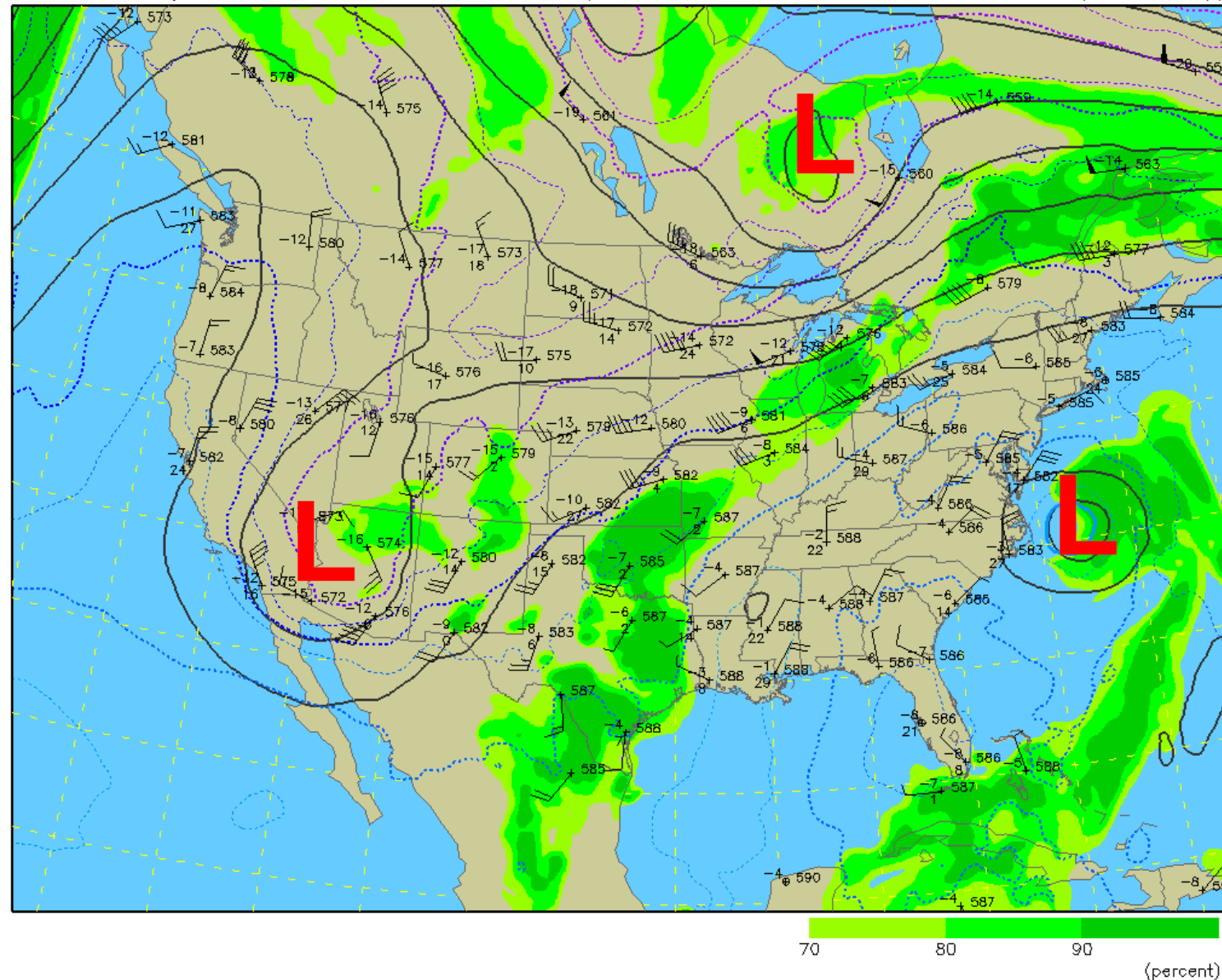


Above,
Dick Delay and I align UVW Anemom-
eters on the Sandia Optical Range

500 mb Heights (dm) / Temperature ($^{\circ}\text{C}$) / Humidity (%)

0-hour analysis valid 1200 UTC Wed 27 Sep 2017

RAP (12z 27 Sep)



One Week Ago

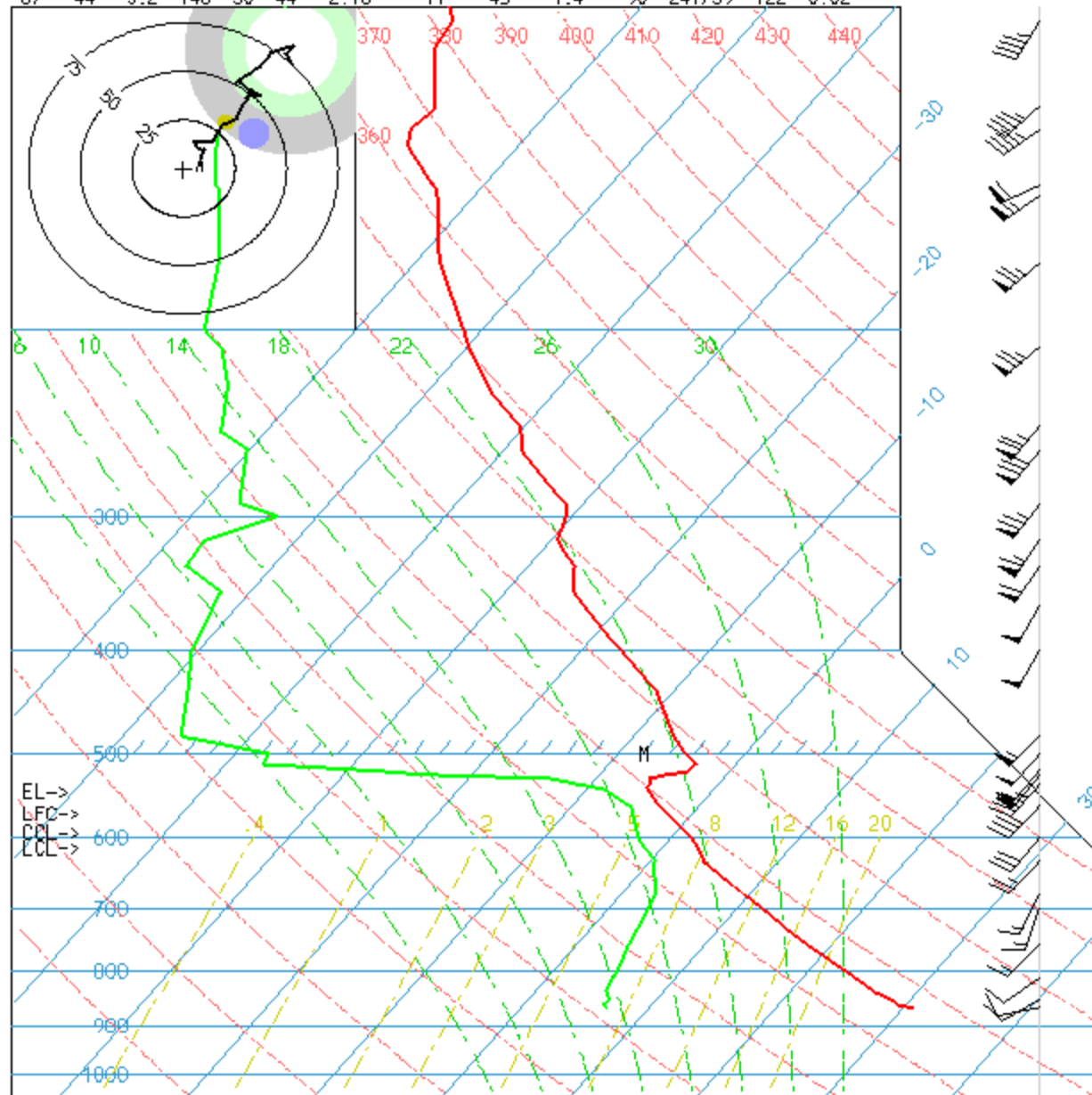
500 mb chart
Wednesday 0600L
27 SEP 1200Z

Short Wave Ontario

Maria E Outer Banks

Rossby Wave
Southwest AZ

T(F)	Td	LI	SWT	K	TT	Pw(m)	CAPE	CIN	Bmin	Tc	CELL	SREH	YGP
87	44	3.2	146	30	44	2.18	11	-45	-1.4	90	241/39	122	0.02



Ten Days Ago!

Skew-T Log P diagram
Saturday evening
24 SEP 2017 0000Z

Good example of
Frontal Inversion
and two air masses.

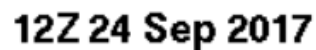
Warm Air

Frontal Inversion of
Temperature

Cold Air

100

<http://weather.uwyo.edu/upperair/sounding.html>



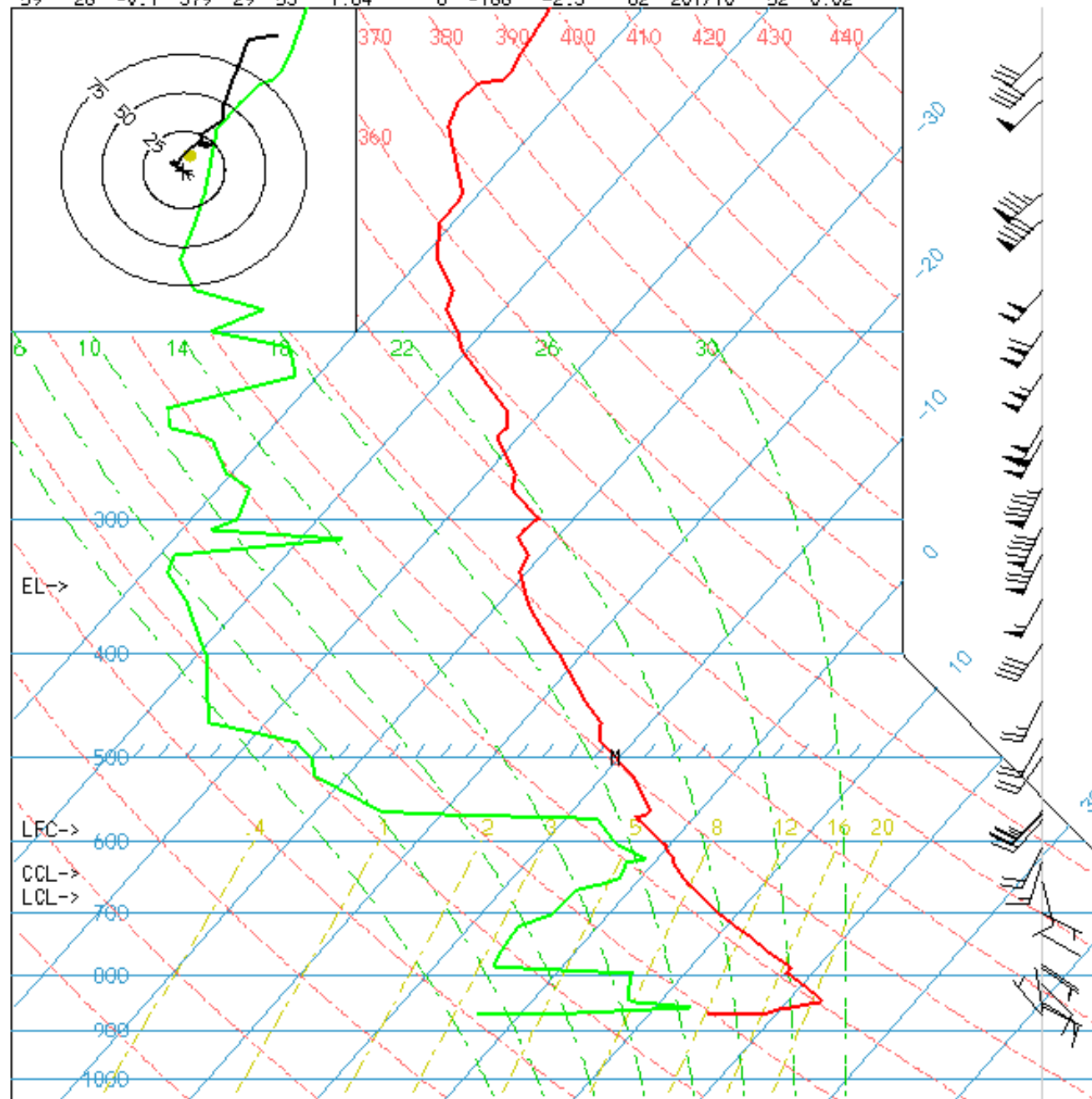
University of Wyoming

Description of the sounding indices.

