

Storm "Chasing"

THRU
OVERNIGHT

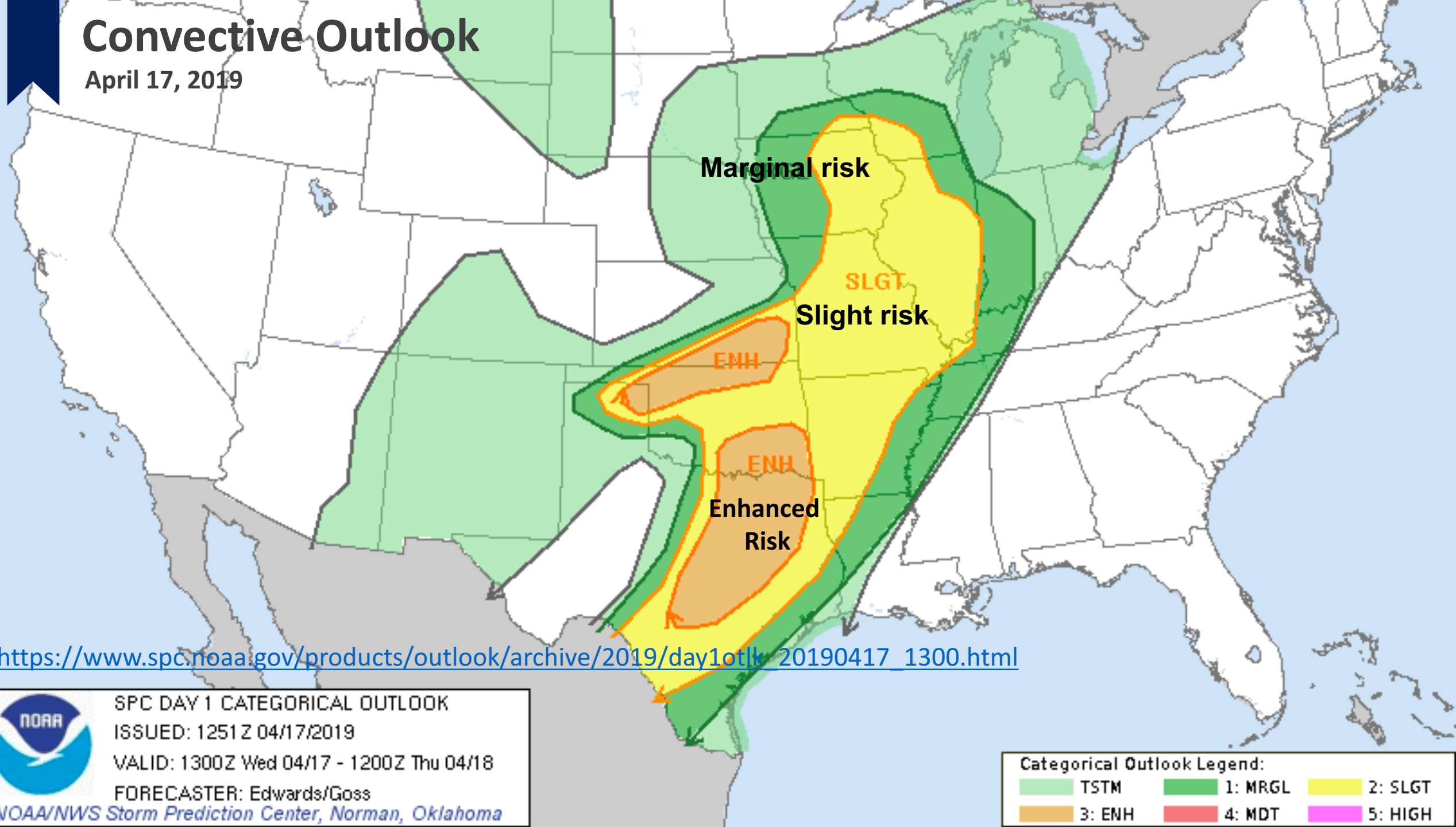
THU

FRI

Storm of the Week
ATMS 103 Hurricanes And Thunderstorms: Their Science And Impact
April, 19 2019

Convective Outlook

April 17, 2019



https://www.spc.noaa.gov/products/outlook/archive/2019/day1otlk_20190417_1300.html



SPC DAY 1 CATEGORICAL OUTLOOK

ISSUED: 1251 Z 04/17/2019

VALID: 1300Z Wed 04/17 - 1200Z Thu 04/18

FORECASTER: Edwards/Goss

NOAA/NWS Storm Prediction Center, Norman, Oklahoma

Categorical Outlook Legend:

