Operational Benefits of Phased Array Radar Data During a Significant Tornado Event: 31 May 2013 Charles M. Kuster (CIMMS), Pamela L. Heinselman (NOAA NSSL), Marcus Austin (NWS Norman)

Warning forecaster examined rapid-update PAR data and conventional WSR-88D data

- Compare significant stormscale features and evolution
 - Quantitative analysis of important features
- Goal: Determine impact of radar update time on warning decisions in an environment clearly favorable for tornadoes





426pm - only storms in our area are in Kay county, not severe yet. Environment S of I-40 is prime for supercells and tornados! Stay alert!



NSSL Lab Review Feb 25–27, 2015



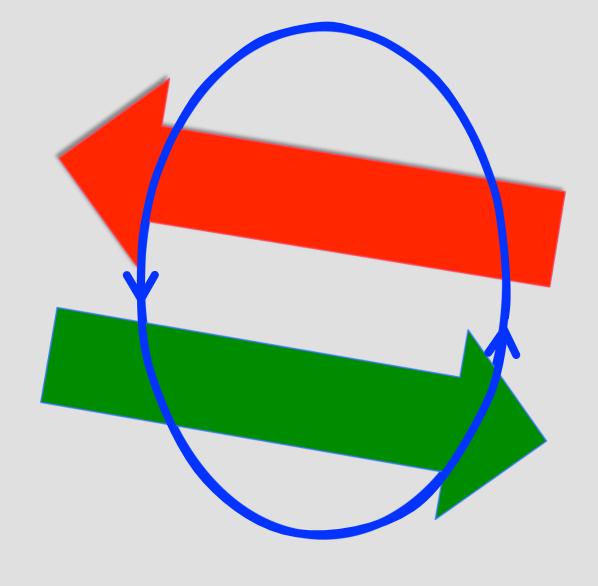


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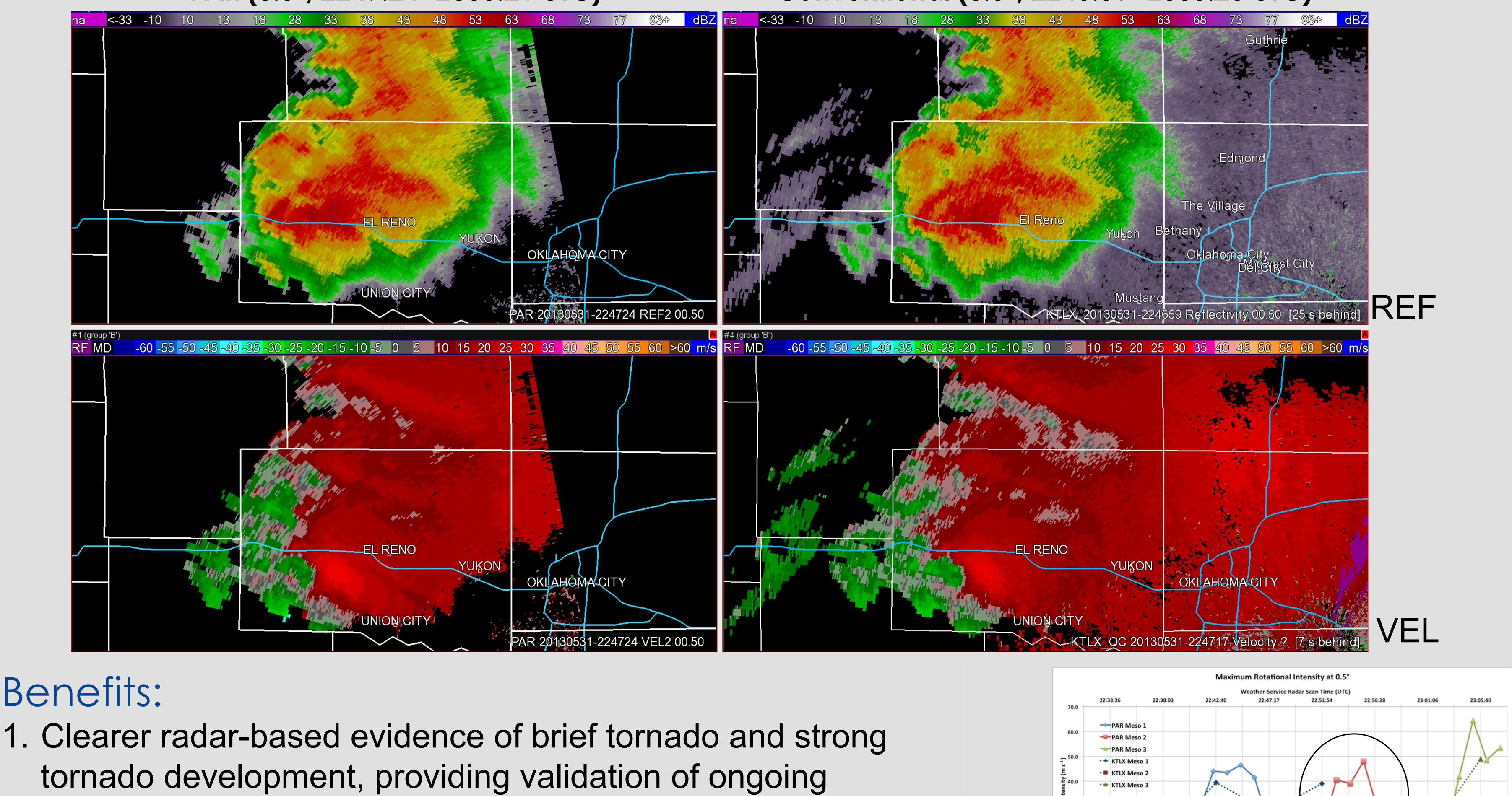
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Radar velocities:



Impact of PAR: Forecaster better able to observe storm organization and tornadogenesis Conventional (0.5°, 2246:59–2305:23 UTC) PAR (0.5°, 2247:24–2306:21 UTC)



Benefits:

- warnings
- warning issuance/updates



PAR

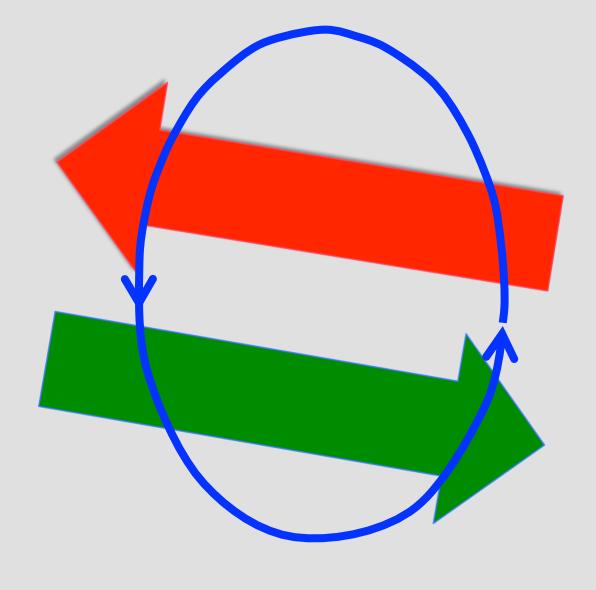
2. More confidence in position and motion of tornado for use in