SLAT	31.86
SLOH	-106.70
SELV	1252.
SHOW	9.69
LIFT	9.59
LFTV	9.25
SWET	62.00
KINX	24.60
CTOT	6.50
VTOT	25.50
TOTL	32.00
CAPE	0.00
CAPV	0.00
CINS	0.00
CINV	0.00
EQLV	-9999
EQTV	-9999
LFCT	-9999
LFCV	-9999
BRCH	0.00
BRCV	0.00
LCLT	270.8
LCLP	646.5
MLTH	306.8
MLMR	5.08
THCK	5776.
PWAT	15.12

24 Sept 2017
Sunday AM
Sounding
Cold Air
Strongest
before being
modified.

T(F) Td LI SNT K TT Pw(cm) CAPE CIN Bmin Tc CELL SREH VGP
 59 26 -0.1 379 29 53 1.64 8 -166 -2.3 82 201/10 52 0.02



El Paso Sounding
 26 Sept 2017

Tuesday AM 1200Z

Just before Tues
 AM's Thunderstorm

"Leaved" Tropopause

Subsidence Inversions

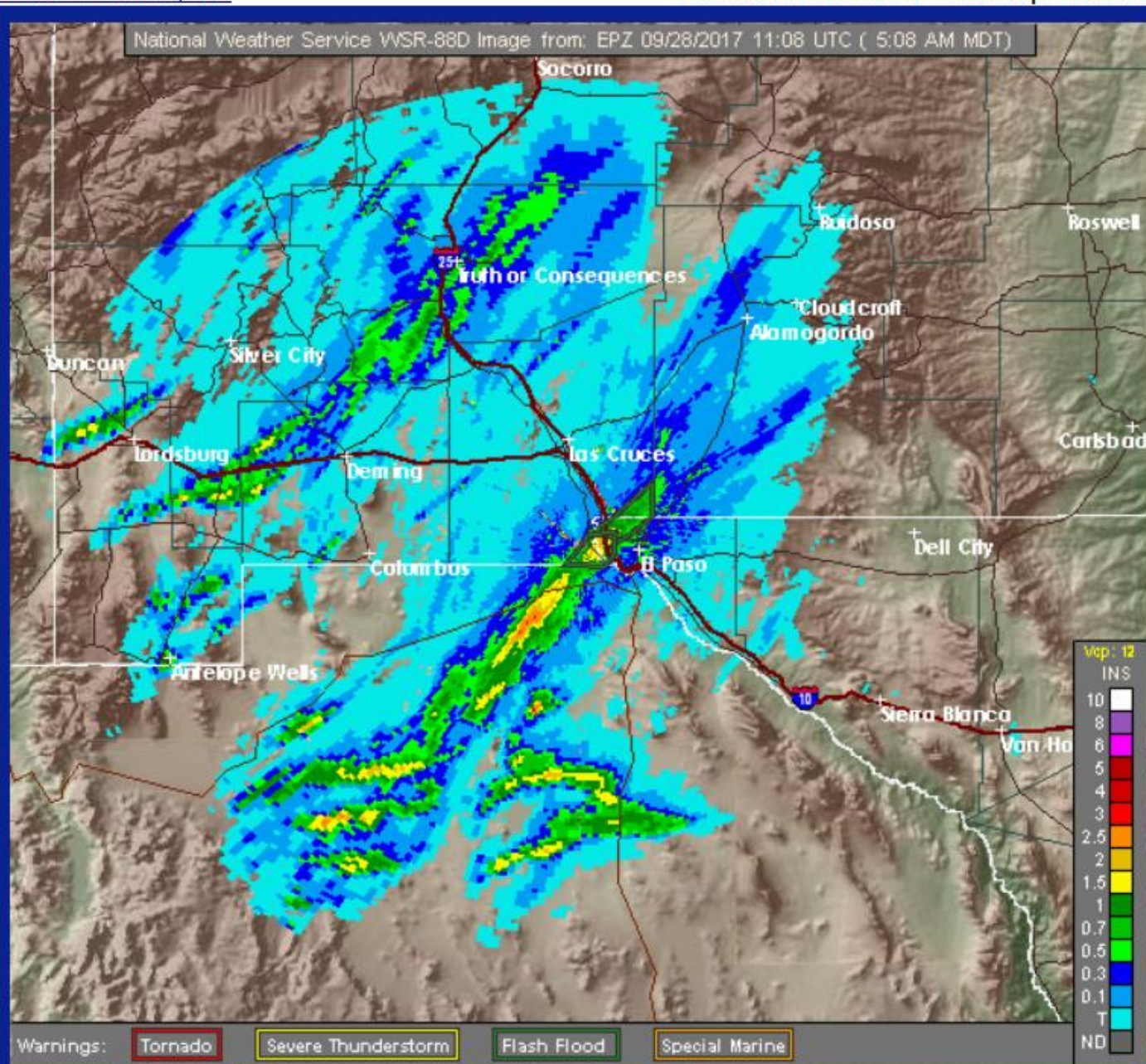
Cold Air has
 been modified

One Week Ago 27 Sep 17

Wed Sep 27 2017

NWS El Paso, TX

to 05:08 AM MDT Thu Sep 28 2017



☑ Topo ☑ Radar ☑ Counties ☐ Rivers ☑ Highways ☑ Cities ☑

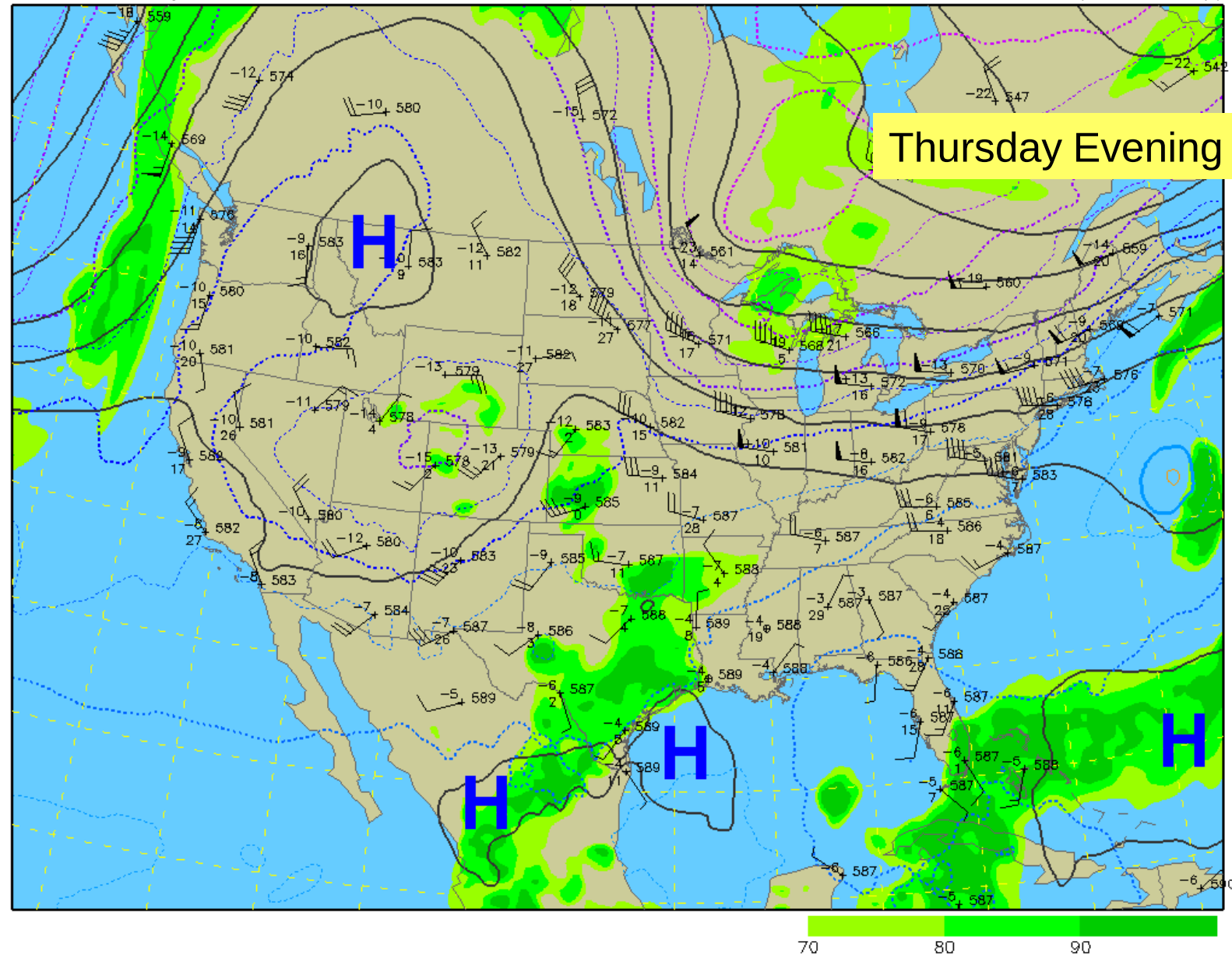
National Weather Service • Since 1870

500 mb Heights (dm) / Temperature (°C) / Humidity (%)

