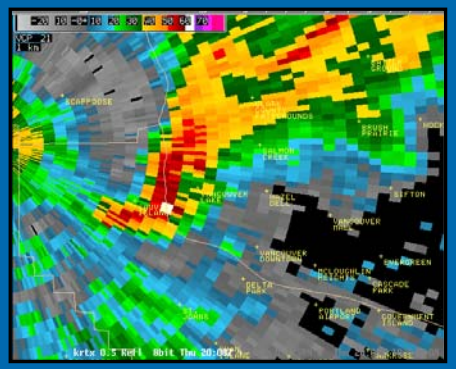
Overview of the 10 January 2008 Vancouver, WA Tornadic Supercell



Jonathan Wolfe and William R. Schneider

National Weather Service Forecast Office
5241 NE 122nd Avenue
Portland OR

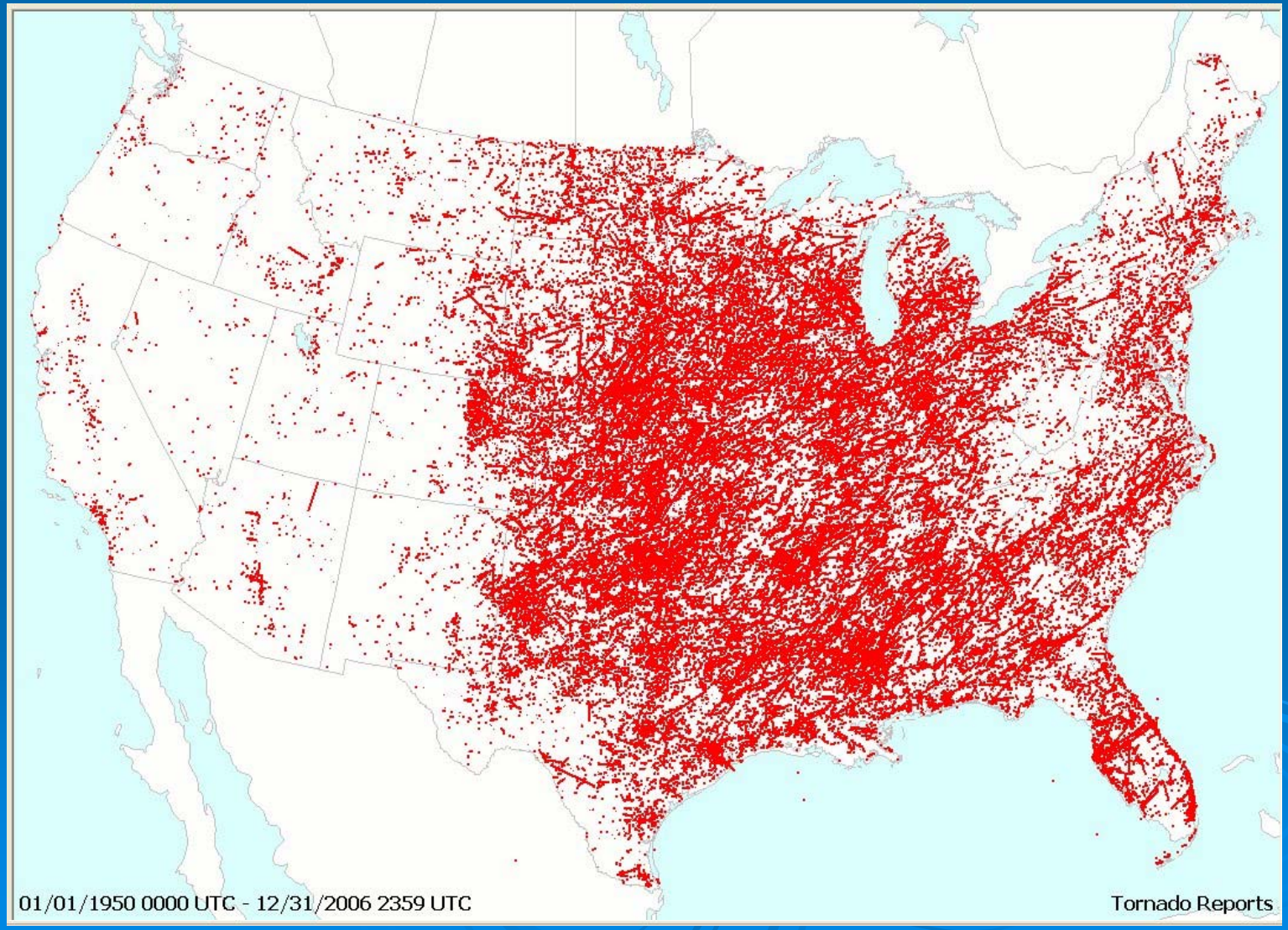
Outline

- Background on Severe Storm/Tornado climatology in the Pacific Northwest
- Timeline of events
- Tornado Damage Assessment

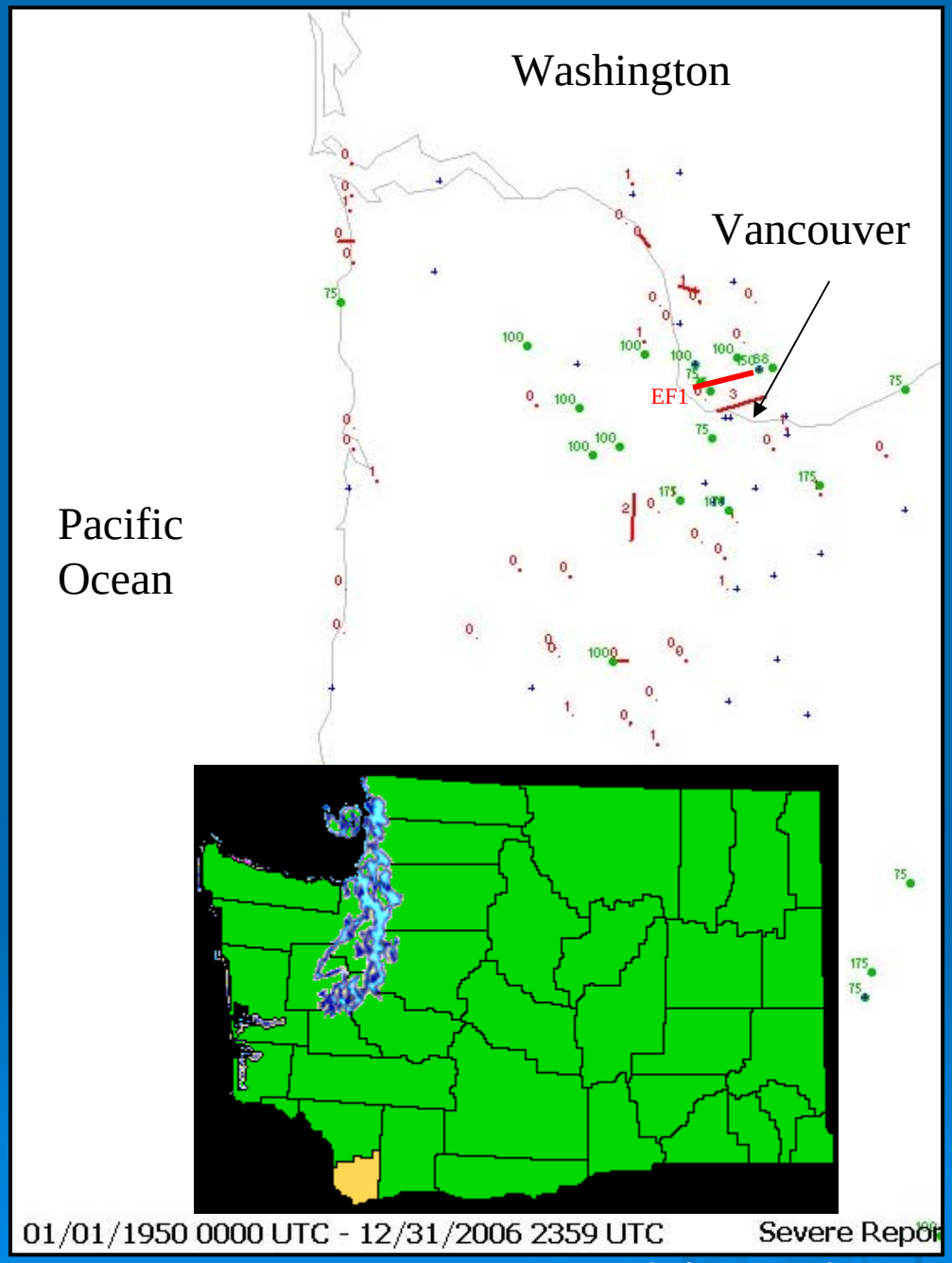
Pacific NW Severe Wx Climatology

tornado hail wind

1950-2006



Plots from Severe Plot v2.0



Plot from Severe Plot v2.0

Portland CWA

1950-Present

tornado hail wind

Tornadoes

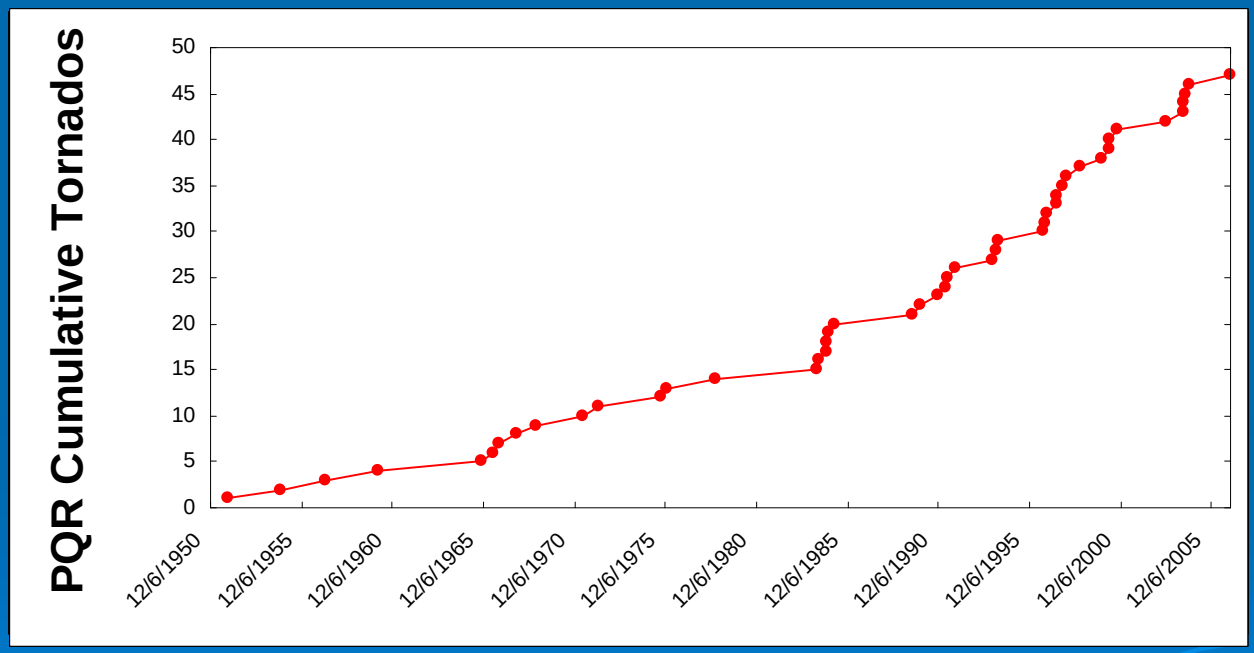
	Num	Deaths	Injuries
F0/?	42	0	3
F1	15	0	1
F2	2	0	0
F3	1	6	300
F4	0	0	0
F5	0	0	0

