KLGX
Low Elevation Angle Test Algorithm Assessment

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NEXRAD Technical Advisory Committee

KLGX: Courtesy of WFO Seattle

KLGX Algorithm Assessment

- Assessment Period: November 1, 2011 – October 31, 2012

- Goal: To summarize the advantages and disadvantages of the lowest elevation angle in regards to impacts to algorithms, base data, and operations. Findings will contribute to the Cost Benefit Study.

- Lowest angle is 0.176 or ~0.2 degrees, but can be changed during the assessment. No plans to modify the angle at this time.

- Parties: ROC, WFO Seattle, WFO Portland, NWRFC, ZSE CWSU

ROC Evaluation

- Algorithms and base data analyzed for possible benefits or unusual features
- Products compared with and without 0.2 degrees
- WFO feedback important for operational significance

- Z, V, SW
- CC, KDP, ZDR
- ML, HC, HHC
- VIL, DVL, ET, EET
- CFC, CLD, CLR
- VWP, MD, TVS, STI, HSR
- OHP, THP, STP, OHA, STA
- OSD, SSD, OSW, SSW

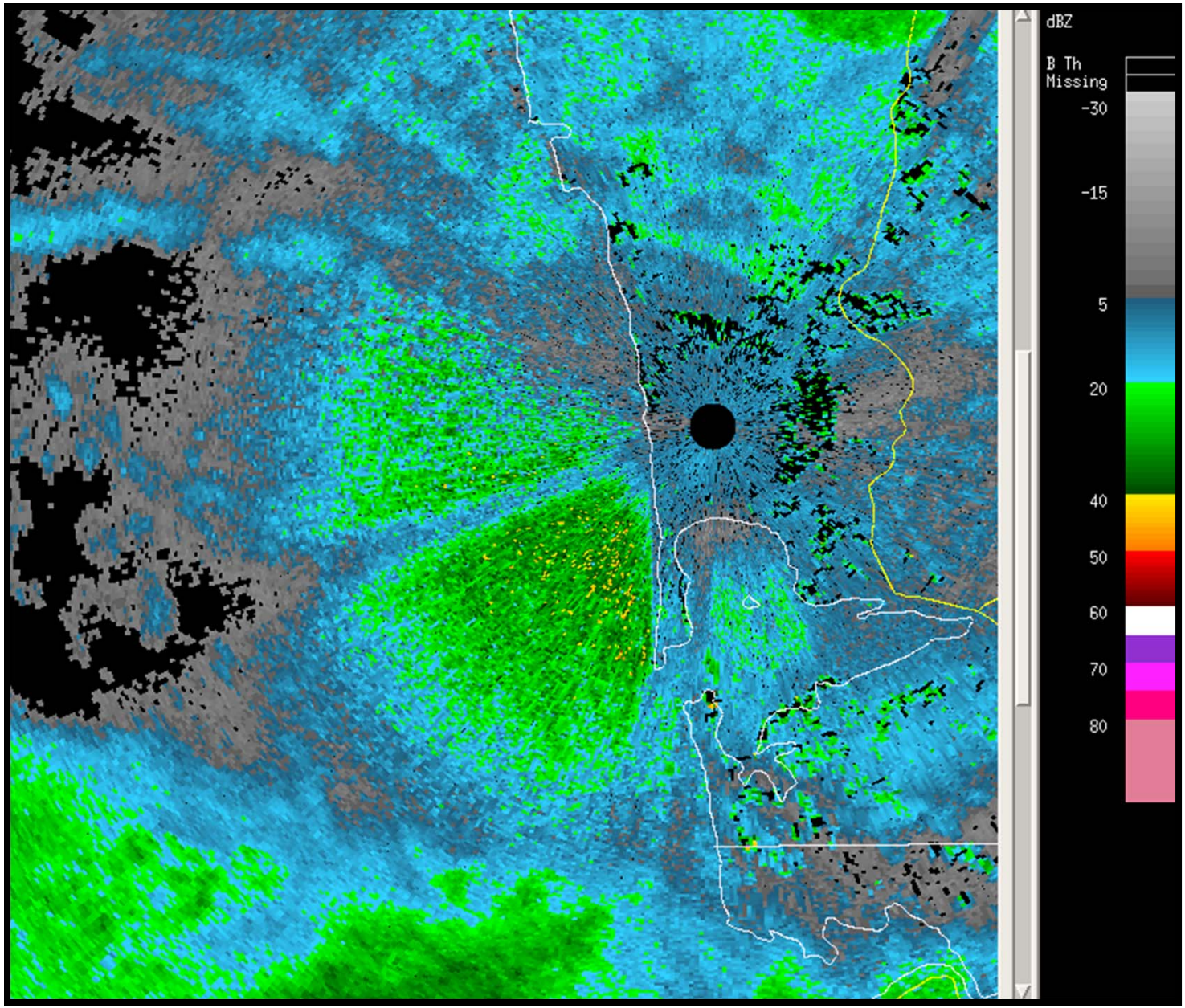
- Team: Bob Lee, Dave Zittel, Amy Daniel, Jessica Schultz