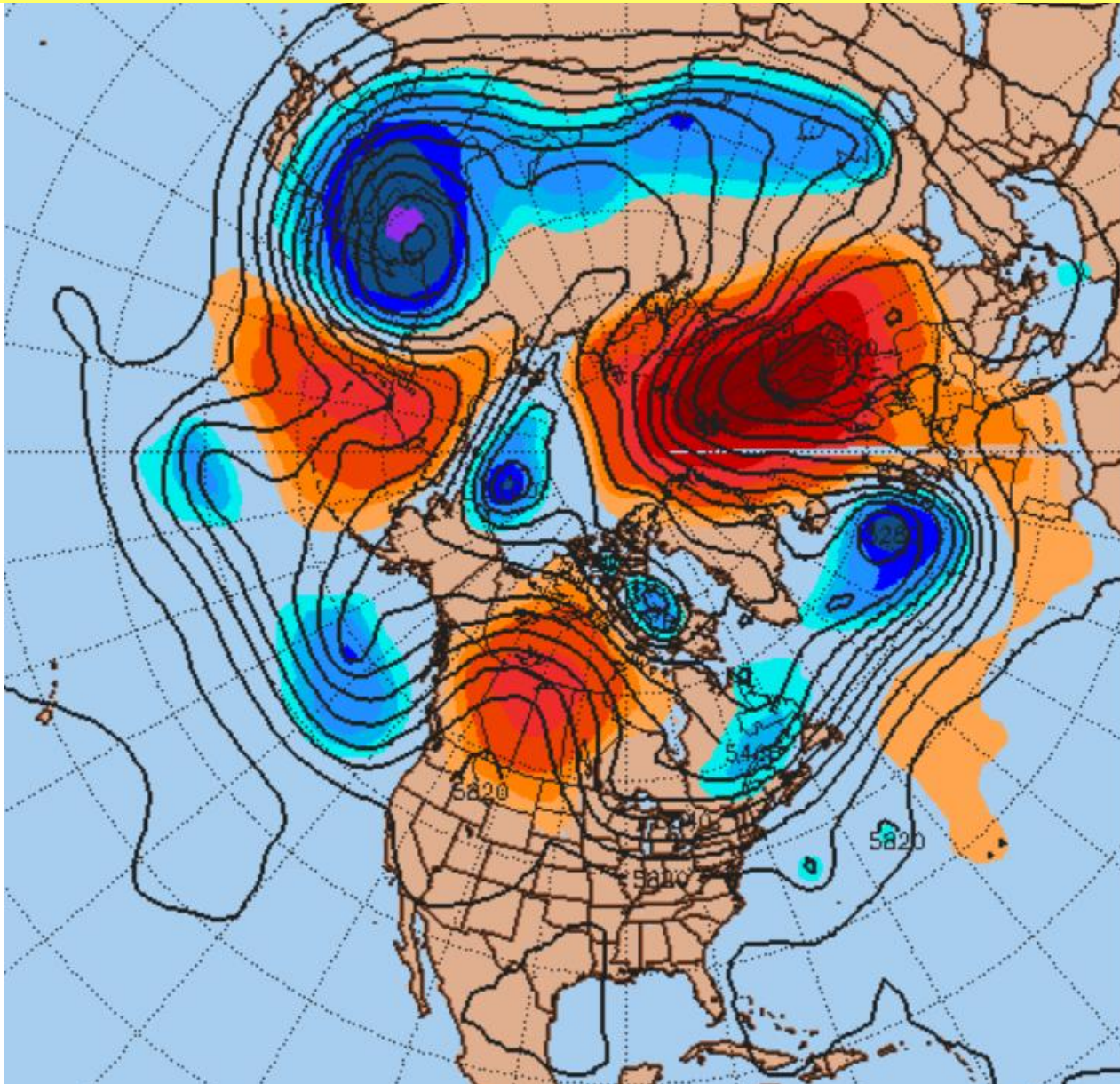
0-hour analysis valid 0000 UTC Fri 29 Sep 2017

RAP (00z 29 Sep)

Thursday Evening 28 Sept 2017



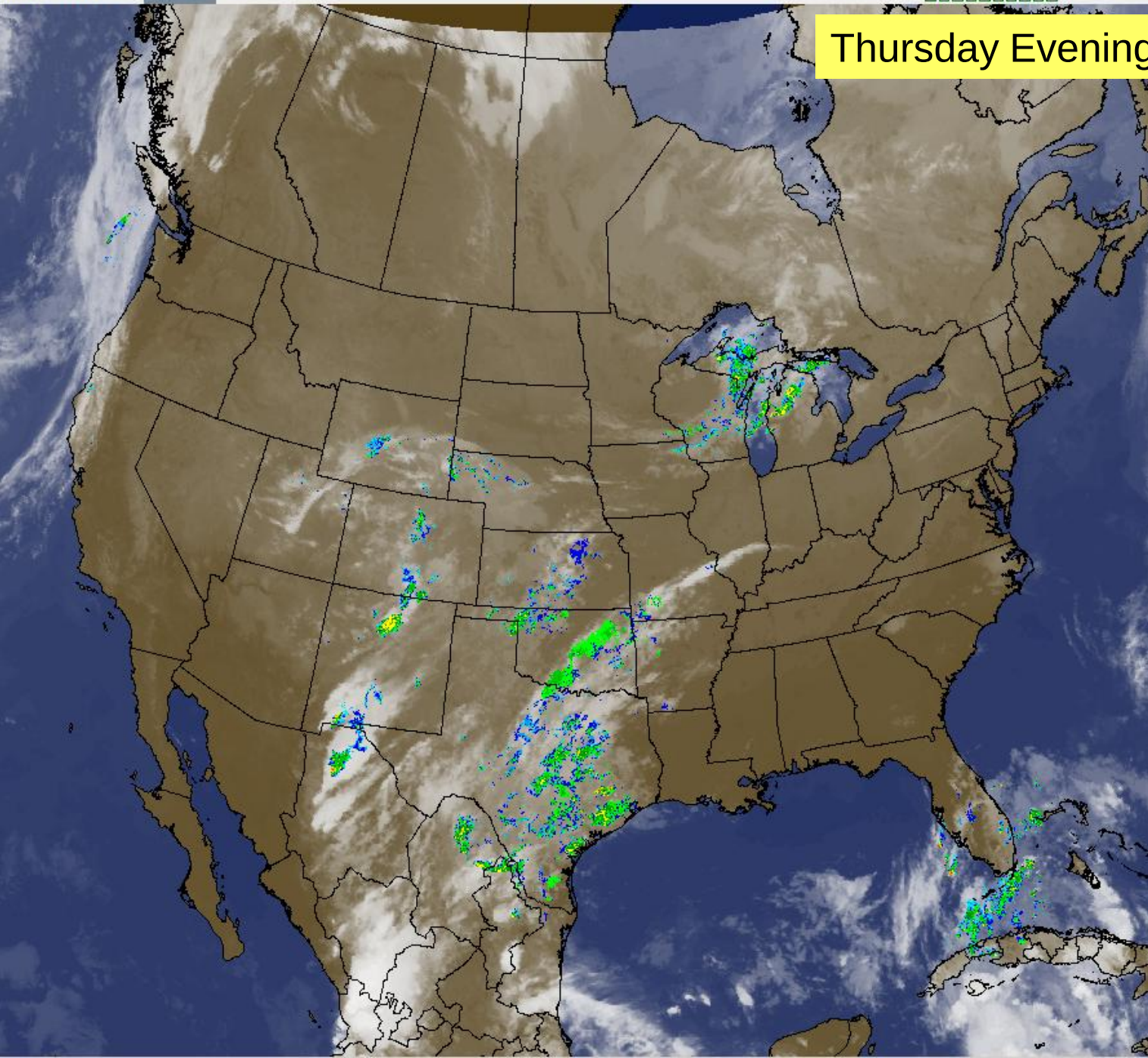
Thursday Evening 28 Sept 2017 Same time, Penn State's Hemispheric analysis "wall"

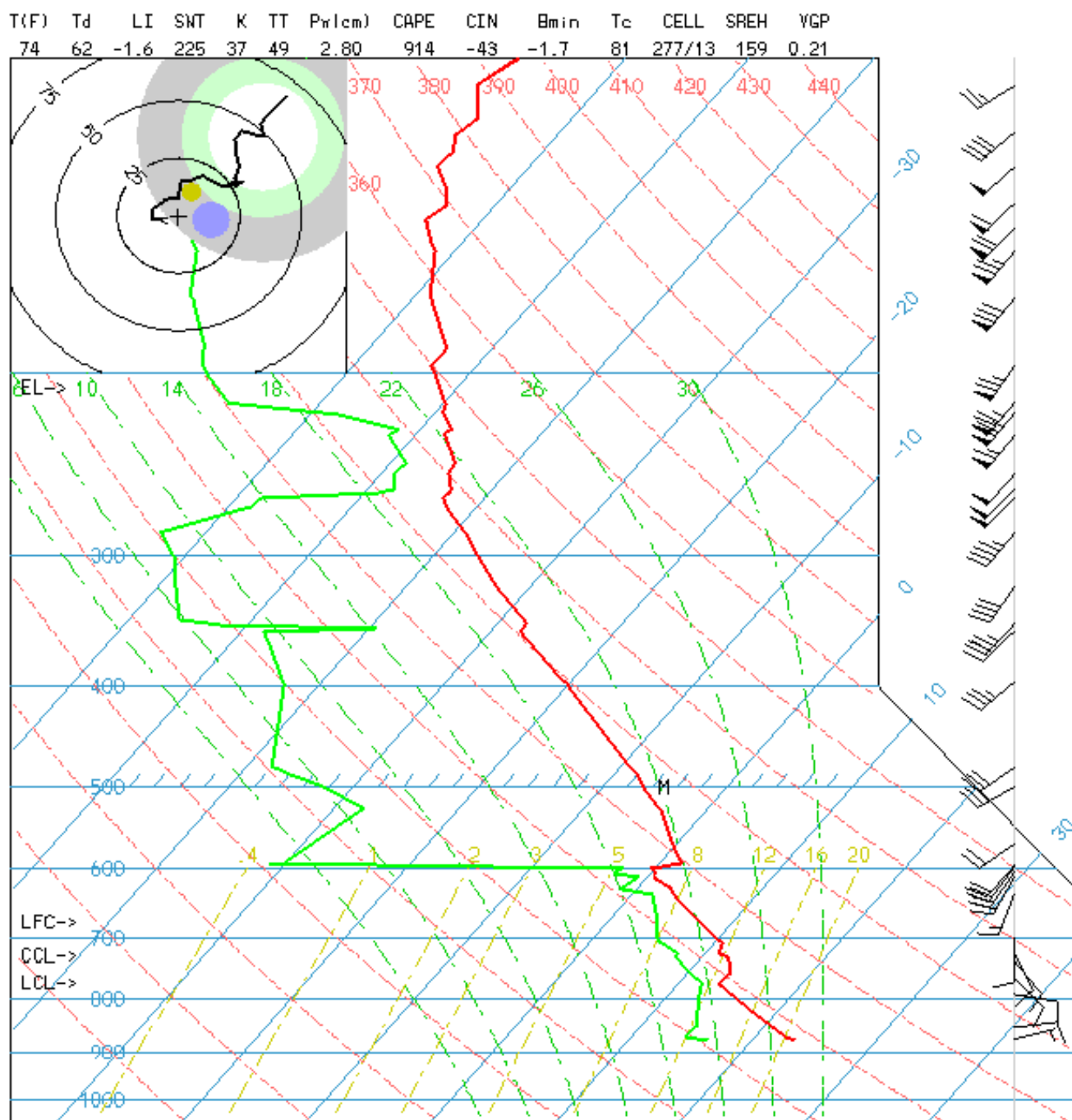


Blue = Colder; Magenta Very Much colder.