- Not as much tornadic activity as expected in Clark County though 2 of 3 longest inland tracks found there.
- Most in urban areas…where people are…

Tornado Frequencies

Portland CWA

tornado hail wind



- Cyclical? Becoming More Frequent?
  (15 yrs → 10 yrs → 5 yrs)

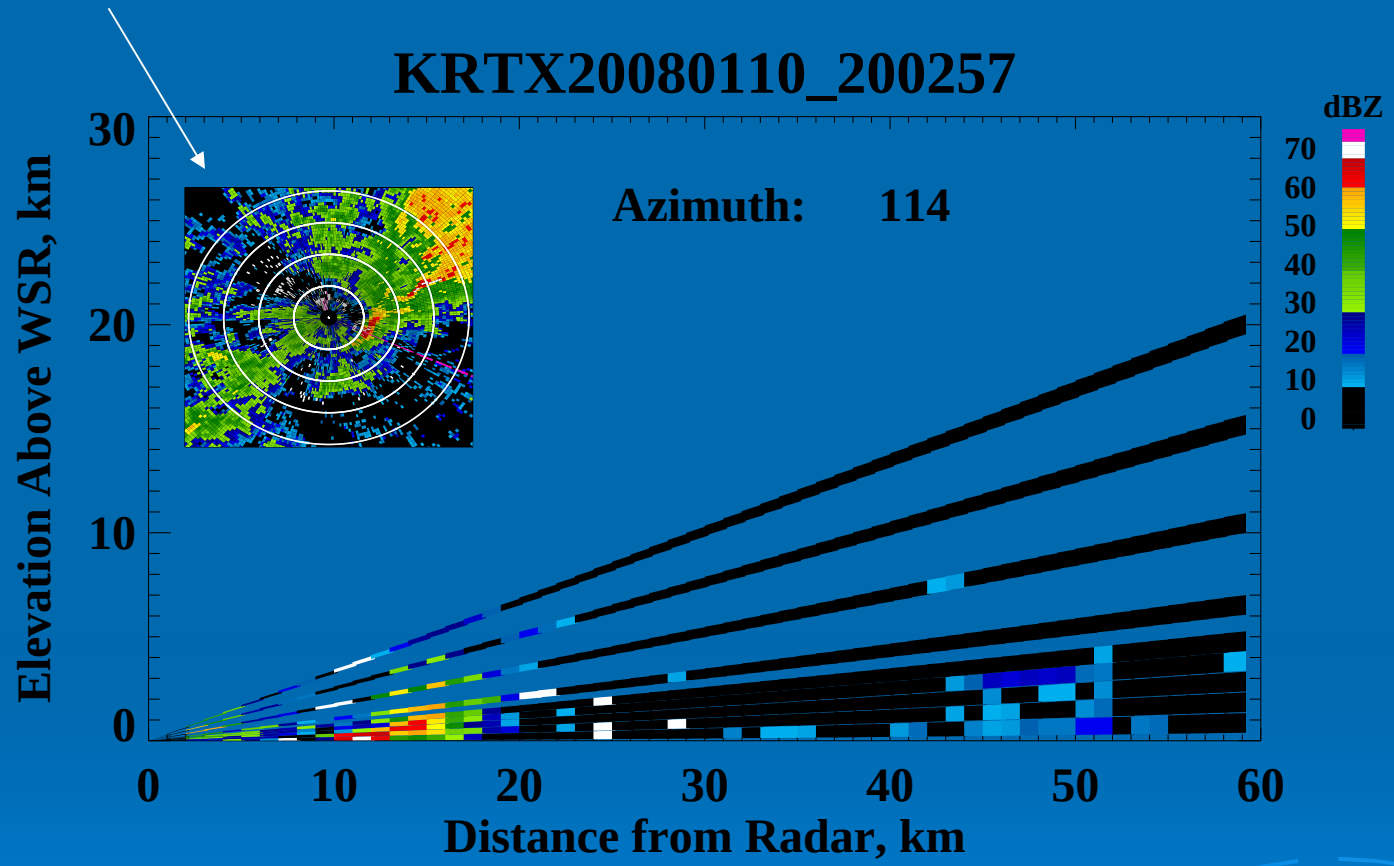
Climatology Summary

- Bimodal tornado frequency distribution with tornado max in winter
- In last ~20 yrs., tornados appear to occur with greater frequency

