

Weather, Climate and Climate Change

What the Data Tell Us

Monsoon Transition, Hurricanes, Cries of Crisis



Bob Endlich

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11 Sept 2019

Fifty-Three Years Ago Today...

B-52 Forecaster, Operation ARC LIGHT

Andersen AFB, Guam, 6 Months



B-52D with Big Belly Mod 108 500# bombs



They called us "Heavy Artillery."

Fifty Years Ago Today

WC-130 Cloud Seeding in SEA

Udorn RTAFB & Tan Son Nhut AB 8 Mos



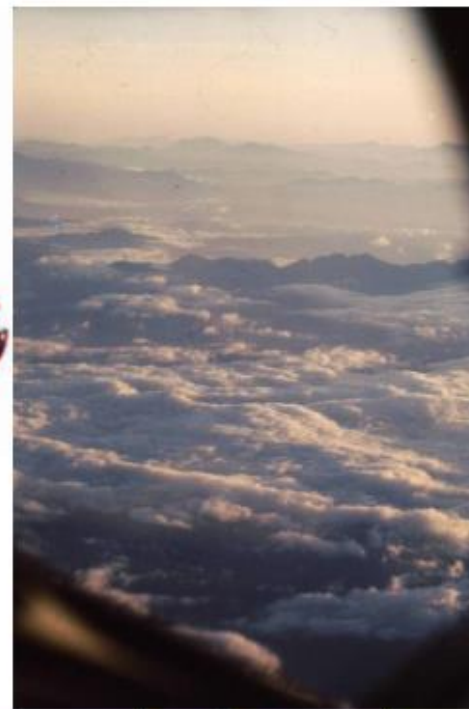
Flight Ops, Udorn, Thailand



Staff Weather Officer Analysis Team, Tan Son Nhut AB, Vietnam

WC-130A Cloud Seeding in SEA

Udorn RTAFB & Tan Son Nhut AB 8 Mos



Flight Ops, Udorn, Thailand



Today's Class Outline

Brief Review of Upper Air Measurements. Transition from Monsoon (Easterly) to Westerly Winds Regime

Peak of Hurricane Season

Hurricane Dolly remnants from 2008

Current Weather Briefing

Hurricane Dorian aftermath; claims of Climate Crisis in the News

I review similar claims about Hurricane Harvey in 2017

2019's Fires in the Amazon Forest—Material you have not seen in media reports.

A week ago on 4 Sep, Wednesday AM, Winds were from the East-- Monsoon pattern

Morning Sounding -- Surface Inversion of Temperature

5 Sept 19/0000Z

Wednesday Evening Sounding -- Superadiabatic Surface Layer.

Planetary Boundary Layer Sfc=>600mb

Potentially warm air above 600mb or ~14,000 ft MSL.

By Wednesday PM, there were strong westerlies aloft

30,000 – 45,000 ft MSL.

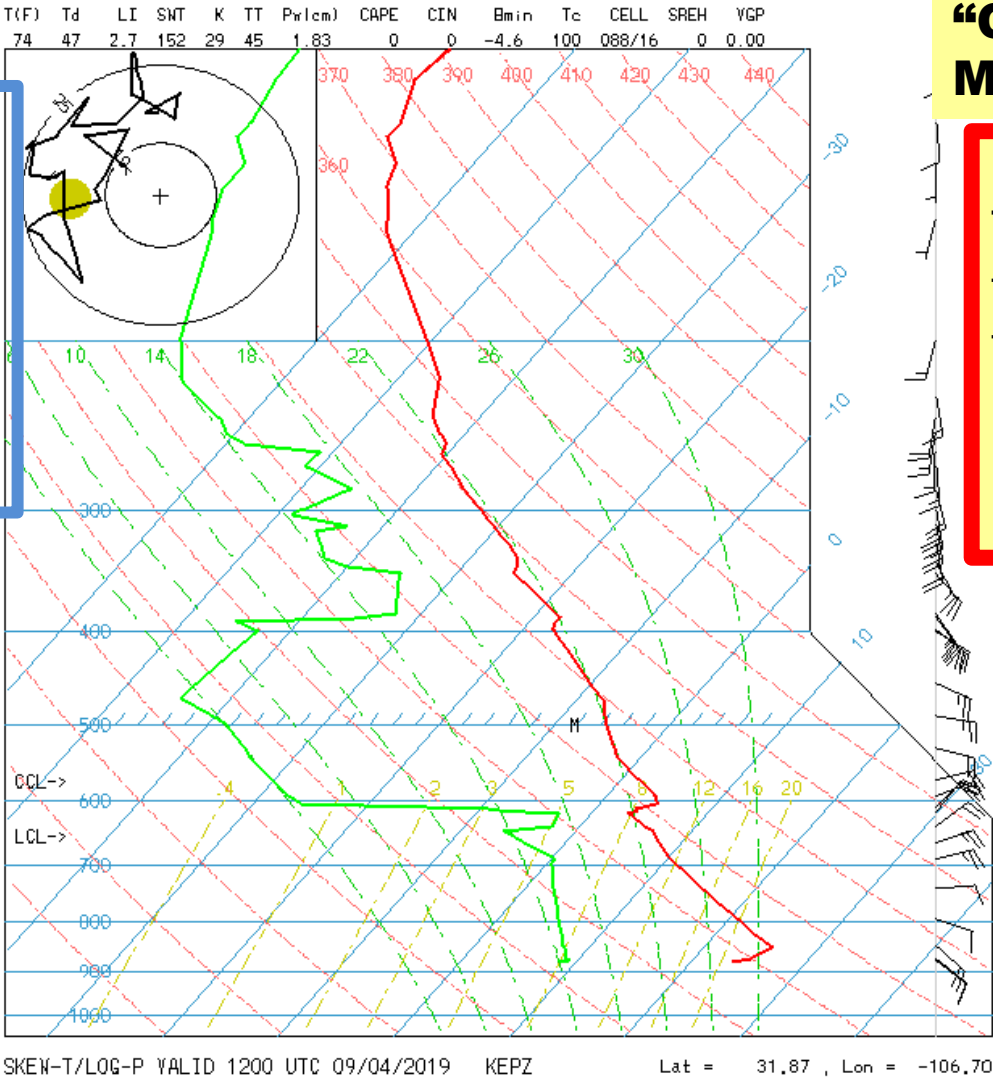
Remains of Fernand did bring cloudiness / showers over the weekend.

Pw = 1.83

Also Blue
in the Vertical
Pressures decrease
logarithmically

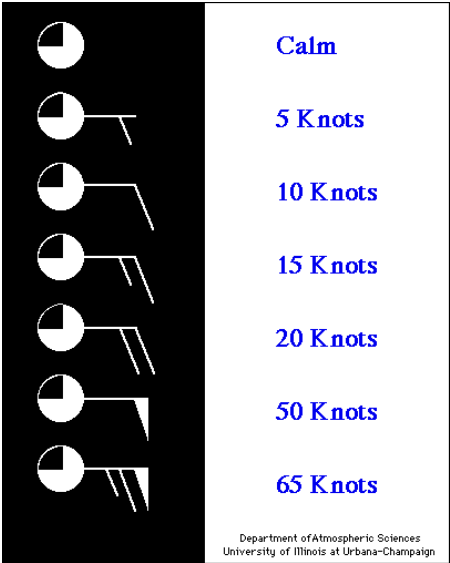
The GREEN LINE
is the Dew Point
temperature
from the same
sounding.

4 Sep 2019/1200Z



“Graph paper” for
Meteorologists

The RED line is
the temperature
from the weather
balloon sounding



Skewed Temperatures in Blue

The Skew-T allows easy calculation of dozens of thermodynamic variables

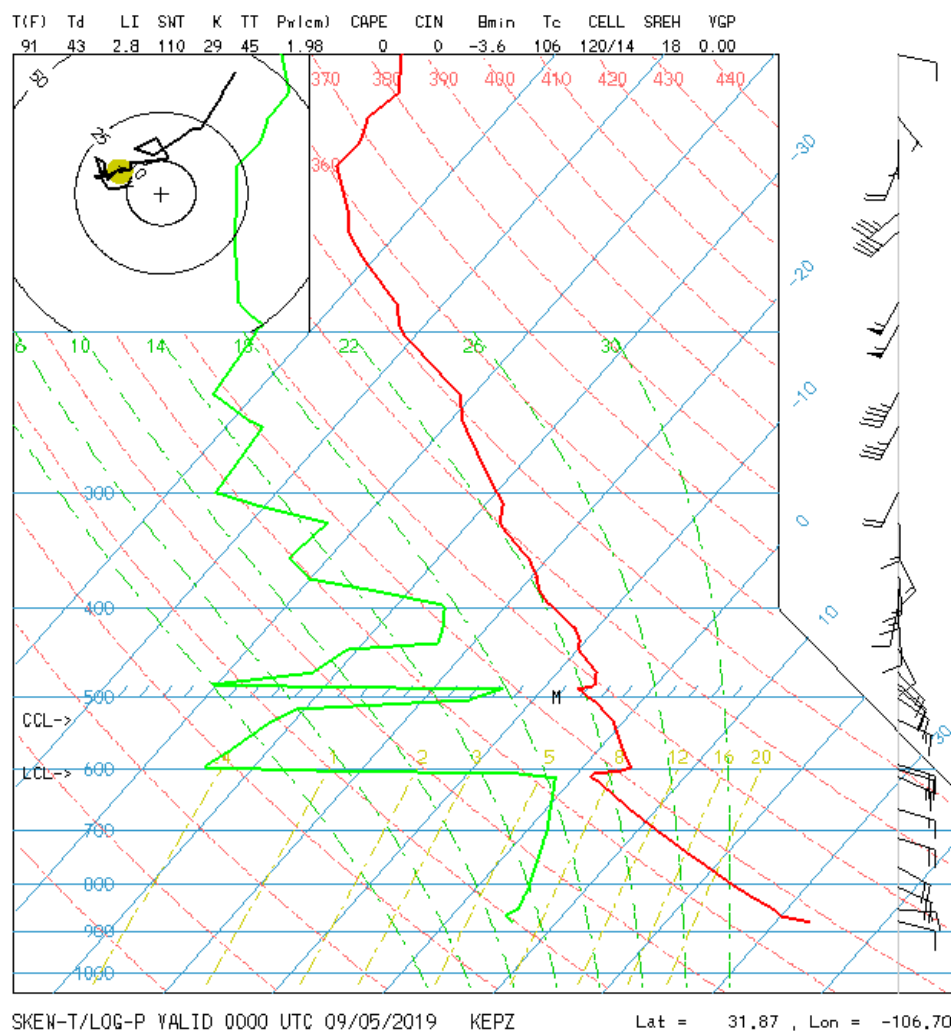
Also in Blue
in the Vertical

Pressures
decrease
logarithmically

“Graph paper” for Meteorologists

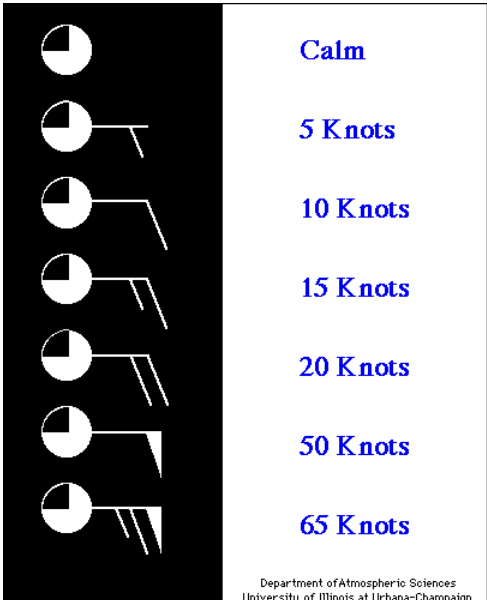
The RED line is the temperature from the weather balloon sounding

The GREEN LINE is the Dew Point temperature from the same sounding.



5 Sep 19/ 0000/z

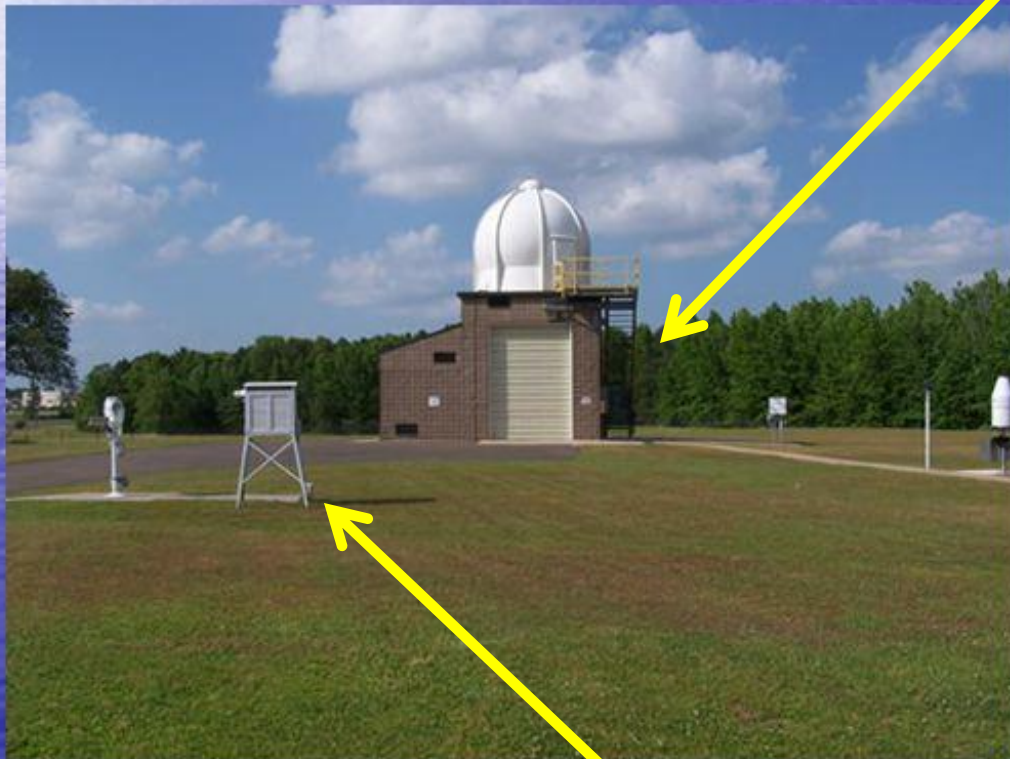
Skewed Temperatures in Blue



The Skew-T allows easy calculation of dozens of thermodynamic variables
Equal Area represents Equal Energy

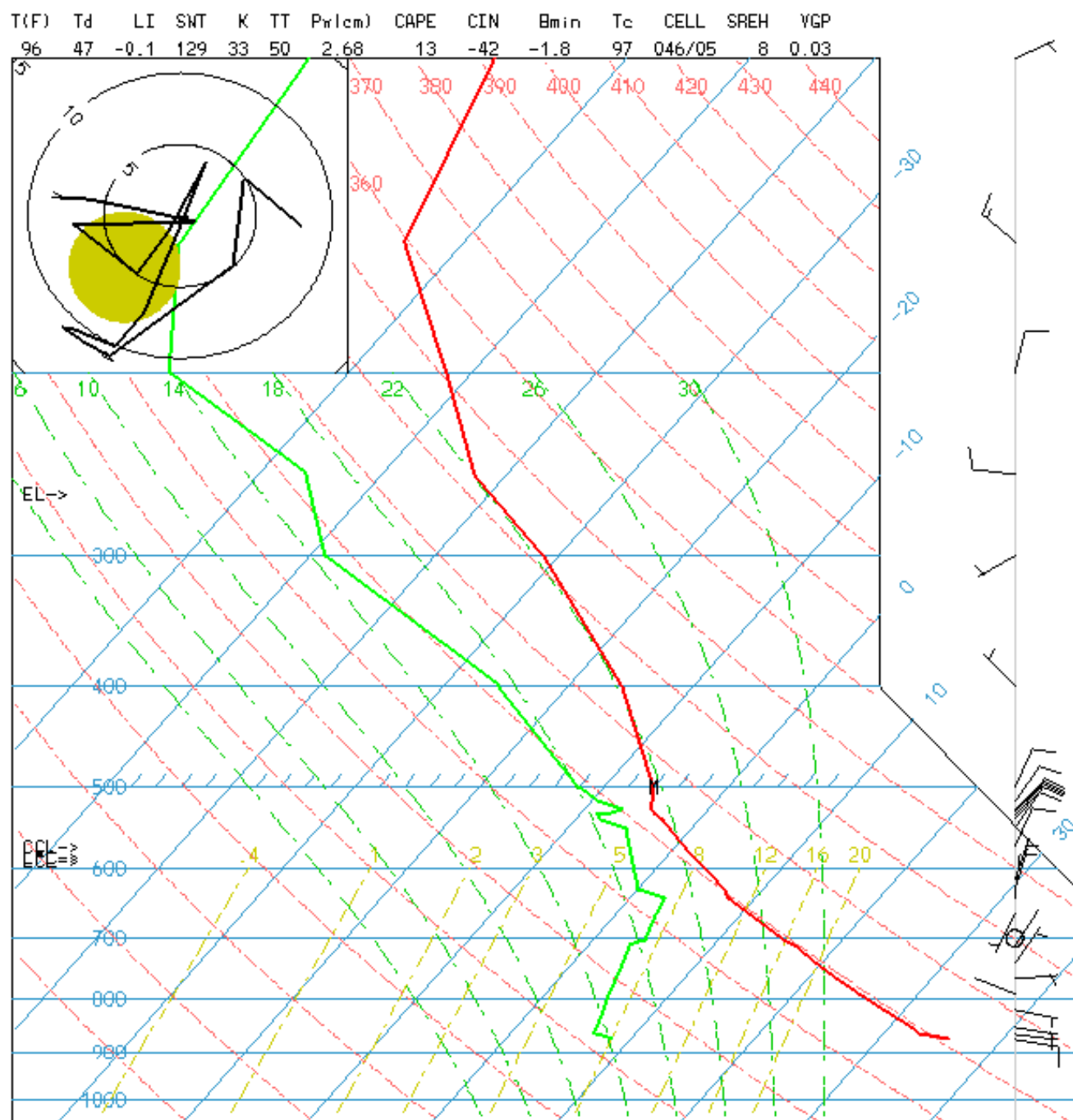
Upper Air - Radiosondes

Radiosondes are released from the inflation building and move up through the atmosphere (20 miles) sending back weather information along the way.