KLGX Events

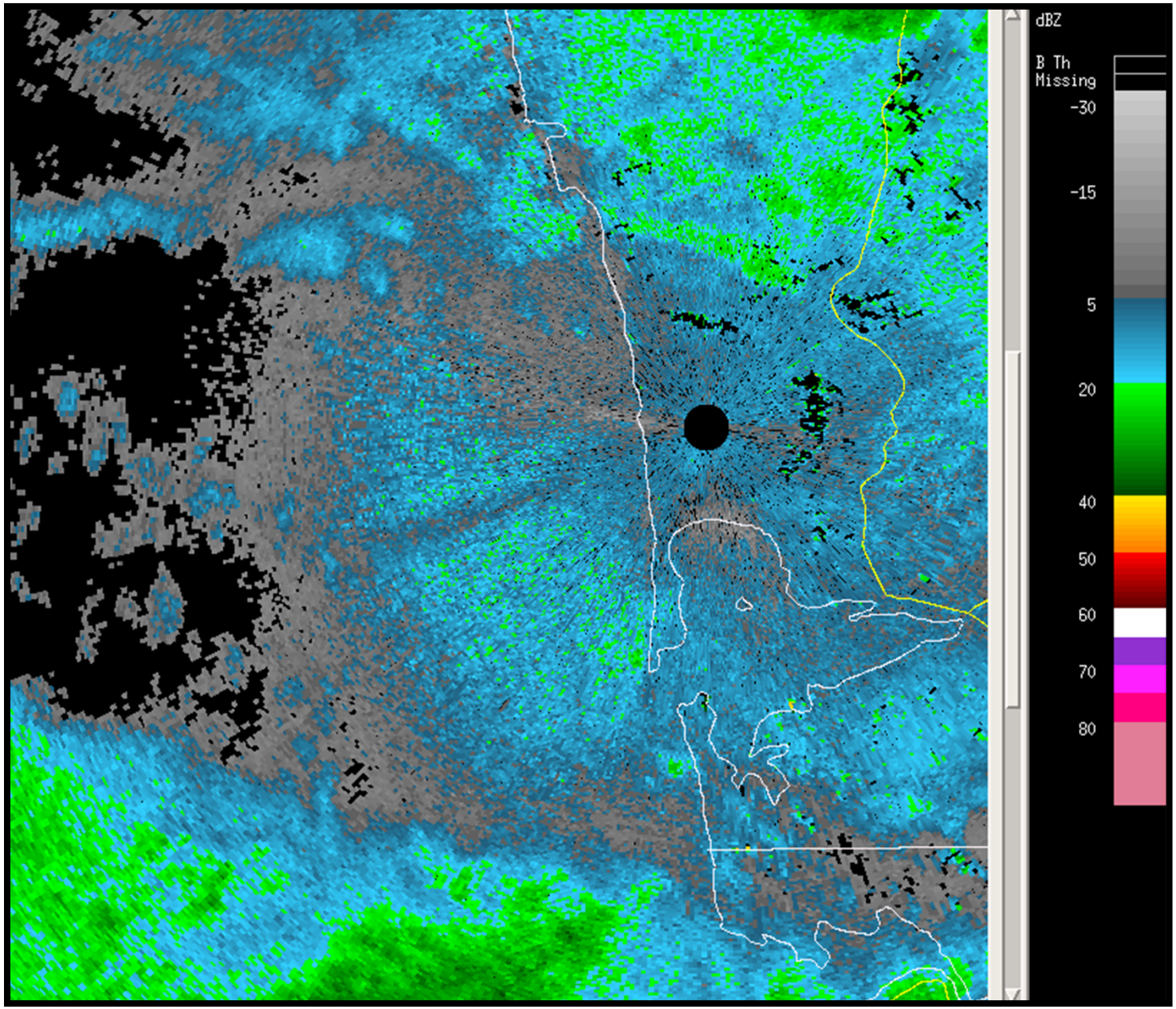
8 cases, 63.5 hours, More than 57,000 products

Date	Time	VCP
11/2/2011	00Z-13Z	31, 33
11/2-3/2011	20Z-05Z	11, 13
11/11-12/2011	16Z-00Z	11, 13
12/25/2011	15Z-22Z	11, 13
12/27-28/2011	21:30Z-07Z	11, 13
1/2-3/2012	17Z-02Z	11, 13
1/18/2012 (Winter)	12Z-16Z	11, 13
1/20/2012	19Z-23Z	221, 223

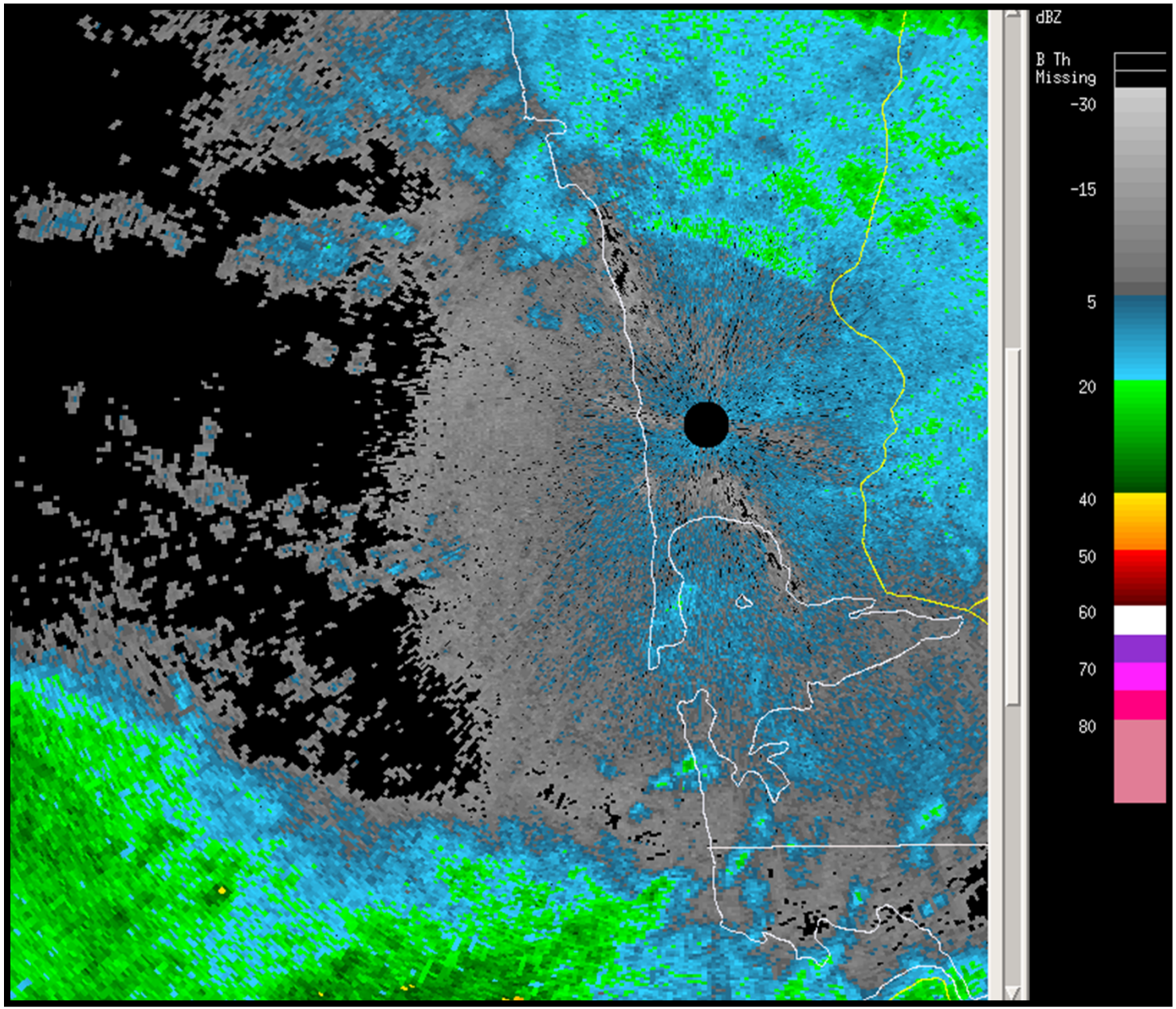
0.2 deg Reflectivity - 27 Dec 11 21:30Z - VCP 13