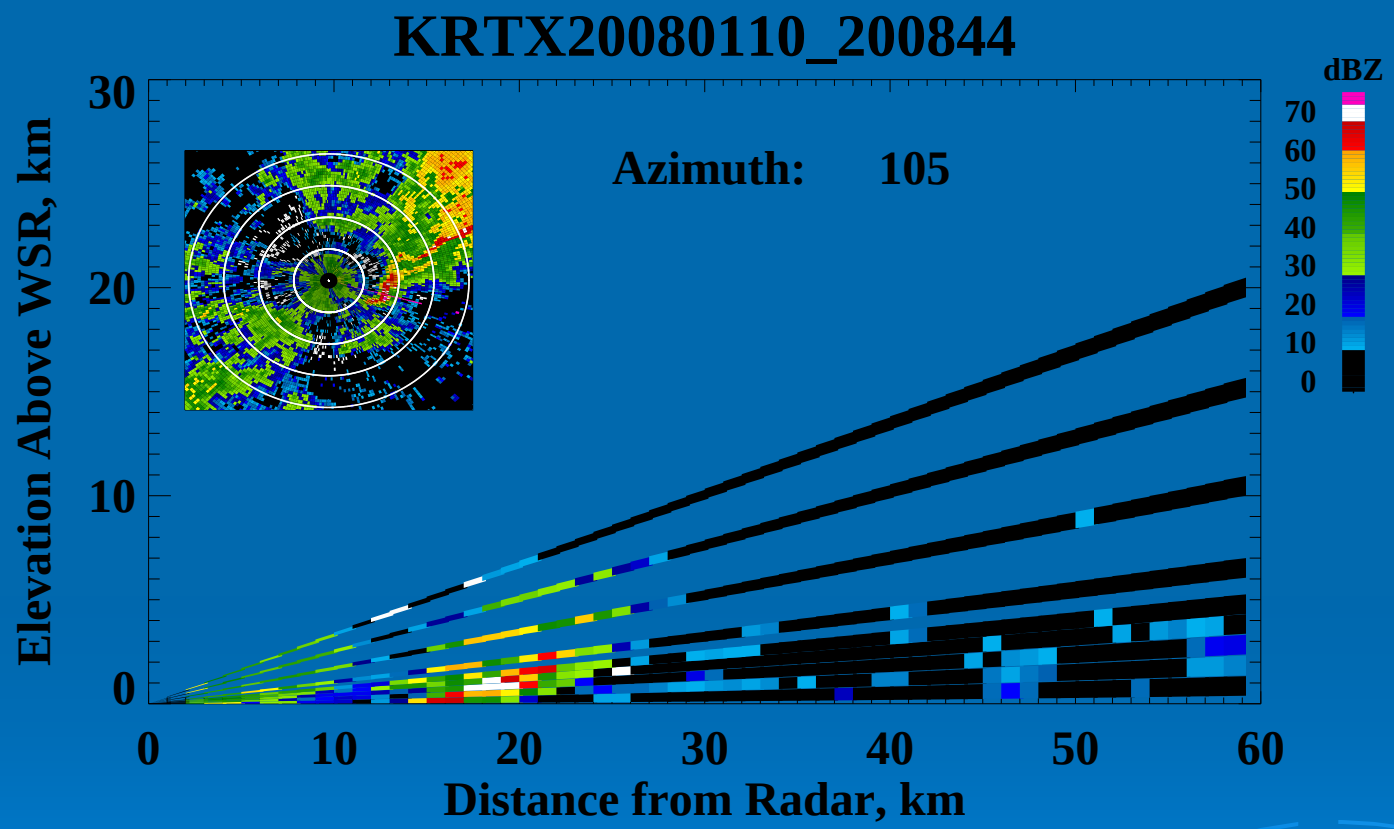
2008 Vancouver, WA Tornado Overview

RHI 2002 UTC

PPI



2008 UTC


KRTX20080110_200844
Azimuth: 105
dBZ
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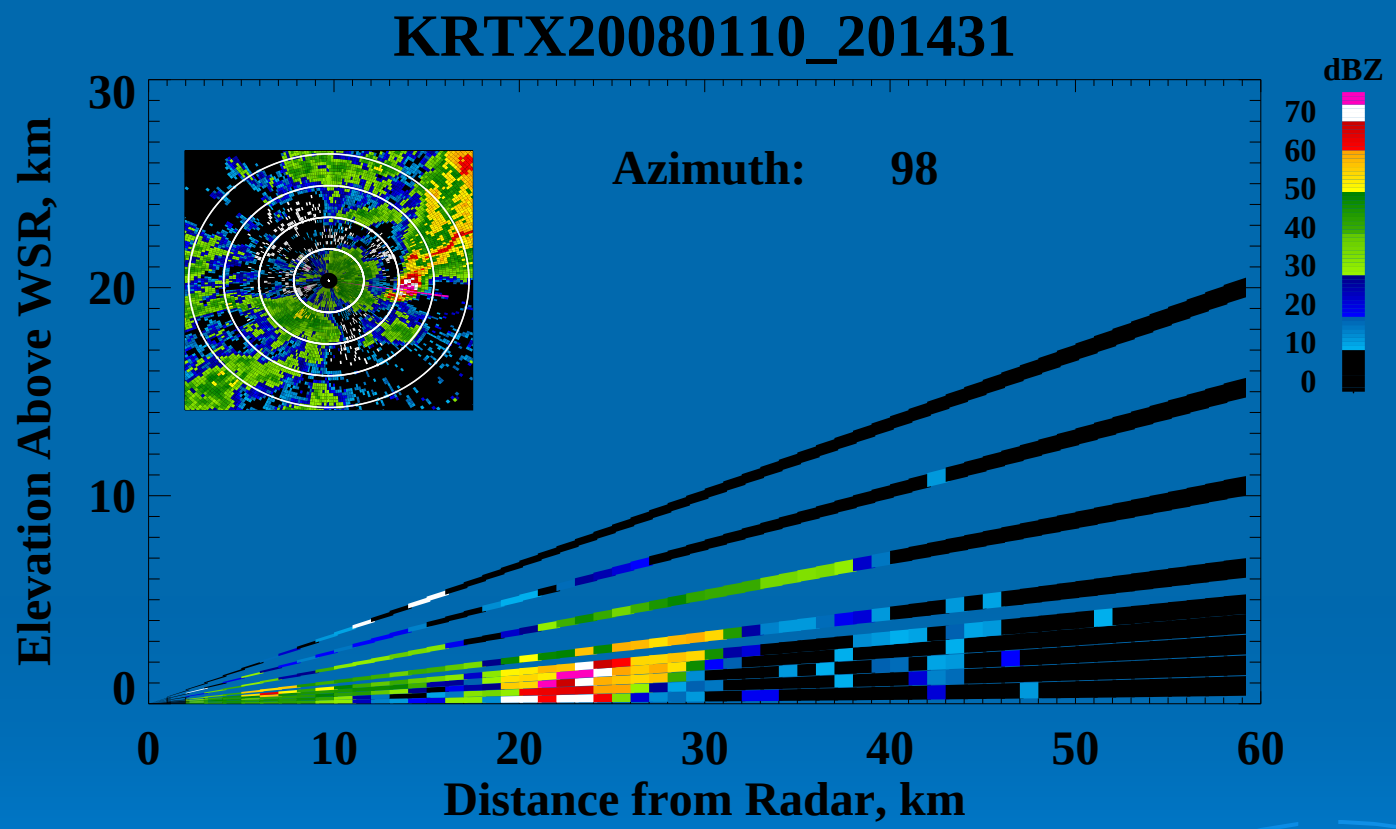
60
50
40
30
20
10
0
Elevation Above WSR, km
30
20
10
0
0
10
20
30
40
50
60
Distance from Radar, km

2014 UTC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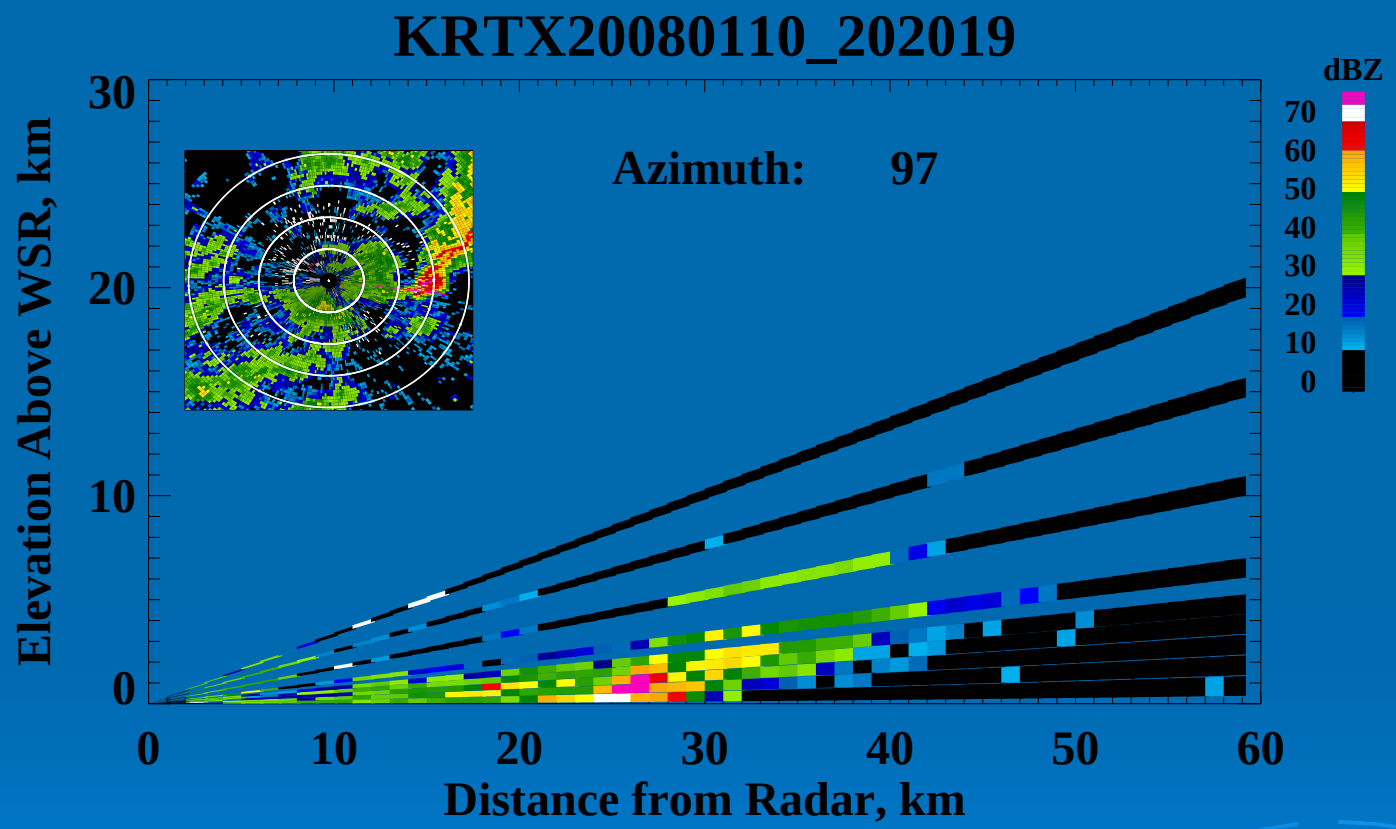
30
40
50
60
Distance from Radar, km

2020 UTC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dBZ
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Elevation Above WSR, km
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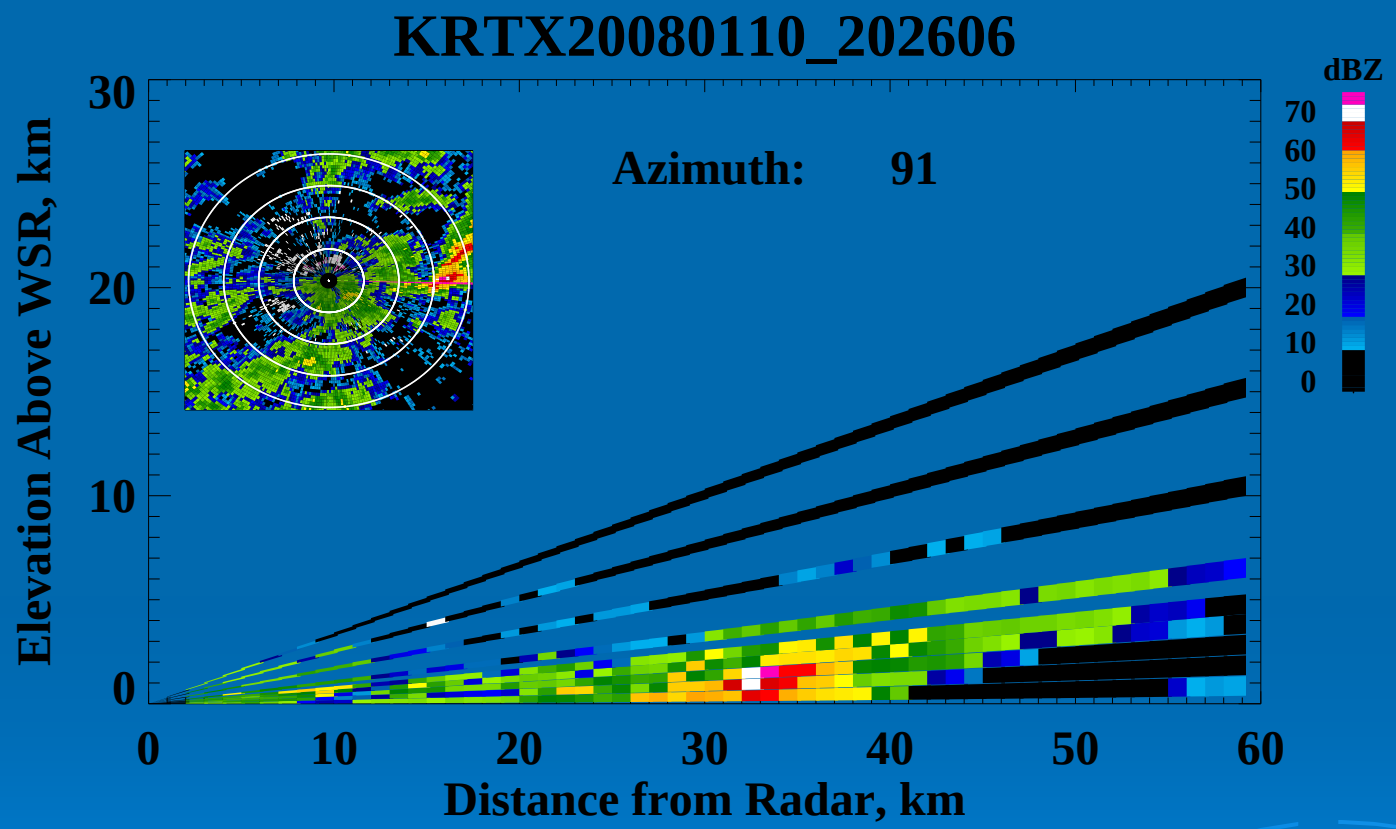
0
10
20
30
40
50
60
Distance from Radar, km