Surface Thermometers are in the Stevenson Screen



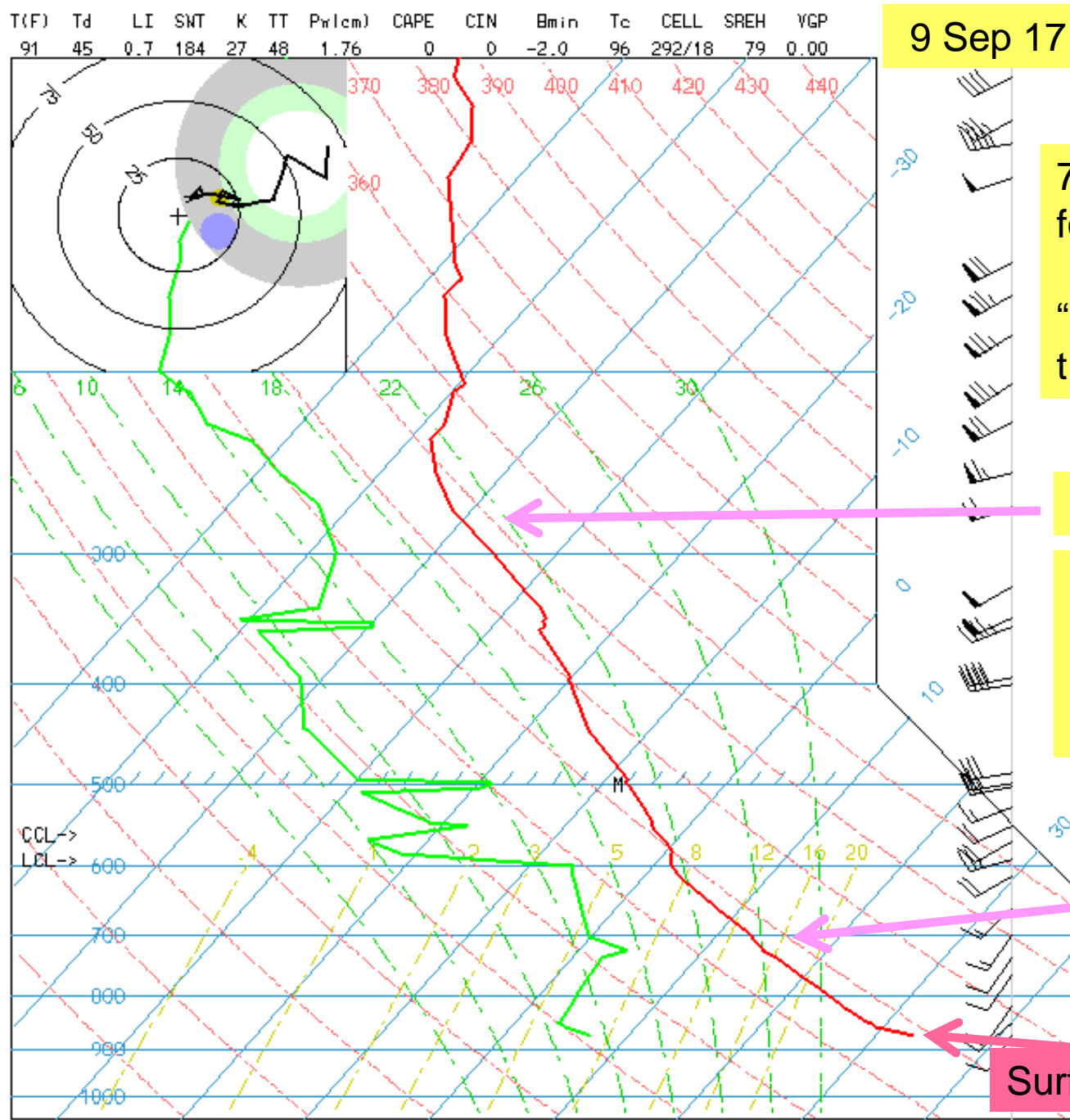


“Textbook Examples”

Moist Adiabatic Layer

Dry Adiabatic Layer

9 Sep 17 Evening Sounding



75-knots very strong for very late summer!

“Leaved,” ...multiple tropopauses

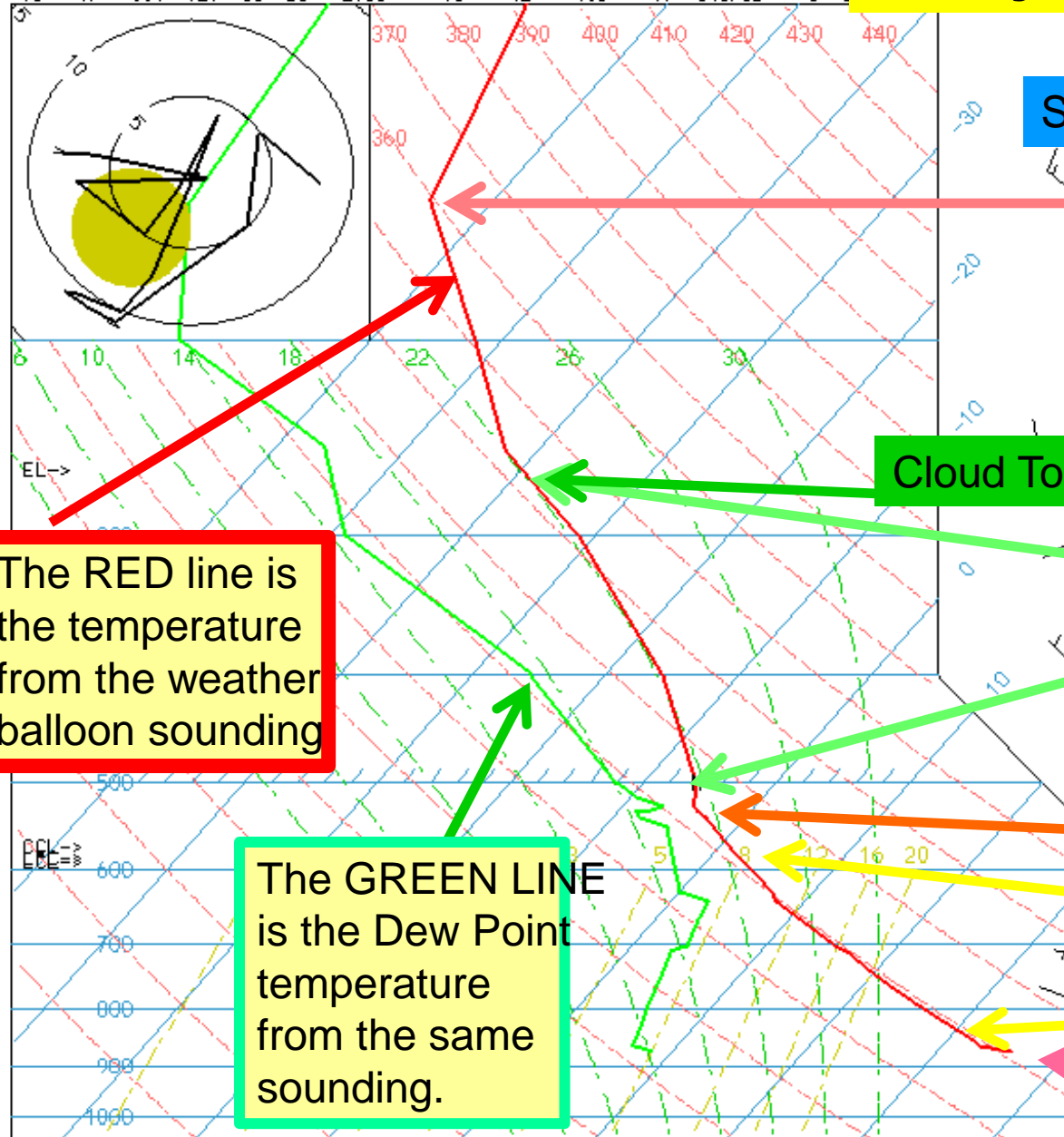
Dry Adiabatic Layer

Nearby:
Towering Cumulus/
Cumulonimbus
Clouds

Dry Adiabatic Layer

Surface Layer Superadiabatic

T(F) Td LI SWT K TT Pw(m) CAPE CIN Bmin Tc CELL SREH
 96 47 -0.1 129 33 50 2.68 13 -42 -1.8 97 046/05 8 0



Stratosphere, above Tropopause

Probable Tropopause

Cloud Top; no longer moist adiabatic abv

Cloud Layer:
Moist Adiabatic

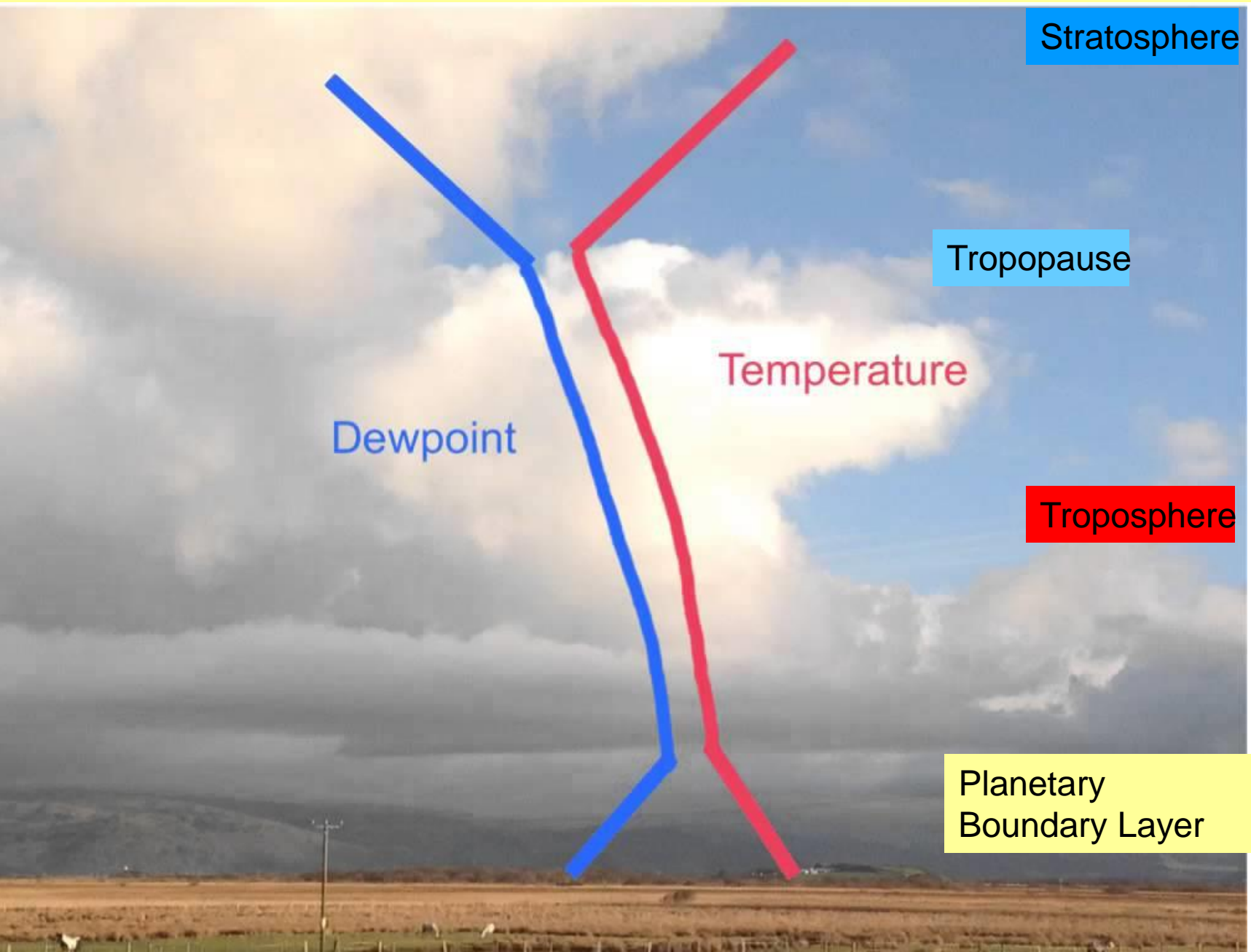
The RED line is
the temperature
from the weather
balloon sounding

The GREEN LINE
is the Dew Point
temperature
from the same
sounding.

Cloud Base: MinTemperature-
Dewpoint Depression

Planetary Boundary
Layer ~ Dry Adiabatic

Surface Layer Superadiabatic



Hurricanes: Science and Society

[Home](#) [Science](#) [Hurricanes & Society](#) [History](#) [Resources](#) [Galleries](#) [Glossary](#)

[Hurricane Science About](#)
[Hurricane Structure](#)

[Primary Circulation](#)

[Hurricane Movement](#)

[Hurricane Life Cycle](#)

[Hurricane Genesis: Birth of a Hurricane](#)

[Hurricane Development: From Birth to Maturity](#)

[Hurricane Decay: Demise of a Hurricane](#)

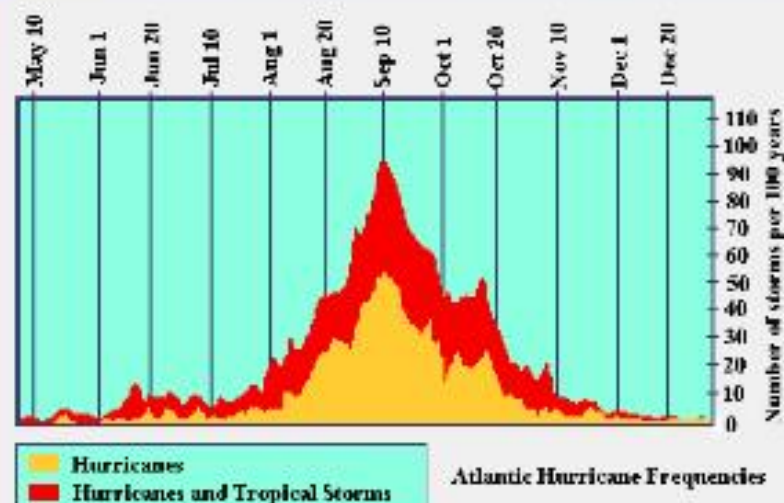
[Interaction between a Hurricane and the Ocean](#)

[Interaction between a Hurricane and the Land](#)

[Home](#) > [Science](#) > [Hurricane Science](#) > [Variability of Hurricane Activity](#)

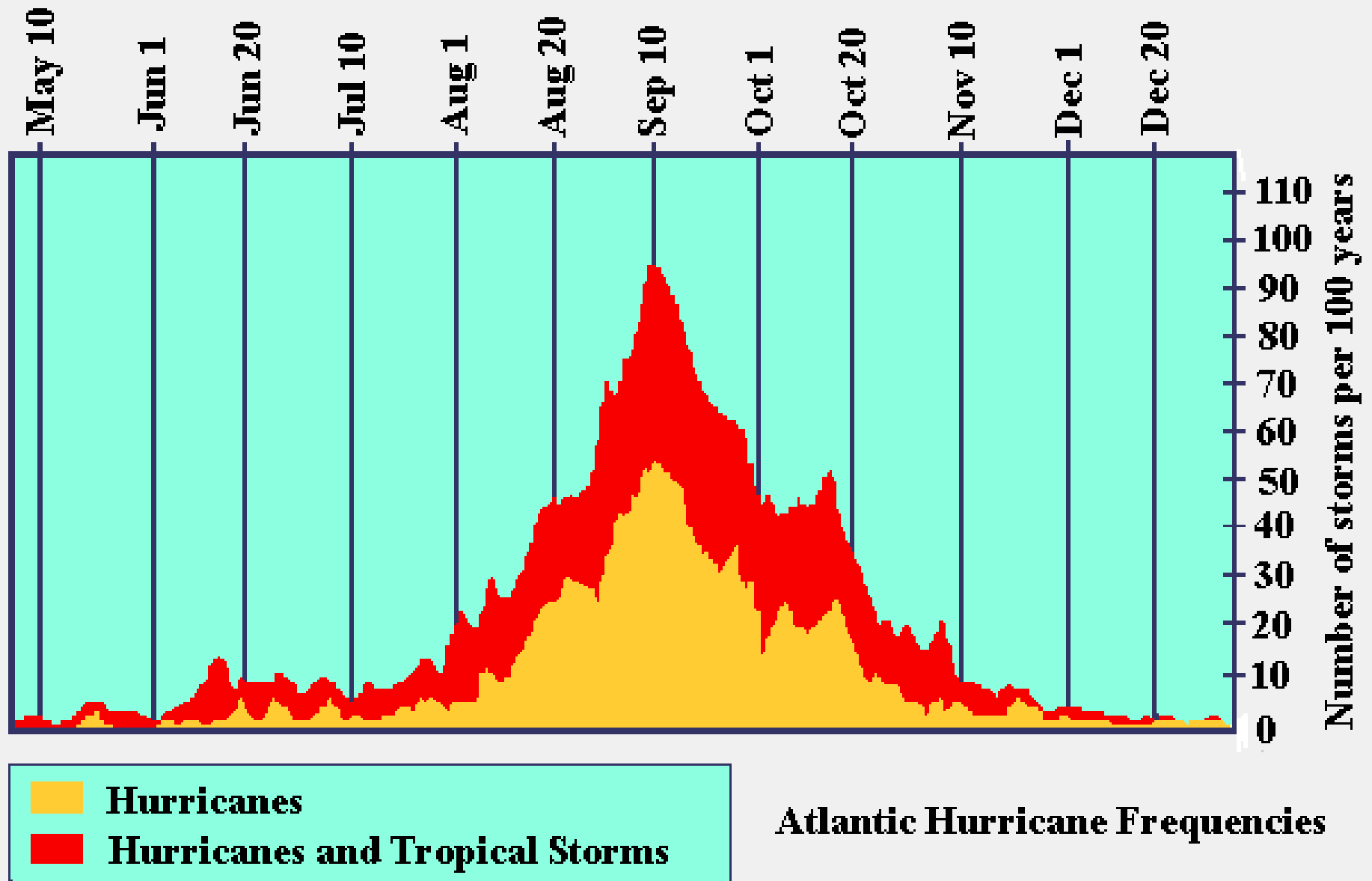
Variability of Hurricane Activity

Hurricane activity varies over different time cycles, and the reasons for this variability are not all well-understood. One cycle that is well-defined in the Atlantic Region, however, is the annual Atlantic hurricane season, which runs from June 1st to November 30th each year. These dates were selected by the U.S. [National Hurricane Center \(NHC\)](#) to include approximately 97% of the [tropical cyclone](#) activity in the Atlantic Basin. The graph below shows the average distribution of [hurricane](#) and [tropical storm](#) activity throughout the year. From this graph, it is clear that the majority of tropical cyclones in the Atlantic Basin occur between August and October with a peak in September. One study



Graph of hurricane frequency for the Atlantic Ocean hurricane season. A peak in activity from August through October is clearly visible. Image credit: NOAA.