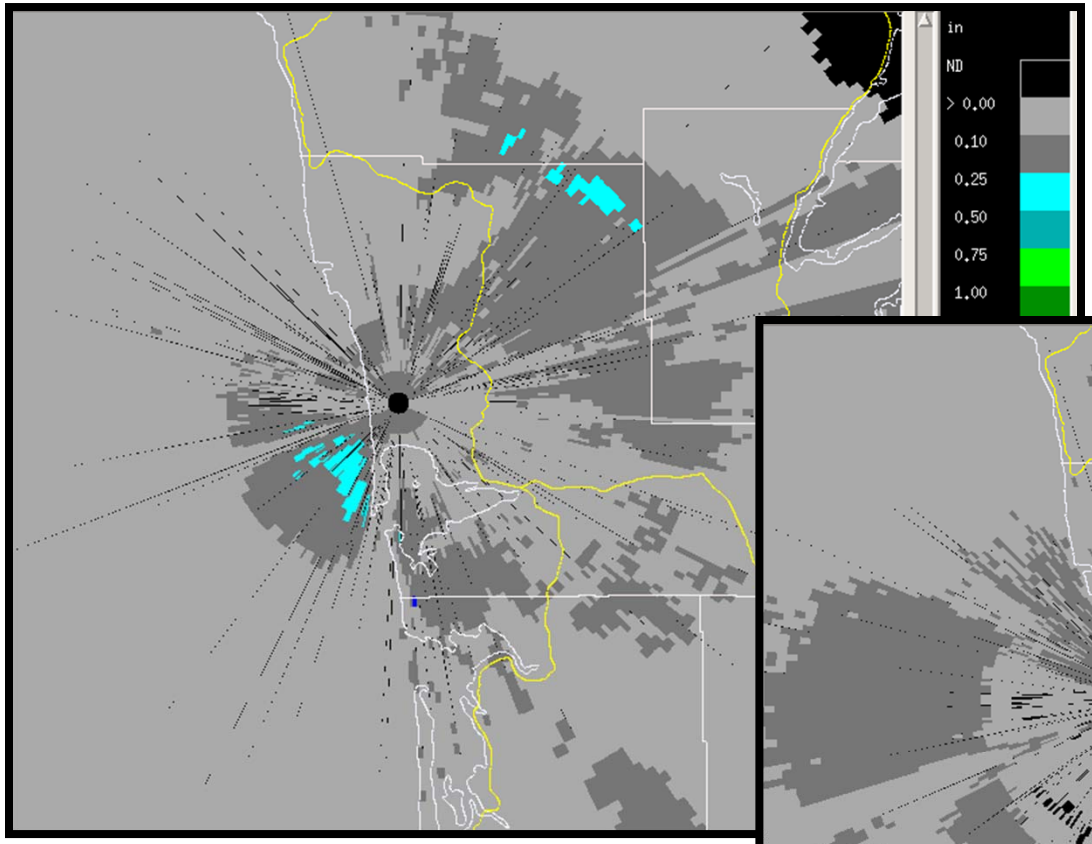
0.5 deg Reflectivity - 27 Dec 11 21:30Z - VCP 13