Red = warmer; Brown Very Much warmer

Thursday Evening Satellite Image





SKW-T/LOG-P VALID 0000 UTC 09/29/2017 KEPZ

Lat = 31.87 , Lon = -106.70

KEPZ Sounding

Friday Morning 1200Z

Severe WX Threat

High Pressure Aloft

Numerous subsidence
inversions

“Potentially”
Warm Air Aloft

Frontal Inversion

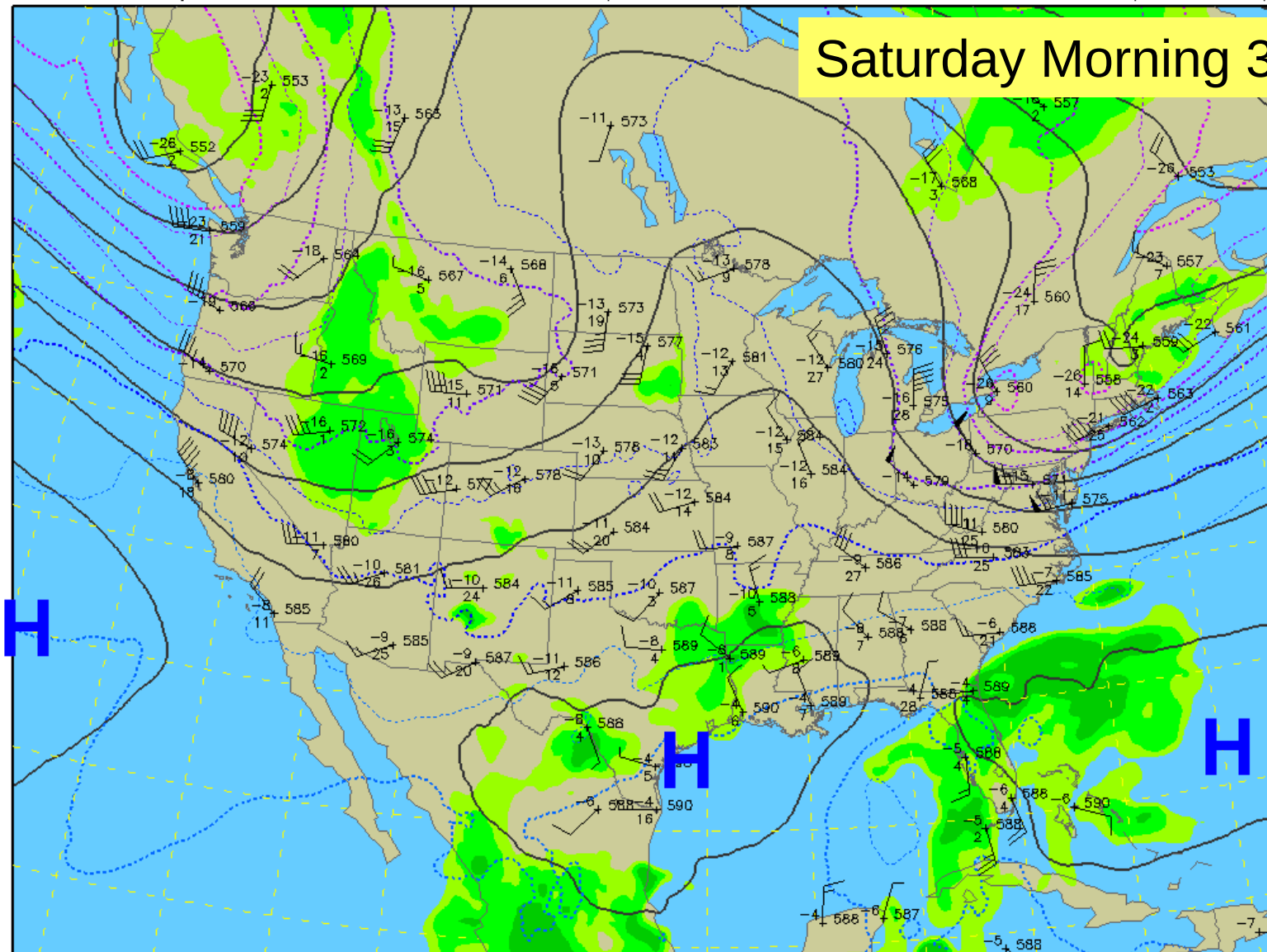
Cool Air / East Winds

500 mb Heights (dm) / Temperature (°C) / Humidity (%)

0-hour analysis valid 1200 UTC Sat 30 Sep 2017

RAP (12z 30 Sep)

Saturday Morning 30 Sept 2017



What we
discussed last
week:

“Short Waves”
Mont- SD
and
Quebec-PA

The Subtropical
Ridge.

East:
Bermuda- Azores
High

West:
Hawaiian High

70 80 90

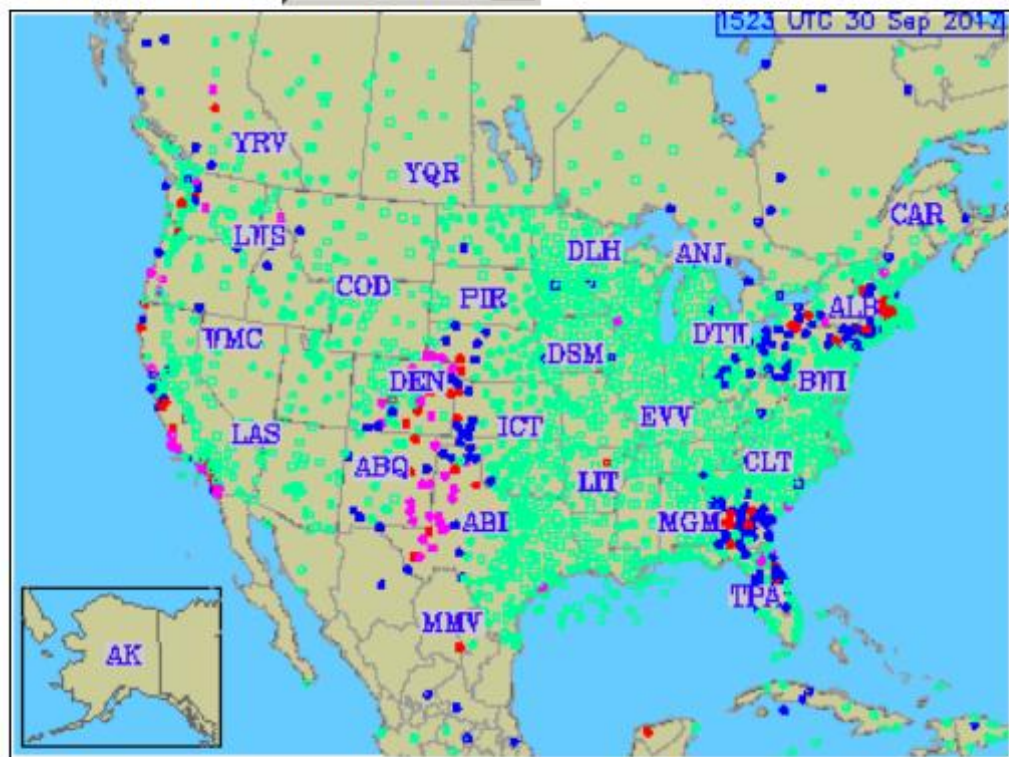
(percent)

End date: Today

End time: Most recent ▼

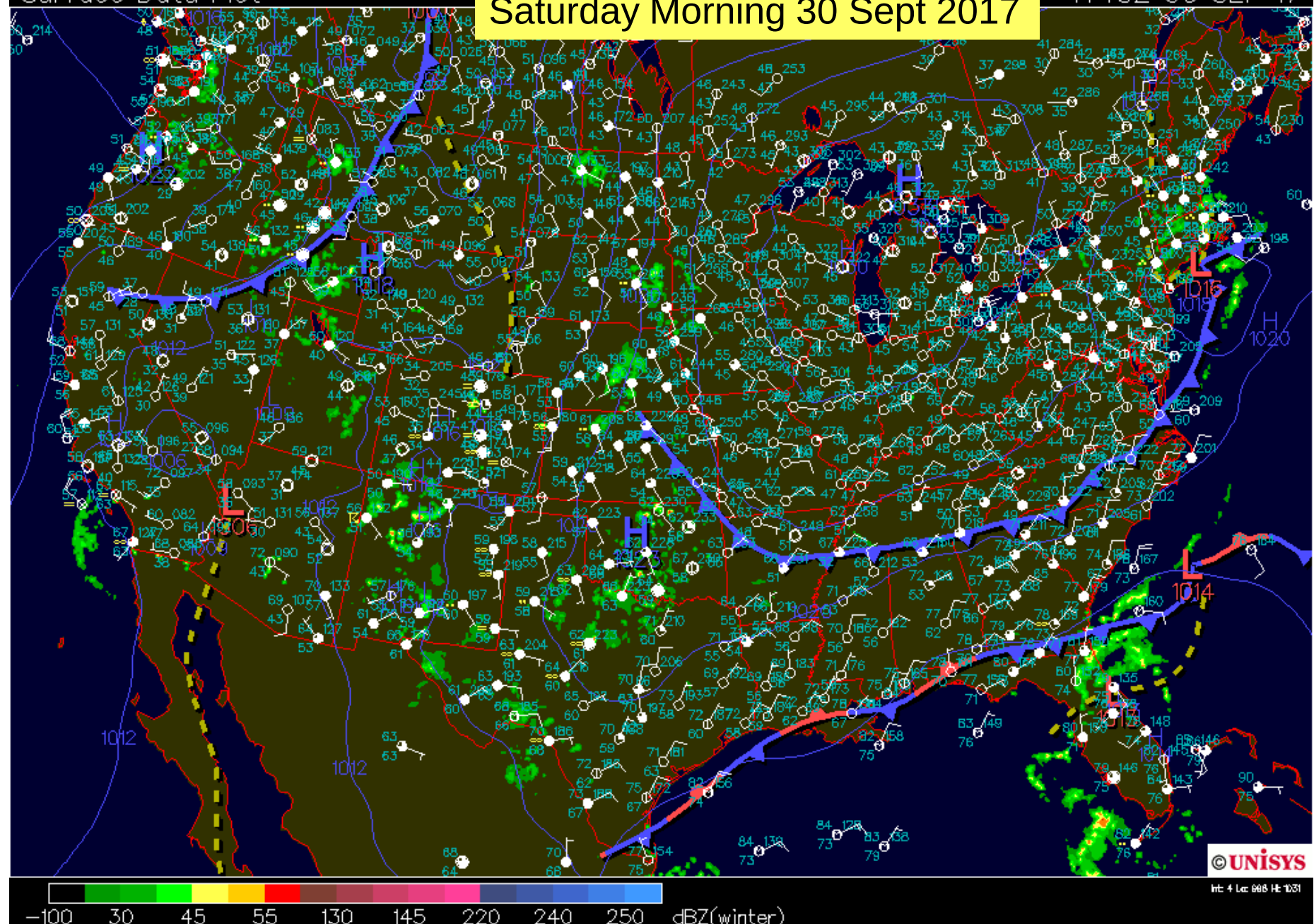
Loop duration: Single image ▼

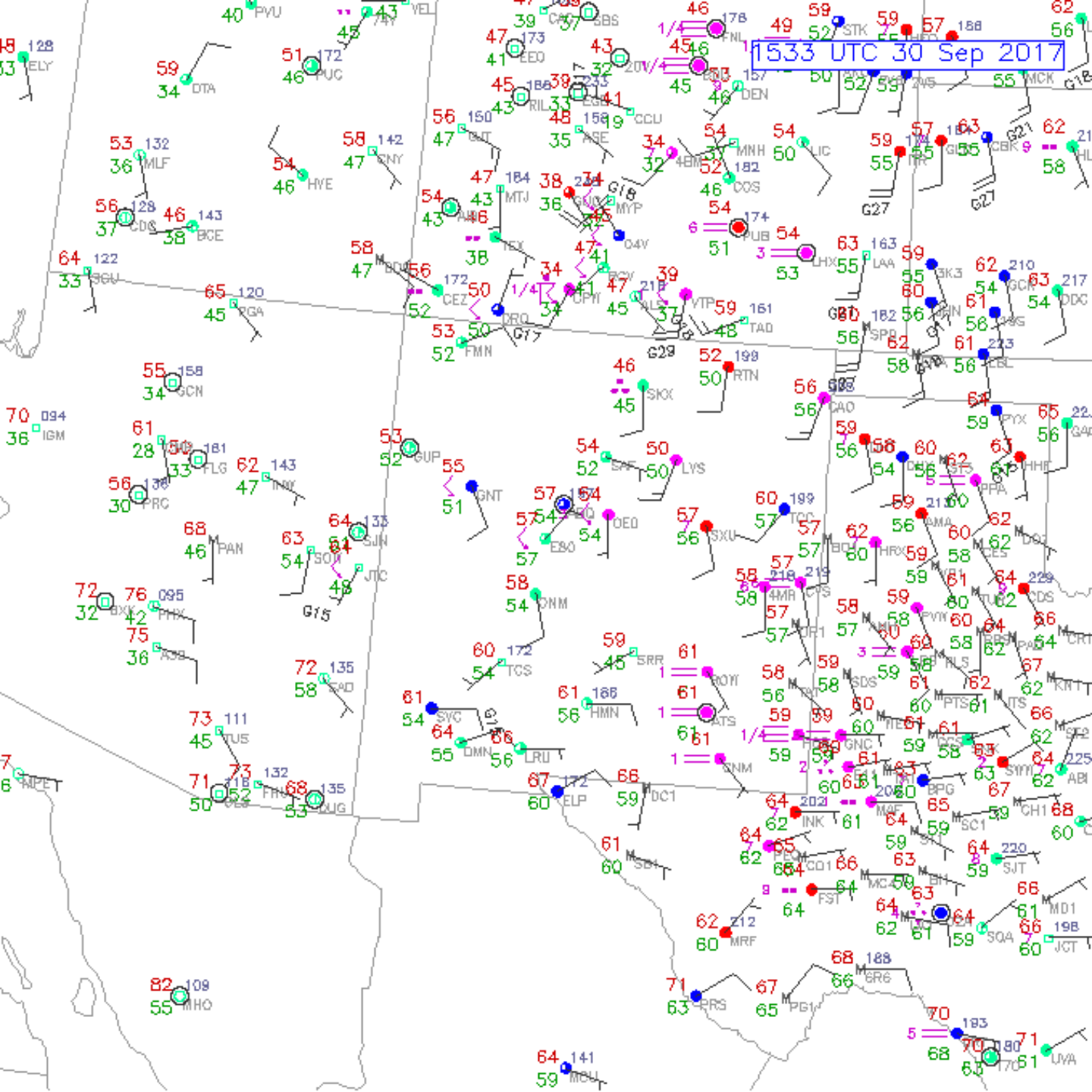
Saturday Morning 30 Sept 2017



Interactive METARs Java applet or large version.