TSTM	1: MRGL	2: SLGT
3: ENH	4: MDT	5: HIGH

Convective Outlook

April 17, 2019

enhanced risk

1 2 3 4 5

hazards

Scattered
Damaging
Wind Gusts



Scattered
Very Large
Hail

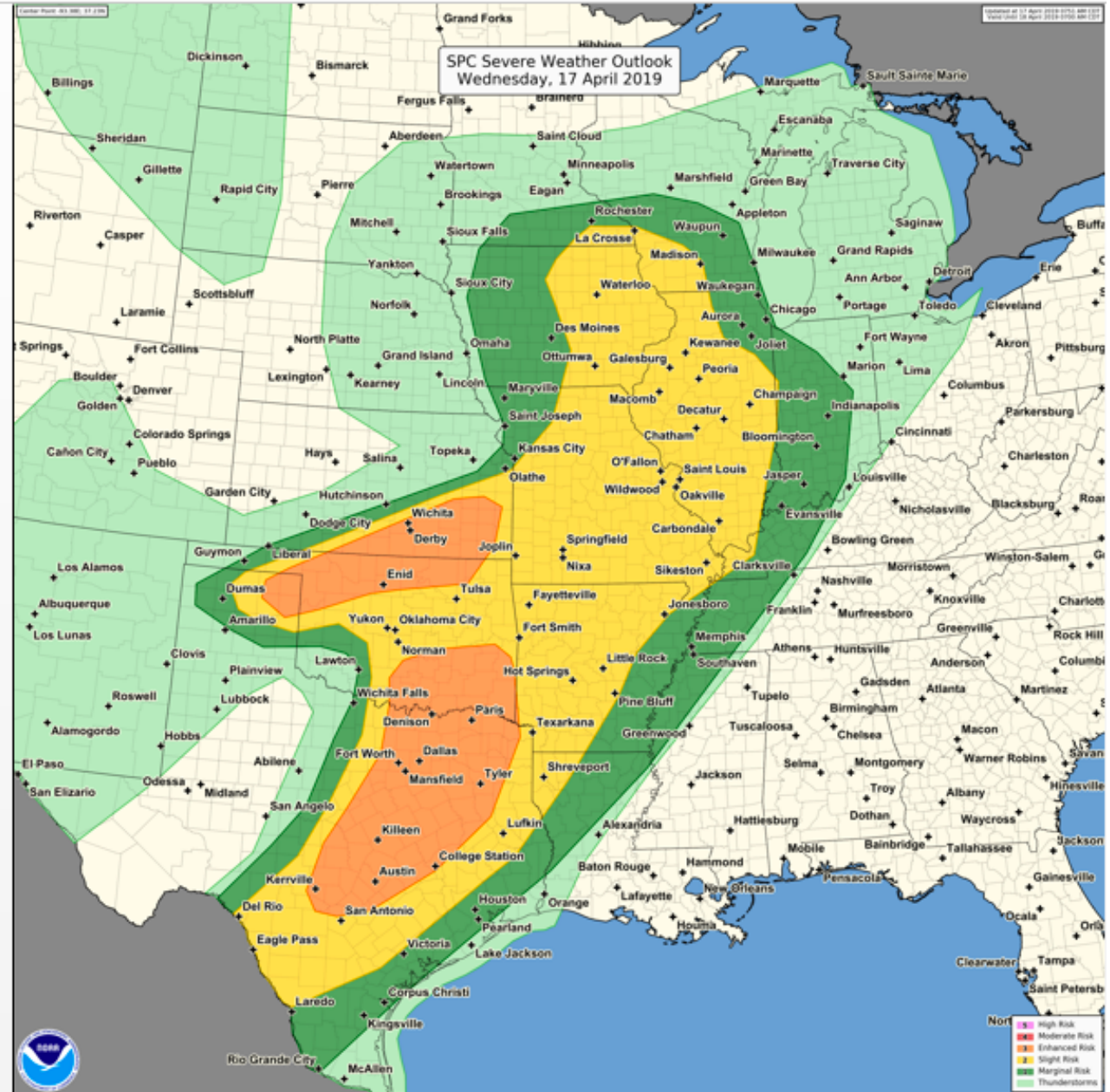


Isolated
Tornadoes



some cities in risk

Dallas, TX | Austin, TX | Fort Worth, TX
Wichita, KS | Enid, OK



Thunderstorm Ingredients

1 A suitable lapse rate

CAPE & CIN

2 Adequate low-level moisture

Relative humidity & Dew Point

3 Trigger that lifts the low-level air