One study



X-Axis = Day of year Y-Axis= average number of storms in Atlantic Basin

Remnants of Hurricane Dolly over Las Cruces

On 26 July 2008 as the remnants of Hurricane Dolly approached from the southeast, the Las Cruces weather was overcast with plentiful rain.

Near noontime, the rain stopped and the sun suddenly came out!

I went outside and indeed the remnants of the eye of Dolly were over Las Cruces.

“Animated GIF” from Don Veazey



Address <http://www.rap.ucar.edu/weather/satellite/displaySat.php?region=ABQ&itype=vis>

Google  Satellite Image New Mexico



Go



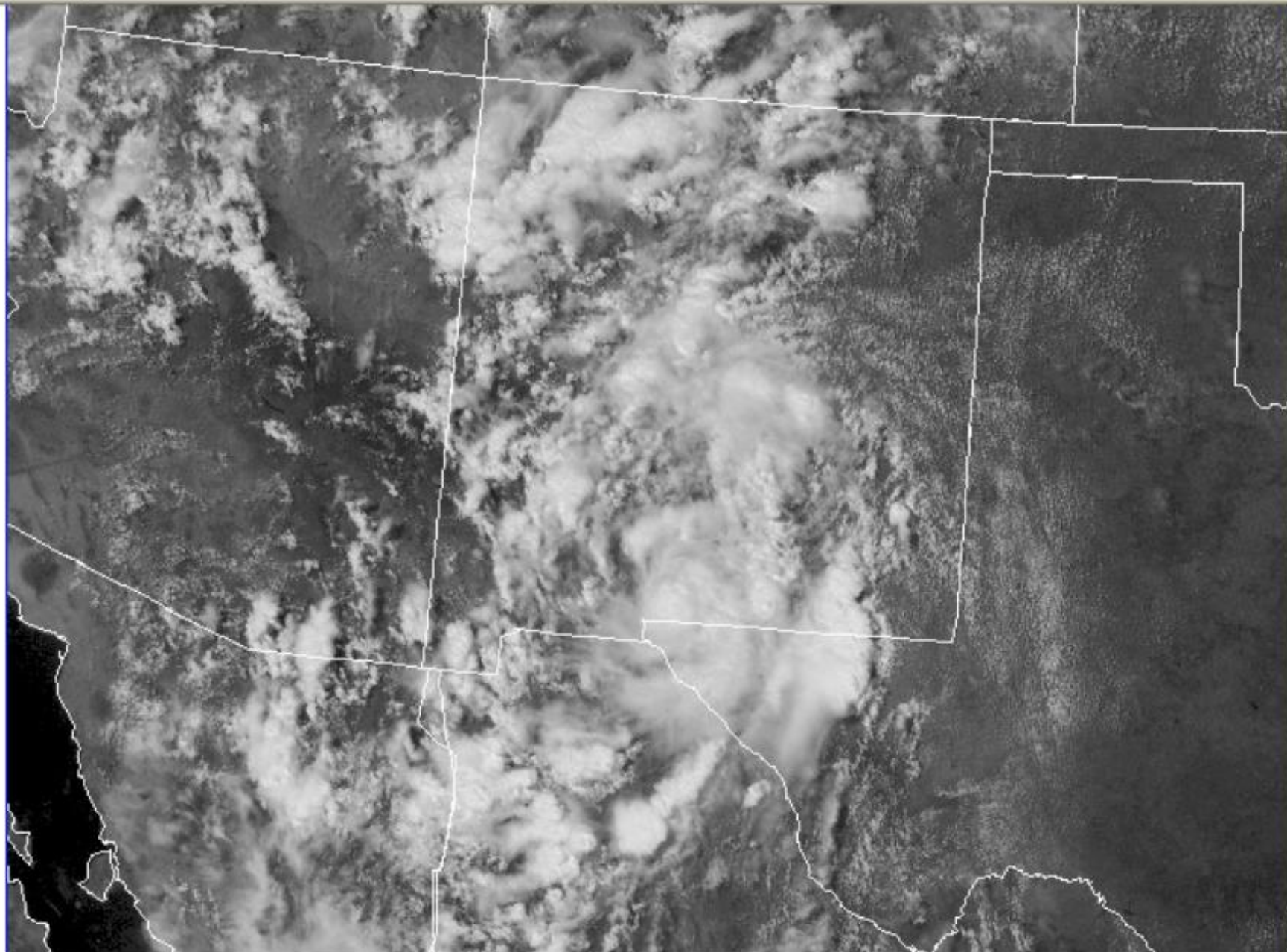
Bookmarks



76 blocked



Settings



Current Weather Briefing...

Starting with Sunday Evening
and Monday Morning

Westerlies!

Stratosphere

Tropopause

Troposphere

Planetary Boundary
Layer

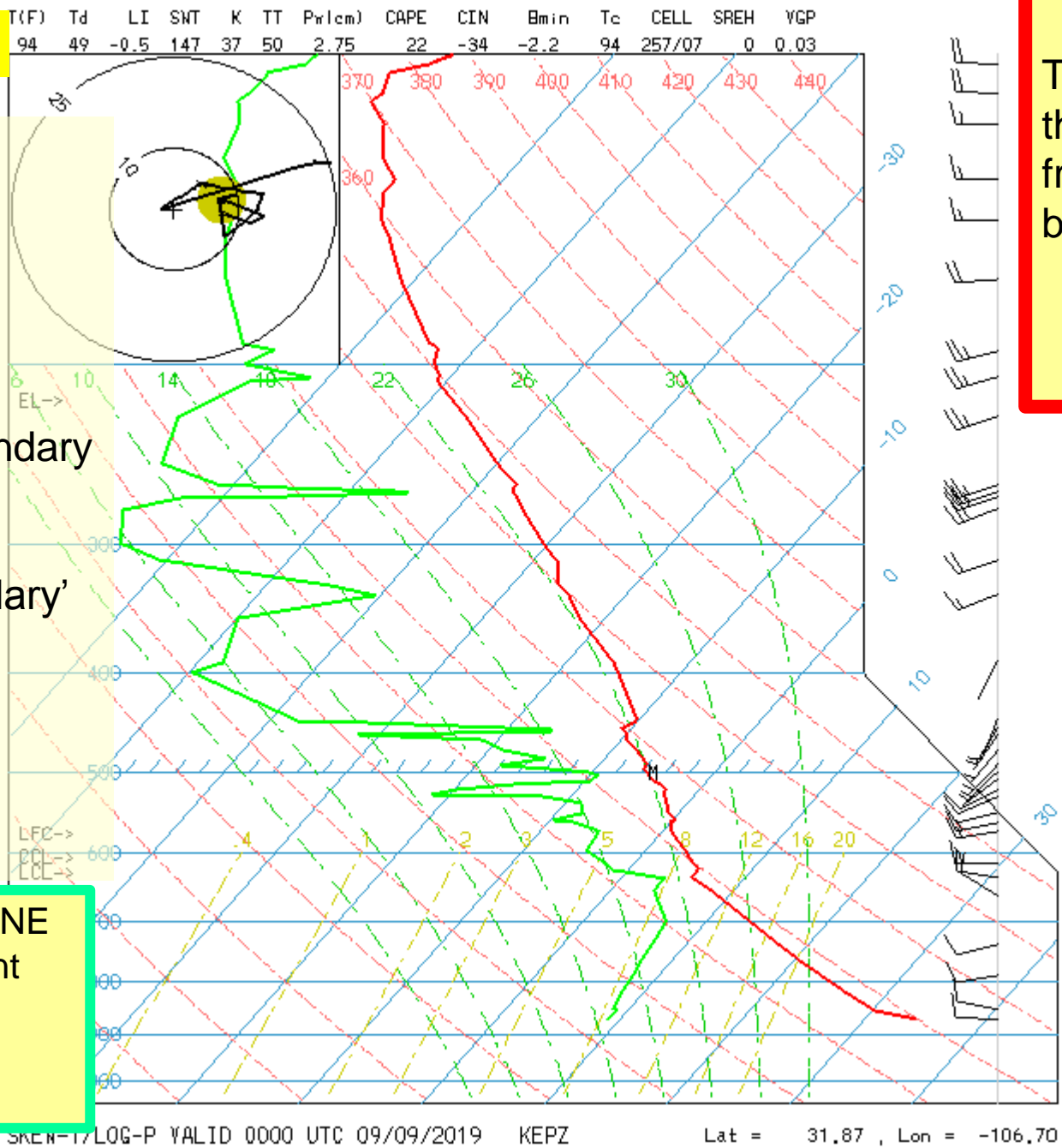
Surface Boundary'
Layer

Dry Adiabats

Moist Adiabats

The GREEN LINE
is the Dew Point
temperature
from the same
sounding.

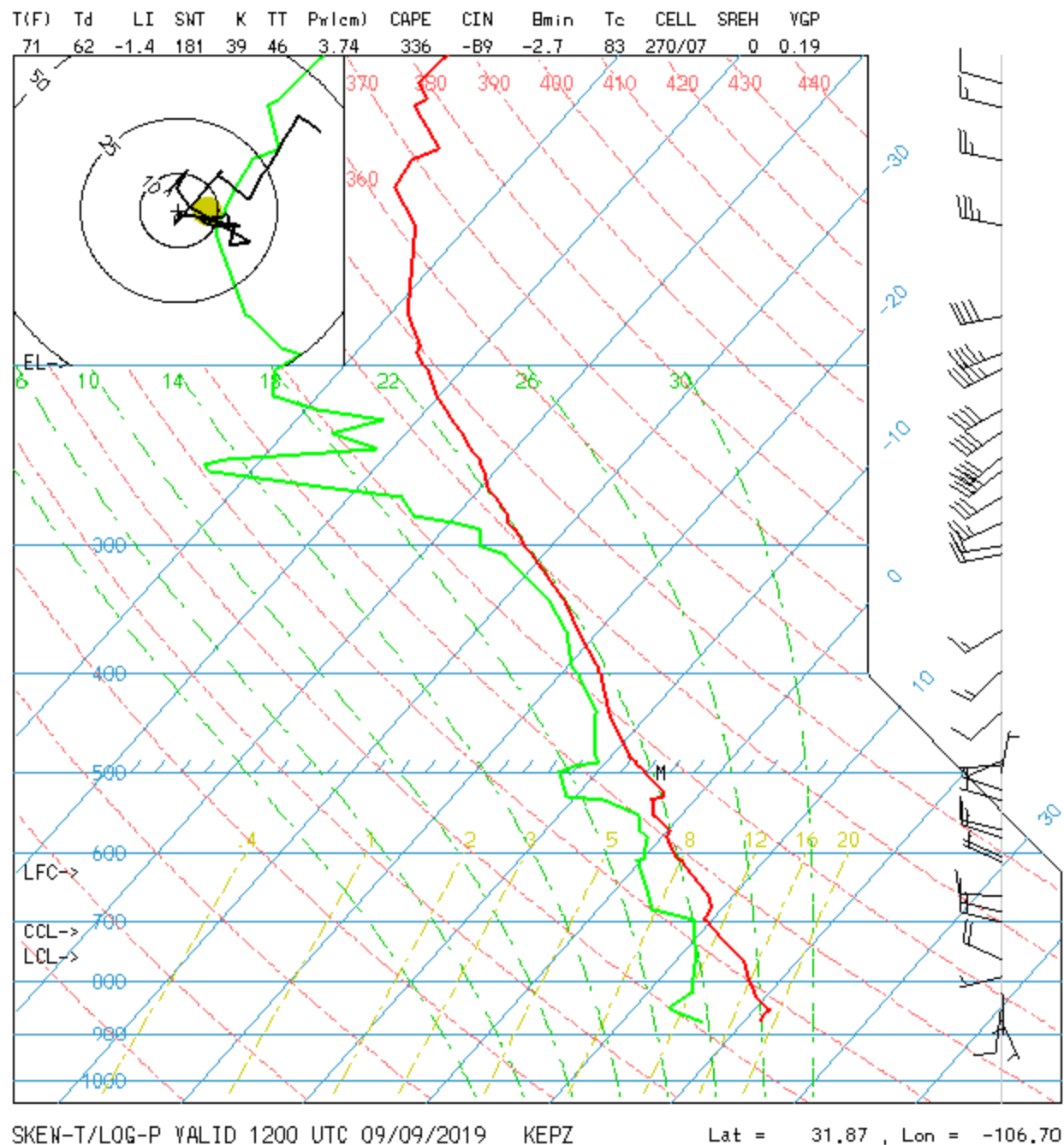
The RED line is
the temperature
from the weather
balloon sounding





Monday, 9 Sept 2019/1200L 1800Z. Towering Cumulus Cloud base just below Organ Needle ~ 9,000 Ft MSL.

Monday 9 Sep 2019
1200Z



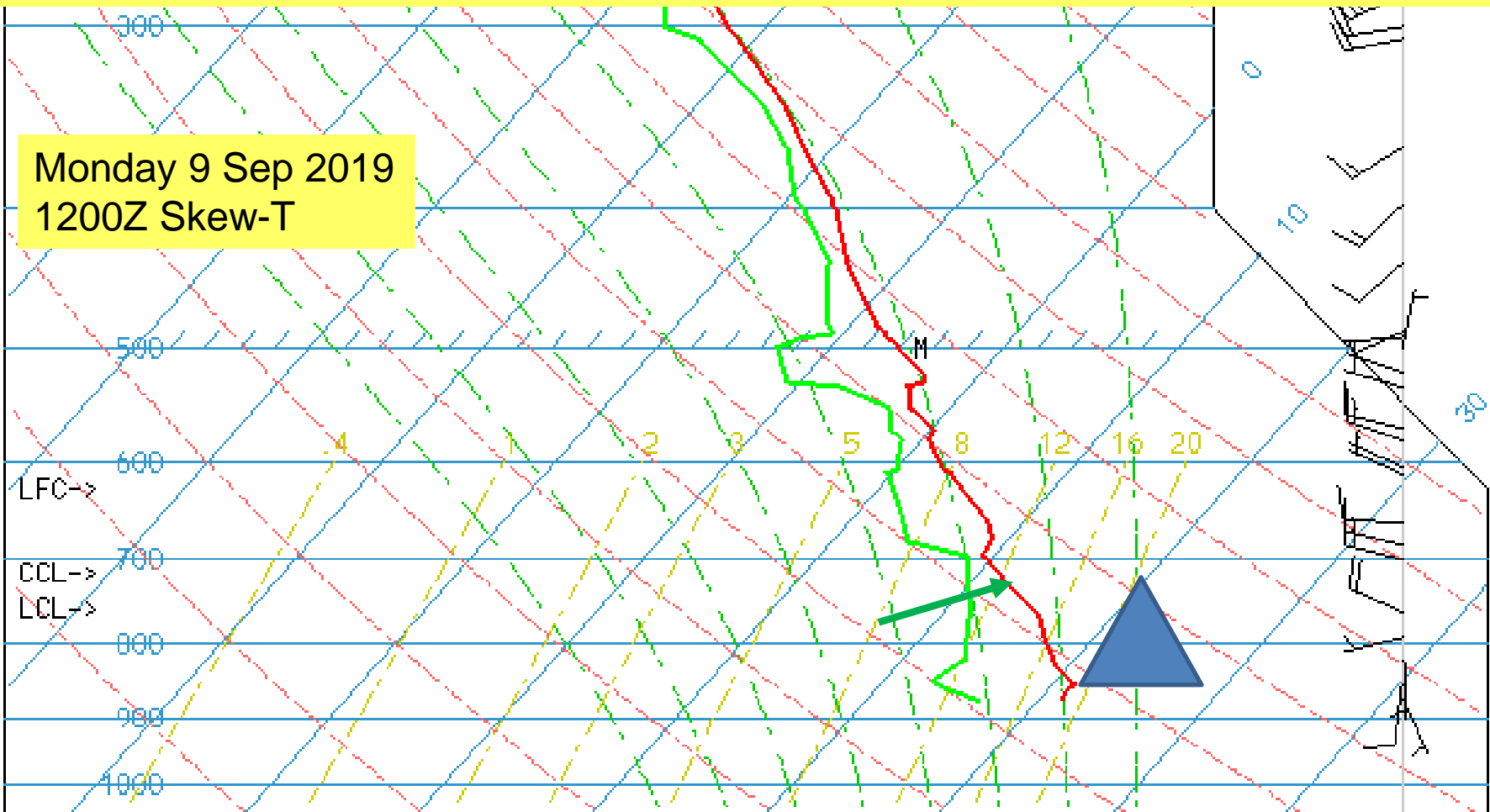
Las Cruces Noon Observation from Las Cruces International Airport KLRU

METAR text: KLRU 091755Z AUTO 18005KT 10SM SCT033 SCT090 27/16 A3010RMK
AO2 T02720163 10272 20205

Conditions at: KLRU(LAS CRUCES INTL , NM, US) observed 1755 UTC 09 September
2019

Temperature: 27.2°C (81°F)

Dewpoint: 16.3°C (61°F) [RH = 51%]