Tornado alley overlay at DEN ▼ Go





Saturday Morning

30 Sep 2017

Continued East
Winds

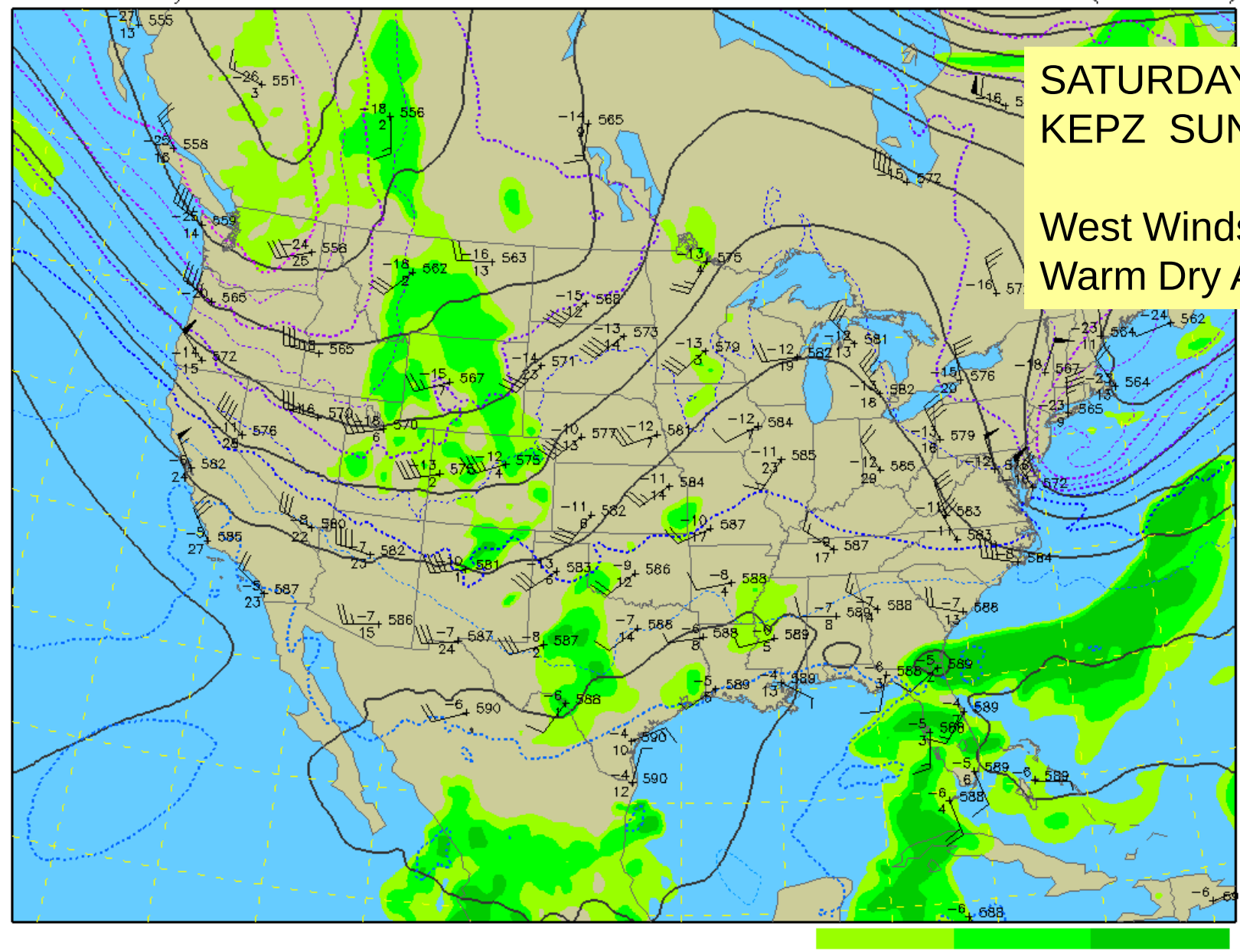
All the way to PHX

Extensive Fog
Low Clouds
East of Mountains

500 mb Heights (dm) / Temperature (°C) / Humidity (%)

0-hour analysis valid 0000 UTC Sun 01 Oct 2017

RAP (00z 01 Oct)



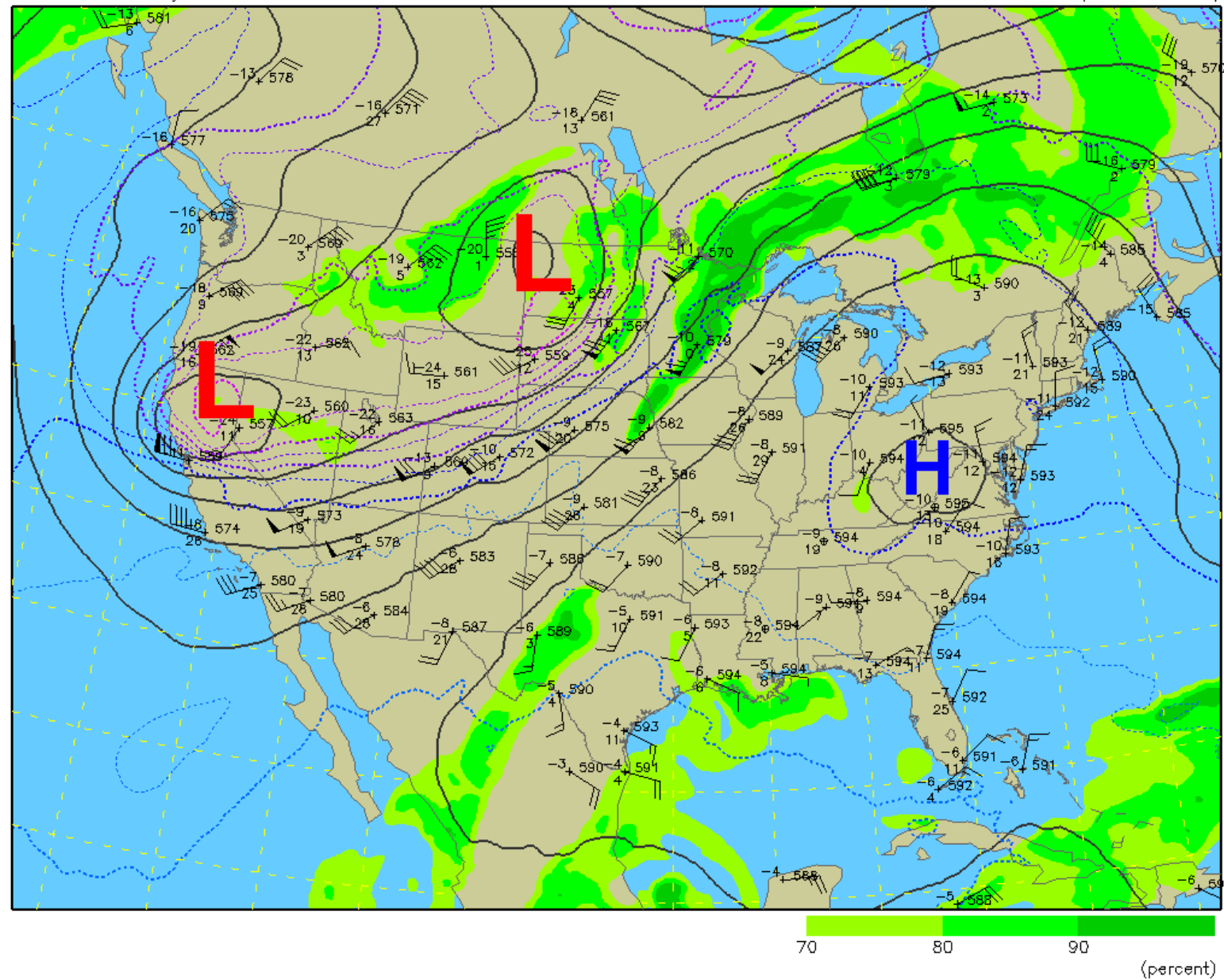
**SATURDAY EVENING
KEPZ SUN 0000Z**

**West Winds Bring
Warm Dry Air Mass**

500 mb Heights (dm) / Temperature (°C) / Humidity (%)

0-hour analysis valid 1200 UTC Tue 03 Oct 2017

RAP (12z 03 Oct)