Thunderstorm Ingredients

April 17, 2019

CAPE

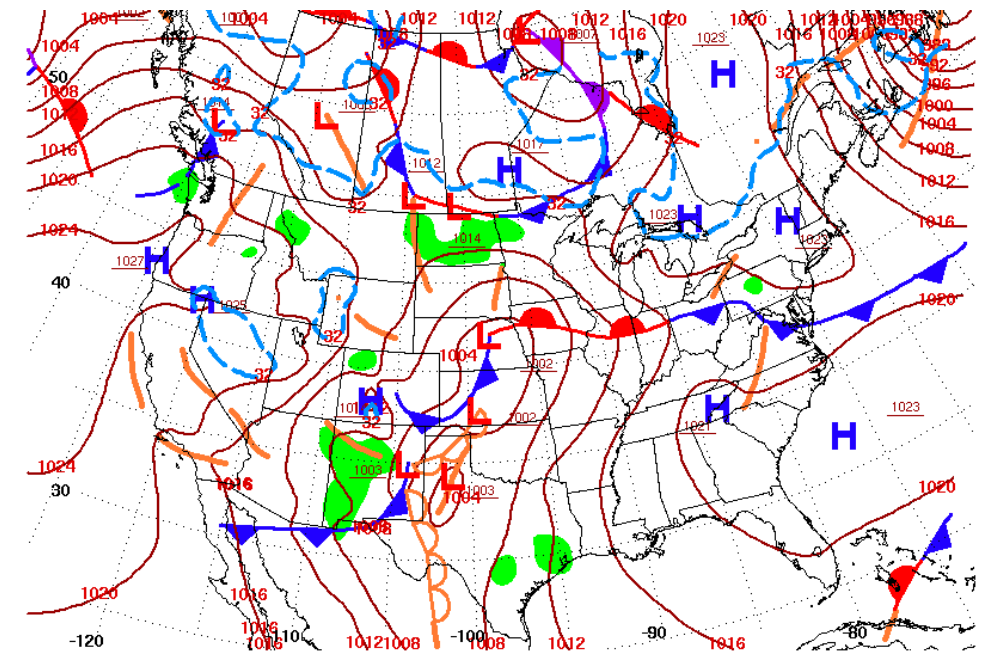
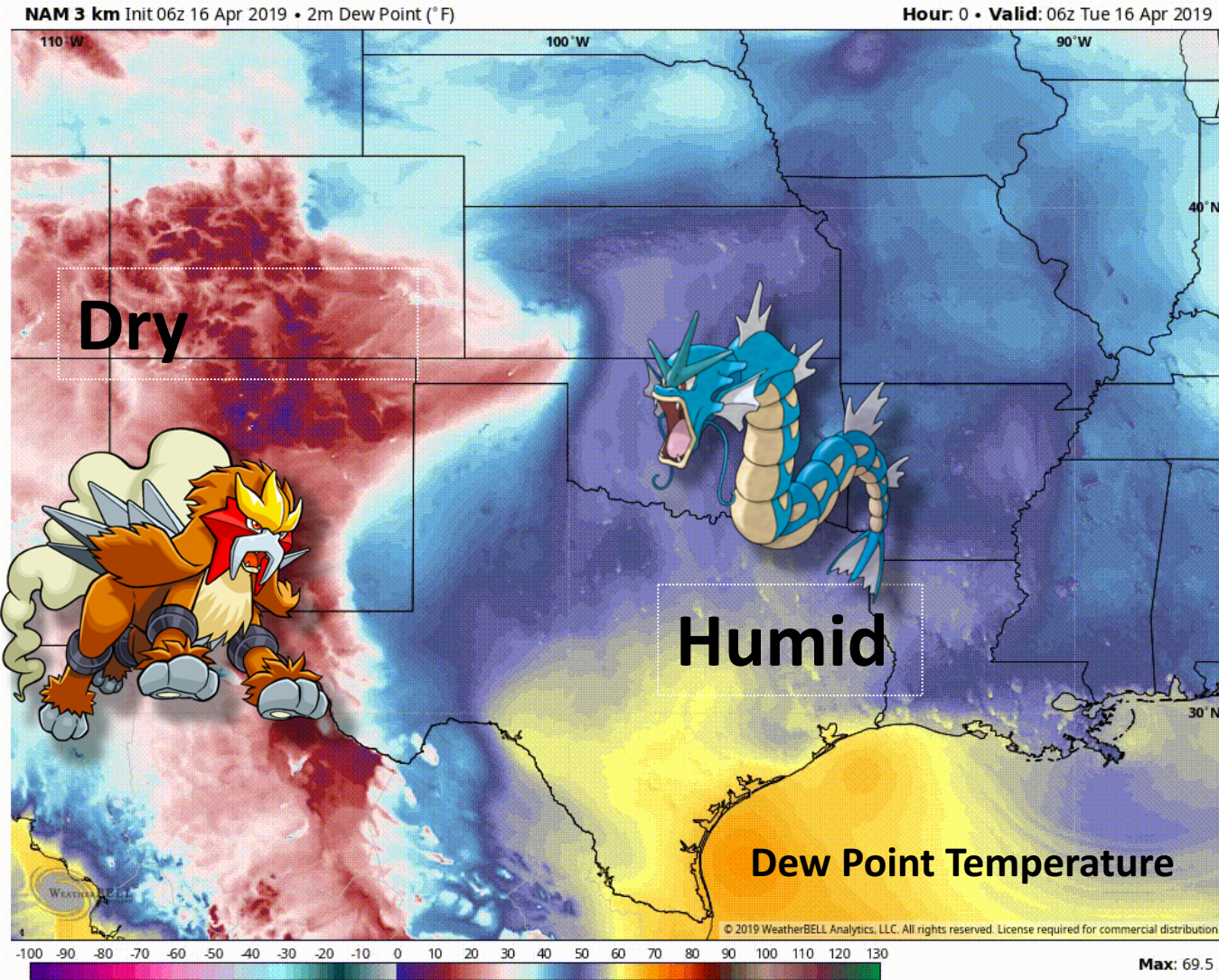
<https://earth.nullschool.net/#2019/04/18/0000Z/wind/isobaric/850hPa/overlay=cape/grid=on/orthographic=-100.04,33.69,1040/loc=-93.968,38.920>

Low level moisture: RH

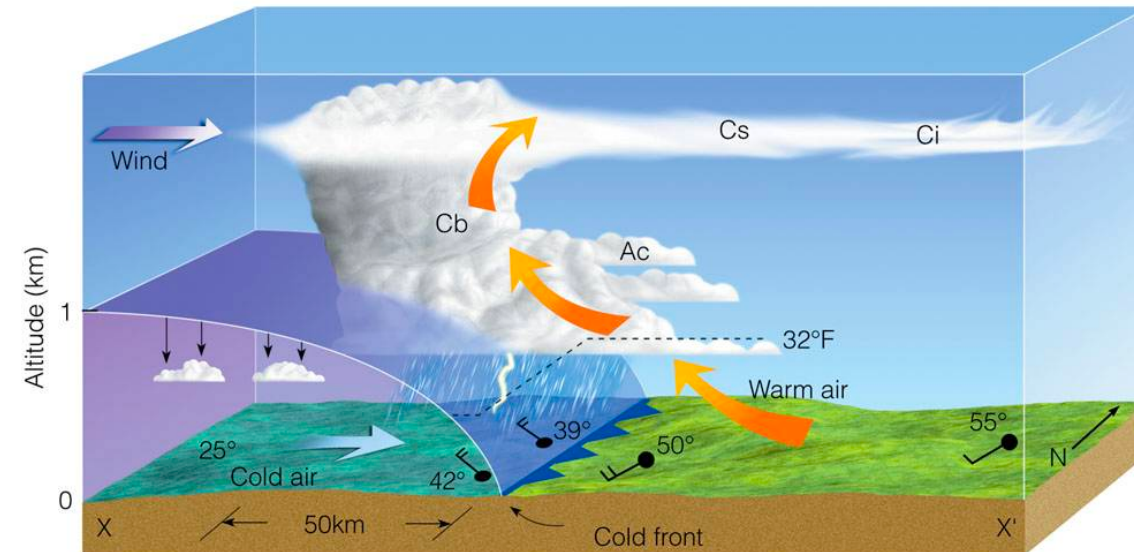
https://earth.nullschool.net/#2019/04/18/0000Z/wind/isobaric/850hPa/overlay=relative_humidity/grid=on/orthographic=-98.21,33.97,953/loc=-95.177,33.514