2026 UTC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Elevation Above WSR, km
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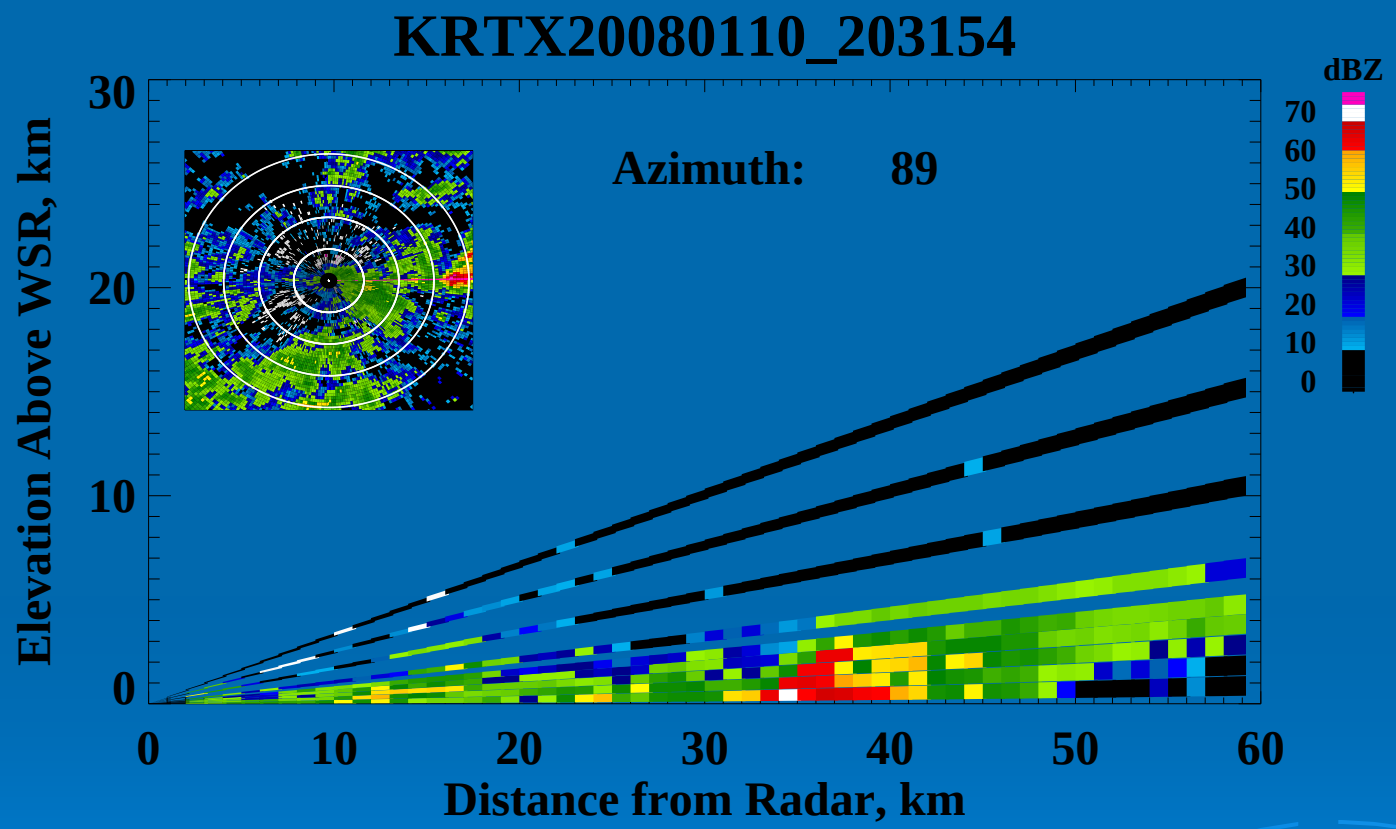
10
20
30
40
50
60
Distance from Radar, km

2031 UTC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Elevation Above WSR, km
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20
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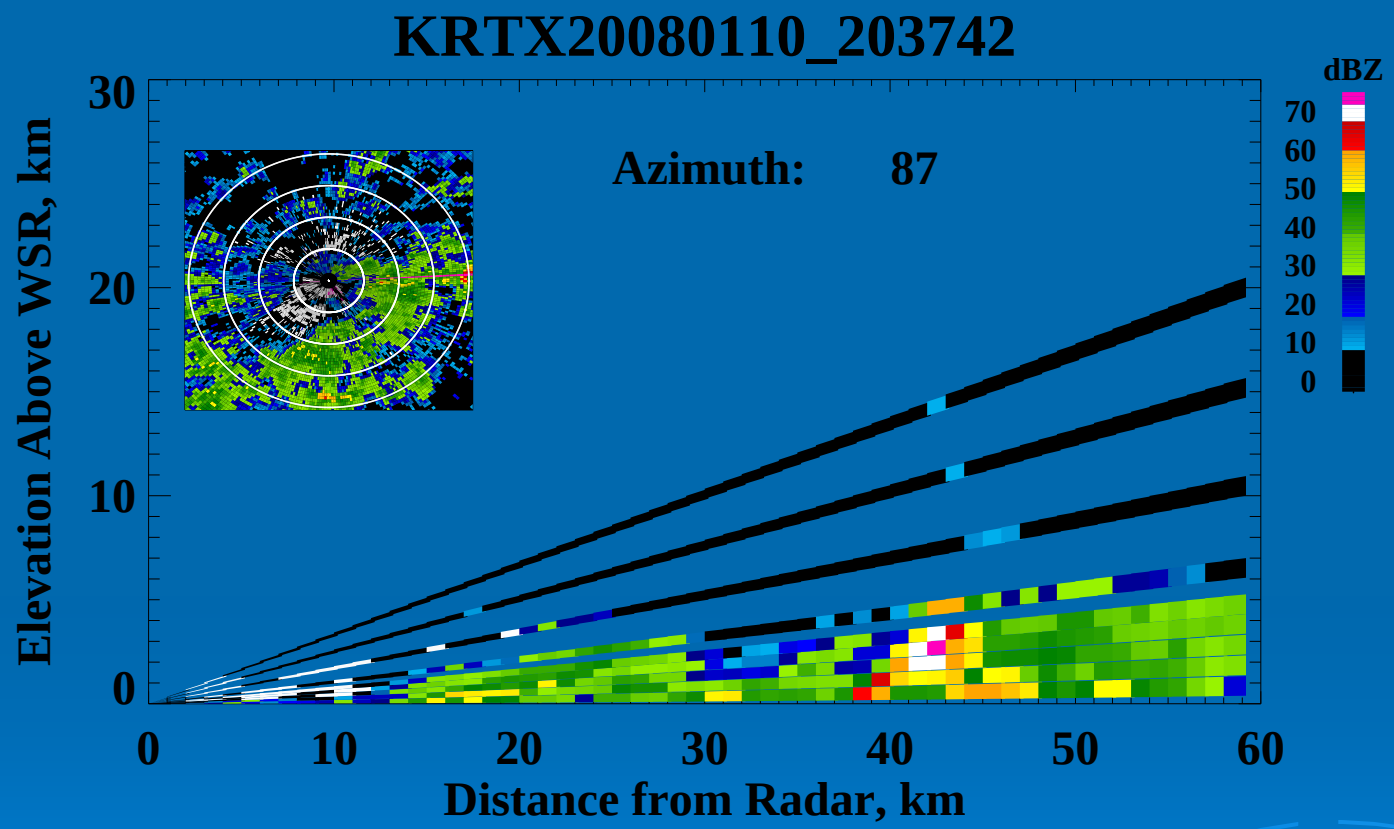
0
0
10
20
30
40
50
60
Distance from Radar, km

2037 UTC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dBZ
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Elevation Above WSR, km
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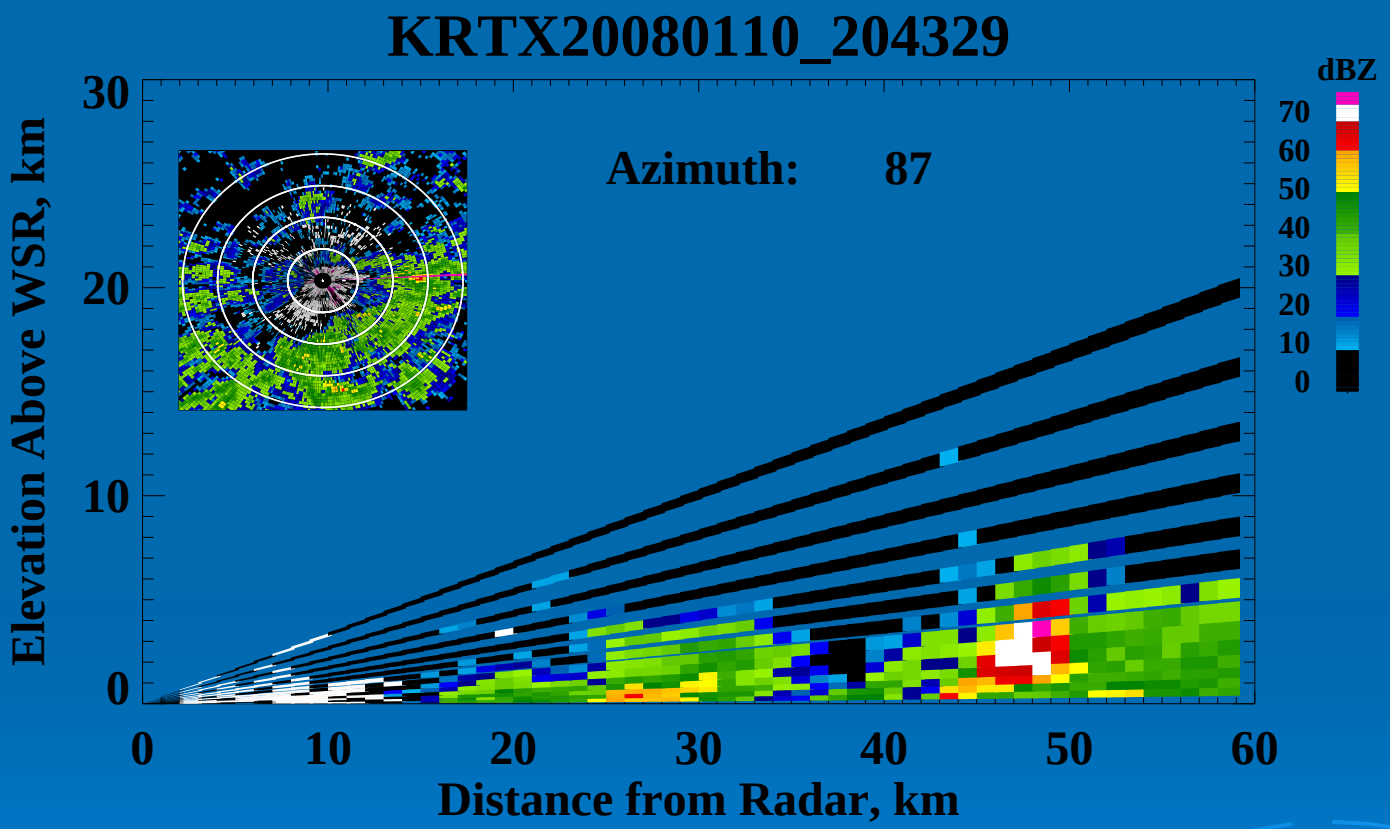
0
10
20
30
40
50
60
Distance from Radar, km