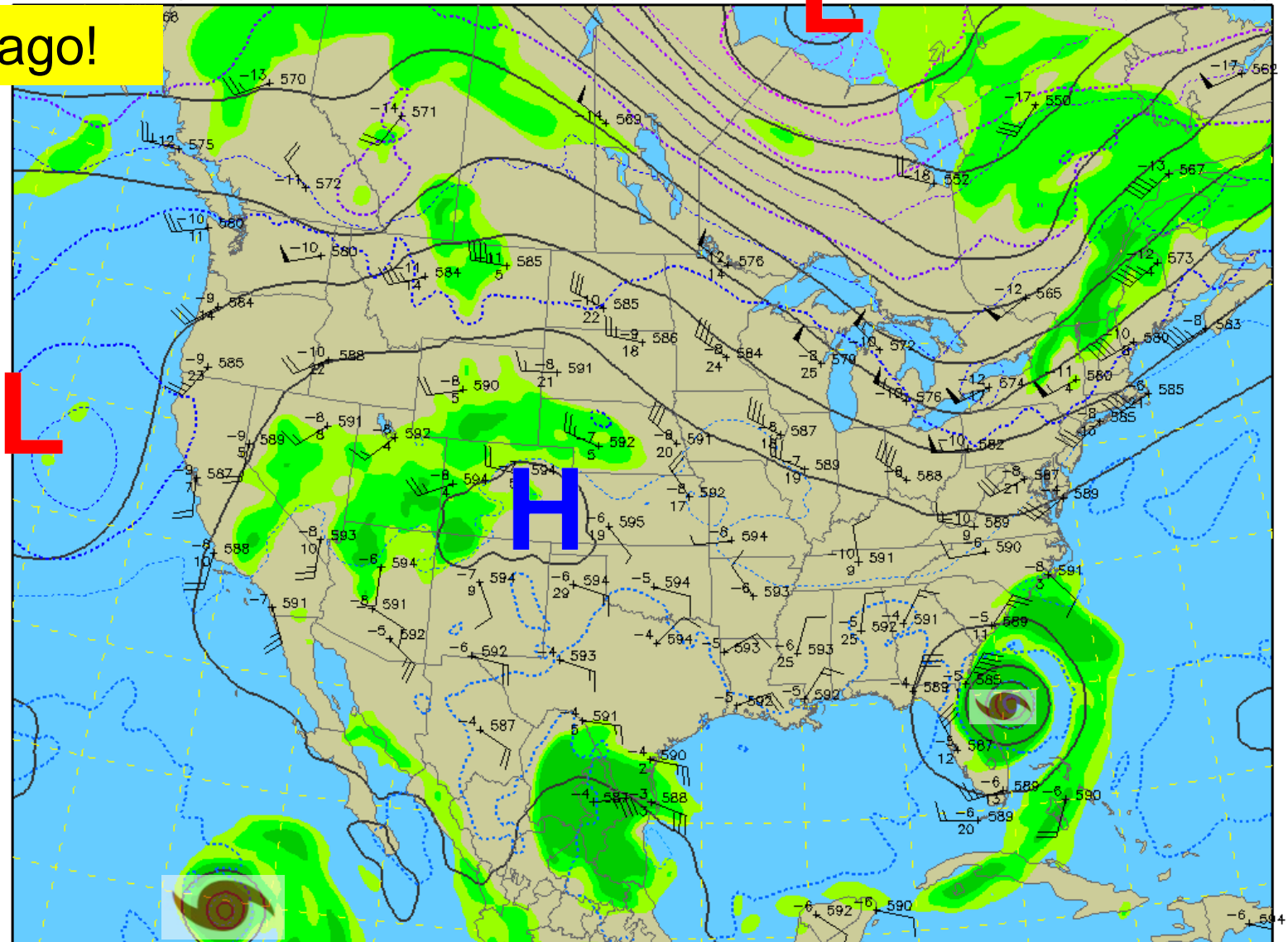
500 mb rawinsonde data 12z Wed 04 Sep 2019

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

0-hour analysis valid 1200 UTC Wed 04 Sep 2019

RAP (12z 04 Sep)

A week ago!



Today, 11 Sep 2019 1200Z

500 mb rawinsonde data 12z Wed 11 Sep 2019

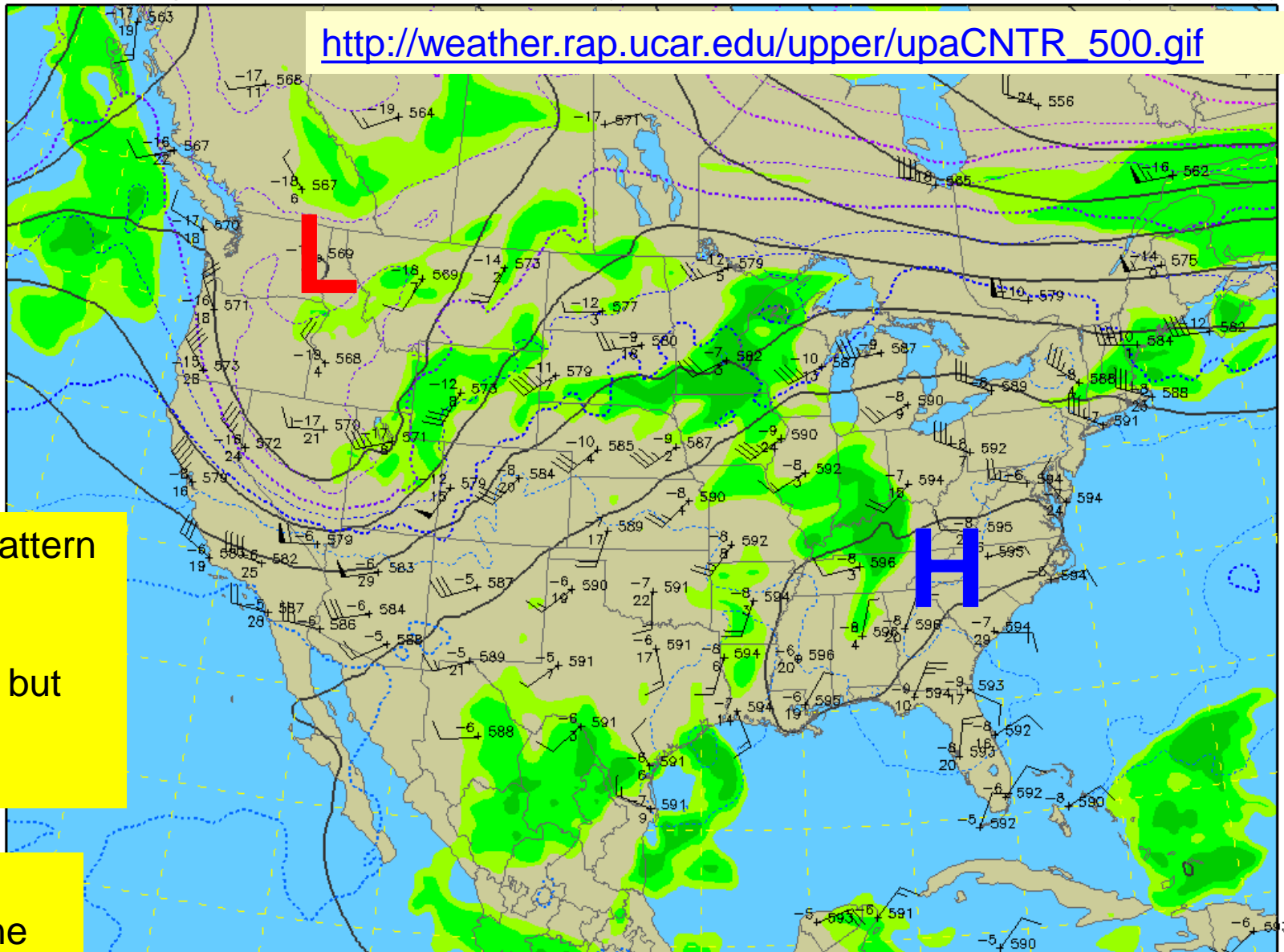
500 mb Heights (dm) / Temperature ($^{\circ}\text{C}$) / Humidity (%)

0-hour analysis valid 1200 UTC Wed 11 Sep 2019

RAP (12z 11 Sep)

http://weather.rap.ucar.edu/upper/upaCNTR_500.gif

Closed Low
Spokane



Winter-time pattern
developing.

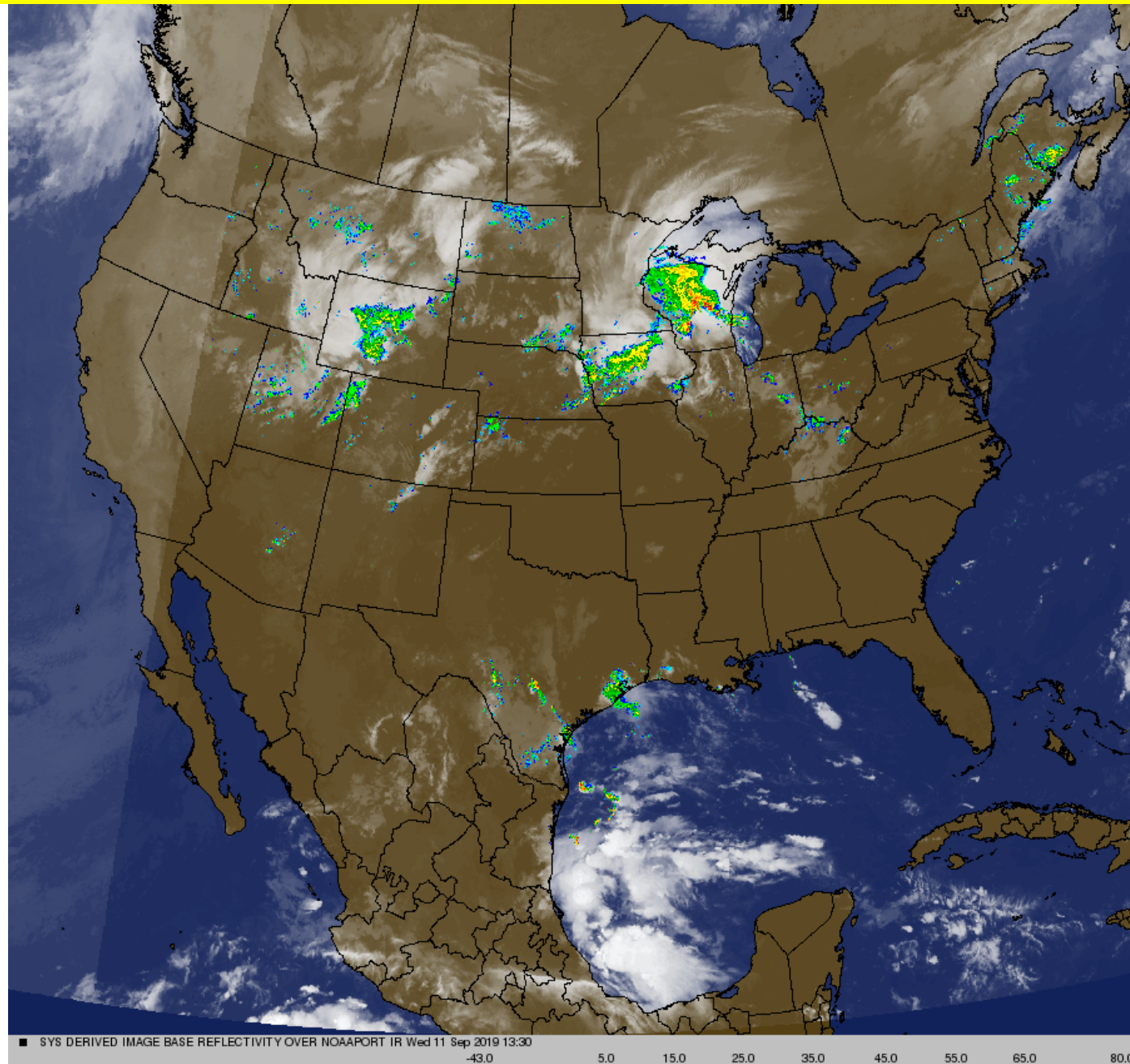
Westerlies all but
Southeastern
States

5940M High
over CO gone

Cold Air Cumulus
offshore WA.

Surface Cold Core
Low Rain/Showers
WY.

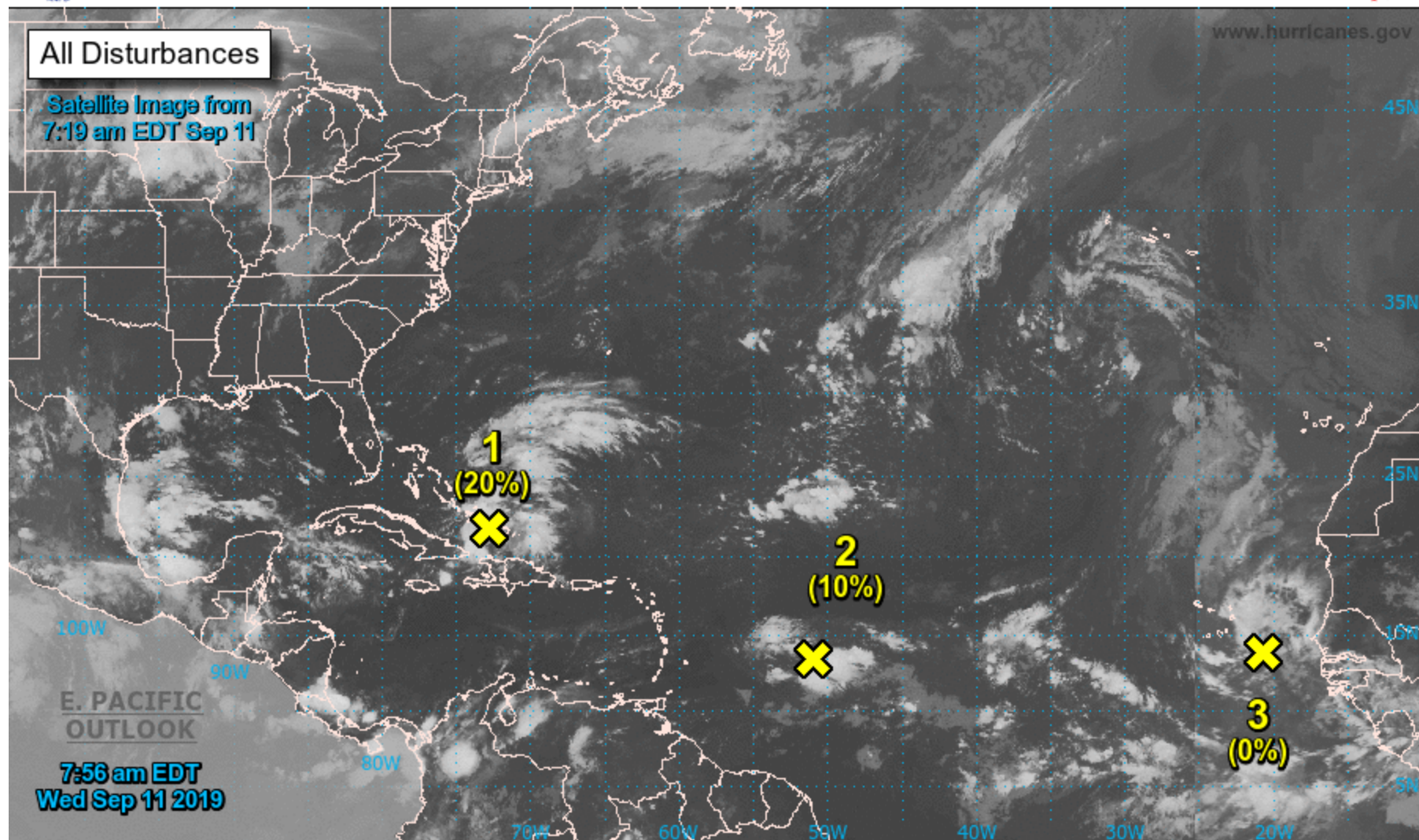
Satellite Radar
Composite





Two-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



Current Disturbances and Two-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants

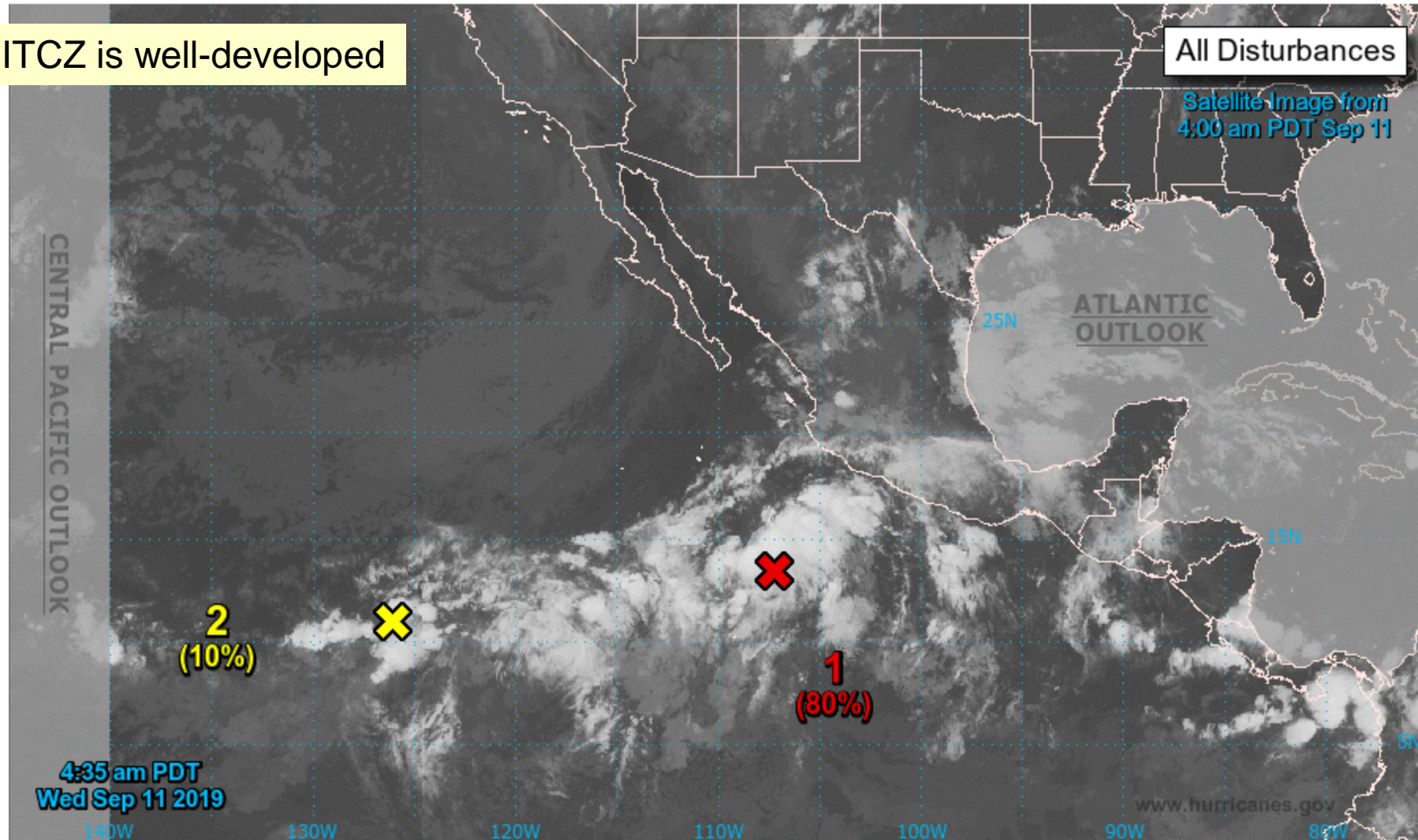


Two-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



ITCZ is well-developed



Current Disturbances and Two-Day Cyclone Formation Chance: < 40% 40-60% > 60%

Tropical or Sub-Tropical Cyclone: Depression Storm Hurricane

Post-Tropical Cyclone or Remnants



NCAR RAL Real-Time Weather Data

Home / RAL :