Thunderstorm Ingredients

April 16, 2019-April 17, 2019



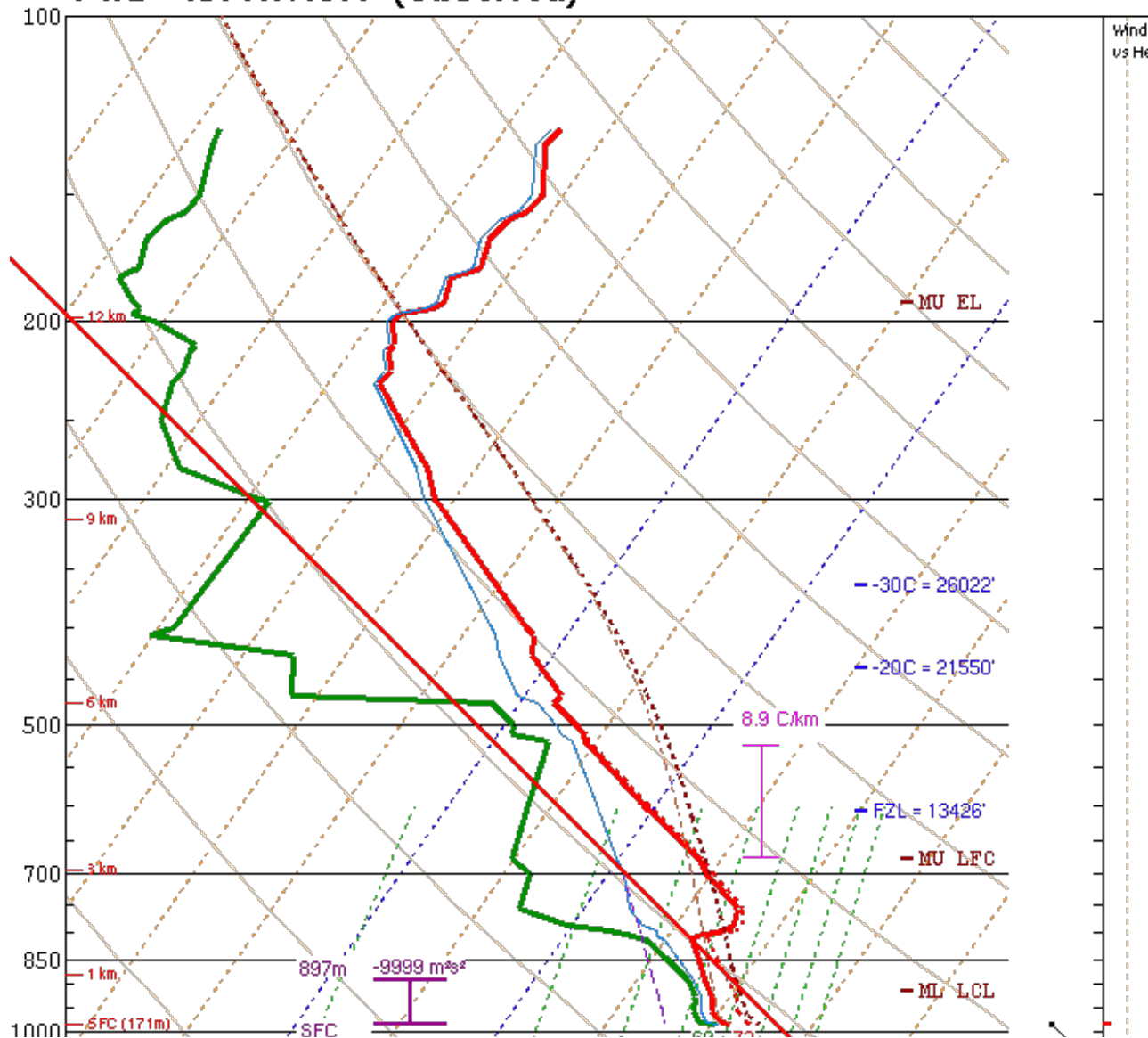
Surface Weather Map at 7:00 A.M. E.S.T.



Thunderstorm Ingredients

April 17, 2019

FWD 190417/1800 (Observed)