1.5 deg Reflectivity - 27 Dec 11 21:30Z - VCP 13

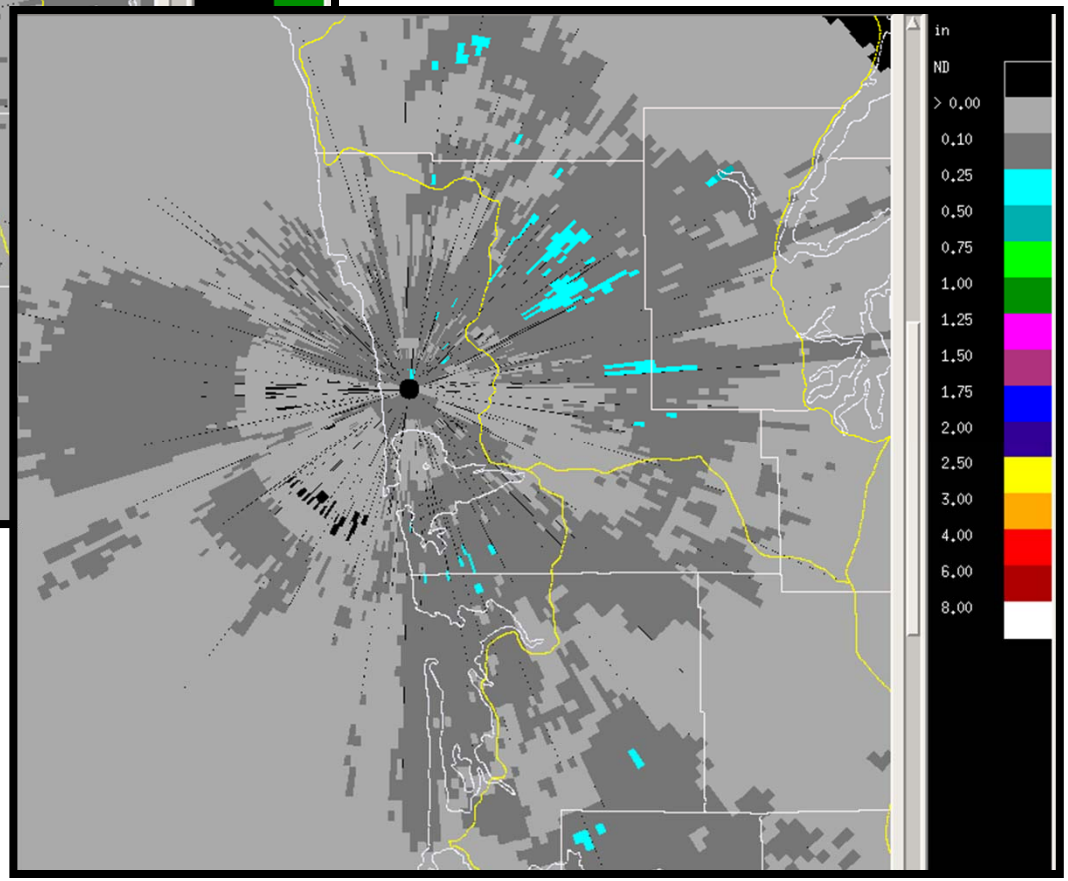


OHP & OHA - 27 Dec 11 23:41Z - VCP 13

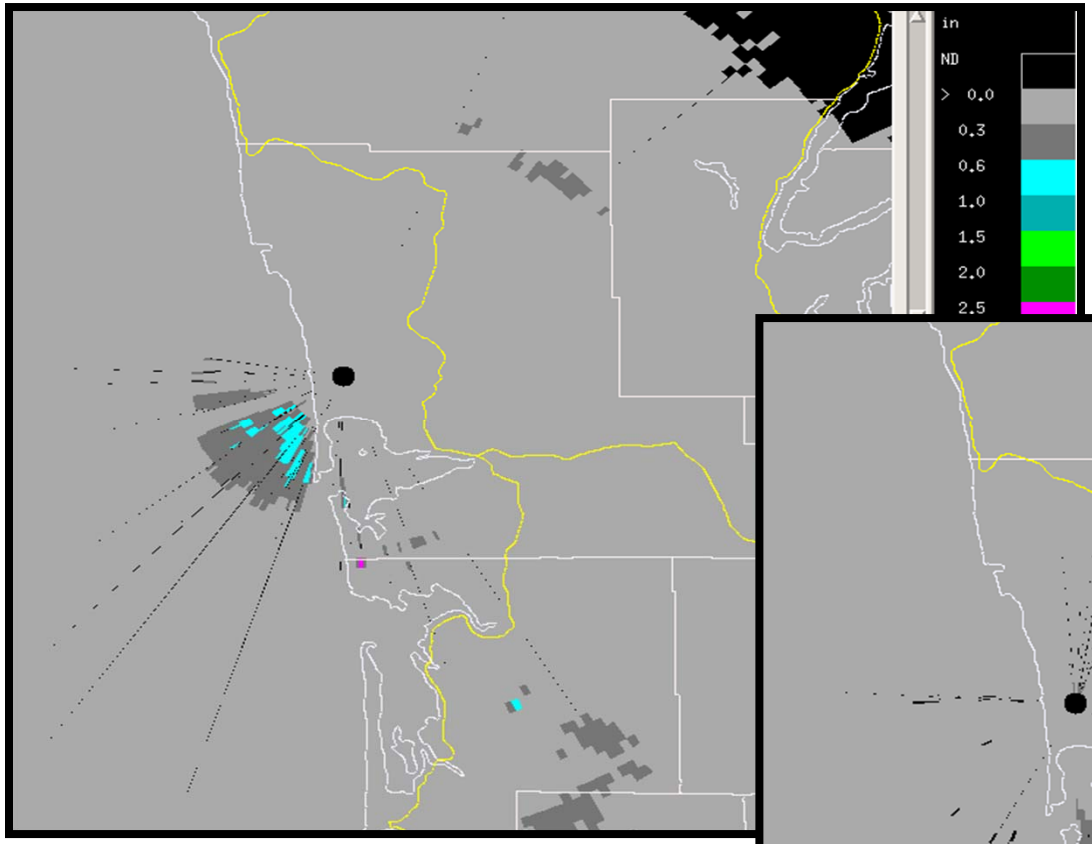


OHP

OHA