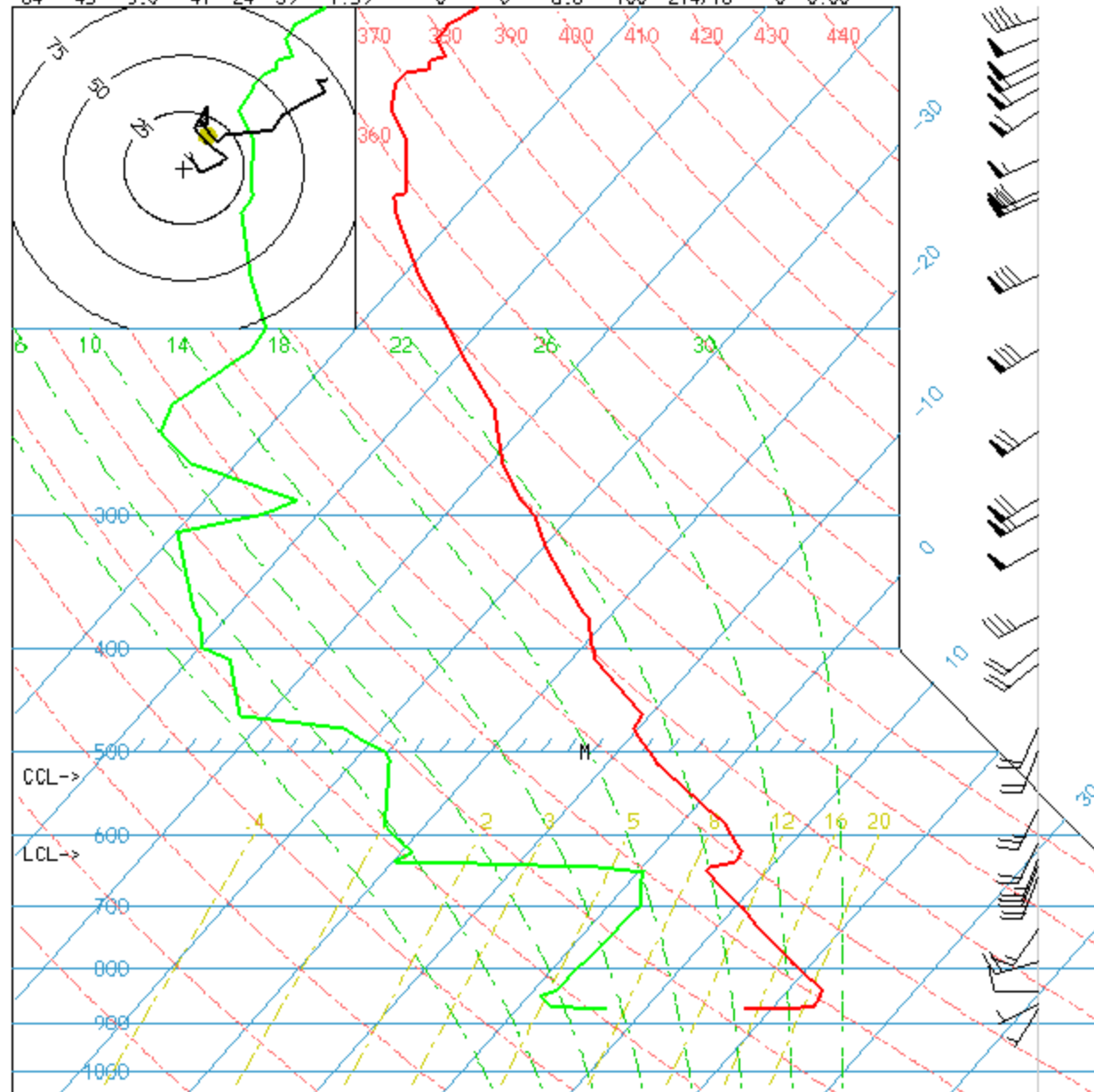


Tuesday Morning

12Z 3 Oct 2017

Cut-Off Lows
WestHuge Warm
Ridge, East

T(F) Td LI SWT K TT Pw(1cm) CAPE CIN Bmin Tc CELL SREH YGP
 64 45 5.0 47 24 39 1.59 0 0 -8.8 100 214/18 0 0.00



SKEN-T/LOG-P VALID 1200 UTC 10/03/2017 KEYZ

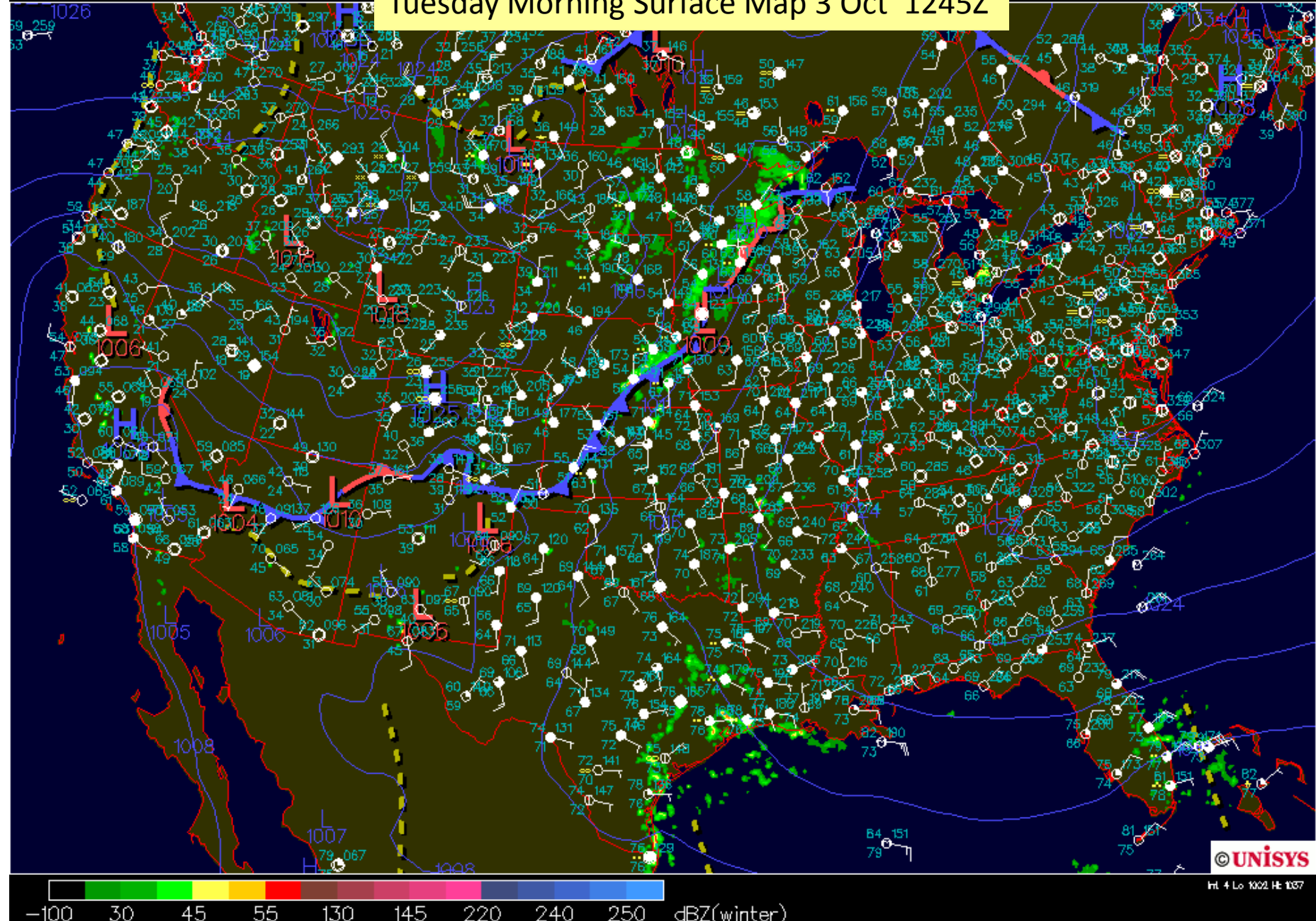
Lat = 31.87 , Lon = -106.70

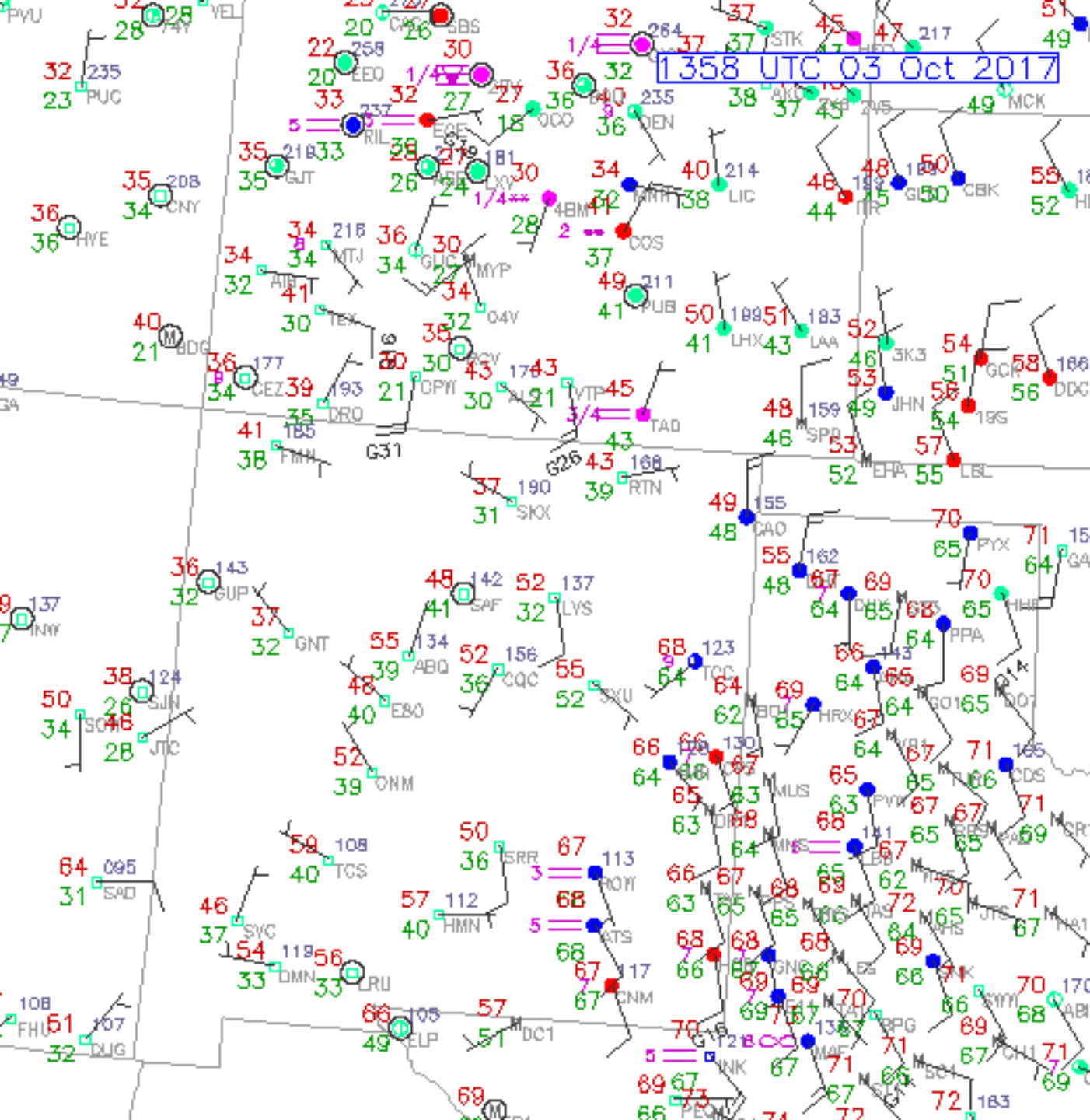
Tuesday Morning

KEPZ 3 OCT 1200Z

Cool air mass
Below 12,000 Ft MSL

Dry Air at Surface!