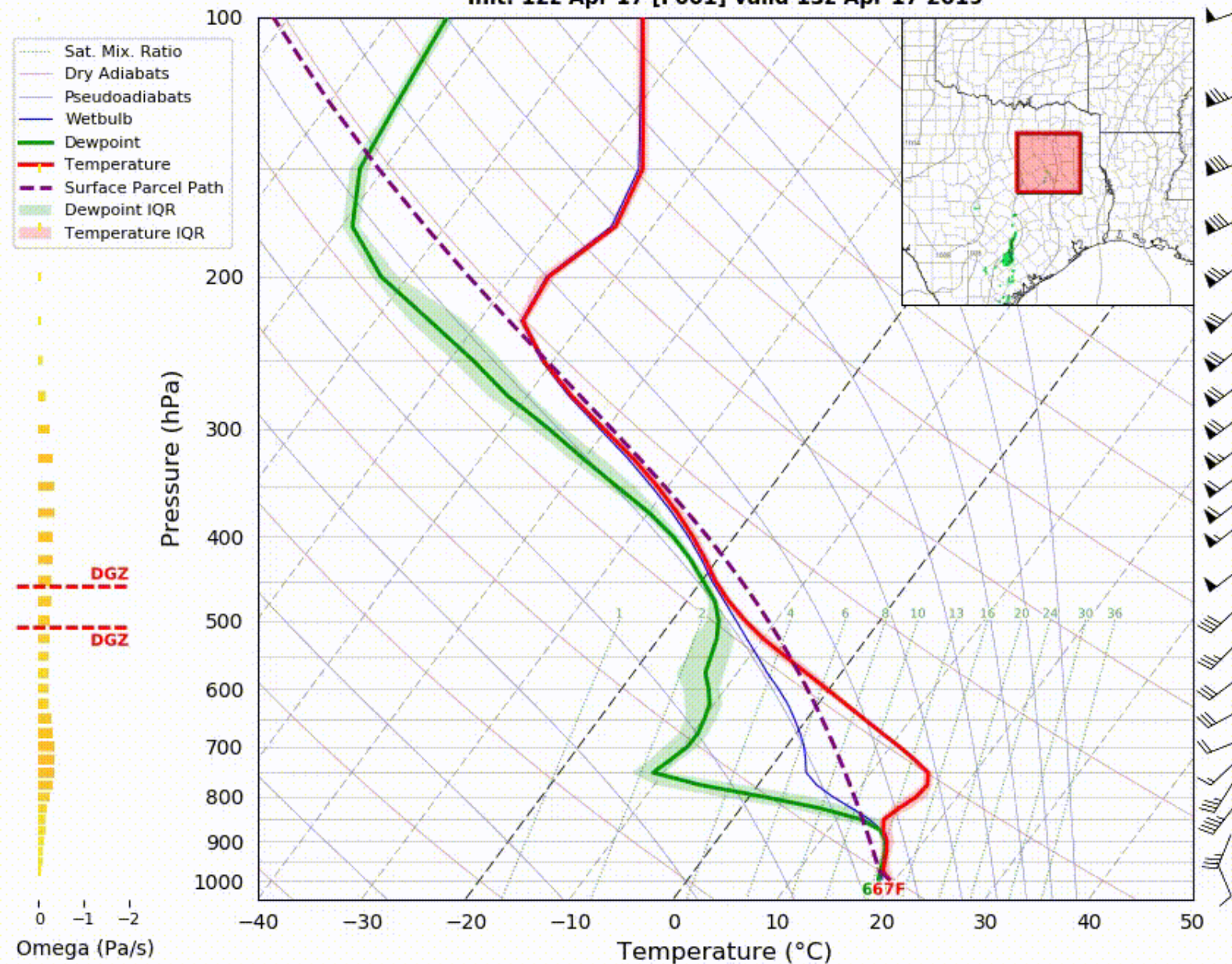
PARCEL	CAPE	CINH	LCL	LI	LFC	EL
SURFACE	2495	-61	201m	-8	3210m	40004'
MIXED LAYER	1570	-156	685m	-6	3640m	38542'
FCST SURFACE	2496	-59	1202m	-8	3210m	40004'
MU (986 mb)	2495	-61	201m	-8	3210m	40004'
PW = 1.26 in 3CAPE = 1 J/kg WBZ = 10511' WNDG = -0.0						
K = 23 DCAPE = 639 J/kg FZL = 13426' ESP = 0.0						
MidRH = 41% DownT = 61 F ConvT = 93F MMP = 0.00						
LowRH = 87% MeanW = 13.5 g/kg MaxT = 82F NCAPE = 0.28						
SigSevere = M						
Sfc-3km Agl Lapse Rate = 4.3 C/km						
3-6km Agl Lapse Rate = 8.6 C/km						
850-500mb Lapse Rate = 6.4 C/km						
700-500mb Lapse Rate = 8.5 C/km						
Supercell = 0.0						
Left Supercell = 0.0						
STP (eff layer) = 0.0						
STP (fix layer) = 0.0						
Sig Hail = 0.6						

Stormwx1 @stormwx1 Apr 17 Looking to be an active evening across parts of Oklahoma and Texas. 18z special launch at #FWD showing surface-based **CAPE values near ~2500 J/kg** with **very steep lapse rates (8.5 C/km 700-500 mb)** yielding to the threat of giant hail. Storms develop by early evening. #okwx #txwx

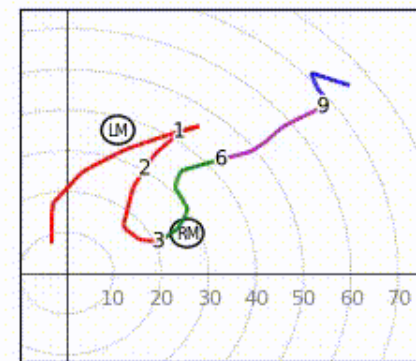
Thunderstorm Ingredients

April 17, 2019


HRRR Sounding Area-Average: [31.25°N—33.03°N, 97.06°W—94.78°W]
Init: 12z Apr 17 [F001] valid 13z Apr 17 2019

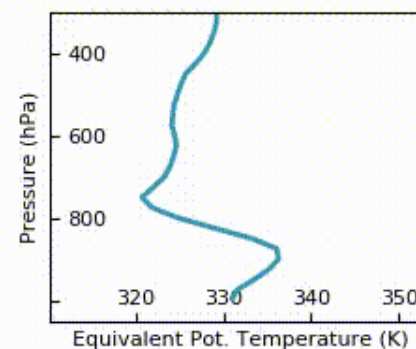


TROPICALTIDBITS.COM



SRH 0-1km: 289 m^2s^{-2}
SRH 0-3km: 167 m^2s^{-2}
SBCAPE: 316 J/kg
MUCAPE: 1172 J/kg
CIN: -530 J/kg
DCAPE: 539 J/kg
SHR 200-850mb: 33 kt
SHR 500-850mb: 9 kt
RH 300-850mb: 55 %
PWAT: 1.29 in

CAPE 
CIN disappears this evening



Storm Reports

April 17, 2019

SPC Filtered Storm Reports for 04/17/19

Map updated at 1724Z on 04/18/19



TORNADO REPORTS.. (9)
WIND REPORTS/HI..... (61/0)
HAIL REPORTS/LG..... (86/8)
TOTAL REPORTS..... (156)