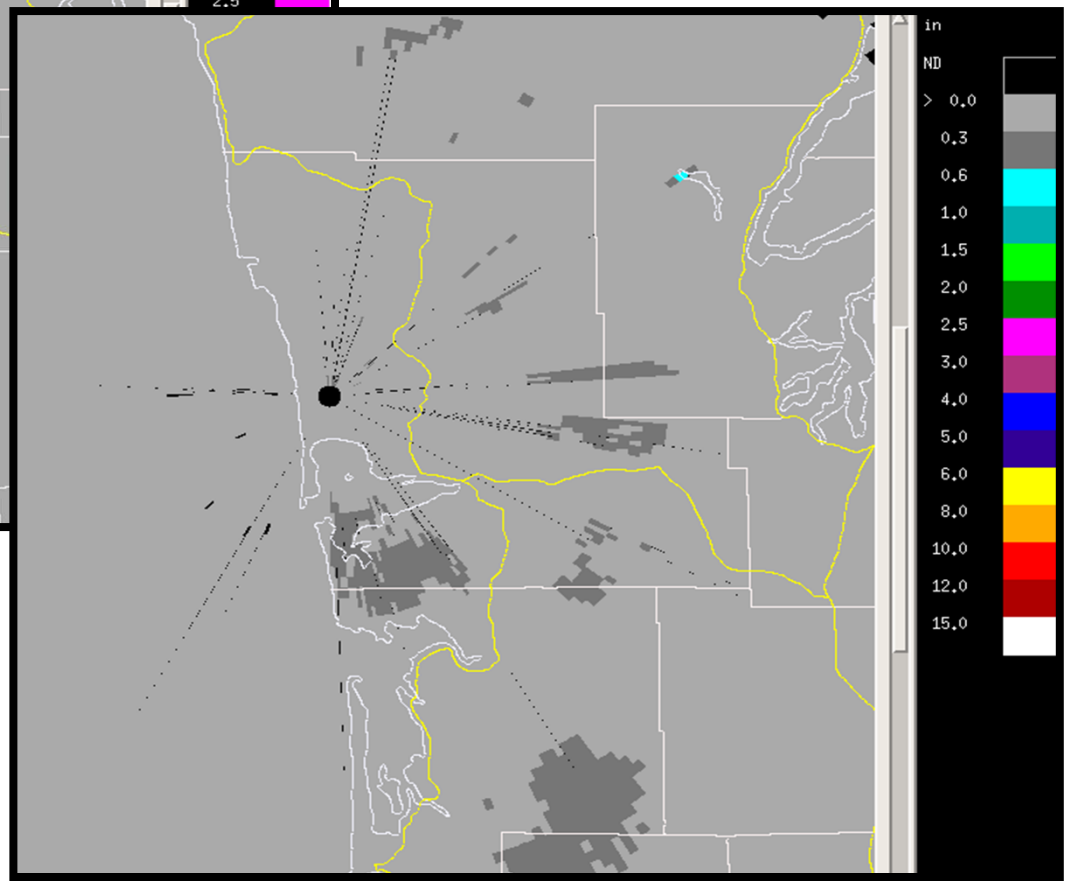


STP & STA - 27 Dec 11 23:41Z - VCP 13

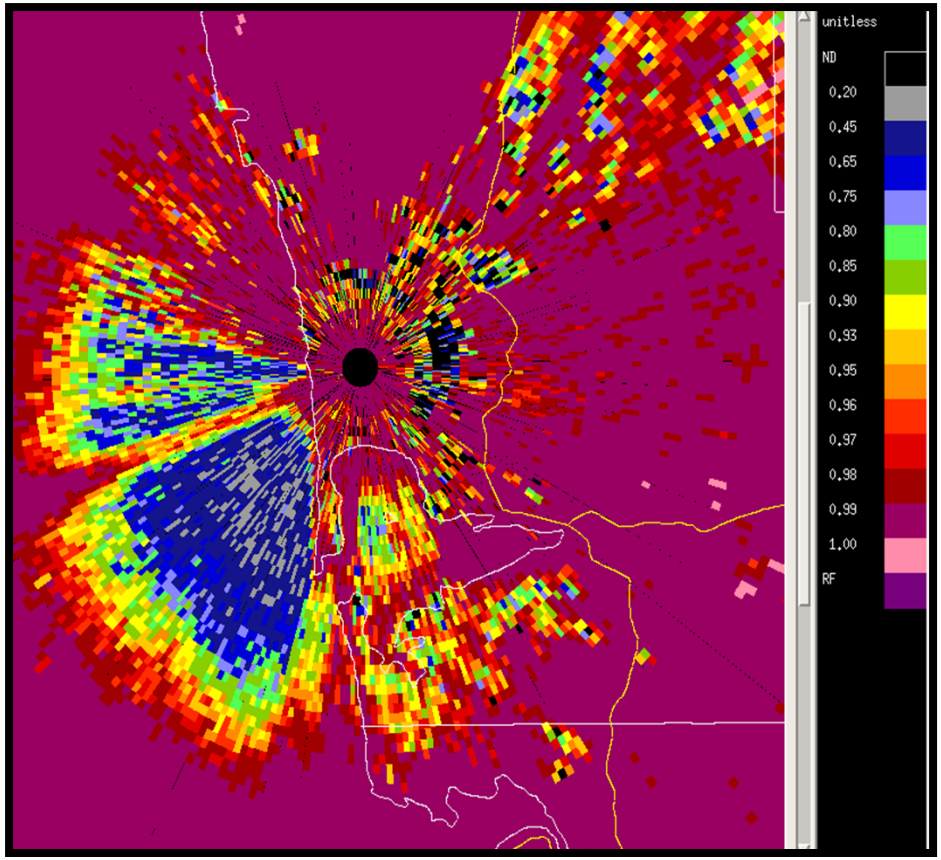


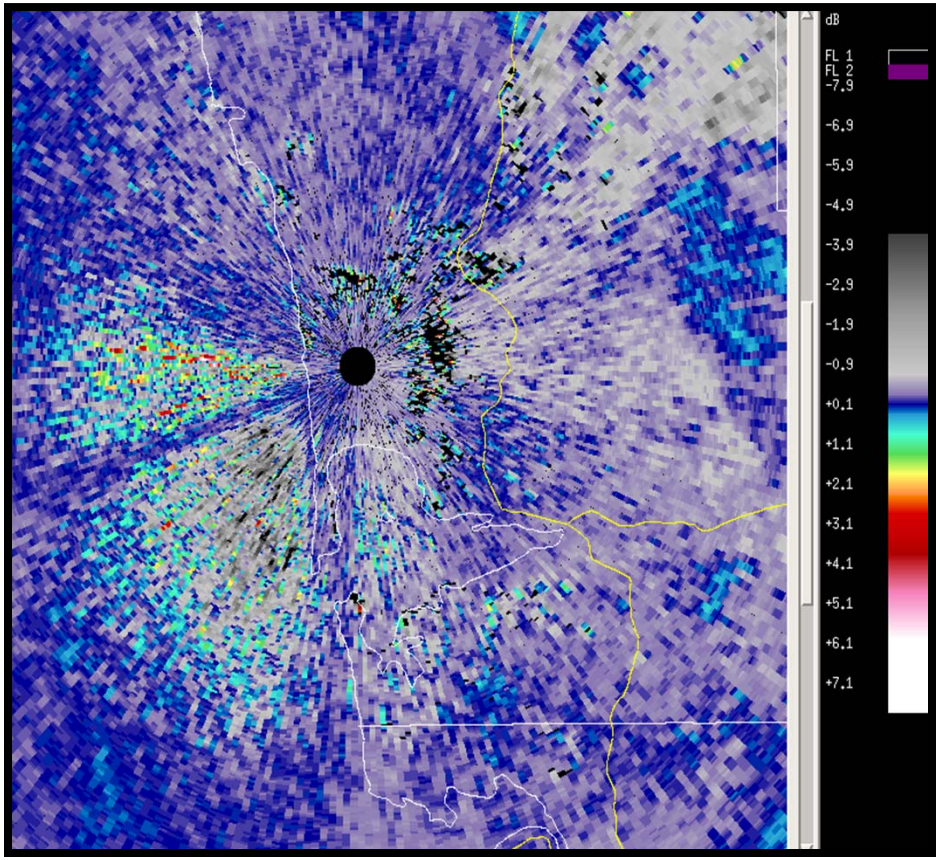
STP

STA

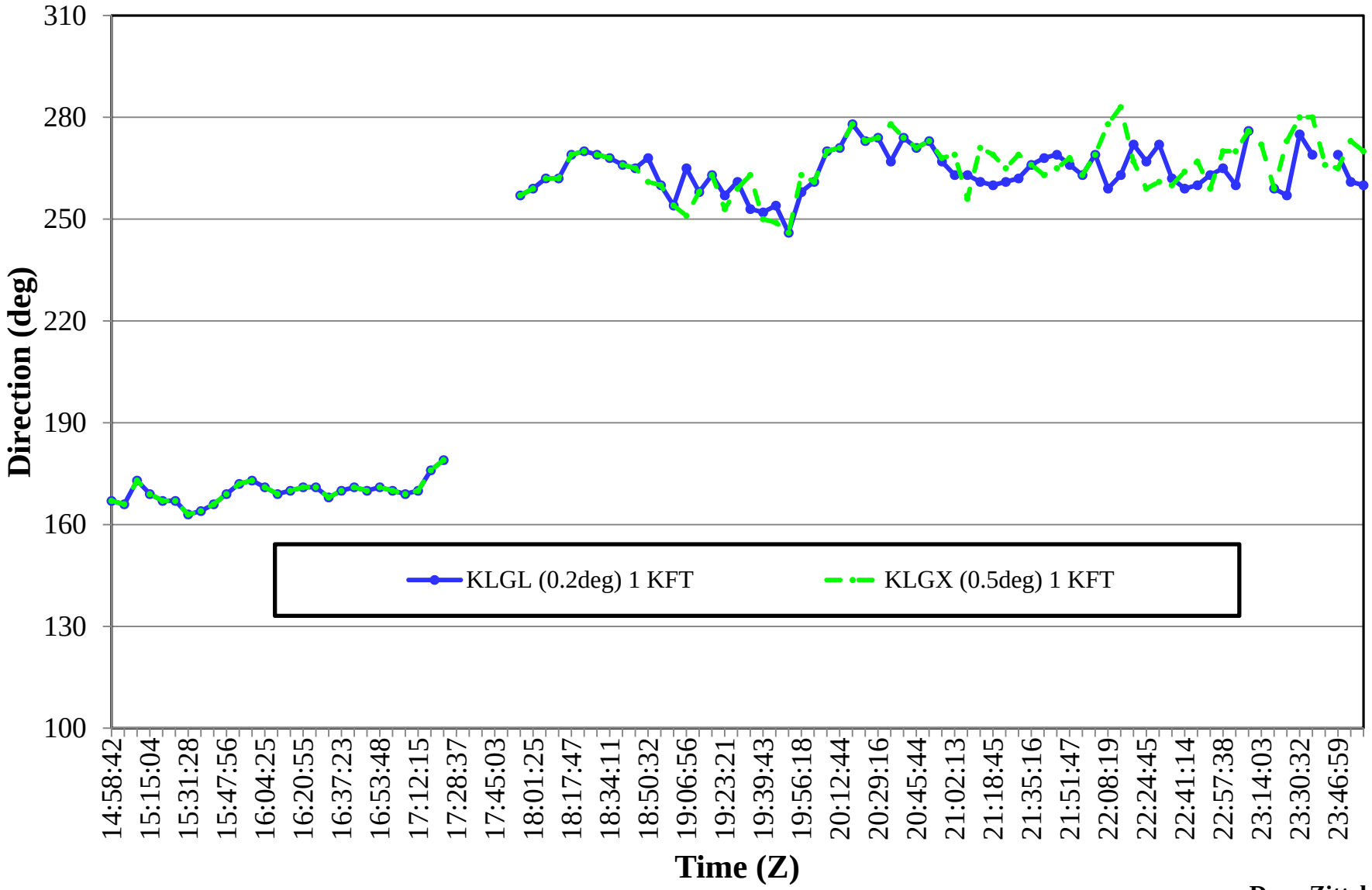