0758L
Tuesday Morning

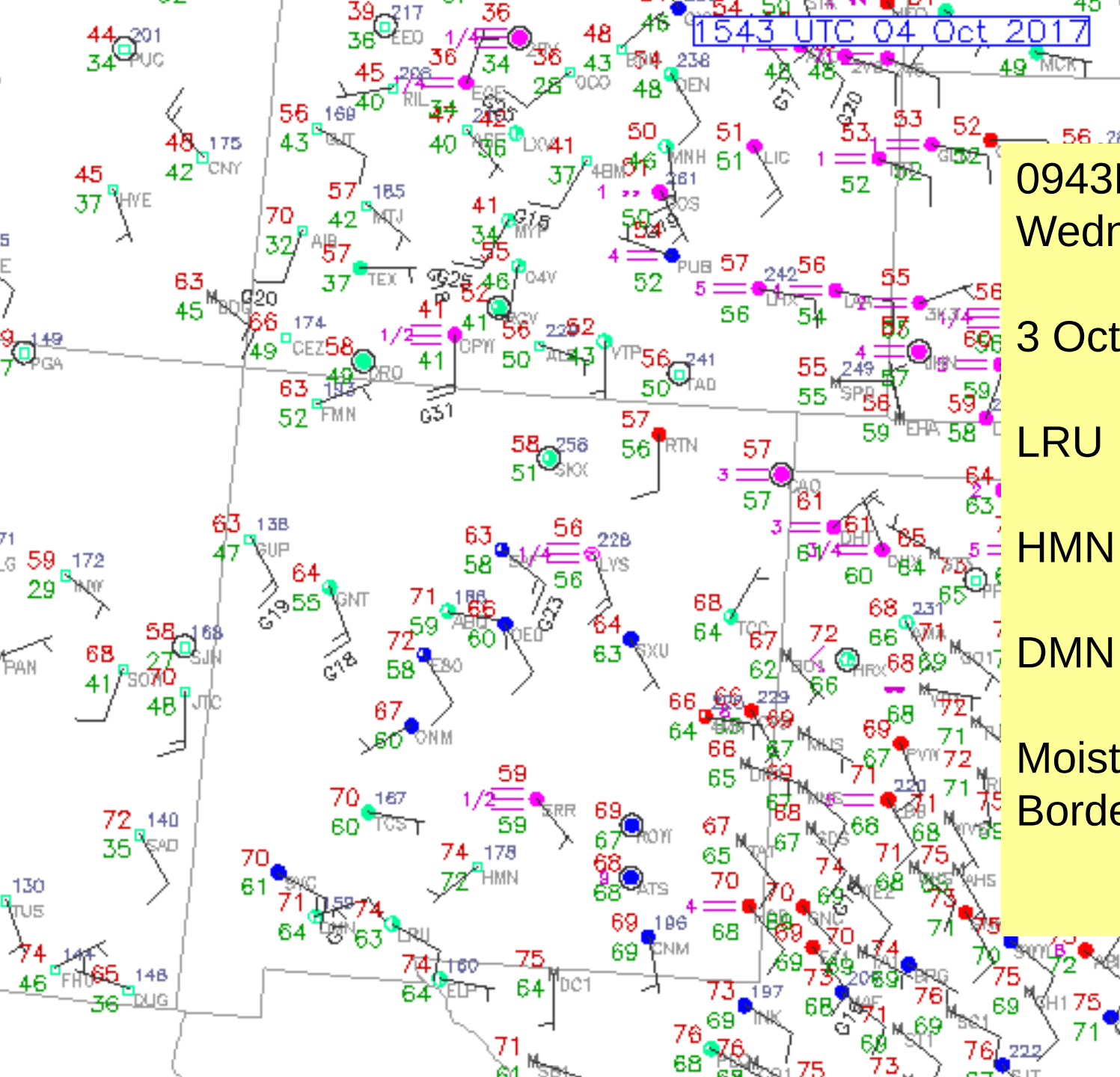
3 Oct 1358Z

LRU Td = 33F

DMN Td = 33F

DUG Td = 32F

1543 UTC 04 Oct 2017



0943L

Wednesday Morning

3 Oct 1358Z

LRU Td = 63F

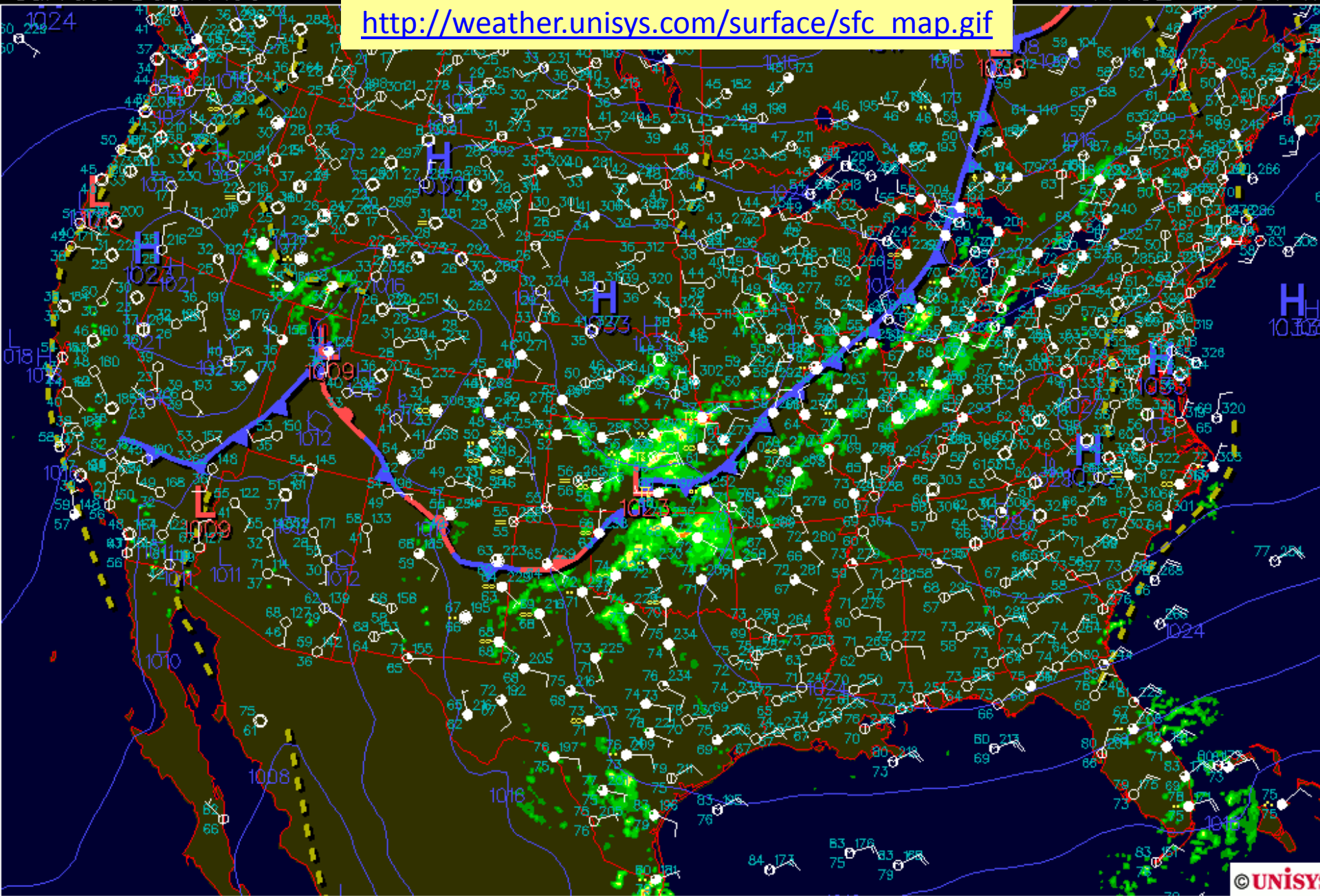
HMN Td = 72F

DMN Td = 64F

Moist Air drenching
Borderland



http://weather.unisys.com/surface/sfc_map.gif



500 mb Heights (dm) / Temperature (°C) / Humidity (%)

0-hour analysis valid 1200 UTC Wed 04 Oct 2017

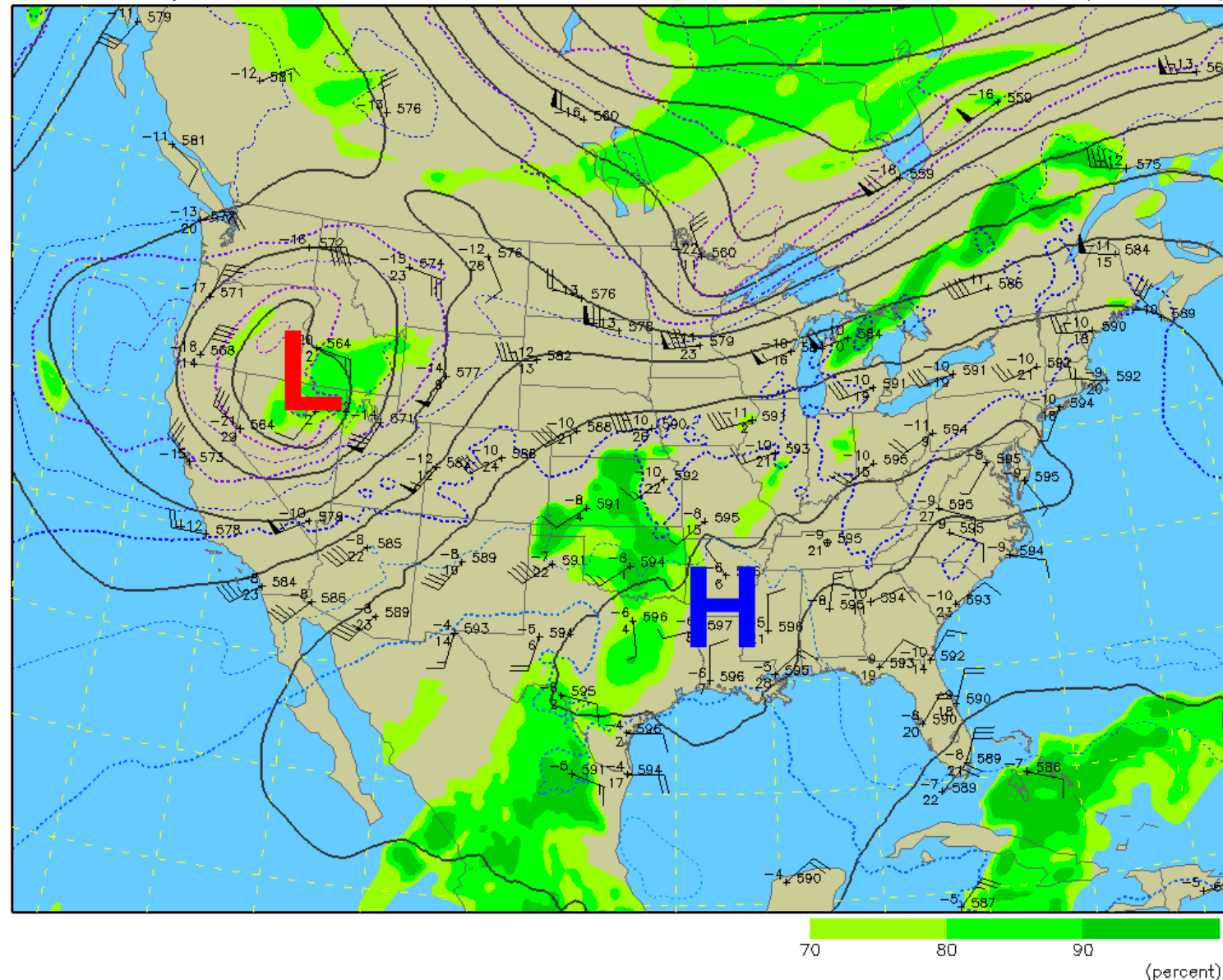
RAP (12z 04 Oct)