2043 UTC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Elevation Above WSR, km
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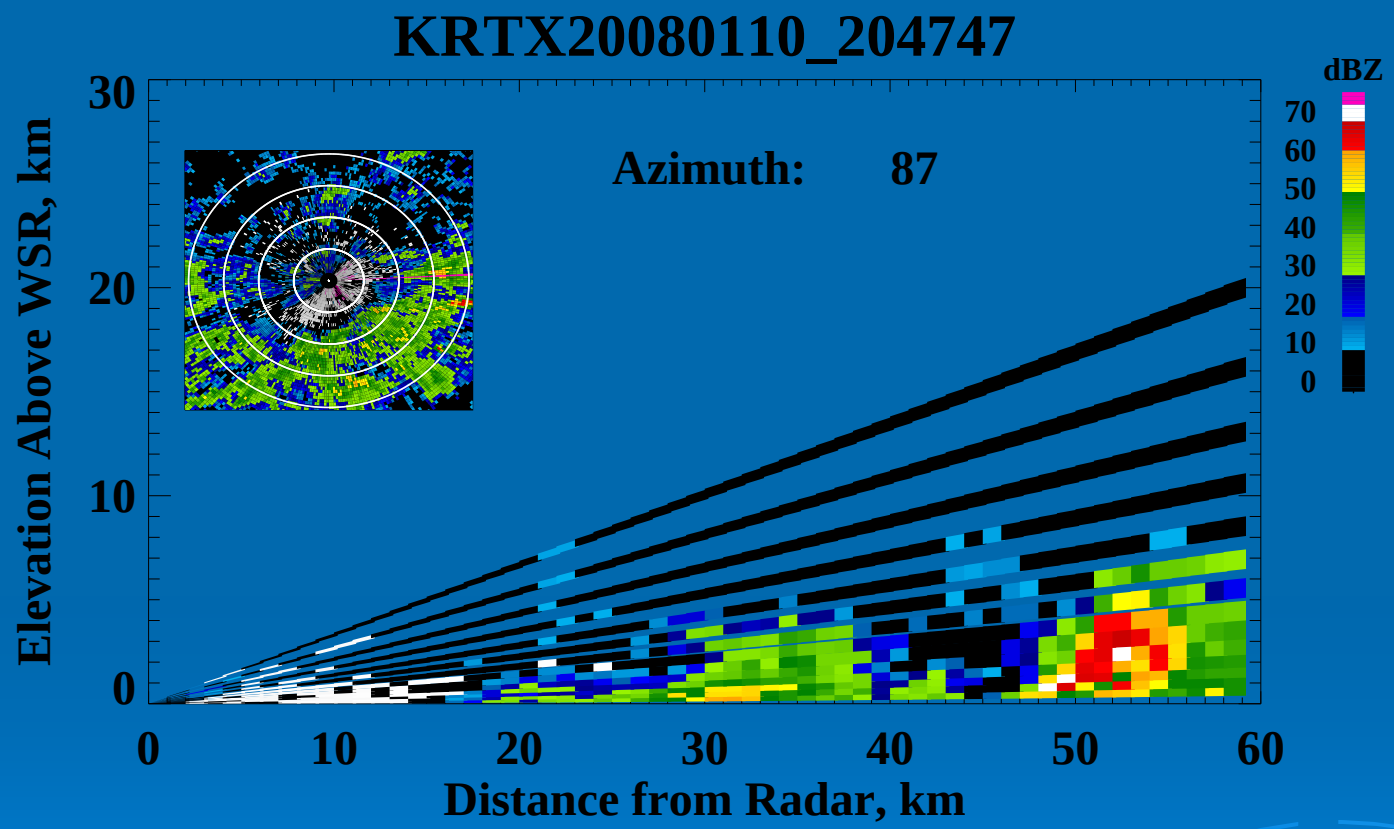
10
0
0
10
20
30
40
50
60
Distance from Radar, km

2047 UTC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dBZ
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Elevation Above WSR, km
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20
10
0
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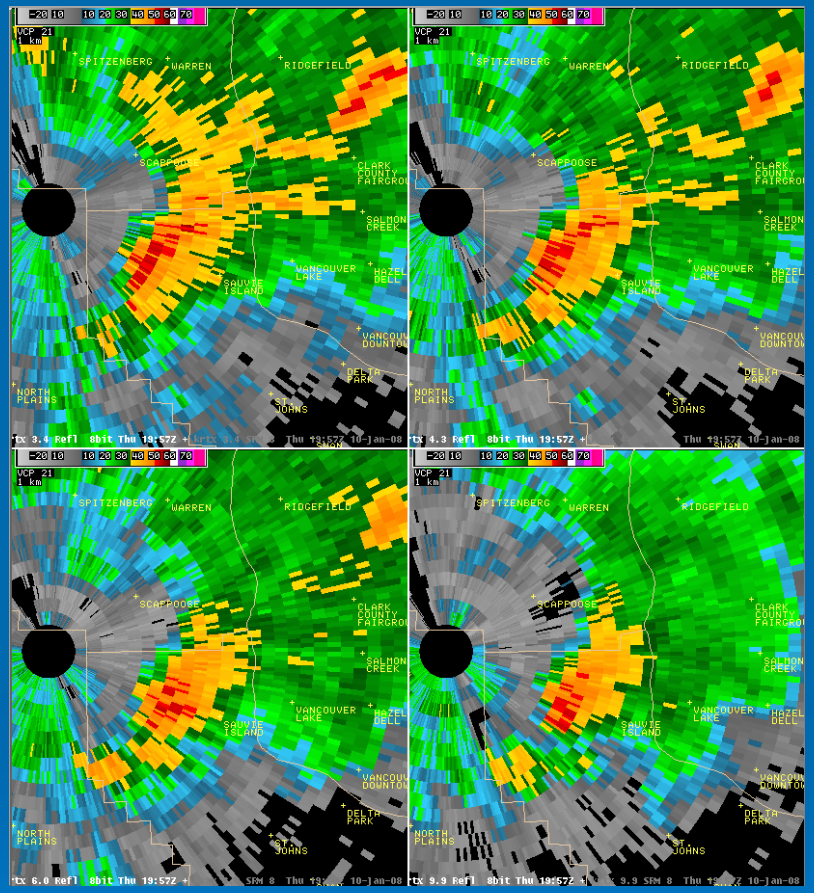
10
20
30
40
50
60
Distance from Radar, km

Timeline

Cluster within “Cone of Silence”