National Weather Service
Storm Prediction Center Norman, Oklahoma

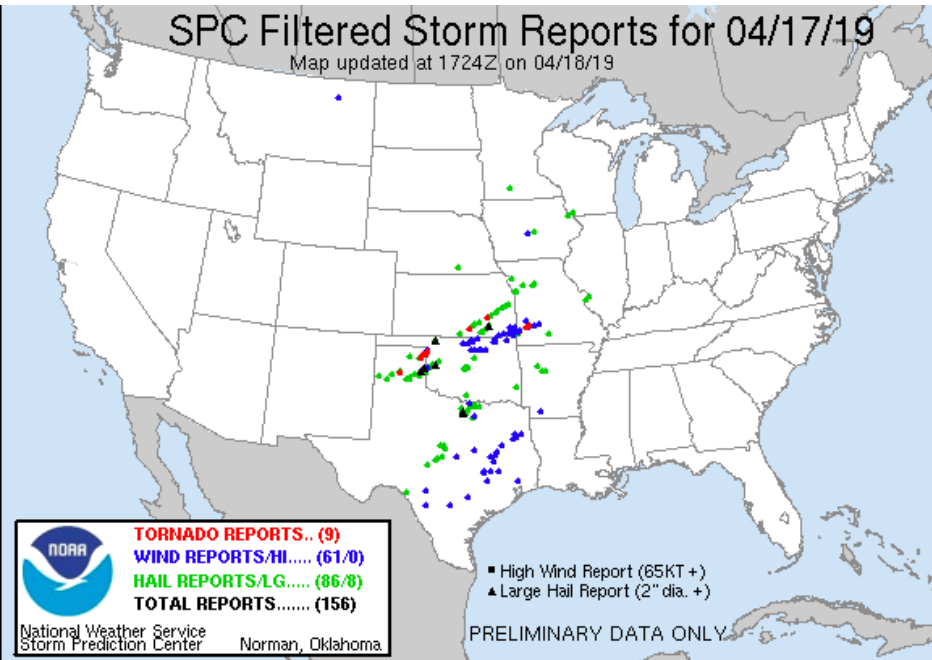
- High Wind Report (65KT +)
- ▲ Large Hail Report (2" dia. +)

PRELIMINARY DATA ONLY

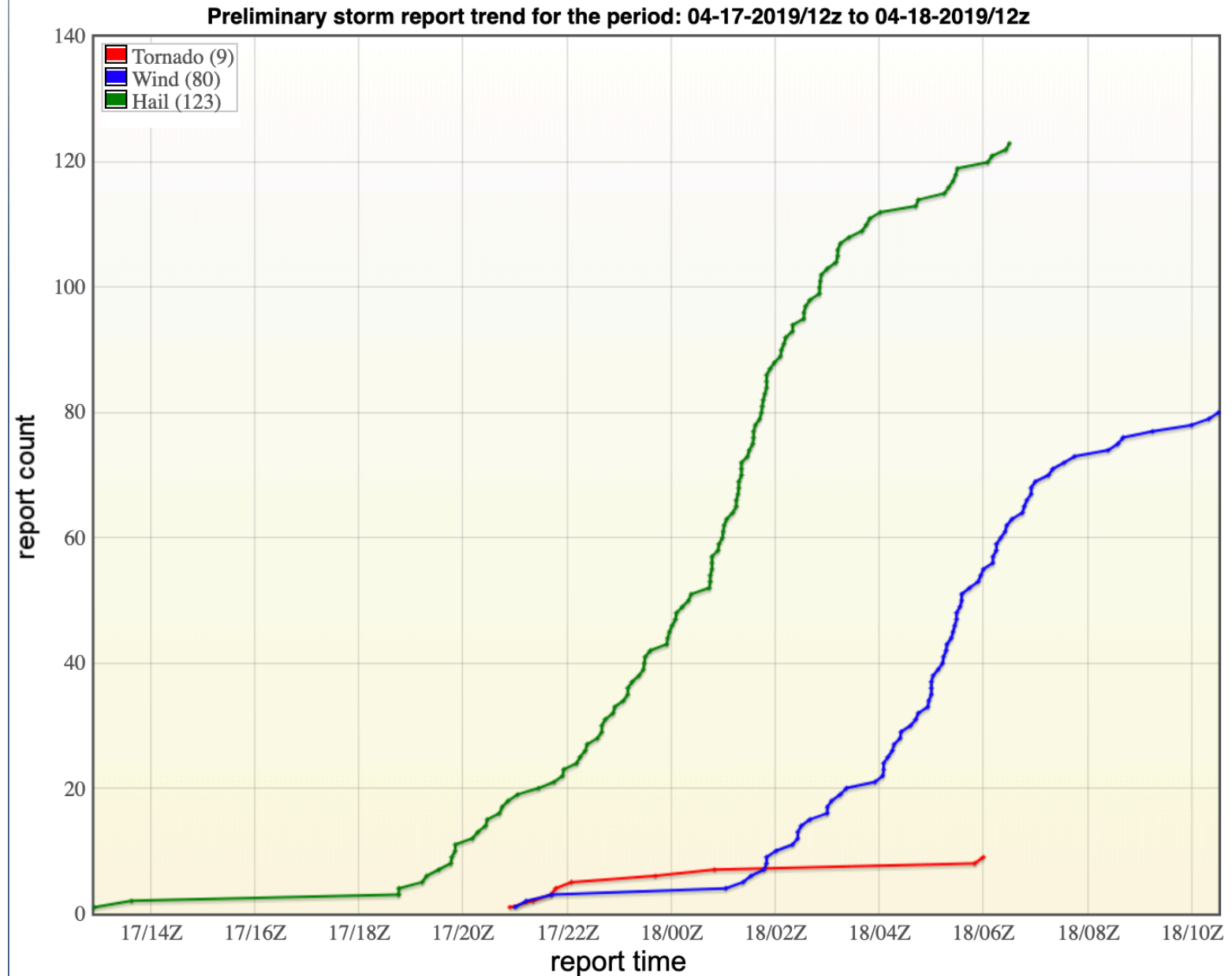
<https://www.spc.noaa.gov/exper/archive/event.php?date=20190417>