[Weather Home](#)

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[Radar](#)

[Surface](#)

[Upper-Air](#)

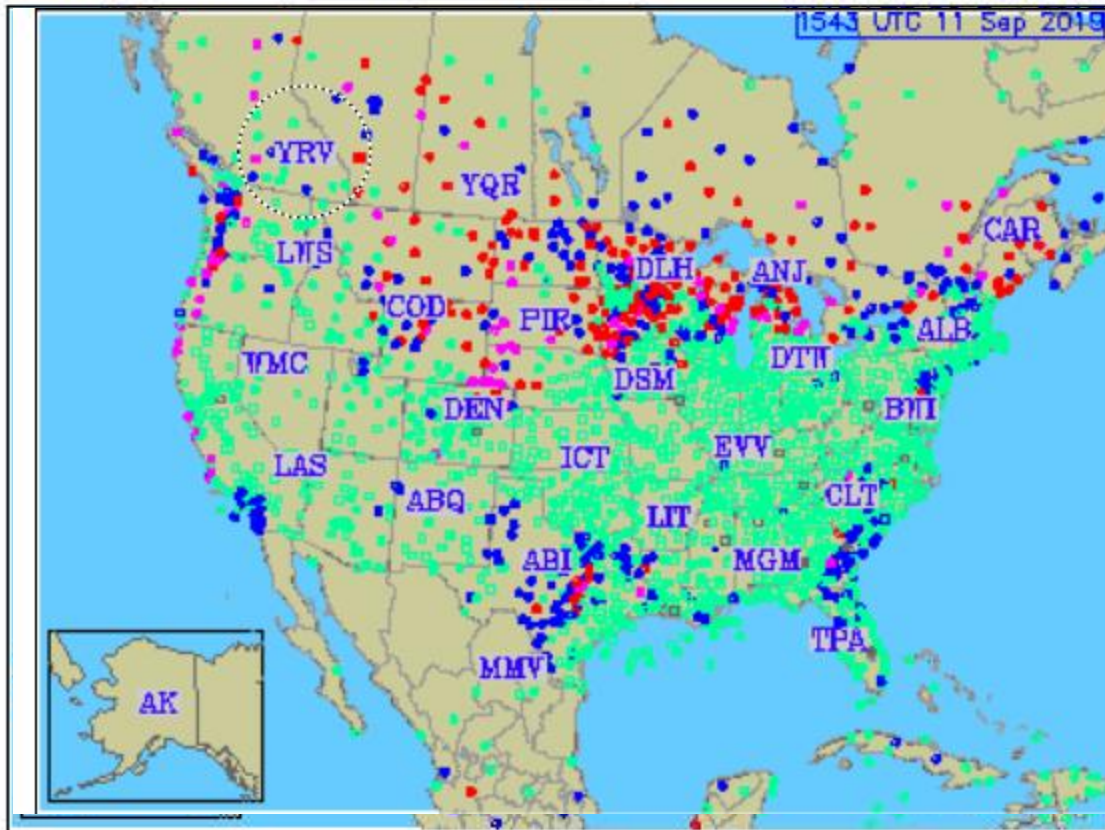
[Forecast](#)

End date:

End time:

Loop duration:

<http://weather.rap.ucar.edu/surface/>



Horizontal Weather Depiction

Sometimes “HWD”

Red Allows rapid identification of threatening weather.

Similar to Military Situation Map

Magenta = even worse

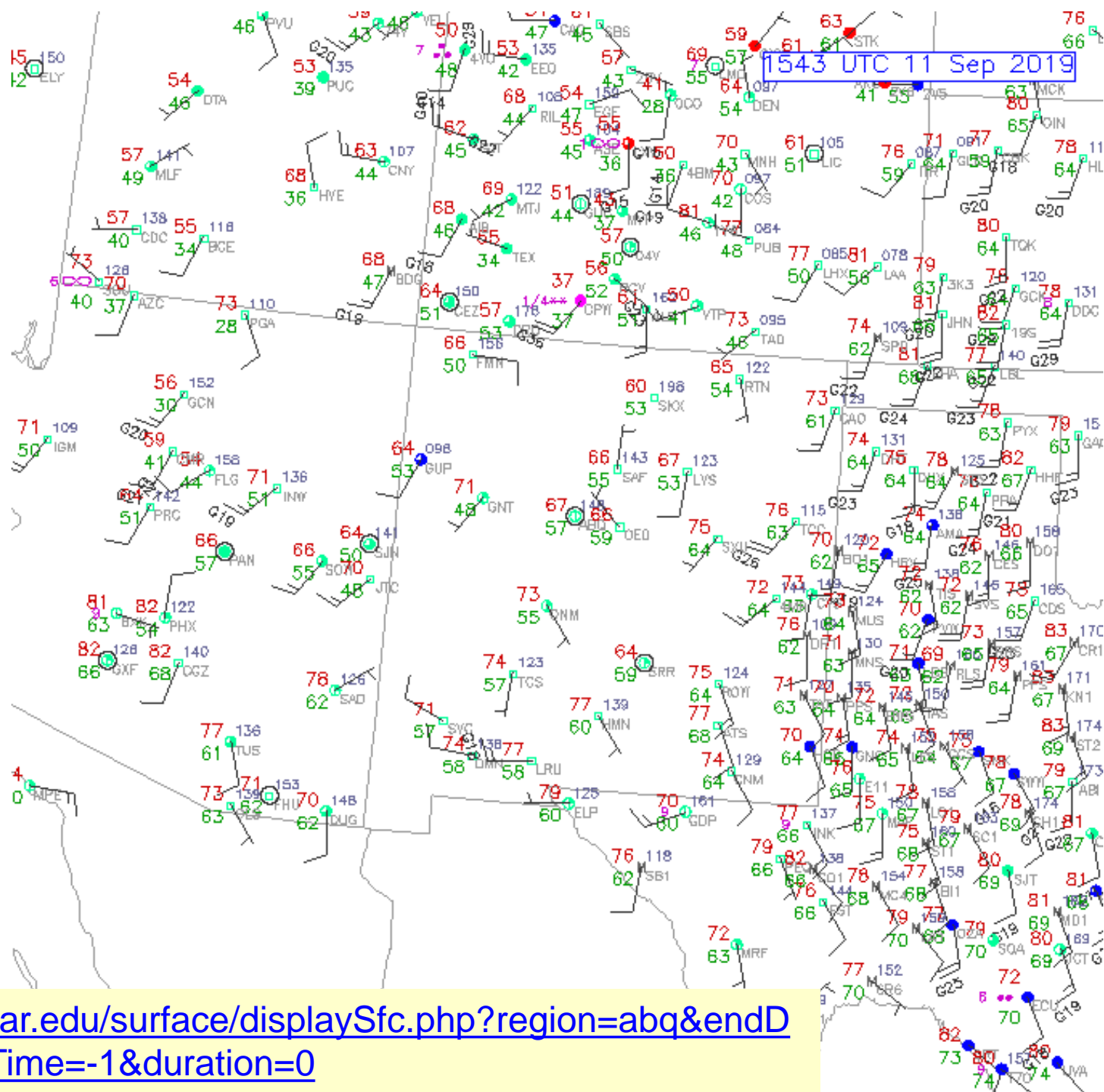
• **Flight category definitions:**

Category	Ceiling		Visibility
Low Instrument Flight Rules LIFR* (magenta circle)	below 500 feet AGL	and/or	less than 1 mile
Instrument Flight Rules IFR (red circle)	500 to below 1,000 feet AGL	and/or	1 mile to less than 3 miles
Marginal Visual Flight Rules MVFR (blue circle)	1,000 to 3,000 feet AGL	and/or	3 to 5 miles
Visual Flight Rules VFR* (green circle)	greater than 3,000 feet AGL	and	greater than 5 miles
<p>*By definition, IFR is ceiling less than 1,000 feet AGL and/or visibility less than 3 miles while LIFR is a sub-category of IFR.</p> <p>*By definition, VFR is ceiling greater than or equal to 1,000 feet AGL and visibility greater than or equal to 3 miles while MVFR is a sub-category of VFR.</p>			

• **Cloud coverage symbols:**

M	□	○	①	☉	●	●	⊗
missing	CLR	SKC	FEW	SCT	BKN	OVC	OVX

Automated stations report "CLR" when clouds may exist above 12,000 feet so a square is used to represent this uncertainty whereas an unfilled circle is used for "SKC" which a human reports the sky is completely clear overhead. The abbreviation "OVX" is unofficial but we use it here to indicate the sky is obscured which is the case when a METAR reports vertical visibility and no cloud information.



<http://weather.rap.ucar.edu/surface/displaySfc.php?region=abq&endDate=20190911&endTime=-1&duration=0>

This is the top line result on a Google Search on <METAR KGUP> GallupNM
https://aviationweather.gov/adds/metars/index?submit=1&station_ids=KGUP&chk_metars=on&hoursStr=2&std_trans=translated&chk_tafs=on

Aviation Digital Data Service (ADDS)

Output produced by METARs form (1558 UTC 11 September 2019)
found at <http://aviationweather.gov/metar/data/>

METAR text: KGUP 111553Z AUTO 22012KT 10SM BKN028 BKN040 19/12 A3024 RMK AO2 SLP094 T01940122

Conditions at: KGUP (GALLUP , NM, US) observed 1553 UTC 11 September 2019

Temperature: 19.4°C (67°F)

Dewpoint: 12.2°C (54°F) [RH = 63%]

Pressure (altimeter): 30.24 inches Hg (1024.1 mb)
[Sea-level pressure: 1009.4 mb]

Winds: from the SW (220 degrees) at 14 MPH (12 knots; 6.2 m/s)

Visibility: 10 or more miles (16+ km)

Ceiling: 2800 feet AGL

Clouds: broken clouds at 2800 feet AGL
broken clouds at 4000 feet AGL

Weather: automated observation with no human augmentation;
there may or may not be significant weather present at this time

METAR text: KGUP 111548Z AUTO 23013G21KT 10SM BKN028 BKN040 19/12 A3024 RMK AO2

Conditions at: KGUP (GALLUP , NM, US) observed 1548 UTC 11 September 2019

Temperature: 19.0°C (66°F)

Dewpoint: 12.0°C (54°F) [RH = 64%]

Pressure (altimeter): 30.24 inches Hg (1024.1 mb)

Winds: from the SW (230 degrees) at 15 MPH (13 knots; 6.7 m/s)
gusting to 24 MPH (21 knots; 10.8 m/s)

Visibility: 10 or more miles (16+ km)

Ceiling: 2800 feet AGL

Clouds: broken clouds at 2800 feet AGL
broken clouds at 4000 feet AGL

Weather: automated observation with no human augmentation;
there may or may not be significant weather present at this time

Aviation Digital Data Service (ADDS)

METAR KHOB

Output produced by METARs form (1602 UTC 11 September 2019)
found at <http://aviationweather.gov/metar/data/>

METAR text: KHOB 111550Z 16009KT 10SM BKN015 23/18 A3013

Conditions at: KHOB (HOBBS/LEA CO. , NM, US) observed 1550 UTC 11 September 2019

Temperature: 23.0°C (73°F)

Dewpoint: 18.0°C (64°F) [RH = 73%]

Pressure (altimeter): 30.13 inches Hg (1020.4 mb)

Winds: from the SSE (160 degrees) at 10 MPH (9 knots; 4.6 m/s)

Visibility: 10 or more miles (16+ km)

Ceiling: 1500 feet AGL

Clouds: broken clouds at 1500 feet AGL

Weather: no significant weather observed at this time

METAR text: KHOB 111450Z 16012KT 10SM OVC010 21/18 A3013

Conditions at: KHOB (HOBBS/LEA CO. , NM, US) observed 1450 UTC 11 September 2019

Temperature: 21.0°C (70°F)

Dewpoint: 18.0°C (64°F) [RH = 83%]

Pressure (altimeter): 30.13 inches Hg (1020.4 mb)

Winds: from the SSE (160 degrees) at 14 MPH (12 knots; 6.2 m/s)

Visibility: 10 or more miles (16+ km)

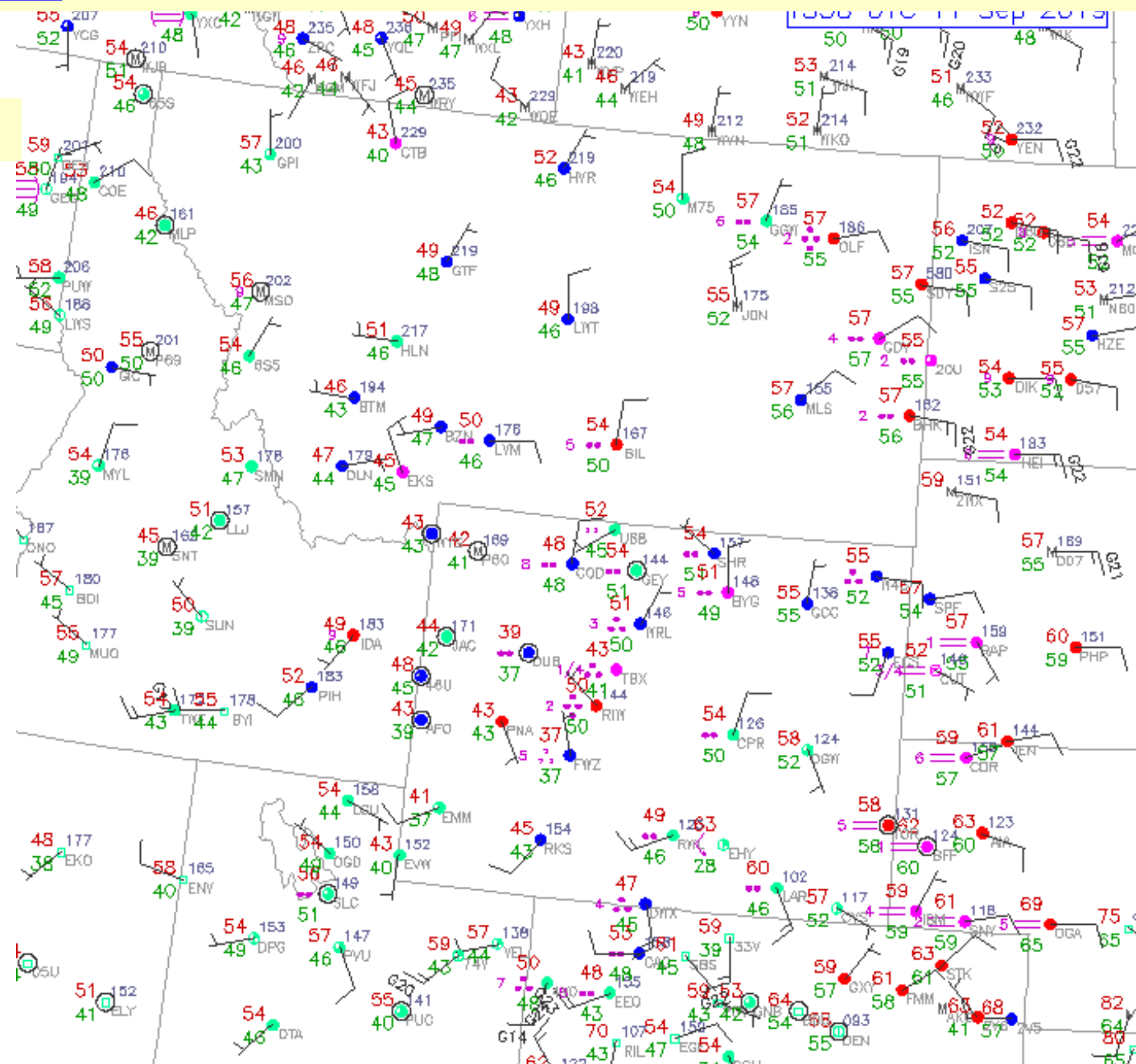
Ceiling: 1000 feet AGL

Clouds: overcast cloud deck at 1000 feet AGL

Weather: no significant weather observed at this time

Map from clicking
HWD COD

Shows WX with
Wyoming Low



Aviation Digital Data Service (ADDS)

Output produced by METARs form (1610 UTC 11 September 2019)
found at <http://aviationweather.gov/metar/data/>