CC & ZDR - 27 Dec 11 23:41Z - VCP 13



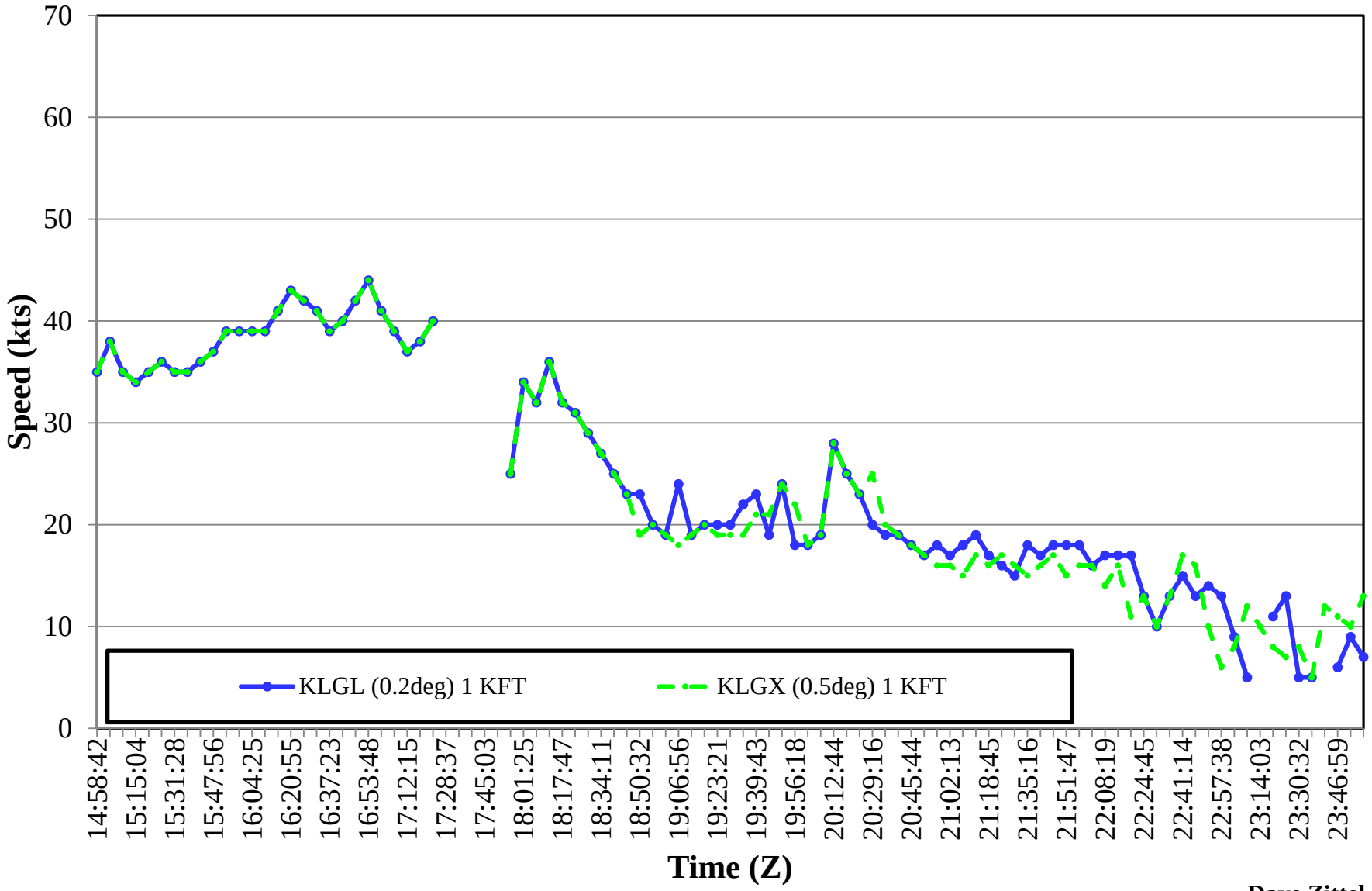


LGL vs LGX VWP Algorithm Evaluation
25 Dec '11 Wind Direction Comparison



Dave Zittel

LGL vs LGX VWP Algorithm Evaluation