3.4

4.3

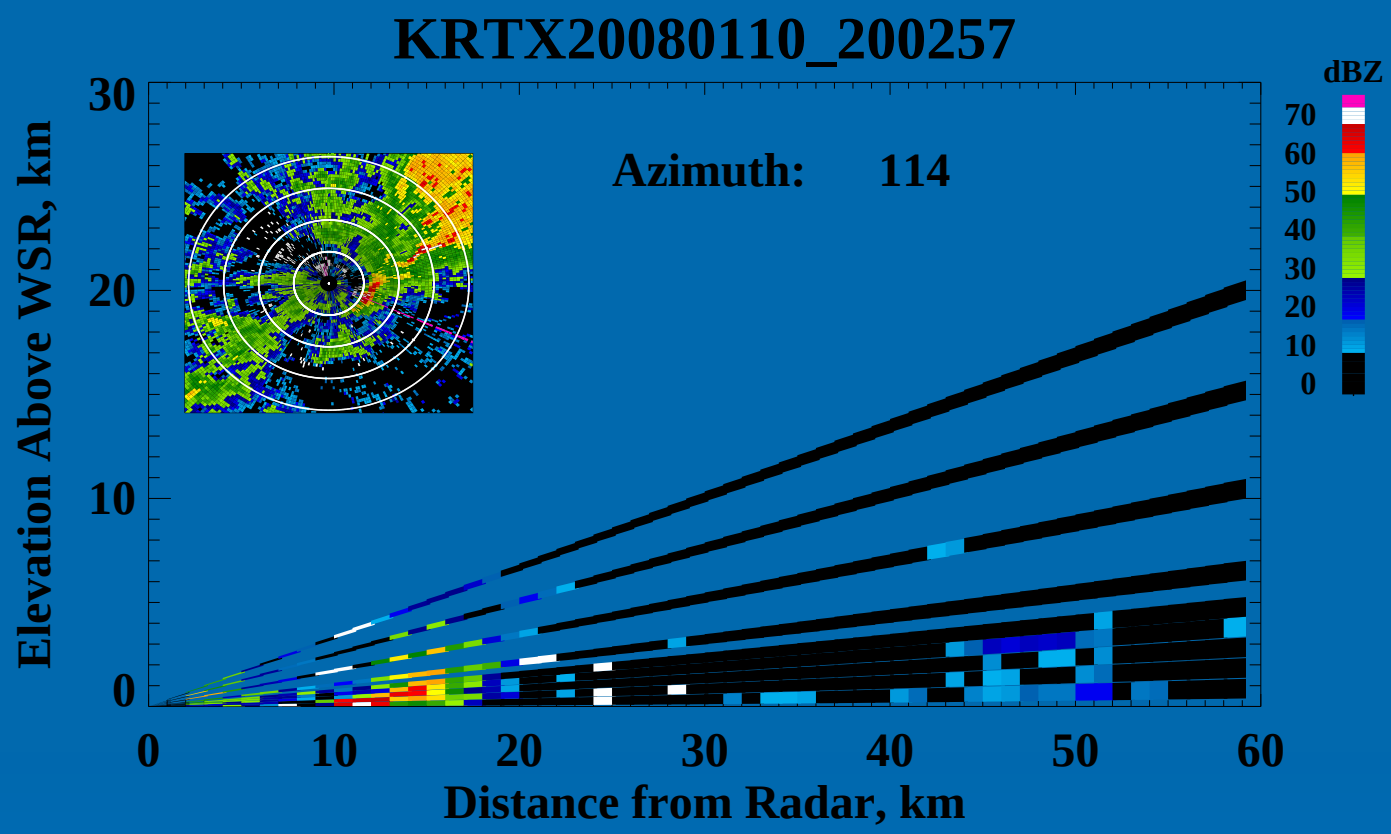


6.0

9.9

1957

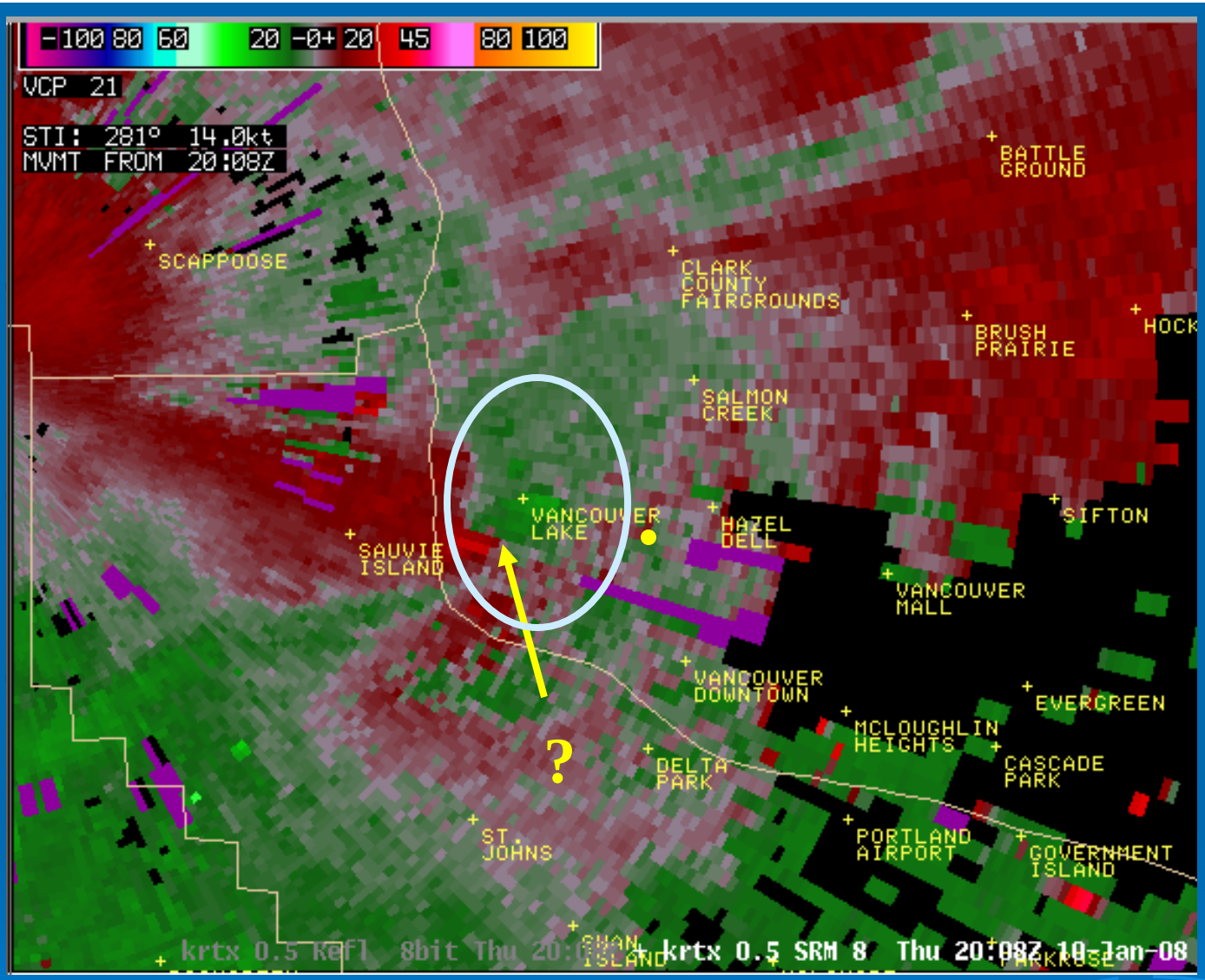
UTC



Cell Emerges from “Cone of Silence”