<METAR KOLF>

METAR text: KOLF 111604Z AUTO 08009KT 5SM -RA BR BKN007 OVC010 14/13 A3007 RMK AO2 P0001 T01440128

Conditions at: KOLF (WOLF POINT , MT, US) observed 1604 UTC 11 September 2019

Temperature: 14.4°C (58°F)

Dewpoint: 12.8°C (55°F) [RH = 90%]

Pressure (altimeter): 30.07 inches Hg (1018.4 mb)

Winds: from the E (80 degrees) at 10 MPH (9 knots; 4.6 m/s)

Visibility: 5 miles (8 km)

Ceiling: 700 feet AGL

Clouds: broken clouds at 700 feet AGL
overcast cloud deck at 1000 feet AGL

Weather: -RA BR (light rain, mist)

https://aviationweather.gov/adds/metars/index?submit=1&station_ids=KOLF&chk_metars=on&hoursStr=2&std_trans=translated&chk_tafs=on

METAR text: KOLF 111553Z AUTO 08009KT 2SM +RA BR BKN007 OVC012 14/13 A3007 RMK AO2 SLP186 P0016 T01390128

Conditions at: KOLF (WOLF POINT , MT, US) observed 1553 UTC 11 September 2019

Temperature: 13.9°C (57°F)

Dewpoint: 12.8°C (55°F) [RH = 93%]

Pressure (altimeter): 30.07 inches Hg (1018.4 mb)
[Sea-level pressure: 1018.6 mb]

Winds: from the E (80 degrees) at 10 MPH (9 knots; 4.6 m/s)

Visibility: 2.00 miles (3.22 km)

Ceiling: 700 feet AGL

Clouds: broken clouds at 700 feet AGL
overcast cloud deck at 1200 feet AGL

Weather: +RA BR (heavy rain, mist)

METAR text: KOLF 111532Z AUTO 08011KT 2 1/2SM RA BR BKN006 BKN012 OVC017 14/13 A3007 RMK AO2 P0009 T01440128

Conditions at: KOLF (WOLF POINT , MT, US) observed 1532 UTC 11 September 2019

Temperature: 14.4°C (58°F)

Dewpoint: 12.8°C (55°F) [RH = 90%]

Pressure (altimeter): 30.07 inches Hg (1018.4 mb)

Winds: from the E (80 degrees) at 13 MPH (11 knots; 5.7 m/s)

Visibility: 2.50 miles (4.02 km)

Ceiling: 600 feet AGL

Clouds: broken clouds at 600 feet AGL
broken clouds at 1200 feet AGL
overcast cloud deck at 1700 feet AGL

Weather: RA BR (moderate rain, mist)

Lat = 31.87 , Lon = -106.70

$$P_w = 3.31 \text{ cm}$$

Jet Stream Pattern Developing

“leaved” Tropopause



National Weather Service National Headquarters

National Weather Service

weather.gov



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Area Forecast Discussion

Issued by NWS

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000

FXUS64 KEPZ 111111

AFDEPZ

[Area Forecast Discussion](#)

National Weather Service El Paso Tx/Santa Teresa [NM](#)

511 AM MDT Wed Sep 11 2019

.SYNOPSIS...

We will see lower rain chances today as some drier air works into the region. Then on Thursday we will see just a [slight chance](#) for rain before better rain chances return to the forecast for Friday and the weekend. Temperatures this week will run near average and then a little below average for the weekend.

&&

.DISCUSSION...

As we move through mid September the forecast weather pattern will begin to look more and more Fall like. Currently we have an upper level [ridge](#) over the southeast U.S. while over the Great [Basin](#) of Nevada and Utah we have an [upper level trough](#). This [upper level trough](#) will slowly progress to the east across Colorado today and tonight. The [trough](#) is too far north to give us rain chances, but it will help usher in drier air on some westerly surface winds today. Our [thunderstorm](#) chances this afternoon and evening will be limited to area mountains and a few locations east of the Rio Grande. On Thursday the dry air will be in place so we will see lower rain chances.

.DISCUSSION... As we move through mid September the forecast weather pattern will begin to look more and more Fall like. Currently we have an upper level [ridge](#) over the southeast U.S. while over the Great [Basin](#) of Nevada and Utah we have an [upper level trough](#). This [upper level trough](#) will slowly progress to the east across Colorado today and tonight. The [trough](#) is too far north to give us rain chances, but it will help usher in drier air on some westerly surface winds today. Our [thunderstorm](#) chances this afternoon and evening will be limited to area mountains and a few locations east of the Rio Grande. On Thursday the dry air will be in place so we will see lower rain chances. On Friday we will see an east push that will allow [moisture](#) and rain chances to return to our forecast. Our best rain chances will be on Friday evening into Saturday. Then by Sunday the upper level [ridge](#) to our east will try and push the [moisture](#) into Arizona. But on Monday and approaching [upper level trough](#) from the west will begin to push the [moisture](#) back to the east over New Mexico. As the [trough](#) gets closer we will see better rain chances. If the [GFS](#) is to be believed we could see some strong to severe storms next Tuesday night, but I'm getting way ahead of myself.

Human-Caused CO₂-fueled Climate Change in the news

Hurricane Dorian, CNNs Climate Crisis Town Hall

100% Renewable Energy Claims and Plans

Detection and Attribution, Tropical Cyclone Diagnostics

Change Power Point to 2019 Hurricane Dorian, etc

Review of claims that 2017's Hurricane Harvey
was made more severe by Human-Caused
CO₂-Fueled global warming

WUWT

Watts Up With That?

The world's most viewed site on global warming and climate change

[Home](#) [About](#) [Climate FAIL Files](#) [Climategate](#) [Reference Pages](#) [Submit story](#) [Test](#) [Tips and Notes](#)

Michael Mann's claims that Harvey was caused by global warming are destroyed by an operational meteorologist

Advertisements

Anthony Watts / August 31, 2017

Bastardi: No Michael Mann — Climate change did not cause Hurricane Harvey

Meteorologist Joe Bastardi takes down [fake Nobelist Michael Mann's](#) lame effort in the Guardian to link climate with Hurricane Harvey.

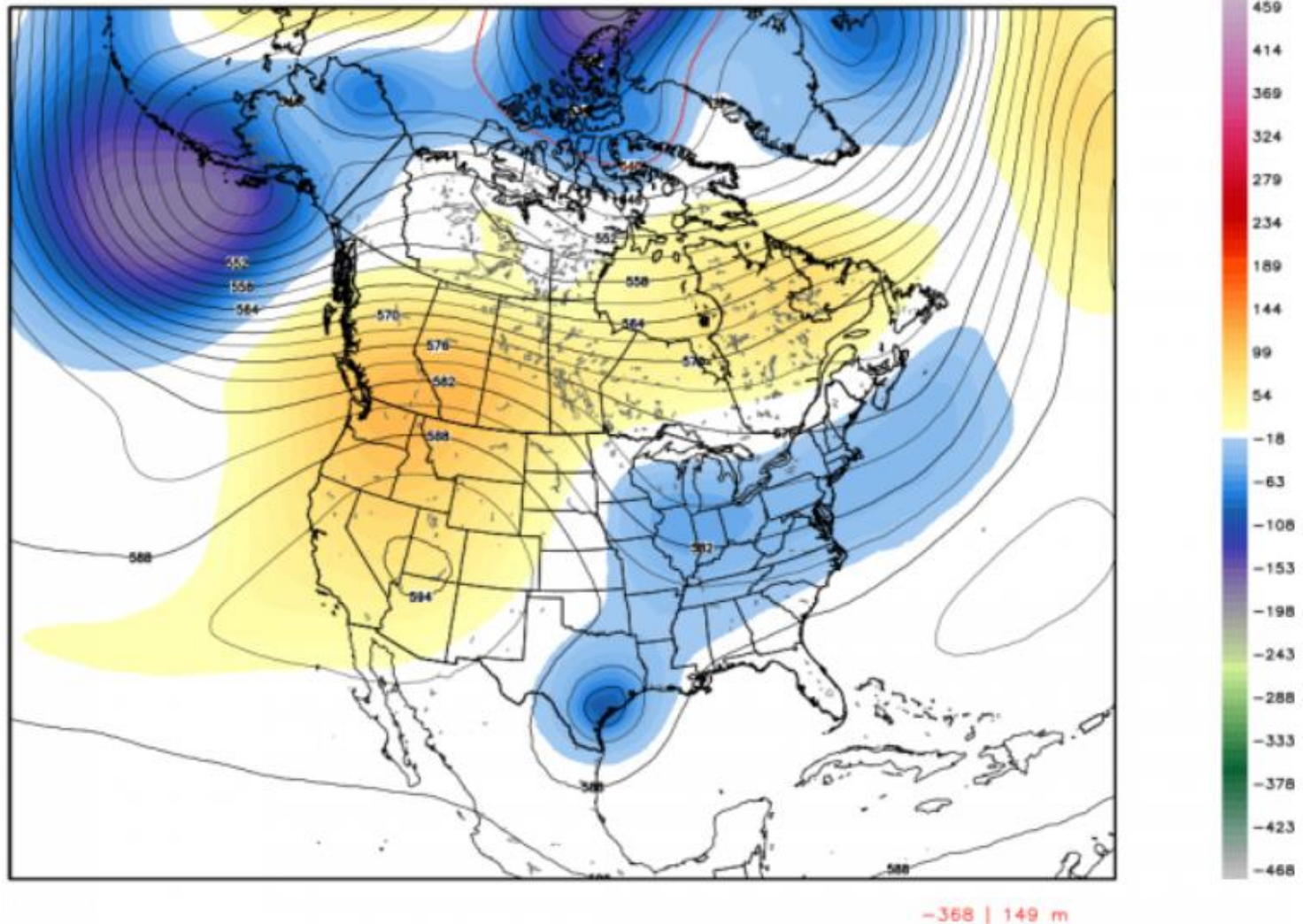
It's a fact: climate change made Hurricane Harvey more deadly

Michael E Mann

The notion that “Global Warming” caused Harvey to intensify is belied by the data:

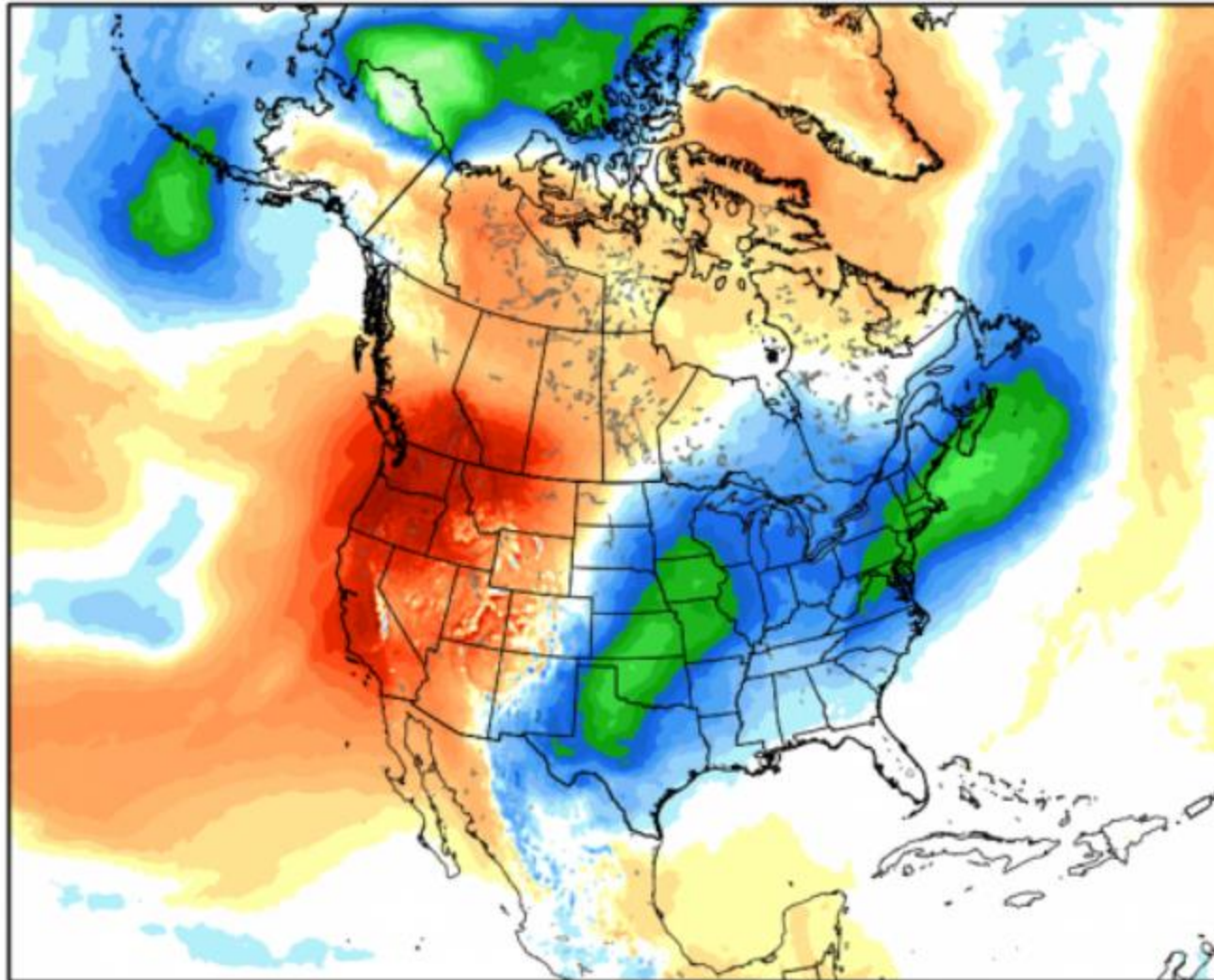
European (ECMWF) 500 millibar chart average of 26-31 August 2017 blue = cold

ECMWF 500 hPa Geopotential Height [dm] & Anomaly [m] fx: [120] hr --> Thu 12Z31AUG2017
INIT: 12Z26AUG2017 5-day Mean between 12Z26AUG2017 & 12Z31AUG2017 Day 0 - Day 5



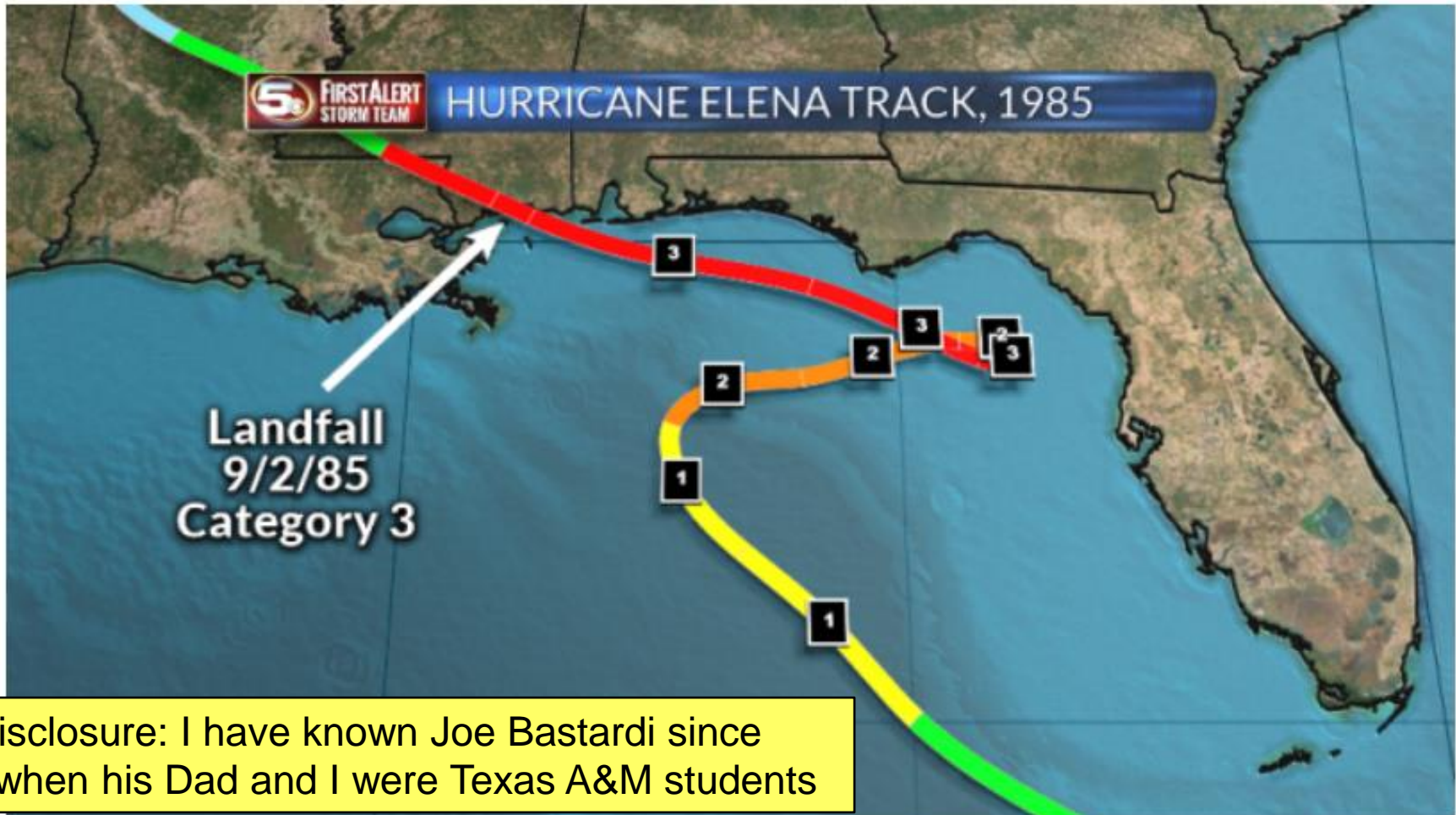
Notion that “Global Warming” caused Harvey to intensify is belied by the data:
European (ECMWF) 850 millibar Temp. chart average of 26-31 Aug 2017: blue = cold
850 mb ~ 5000 ft MSL

ECMWF 850 hPa Temperature Anomaly [°C] fx: [120] hr --> Thu 12Z31AUG2017 -8.2° | 7.9°C
INIT: 12Z26AUG2017 5-day Mean between 12Z26AUG2017 & 12Z31AUG2017 Day 0 - Day 5



Notion that “Global Warming” caused Harvey to stall over Texas is belied by the data: It’s happened before; this is Joe Bastardi describing Michael Mann’s errors.