25 Dec '11 Wind Speed Comparison



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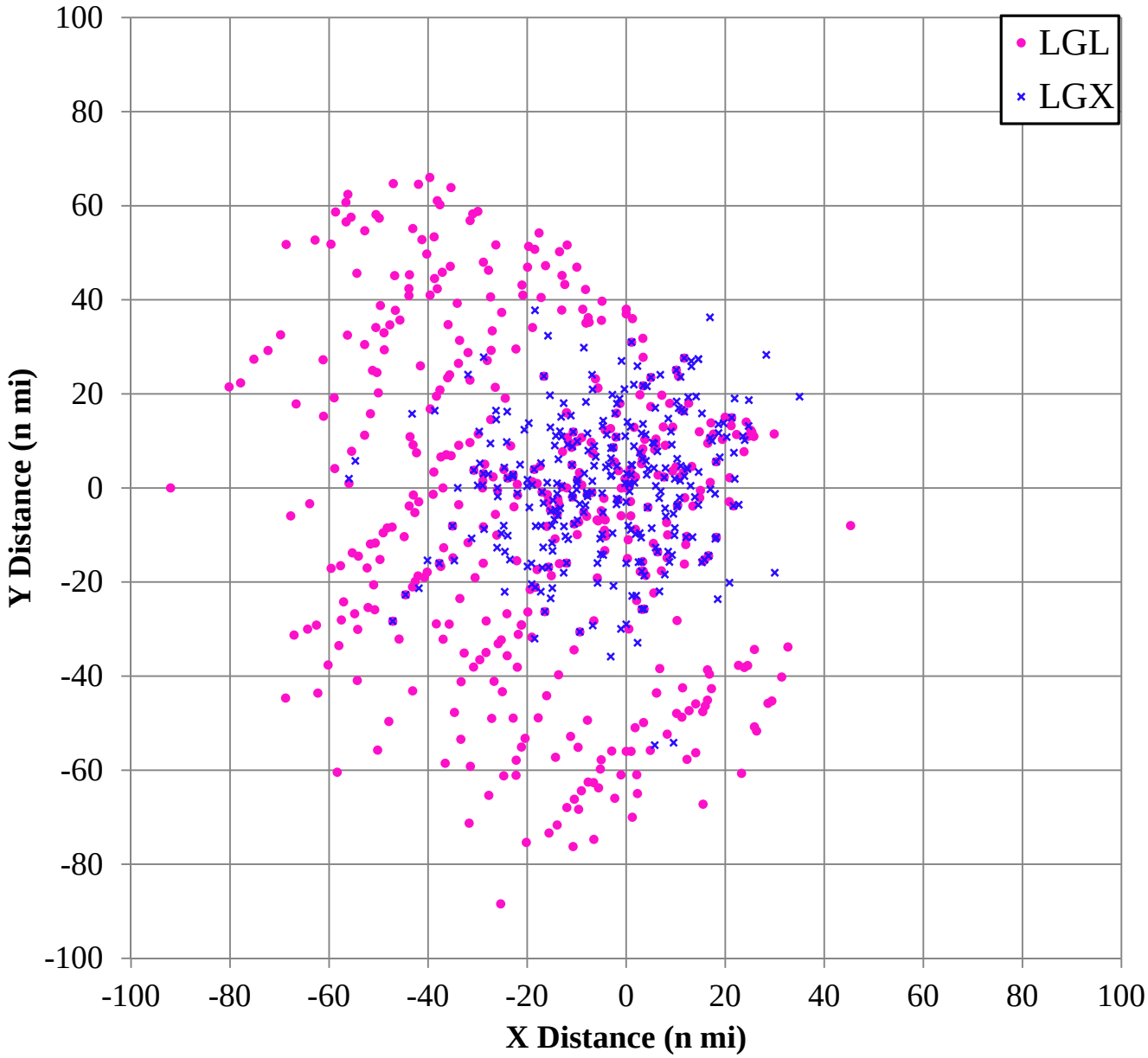
LGL vs LGX Storm Cell Location/Identification
25 December 2011, 14:58Z to 17:12Z