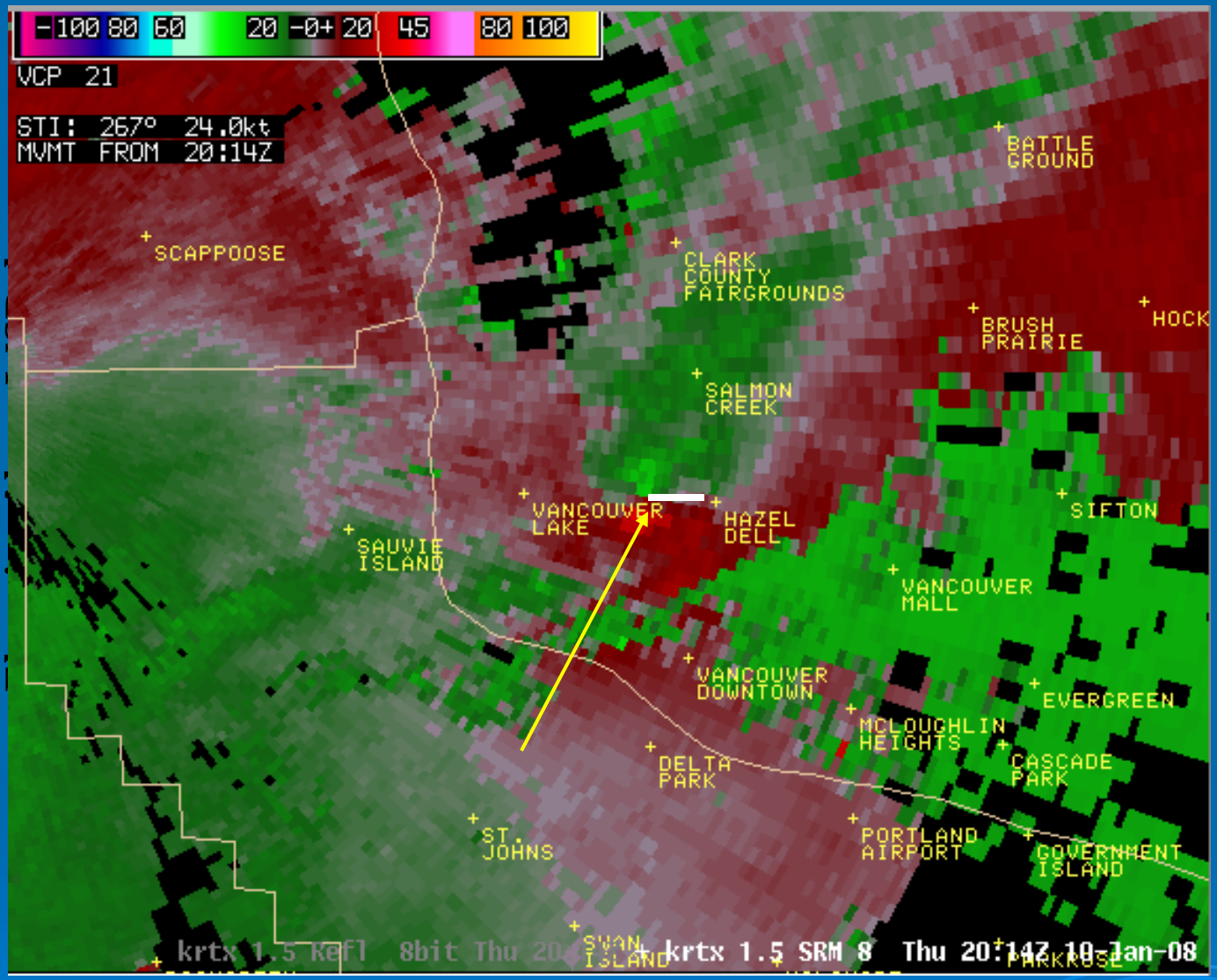
1957 **2002**

UTC



1957 2002 **2008**

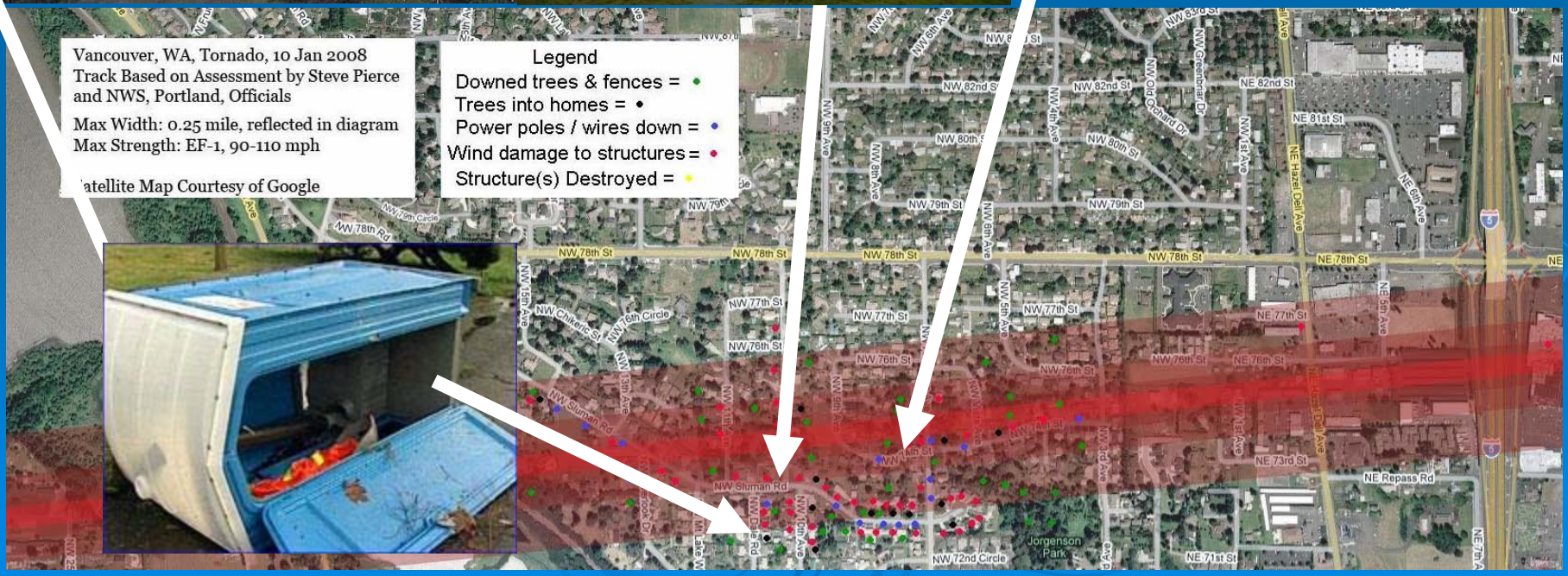
UTC

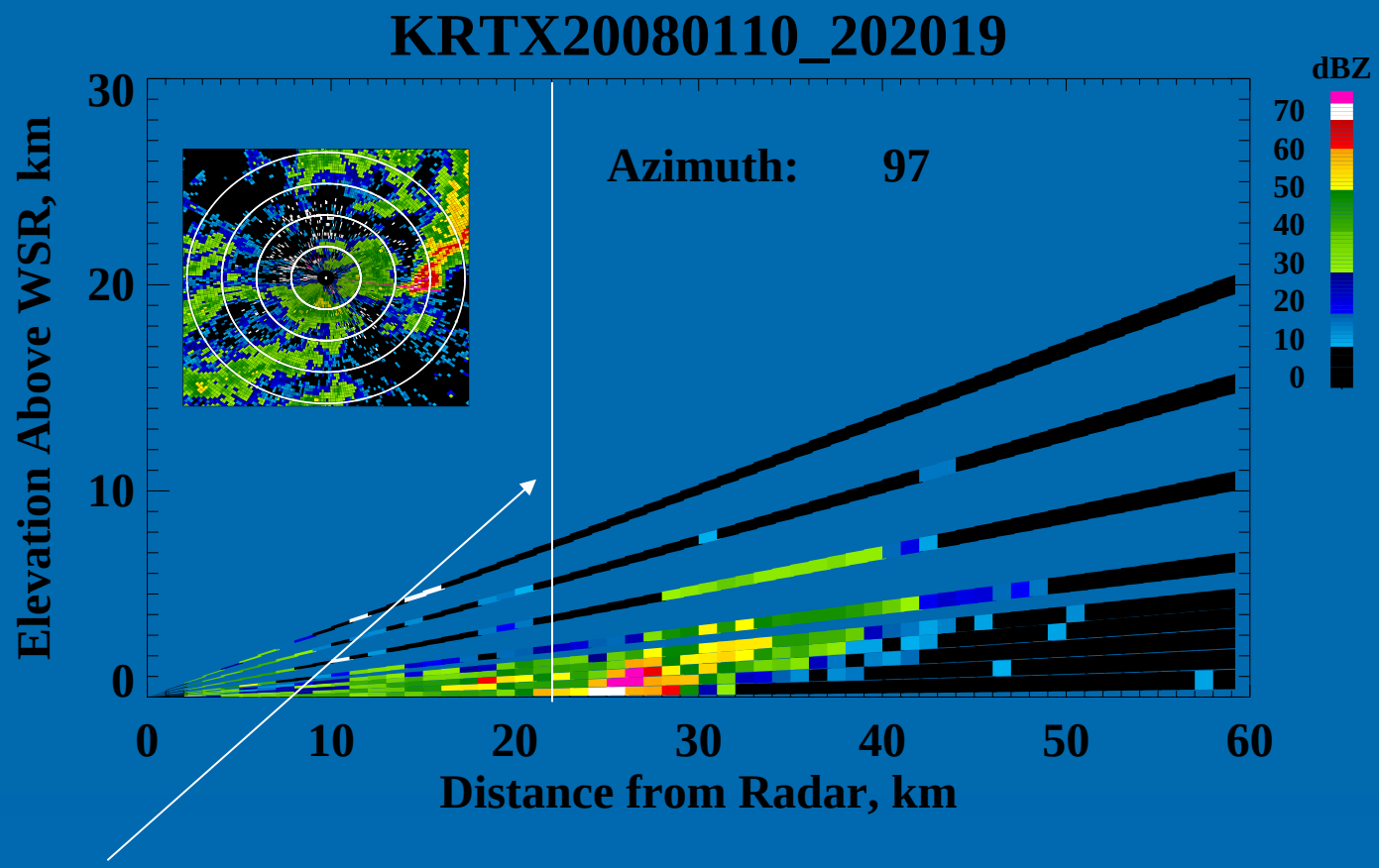


1957 2002 2008 **2015**

UTC

Damage Path


Vancouver, WA, Tornado, 10 Jan 2008
Track Based on Assessment by Steve Pierce and NWS, Portland, Officials
Max Width: 0.25 mile, reflected in diagram
Max Strength: EF-1, 90-110 mph
atellite Map Courtesy of Google
Legend
Downed trees & fences =
Trees into homes =
Power poles / wires down =
Wind damage to structures =
Structure(s) Destroyed =
NW 78th St
NW 77th St
NW 76th St
NW 79th St
NW 82nd St
NE 82nd St
NE 81st St
NE 78th St
NE 77th St
NE 76th St
NE 73rd St
NE 71st St
NW Shuman Rd
NE Repass Rd
NW 72nd Circle
Jorgenson Park



Vancouver Marina

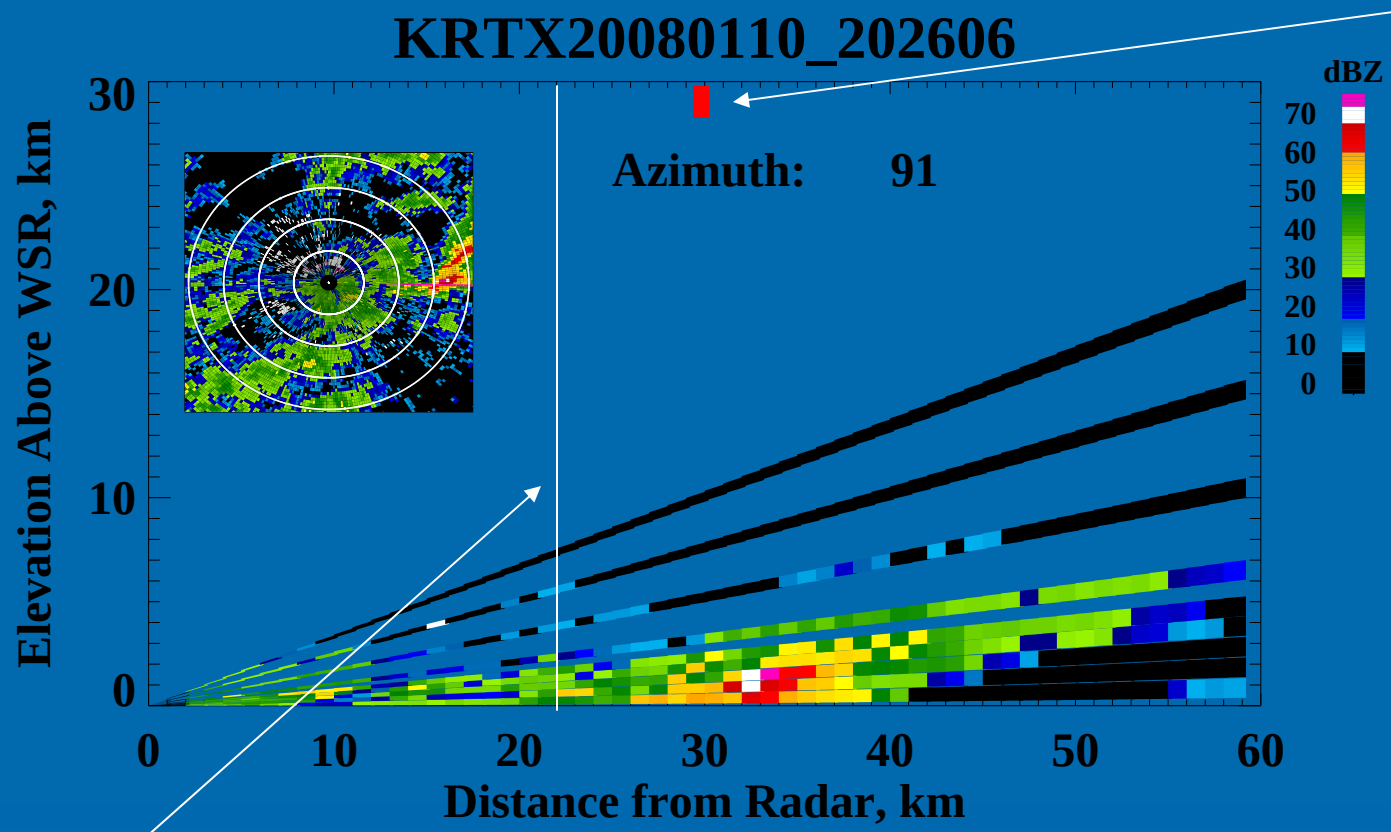
Spotter Report of Tornado in Vancouver at 2024 UTC