So what apparently he is describing is a ridge position enhanced that means the storms moves slow. DO YOU UNDERSTAND THAT THIS IS THE OPPOSITE? THIS IS A MAJOR TROUGH TOO FAR SOUTH. The same thing that caught Elena in 1985 except it was over the gulf.



Full Disclosure: I have known Joe Bastardi since 1963 when his Dad and I were Texas A&M students

The notion that “Global Warming” caused Harvey to stall over Texas is belied by the data:

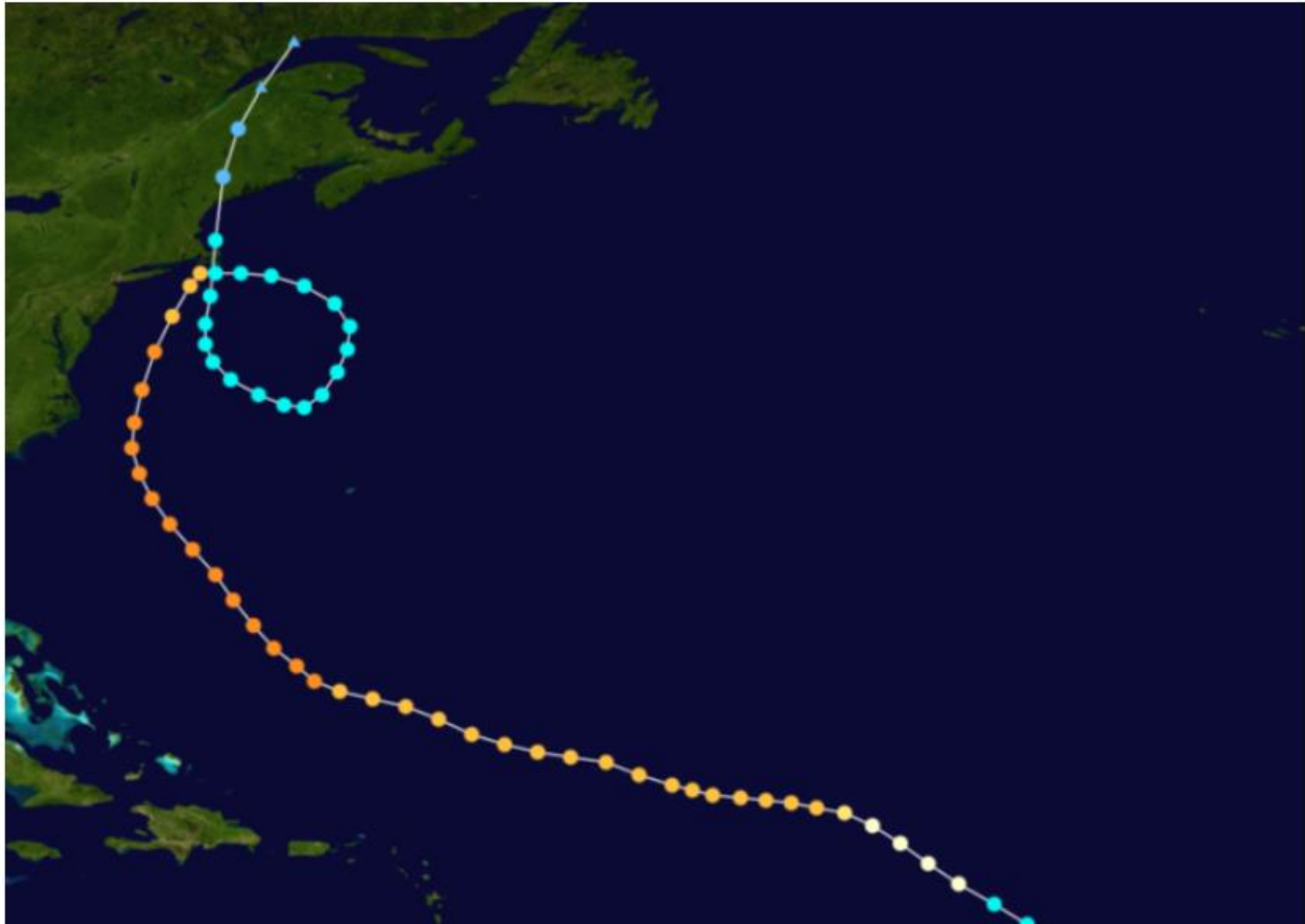
It has happened before:

It Caught Dennis in 1999.



Notion that “Global Warming” caused Harvey to stall over Texas is belied by the data:
It has happened before:

But Dennis was over the water before he came back. You want really crazy? Look at Esther in 1961.



Joe Bastardi is using Wikipedia to gather information to destroy Michael Mann's arguments
Quick Sidebar on Wikipedia and “Wikipedia's Climate Doctor” ahead

Added 5 Dec 2018:

<https://www.masterresource.org/houston-chronicle/houston-chronicle-harvey-alarmism/>

Houston Chronicle: Preaching Climate Alarmism Post Harvey

By Robert Bradley Jr. -- October 4, 2017

"Hometown hurricane expert and Ph.D. scientist Neil Frank, whose insight would normally be sought out (not just welcomed) by the Houston Chronicle, finds himself unable to even get a letter-to-the-editor published there (he tried twice several months ago, he communicated to me)."

Full Disclosure: I have had several post in Rob Bradley's blog, Master Resource, one coming 12 Sept 2019.

Houstonian **Charles Battig**, a diligent student of the climate debate, documented the bias at the hometown paper in a September 6 post at MasterResource: "[Politicizing Harvey in the Houston Chronicle](#)." He asked:

We will see if the Houston Chronicle will publish a rebuttal to CO2-driven Harvey as the emotionalism of climate alarmists' 'gotcha' subsides. Maybe even hometown hurricane expert Neil Frank will set them straight.

No, the paper hasn't sought out the loyal opposition. And I have a pile of articles (I take the print edition) from the last few weeks continuing the alarmist bias on this subject.

“The amount of rain in a tropical system is not related to the strength of the wind,” he explained, “it depends on the forward speed of motion.”

Before we had sophisticated numerical models to forecast the amount of rain a system would produce, we used a simple empirical equation that gave good results. Determine the forward speed of motion and divide it into 100.

If a tropical system is moving 10 mph, expect 10 inches of rain, 20 inches for a system moving 5 mph and if the forward speed is only 2 mph be prepared for 50 inches. That is exactly what happened in Harvey. The hurricane was moving around 2 mph for 3 days and a broad band of 40 to 50 inches of rain covered a large portion of southeast Texas and southwest Louisiana.

Frank then turns to hurricane history.

- *“Harvey has been labeled the wettest hurricane in history; however, the 50 inches recorded in the hurricane is not related to global warming. The reason for the heavy rain is the hurricane stalled for 3 days and unfortunately southeast Texas is where that happened.”*
- *“There are numerous examples of stalled tropical systems producing excessive rains. For example, in 1979 tropical storm Claudette stalled for 2 days and generated over 40 inches in a broad area south of downtown Houston. The 42 inches that fell in 24 hours in Alvin is the record for a 24 hour rain in the U.S. A year earlier, stalled tropical Storm Amelia produced 48 inches in central Texas. In 1967 slow moving Hurricane Beulah moved into in south Texas and generated between 30 and 40 inches inland from Brownsville.”*

Even with the system stalling, the greatest multi-day rainfall total as of 3 9 a.m. this Monday morning is just over 30 39.7 inches, with many locations recording over 20 inches. We should recall that Tropical Storm Claudette in 1979 (a much smaller and weaker system than Harvey) produced a 43 inch rainfall total in only 24 hours in Houston.

Was Harvey unprecedented in intensity?

In this case, we didn't have just a tropical storm like Claudette, but a major hurricane, which covered a much larger area with heavy rain. Roger Pielke Jr. has pointed out that the U.S. has had only four Category 4 (or stronger) hurricane strikes since 1970, but in about the same number of years preceding 1970 there were 14 strikes. So we can't say that we are experiencing more intense hurricanes in recent decades.

Going back even earlier, a Category 4 hurricane struck Galveston in 1900, killing between 6,000 and 12,000 people. That was the greatest natural disaster in U.S. history. And don't forget, we just went through an unprecedented length of time – almost 12 years – without a major hurricane (Cat 3 or stronger) making landfall in the U.S.

One of the most important findings of our studies is that there are long-term variations in catastrophic hurricane activities at millennial timescales.

The inter-millennial variability is superimposed on the **inter-decadal and interannual variability** that has been documented based on the instrumental hurricane record of this century (Gray, 1990; Landsea et al., 1996).

Data from Western Lake and adjacent lakes suggest that catastrophic hurricanes struck the Florida Panhandle much more frequently during the first millennium AD than the last 1000 years.

The notion that the current millennium is relatively quiescent in catastrophic hurricane activities has important scientific and practical implications.

If future global climate change results in a return to the hyperactive hurricane regime typical of the first millennium AD, the Gulf of Mexico coast would experience a dramatic increase in the risk of catastrophic hurricane landfalls.

Understanding the climatological mechanisms controlling such long-term variations in hurricane activities is one of the most challenging tasks for climate scientists and global change researchers.


Paragraphing and Bolding Added

<http://www.nationalpost.com/opinion/columnists/story.html?id=62e1c98e-01ed-4c55-bf3d-5078af9cb409>

By Lawrence Solomon

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OPINION

Wikipedia's climate doctor

How Wikipedia's green doctor, William Connolley, rewrote 5,428 climate articles

Climategate Emails describe how a small band of climatologists cooked the books to make the last century seem dangerously warm.

The emails also describe how the band plotted to rewrite history as well as science, particularly by eliminating the Medieval Warm Period, a 400 year period that began around 1000 AD.

The Climategate Emails reveal something else, too: the enlistment of the most widely read source of information in the world — Wikipedia — in the wholesale rewriting of this history.

These can be accessed on the web page,
<https://casf.me/wp-content/uploads/2017/04/Wikipedias-Climate-Doctor-by-Lawrence-Soloman.pdf>

Wikipedia's Climate Doctor

by Lawrence Solomon

Originally published 19 Dec 2009, National Post ·

The Climategate Emails describe how a small band of climatologists cooked the books to make the last century seem dangerously warm.

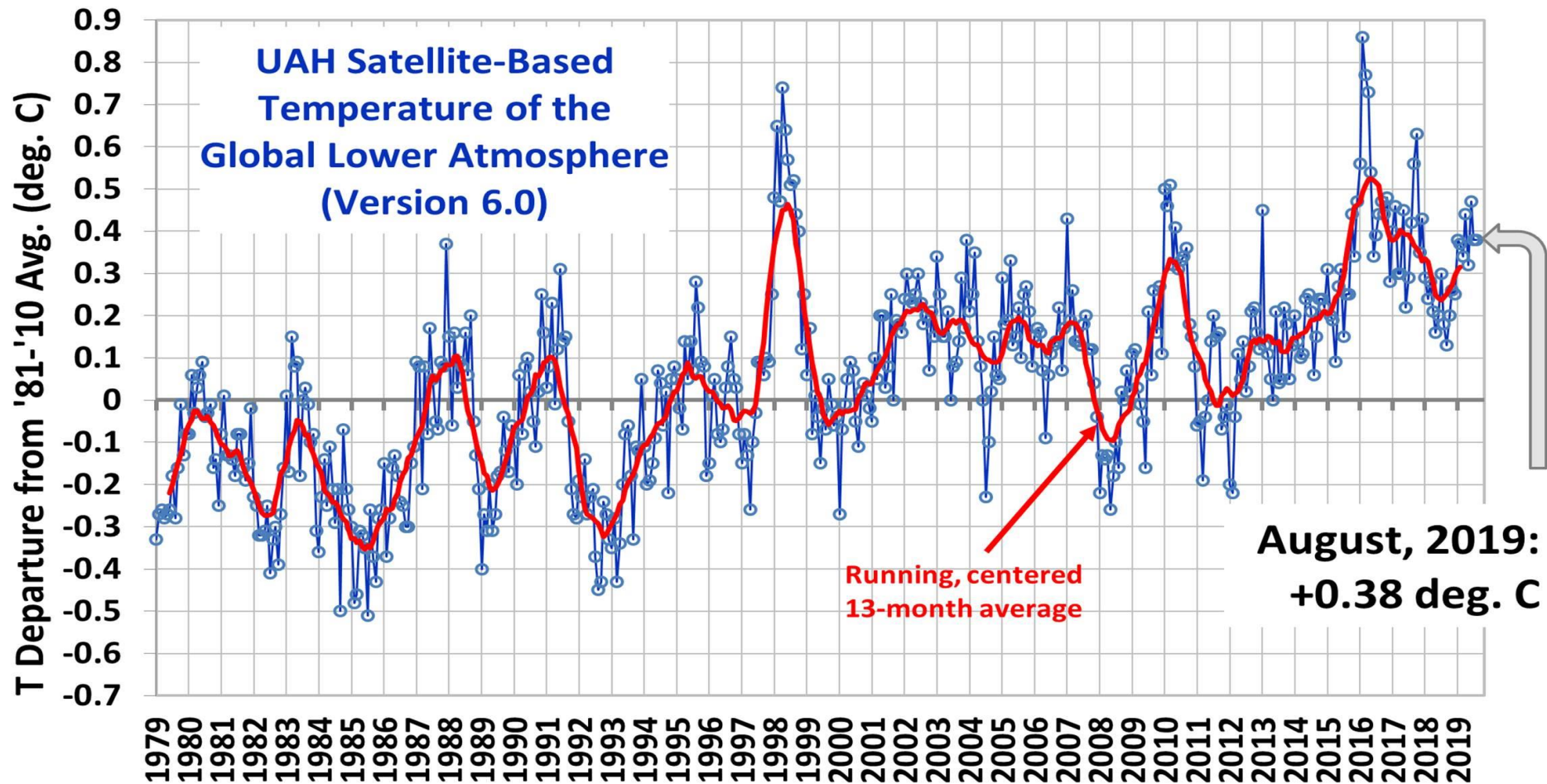
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The Medieval Warm Period, which followed the meanness and cold of the Dark Ages, was a great time in human history -- it allowed humans around the world to bask in a glorious warmth that vastly improved agriculture, increased life spans and otherwise bettered the human condition.

Another point about Harvey and Greenhouse Warming

[http://www.drroyspencer.com/wpcontent/uploads/UAH LT 1979 thru August 2019 v6.jpg](http://www.drroyspencer.com/wpcontent/uploads/UAH_LT_1979_thru_August_2019_v6.jpg)



X-Axis: Time since 1979 Y-Axis Temperature departure, blue, plotted every month

If greenhouse warming effect is so strong, why didn't Hurricanes of Harvey's, Irma's, Maria's, Dorian's strengths form in 2016?

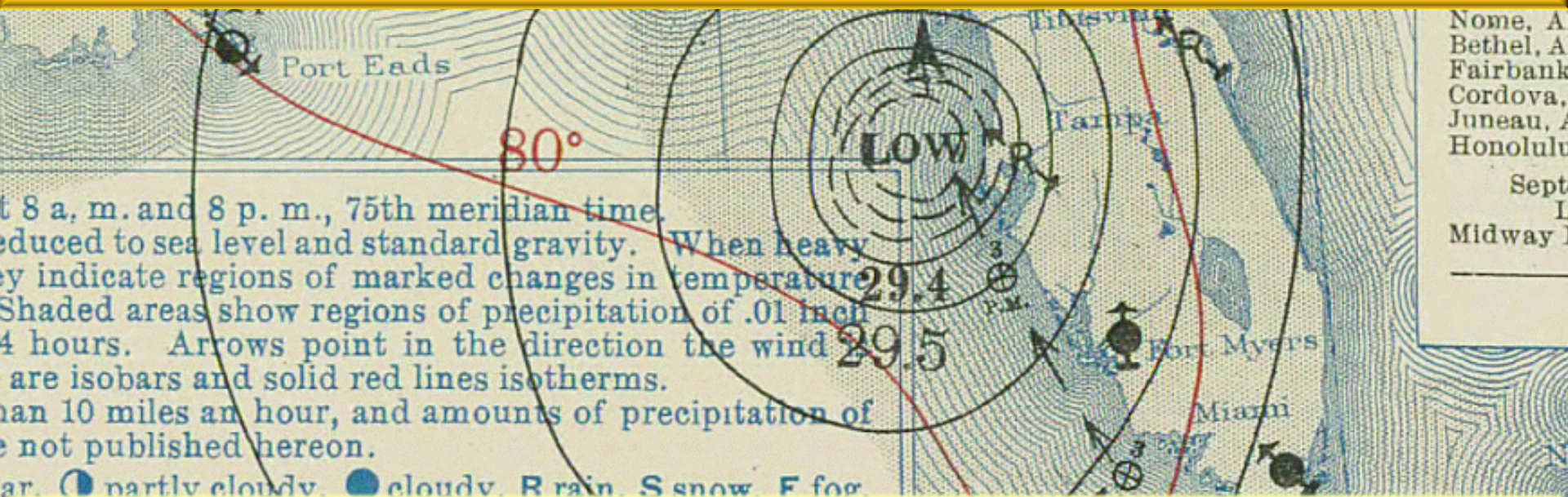
On the notion expressed in the CNN town hall

“Hurricanes recently are stronger than ever, and getting more numerous over time.”

We’ve heard this before....Let’s look at some data:

Climate Short

In the days after Superstorm Sandy
this claim: <tropical> “Storms Today are
Different”



Bob Endlich

bendlich@msn.com

12 Sep 2017

Weather, Climate and Climate Change—What the Data Say

“Storms Today Are Different”

"Because of sea level rise, the storm surge was much more intense, much higher than it would have been in a non-climate-changed world."