Storm Reports

April 17, 2019



Note:
Central Time UTC -6:00-5:00



Most storm reports: late in the afternoon and during the night in local time

Thunderstorms

April 17, 2019

Thunderstorms are bubbling up over the south central US as seen by GOES Satellite

[Paul Griffin](#) @PaulGriffinWX

WOW! GOES Satellite loop of the squall line of storms in west/central TX. [#txwx](#)

17 Apr 2019 23:11 UTC GOES-East GEOCOLOR



Thunderstorms

April 17, 2019

Wichita Falls, Texas

[Kyle Tevlin @TevlinKyle 21h21 hours ago](#) More
Awesome! East of Wichita Falls [#wx @TxStormChasers](#)

Thunderstorms

April 17, 2019

Chico, Texas

[Renee Guthrie @rguthrie0209](#) Apr

Insane clouds!!! **Storm Chaser** Kyle Guthrie near Chico, Texas 7:50pm [#txwx](#) [#texomawx](#) [#dfwwx](#)

Thunderstorms

April 17, 2019

Hammon, Oklahoma



[Morgan Schneider @mschneider](#) wx 22h22 hours ago

Looking west in Hammon, OK. [#okwx](#) [@NWSNorman](#) [@ounwcm](#)

Thunderstorms

April 17, 2019

Custer City, Oklahoma

@OkWxChaser

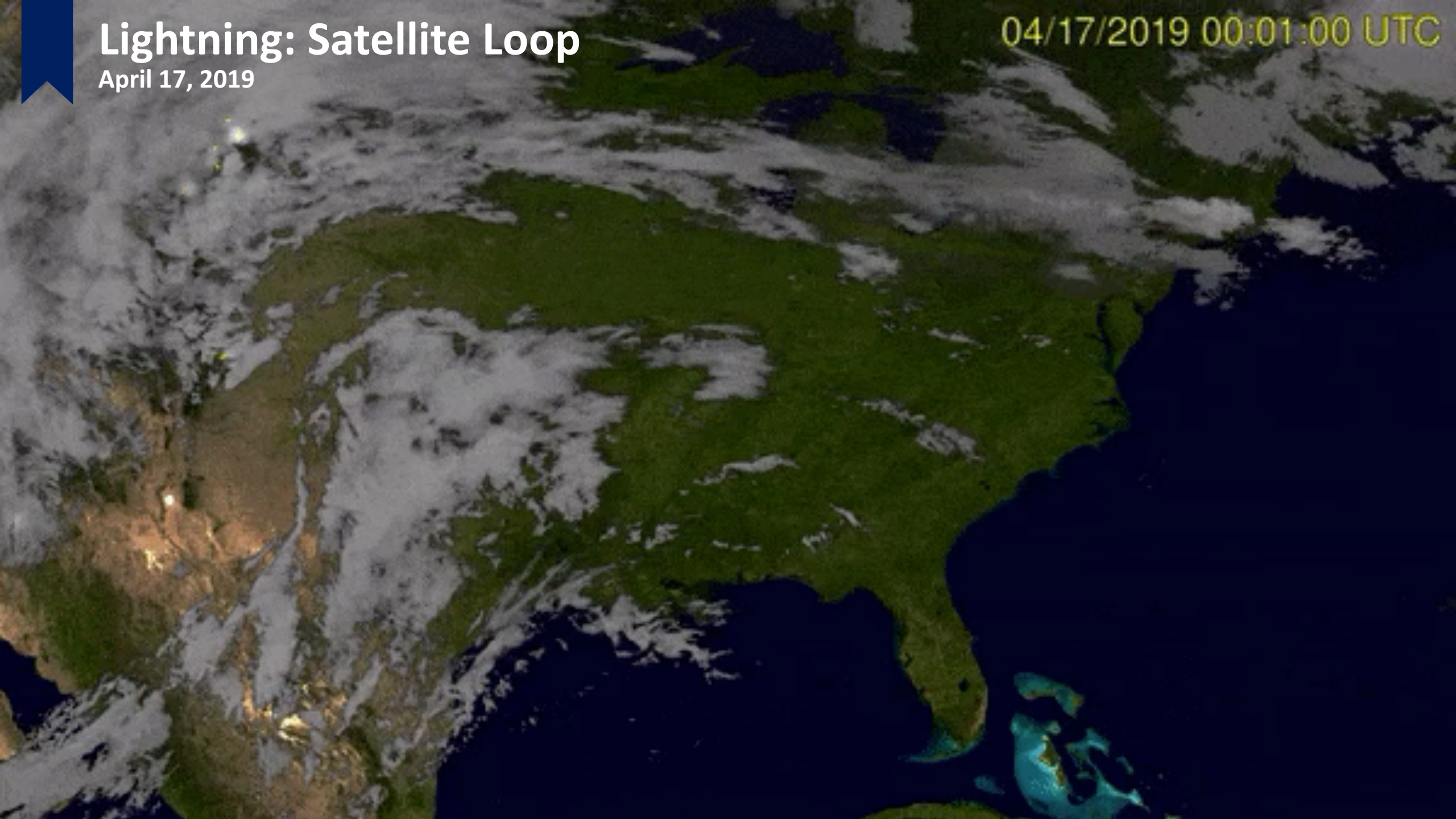
[Kathy Rebec](#) [@OkWxChaser](#) 3h3 hours ago More

Higher quality photo of **supercell** near Custer City, OK 4/17/19 [#okwx](#)

Lightning: Satellite Loop

April 17, 2019

04/17/2019 00:01:00 UTC



Lightning

April 17, 2019

Conway, Arkansas



[Vortex Crew @VortexChasing](#)

Great shot of CG lightning last night from Conway, Arkansas. Photo sent to us from follower, Tyler Sorrells. [#arwx](#)

Lightning

April 17, 2019

Anadarko, Oklahoma



[Paul Smith @PaulSmi45427335](#)