Wednesday
Morning

4 Oct 12Z

Cold Cutoff
Low West

Huge Warm
Ridge East



KEPZ 04/1200Z

Wednesday AM
Sounding

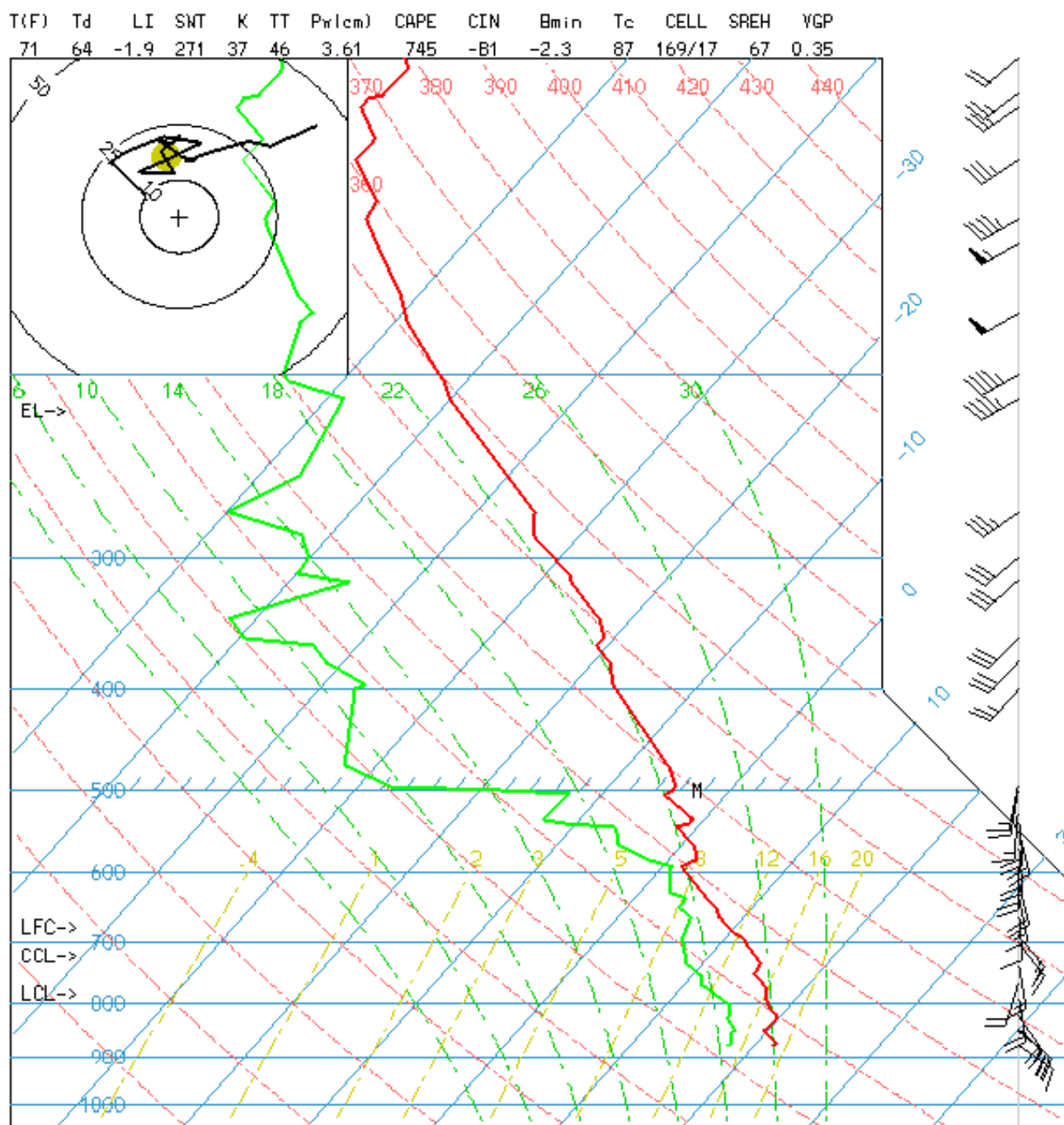
PW = 3.61 MM

PW = 1.42 In.
Extremely wet
for October.

Dry Air

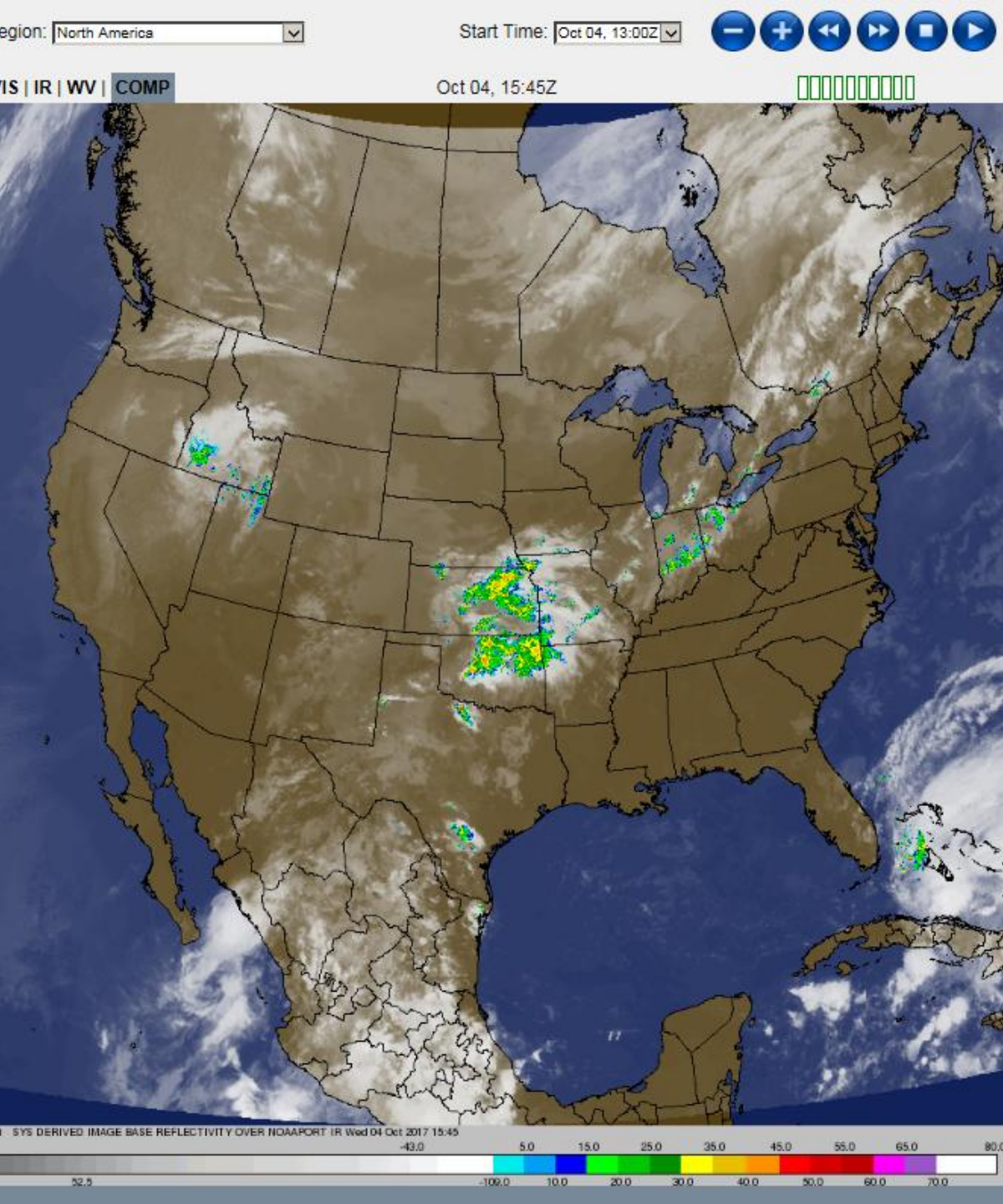
Moist Air

Flow from East
around Mtns



SKW-T/LOG-P VALID 1200 UTC 10/04/2017 KEPZ

Lat = 31.87 , Lon = -106.70



http://wxweb.meteostar.com/models/noaaport_loop.php?PATH=/var/www/leads_images/satellite/SYS/COMP/

Wednesday Morning
04 Oct 1545Z

Satellite/Radar Composite
Image

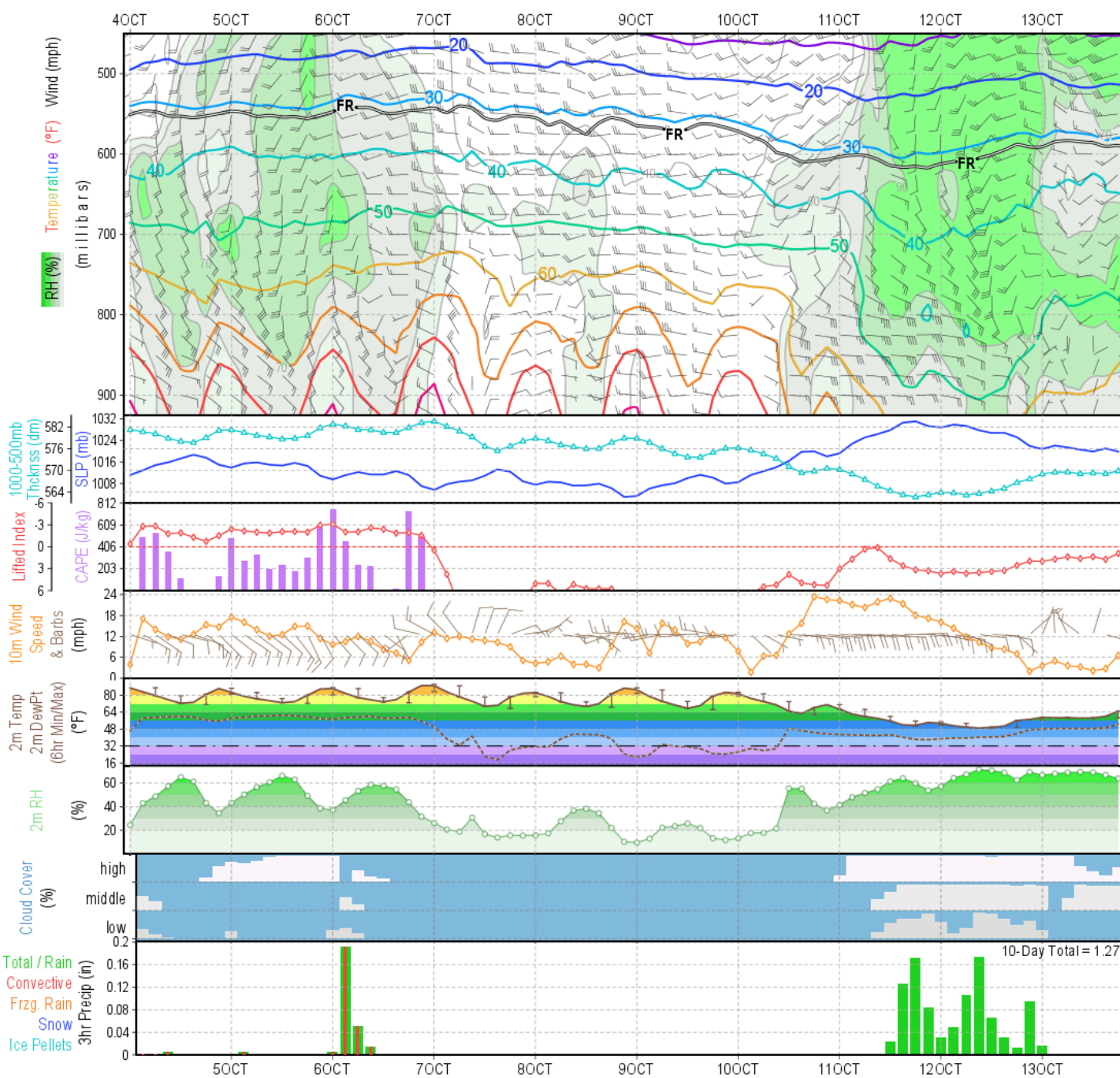
Cold Air Cumulus, ID

Widespread Fog, Low
Stratus Clouds
Plains States

Moist Flow around
Sub Tropical Ridge

EIPaso

GFS 0~10day 3-hourly Forecast Meteogram for (106.5W, 31.75N)



El Paso METEGRAM

X-AXIS = TIME

Y-Axis

Wind

Temperature

Relative Humidity

Freezing Level

Sea Level Pressure

Convective Potential

Surface Winds

Temp Dewpoint

Color Coded

Cloud Cover

Convective Rainfall

Rainfall