Dave Zittel

WFO Feedback

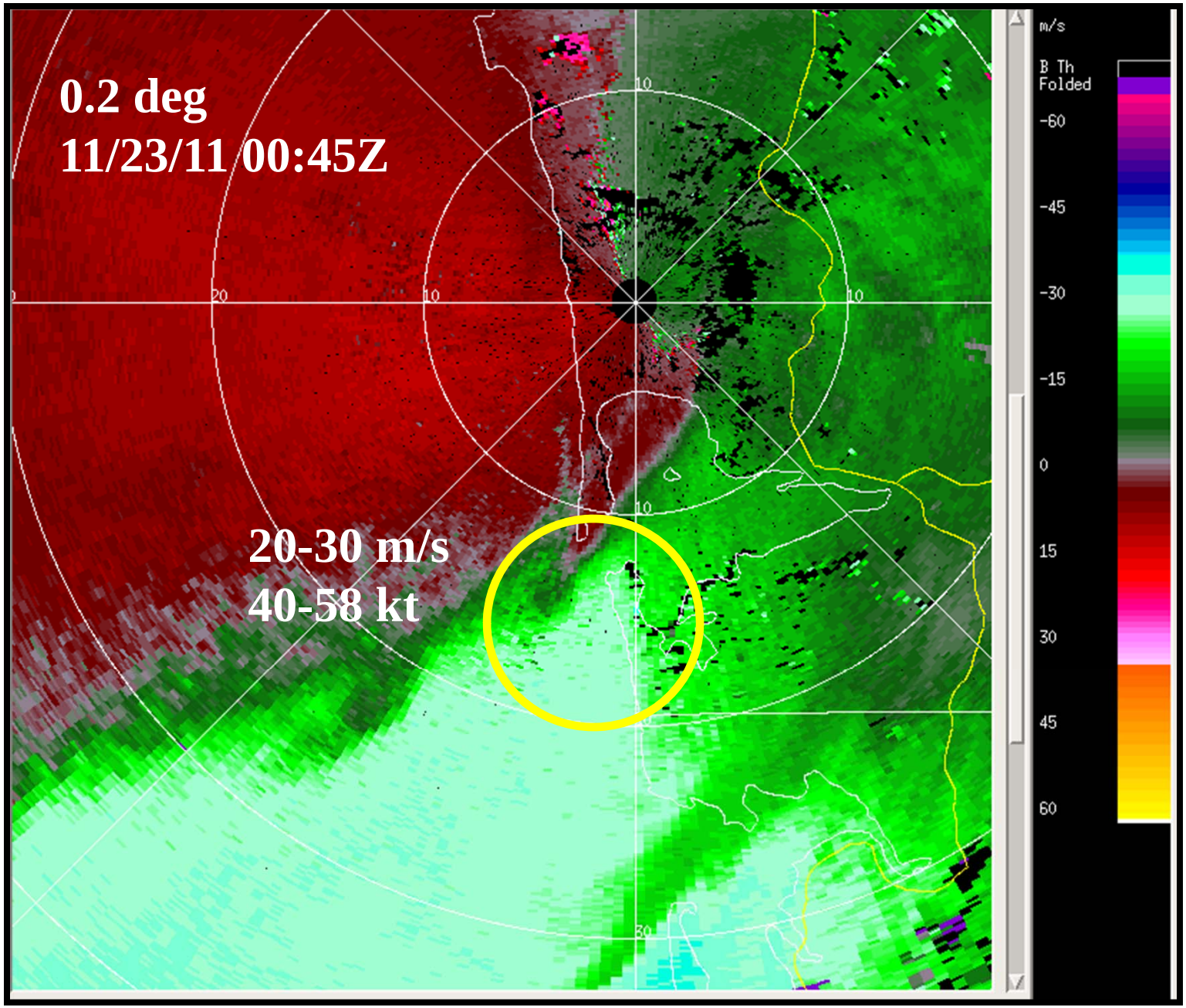
- Nov 22 – Strong Wind Event

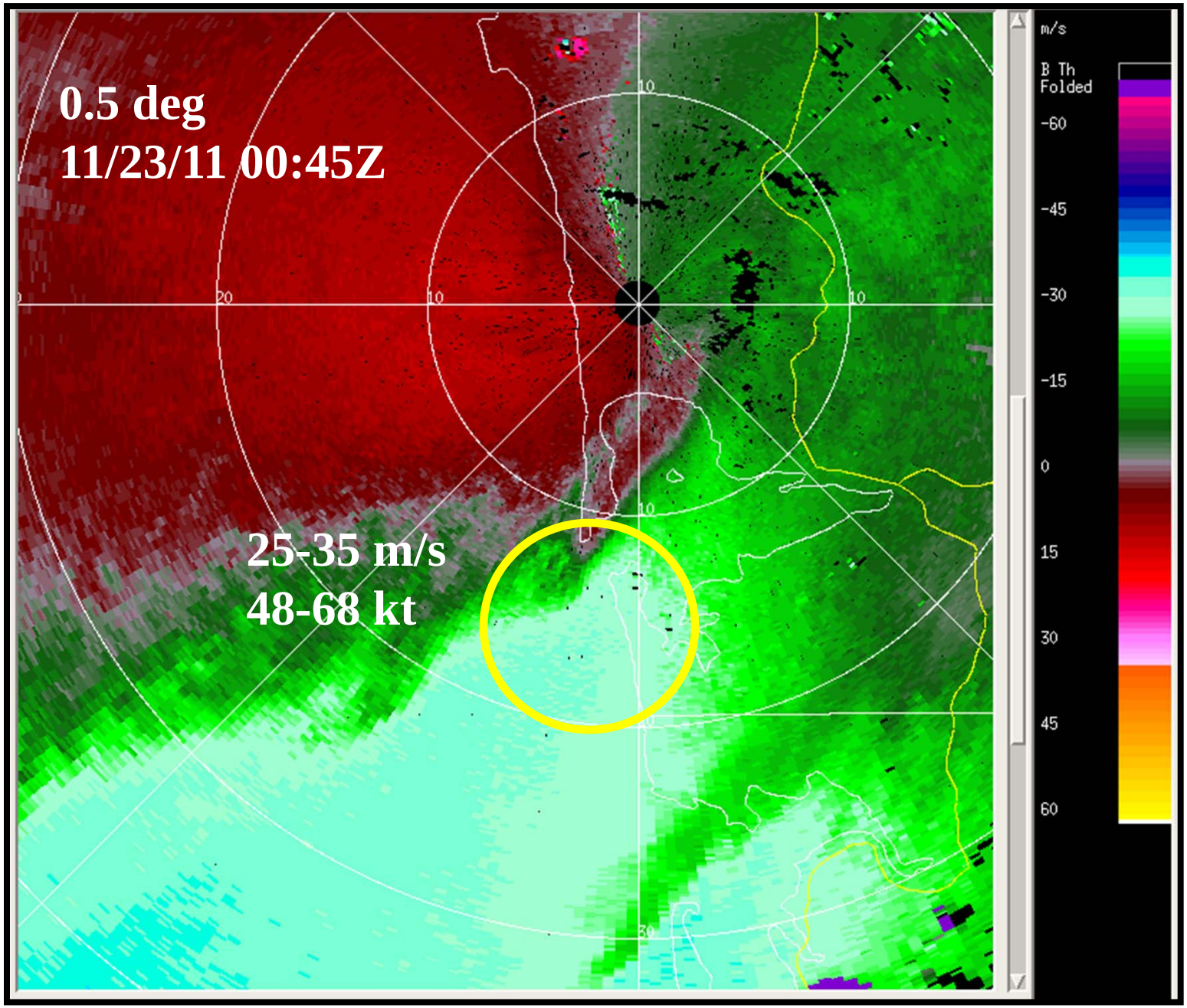
  - Staff used KLGX 0.2 degree velocity data

  - 55-60 kt winds 500-600 ft off the ground

  - Staff issued High Wind Warning & Gale Warning

  - 47 mph at Hoquiam ASOS, peak gust of 68 mph


0.2 deg
11/23/11 00:45Z
20-30 m/s
40-58 kt
m/s
B Th
Folded
-60
-45
-30
-15
0
15
30
45
60


0.5 deg
11/23/11 00:45Z
25-35 m/s
48-68 kt
m/s
B Th
Folded
-60
-45
-30
-15
0
15
30
45
60

WFO Feedback

- WFO Survey – Jan 2012:

  - Beneficial for low level wind analysis

  - Better view of fronts and precipitation

  - More clutter, but is manageable

  - Possible benefits for waterspout detection

Summary

- Review & Analysis continues through October 2012
- Operational Benefits: low level winds, precipitation, fronts
- Dual Pol is helpful in mitigating impacts of sea clutter
- No unanticipated impacts from lower angle on algorithms