Jane Lubchenco, NOAA Chief

13 December 2012

From a news story on Hurricane, then post-tropical storm, Sandy, in late 2012:

Storms today are different," says Jane Lubchenco, who heads the National Oceanic and Atmospheric Administration, which includes the National Weather Service.

"Because of sea level rise, the storm surge was much more intense, much higher than it would have been in a non-climate changed world."

...NPR, *Morning Edition*, Thursday, 13 Dec 2012

Let's examine this claim in light of some pertinent data.



Storm Surge Map for Sandy

NOAA: Surge = ~14 Ft
near NYC

<CO₂ ~ 394 PPM>

Lat: 42.8760 Lon: -61.3916

Legend

Height above NGVD-29 (feet)

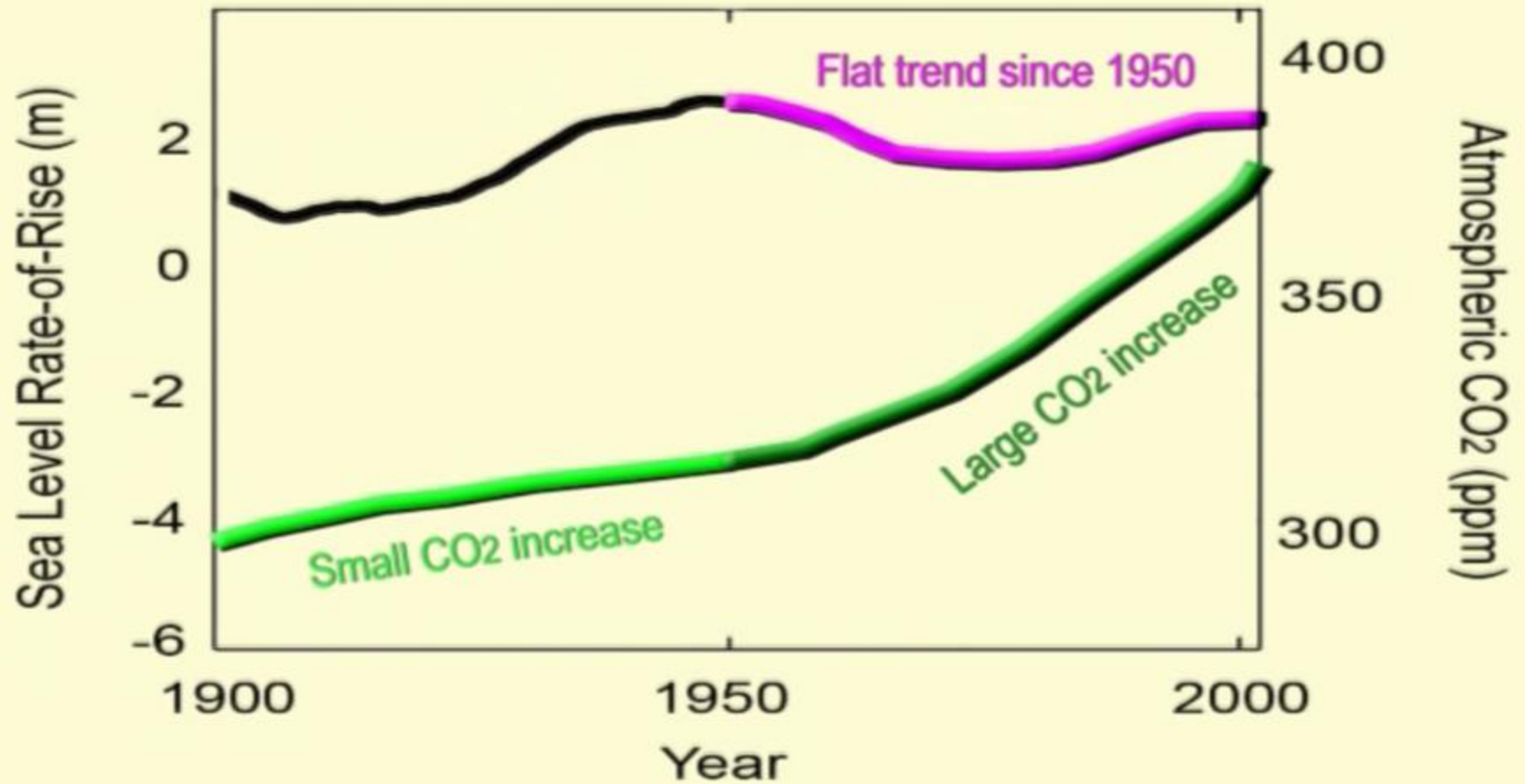
0 to < 2	11 to < 13	23 to < 25
2 to < 3	13 to < 15	25 to < 27
3 to < 5	15 to < 17	27 to < 29
5 to < 7	17 to < 19	29 to < 36
7 to < 9	19 to < 21	
9 to < 11	21 to < 23	

Disclaimer



Historical Data:
NHC this storm
NHC all storms
MDL

Observed Data: No 20th Century Acceleration of Sea Level Rise, despite the large increase in atmospheric <CO₂>



Church, J.A., White, N.J., Coleman, R., Lambert, K. and Mitrovica, J.X. 2004, Estimates of the regional distribution of sea level rise over the 1950-2000 period. *Journal of Climate* 17: 2609-2625.

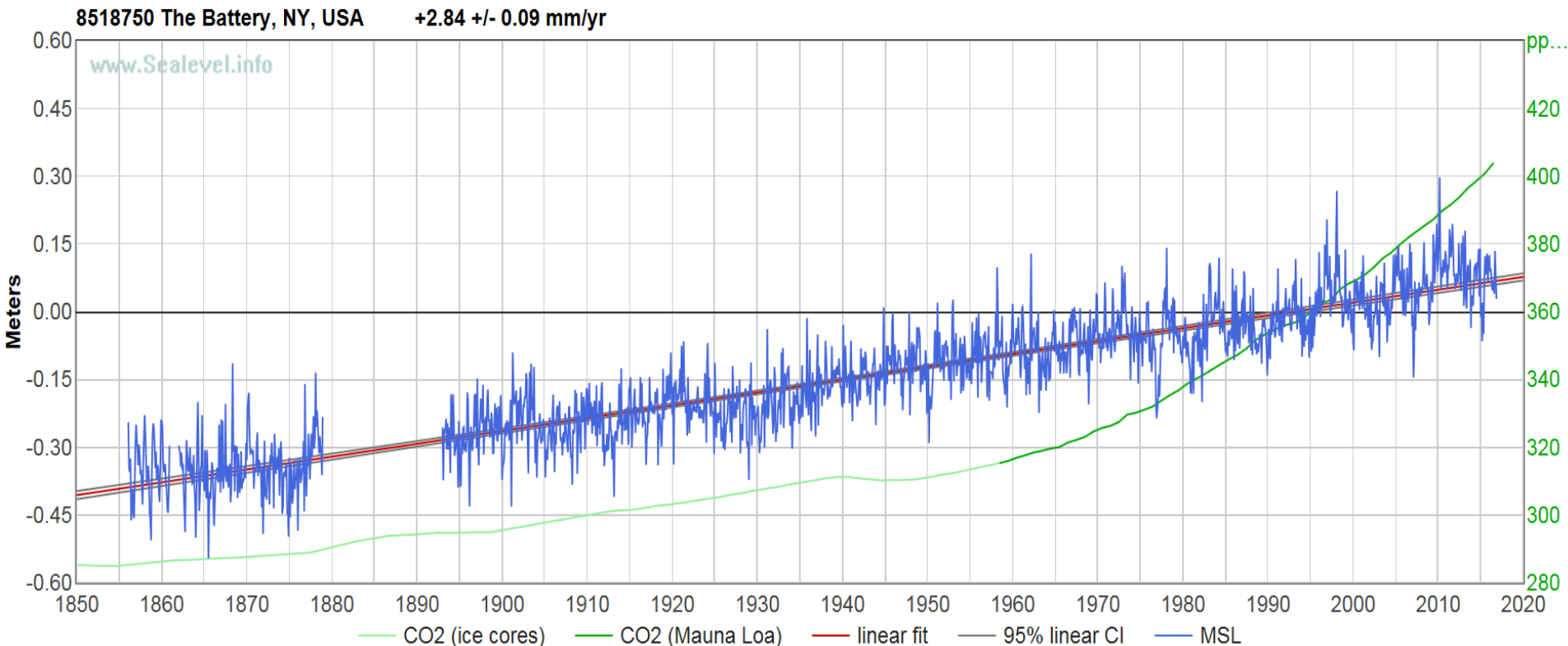
Sea Level Rate of Rise from one of the longest tide gage station records in the USA, The Battery, New York City, close to where Sandy came ashore.

http://www.sealevel.info/MSL_graph.php?id=Battery

The mean rate of Sea Level Rise is 0.93 ft in 100 years.

[Sealevel.info](http://www.sealevel.info) → [Data](#) → 8518750

Mean Sea Level at The Battery, NY, USA (NOAA [8518750](#), 960-121, PSMSL [12](#))



X-Axis: Time, years.

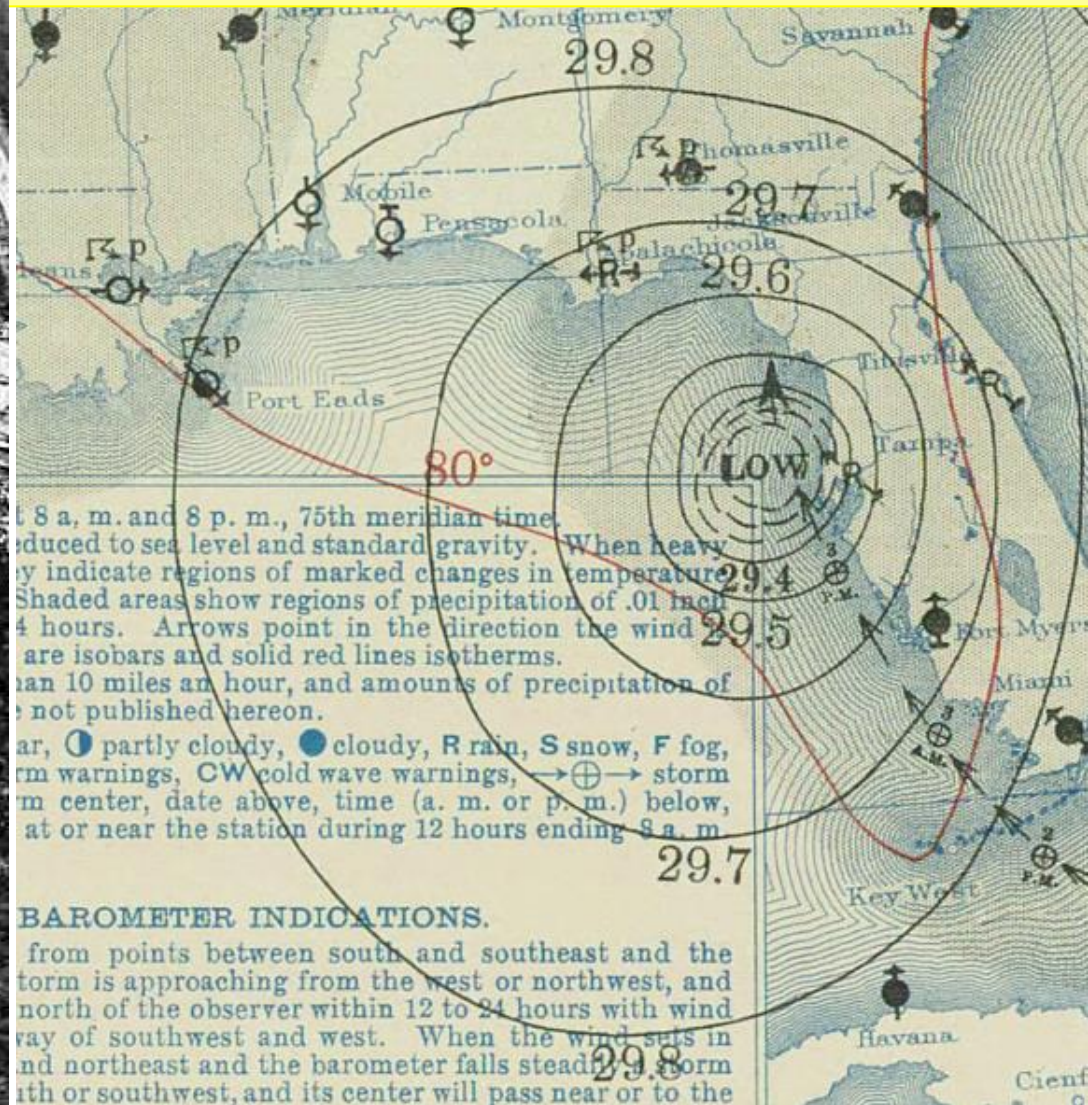
Y-Axis (Left) Sea Level Ht, meters. Y-Axis (Right) Atmospheric <CO2>

1935 Labor Day Hurricane Storm Surge over 18 ft

...the compact and intense hurricane caused extreme damage in the upper Florida Keys, as a storm surge of approximately 18 to 20 feet swept over the low-lying islands...

<CO2~306 PPM>

http://en.wikipedia.org/wiki/1935_Labor_Day_hurricane



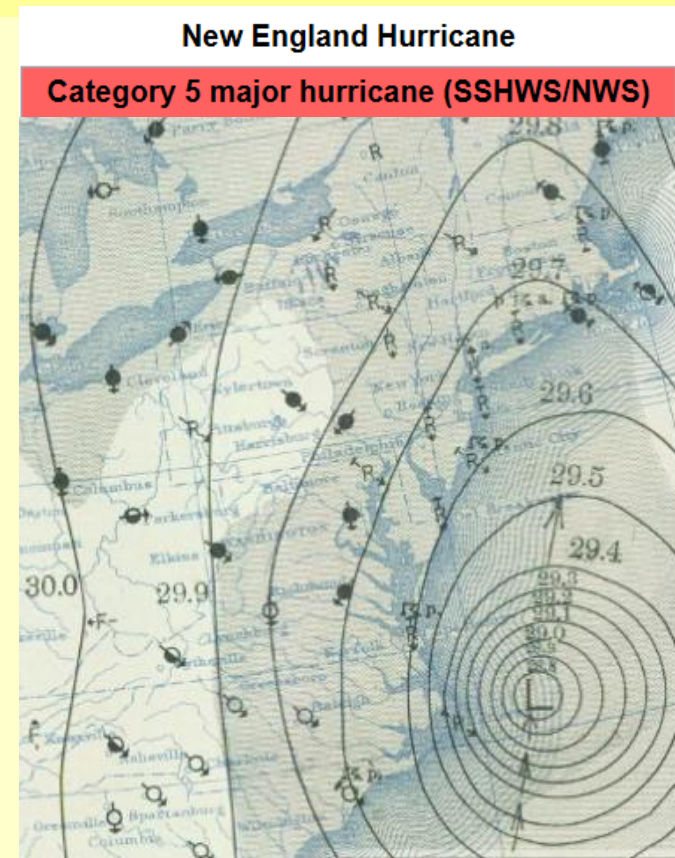
1938: “Long Island Express” Hurricane’s Storm Surge was 18 to 25 Ft

http://en.wikipedia.org/wiki/1938_New_England_hurricane

The **1938 New England Hurricane** (also called the **Great New England Hurricane** and **Long Island Express**)... one of the deadliest and most destructive [tropical cyclones](#) to strike [Long Island, New York](#) and [New England](#).

...the hurricane killed 682 people,^[2] damaged or destroyed more than 57,000 homes, and caused property losses estimated at US\$306 million (\$4.7 billion in 2017).^[3]

Damaged trees and buildings were still seen in the affected areas as late as 1951.^[4]



The storm surge hit [Westerly, Rhode Island](#) at 3:50 pm EDT, resulting in 100 deaths there alone.^[22]

...tide was even higher than usual because of the [Autumnal Equinox](#) and [full moon](#). ...storm tides of 14 to 18 feet (5 m) across most the Long Island and Connecticut coast, **[with 18- to 25-foot \(8 m\) tides](#)** from [New London](#) east to [Cape Cod](#).

MANY DEAD IN HURRICANE

Bodies Cast On L. I. Shore; Subways Stop; Hotels Dark

EXTRA

Scores of bodies have been washed ashore from the ocean between Center Moriches and Sag Harbor, L. I., following today's storm, Nassau County Police Headquarters here tonight announced they had been advised by police in different Suffolk County communities.

The persons reported to have been drowned are said to have been occupants of cottages along a fifty-mile stretch of shoreland between the Montauk Highway and the Atlantic Ocean and stretching from Center Moriches to Westhampton.

Six bodies, victims of yesterday's devastating hurricane, were washed ashore last night at Westhampton, L. I., bringing the total death toll in all the affected area to 25.

In Westhampton, thirty persons were missing in the ruins of 160 Summer bungalows, which had been swept away by the gale. The bodies recovered were those of four men and two women.

After the Independent Subway System and the Manhattan-Hudson tubes had been tied up by light and power failure and by flooded tracks, hundreds of upper Broadway hotels, stores and apartment houses were plunged in darkness by the flooding of Edison plants, supplying the area with alternating current.

(Earlier details on Page 2. Complete account of hurricane havoc in later editions of today's News.)

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(By Associated Press)

The hurricane came! Here a Nassau County cop employs rubber boat to rescue children from rain-flooded home at Williston Park, Nassau.

2 Full Pages of Hurricane Fotos in Center Fold.



We've examined Jane Lubchenco's claim that, because of climate-changed sea level rise, the surge for superstorm (post-tropical storm) Sandy was greater than for previous storms.

We found increasing atmospheric <CO2> has NOT increased the rate at which sea level rises.

NOAA's data showed a 14 ft storm surge for Sandy at New York.

We found the storm surge for the 1935 Labor Day Hurricane in Florida was 18 to 20 ft.

We found the storm surge for the 1838 "Long Island Express" hurricane was 18 to 25 ft in coastal Massachusetts.

We found that Jane Lubchenco's claims are Incorrect or False.

“Storms Today Are Different”

"Because of sea level rise, the storm surge was much more intense, much higher than it would have been in a non-climate changed world."

Jane Lubchenco, former NOAA Chief

**Was she speaking out of ignorance of the facts,
or for political reasons?**