Even the full moon couldn't drown out some of the vibrant sprite lightning over Northern Oklahoma last night. This is from Anadarko Ok, looking up towards Woodward Ok 4/17/2019



Lightning

April 17, 2019

Camp Mabry, Texas

[Avery Tomasco](#) **Verified** [@averytomascowx](#)

YALL One of the coolest lightning shots I've ever taken, right as I passed Camp Mabry [#atxwx](#) [#txwx](#)

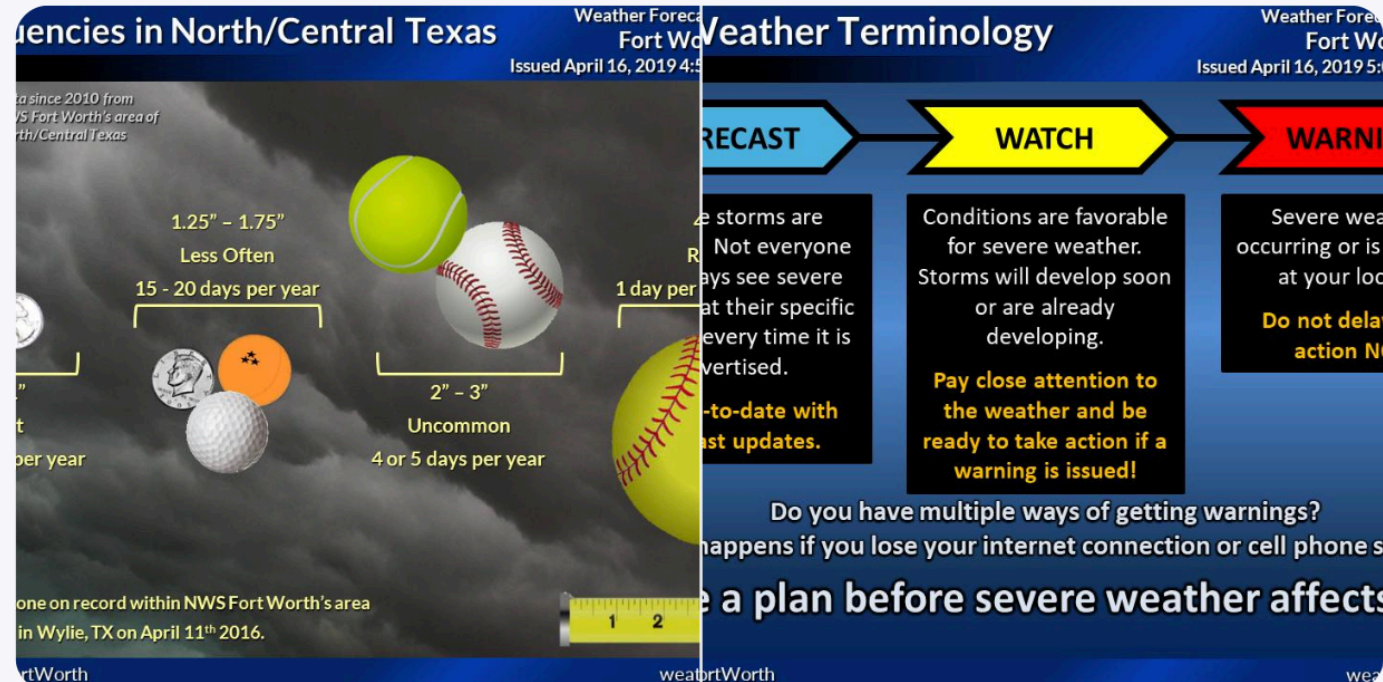
Hail

April 16, 2019



NWS Fort Worth @NWSFortWorth · Apr 16

The environment for Wednesday afternoon is favorable for very large **hail**, which generally is **baseball** size or larger. Take a look at **hail** frequencies across our region. Make sure you have a plan & multiple ways to receive severe weather warnings! [#dfwwx](#) [#ctxwx](#) [#txwx](#) [#texomawx](#)



9 155 191

Hail...?!

April 17, 2019

Texas



[FOX31 Denver KDVR](#) Verified account @KDVR 8h8 hours ago

Photos show Texas car owners' creative ways to protect vehicles from devastating hail <http://bit.ly/2IEgedd>

Courtesy of Brilliant Texas car owner

Hail



Downtown Chico, TX 8:15pm.



TX

Hail Frequencies in North/Central Texas

Weather Forecast Office
Fort Worth, TX

Issued April 16, 2019 4:58 PM CT



*Data since 2010 from
NWS Fort Worth's area of
North/Central Texas



The largest hail stone on record within NWS Fort Worth's area is 5.25" which fell in Wylie, TX on April 11th 2016.



Storm Chaser in Texas

April 17, 2019

<https://www.youtube.com/watch?v=VS79tSk3gmM>



PHOENIX.COM
LIVE

FOX
NEWS
NOW

5:45 ET

FUNNEL CLOUD SPOTTED

Texas Panhandle area

FOX10

Storm Chaser in Oklahoma

April 17, 2019

<https://www.youtube.com/watch?v=-3VHGisVwsk>



Storm Chase
April 17, 2019



ATMS 103

Thank You

S t o r m o f t h e W e e k

“There is so much more to chasing than just severe weather.
Welcome back, spring.” ☀️

Courtesy of Alex Spahn



ALEXANDER SPAHN
PHOTOGRAPHY

Thunderstorms

April 17, 2019

Thunderstorms are bubbling
up over the Texas Panhandle
this afternoon, as seen here
by GOES East Satellite



enhanced risk

1 2 **3** 4 5

hazards

Widespread
Damaging
Wind Gusts



Isolated
Large
Hail



Tornadoes,
Possibly
Some Strong



some cities in risk

New Orleans, LA | Mobile, AL
Baton Rouge, LA | Montgomery, AL
Jackson, MS