1957 2002 2008 2015

2024

UTC

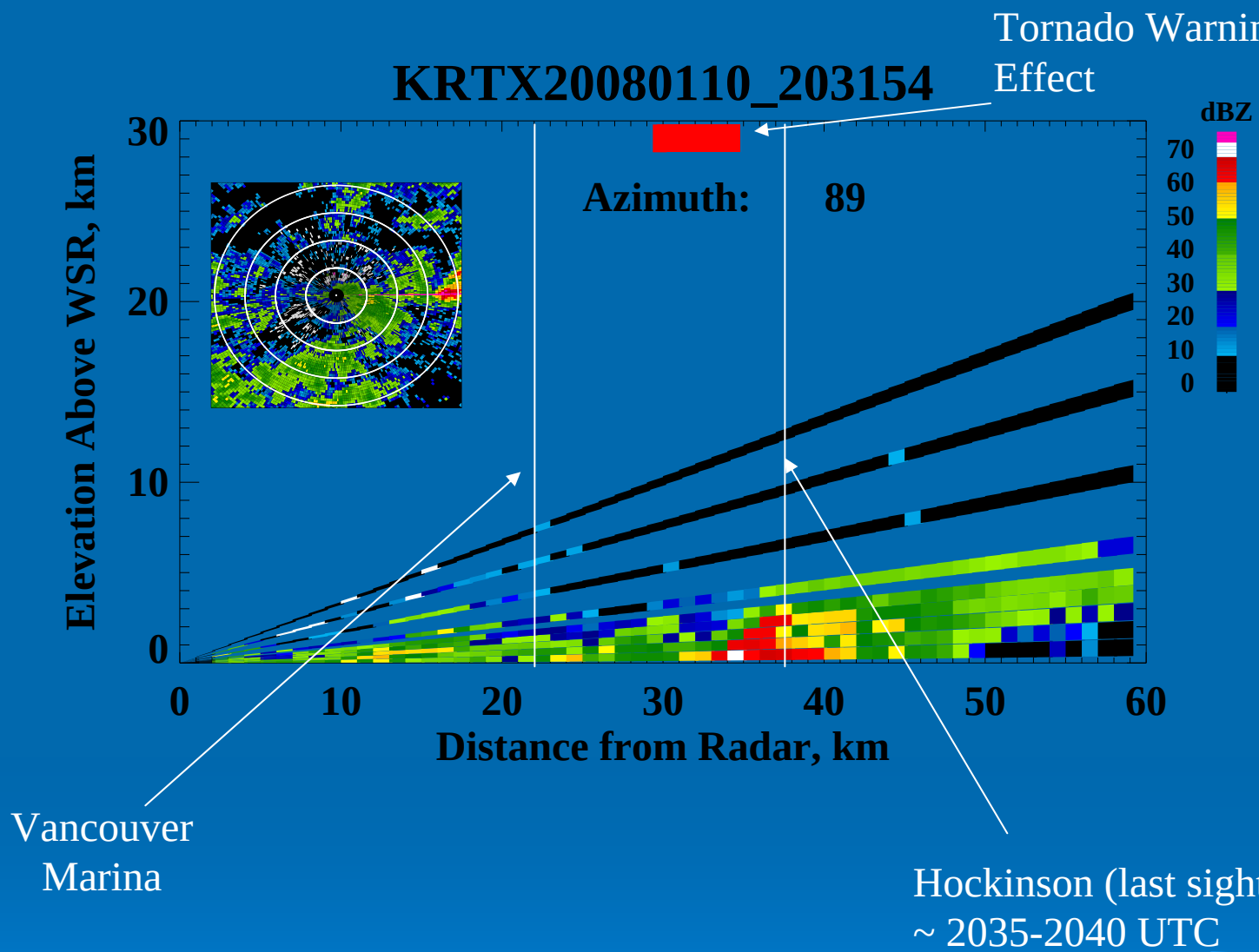
Tornado Warning Issued



Vancouver
Marina

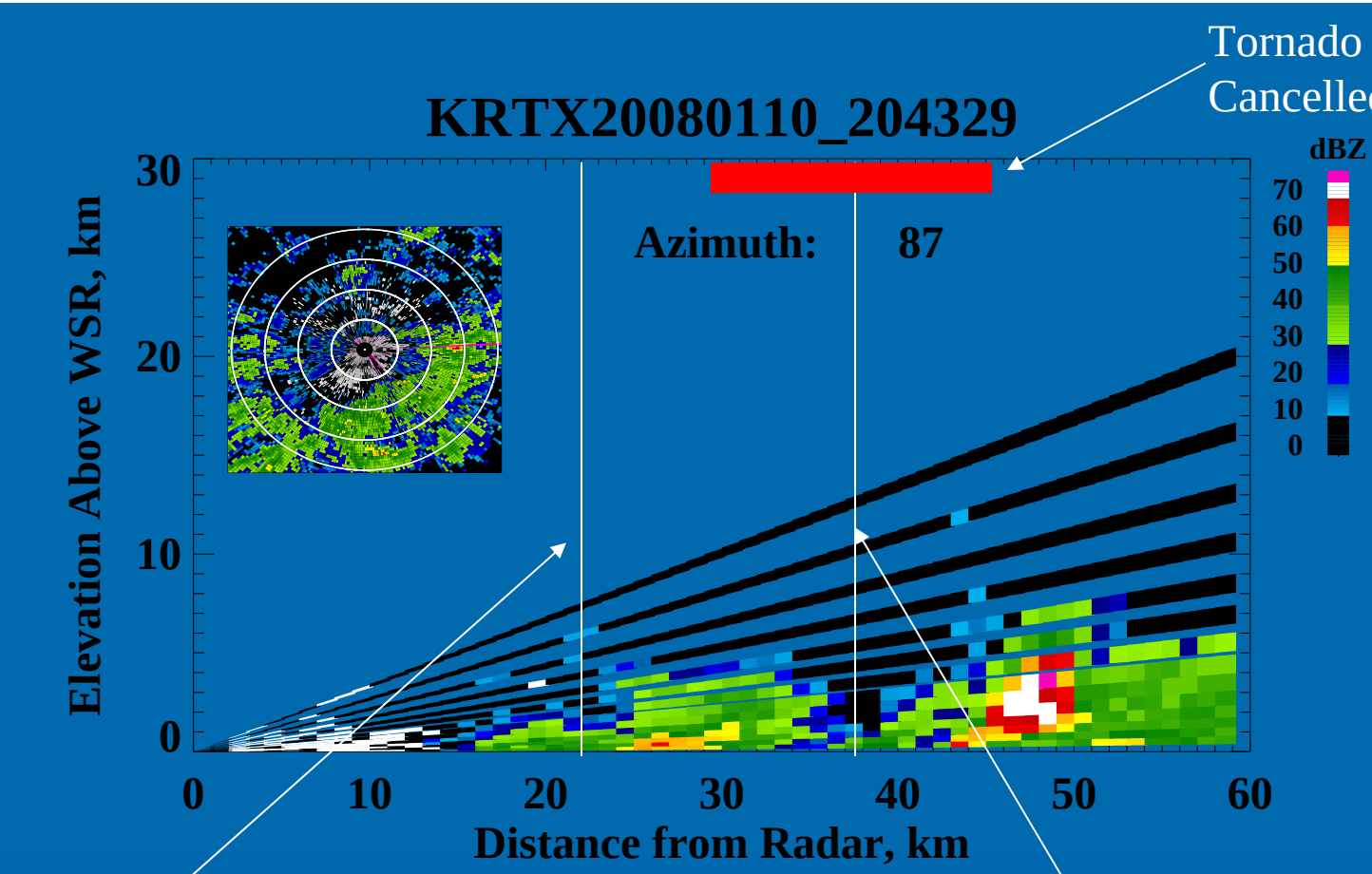
1957 2002 2008 2015 **2025**

UTC



1957 2002 2008 2015 2025 **2035**

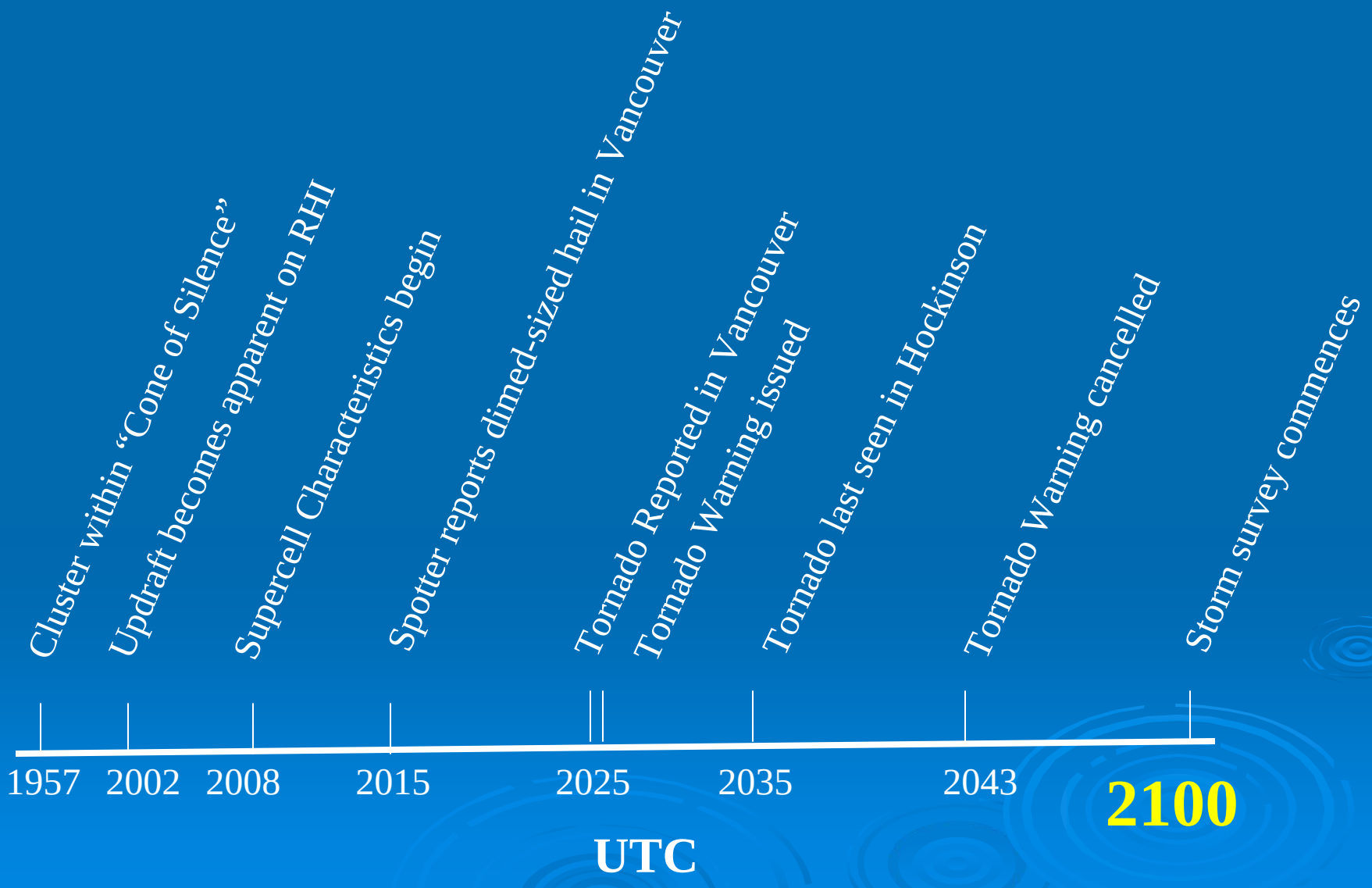
UTC



1957 2002 2008 2015 2025 2035 **2043**

UTC

Timeline of Events



Storm Summary

- EF1 rating -- winds estimated to be (90-110 mph)
- 200+ trees down
  - largest 50 inches in diameter
  - 6 in excess of 36 inches in diameter
  - 19 Power poles snapped
- 30 to 40 homes damaged
- Path Length: 10 miles (1/4 mi. wide)

References

- SPC's Severe Plot v2.0
  - http://www.spc.noaa.gov/software/svrplot2/
- Steve Pierce and Wolf Read (Storm Damage Map)

Questions?