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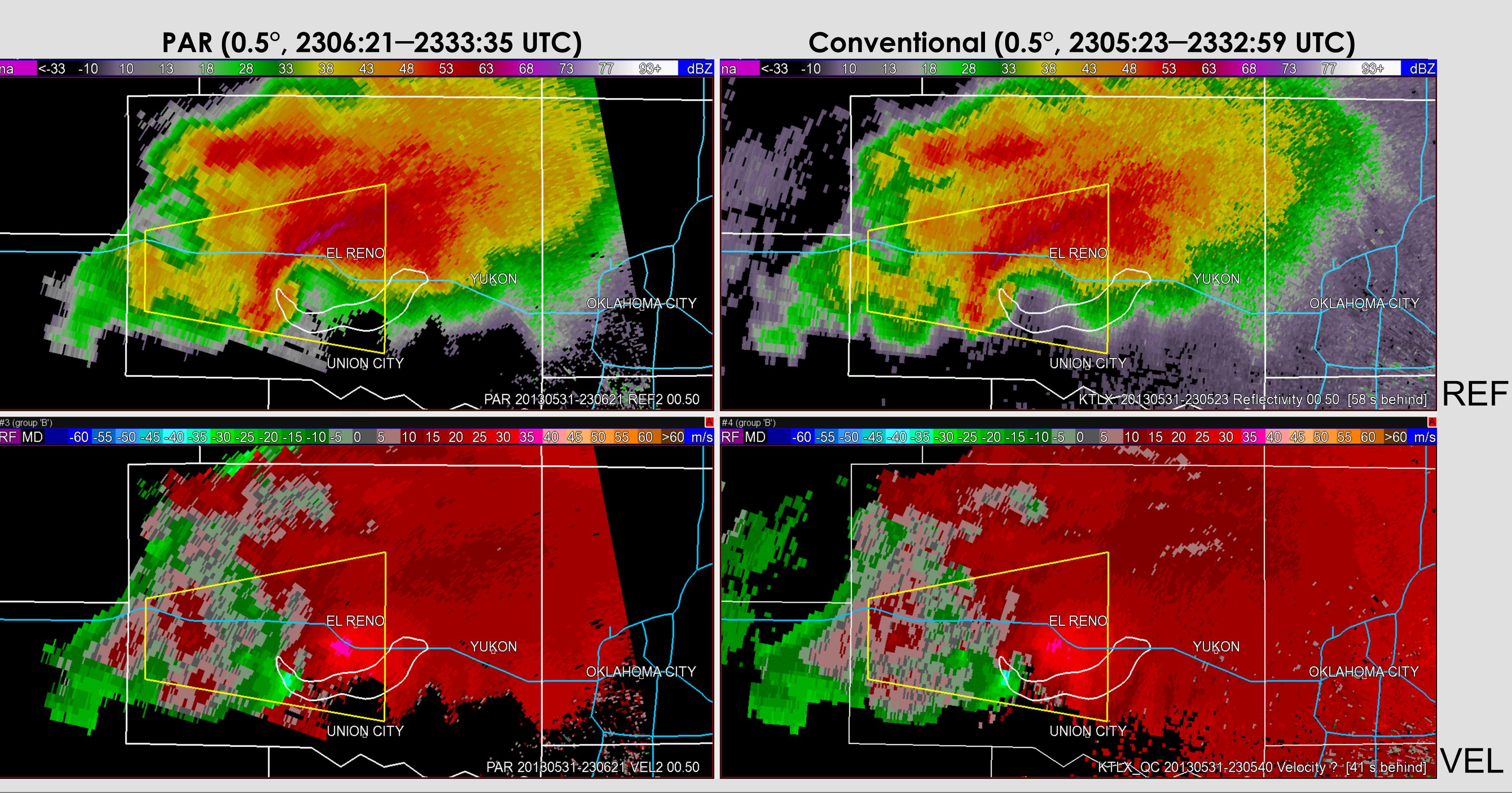
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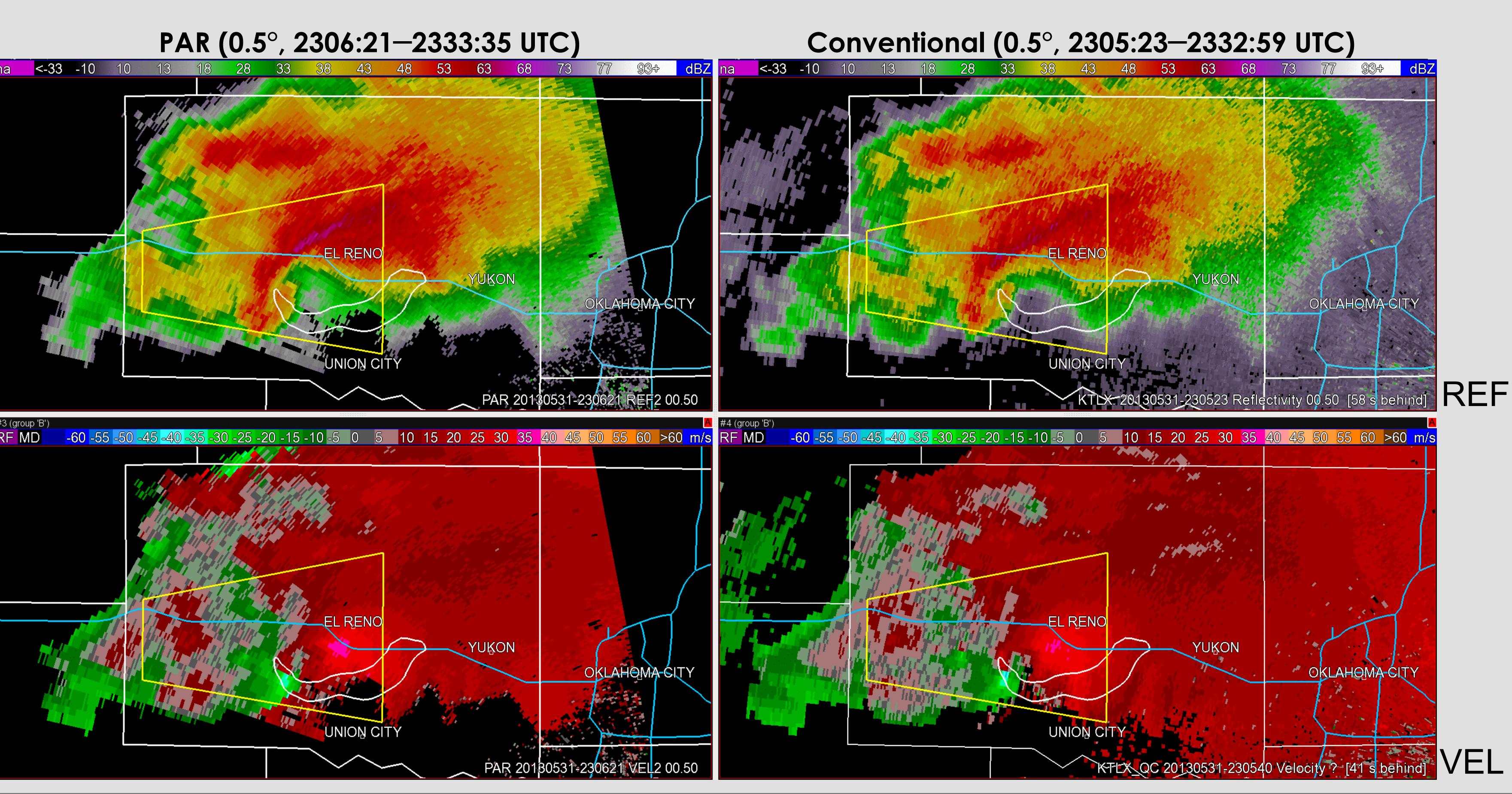
Radar velocities:



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Impact of PAR: Forecaster better able to observe rapid changes in tornado motion





Benefits:

1. Clearer radar-based evidence of brief tornado and strong tornado development, providing validation of ongoing warnings 2. More confidence in position and motion of tornado for use in warning issuance/updates

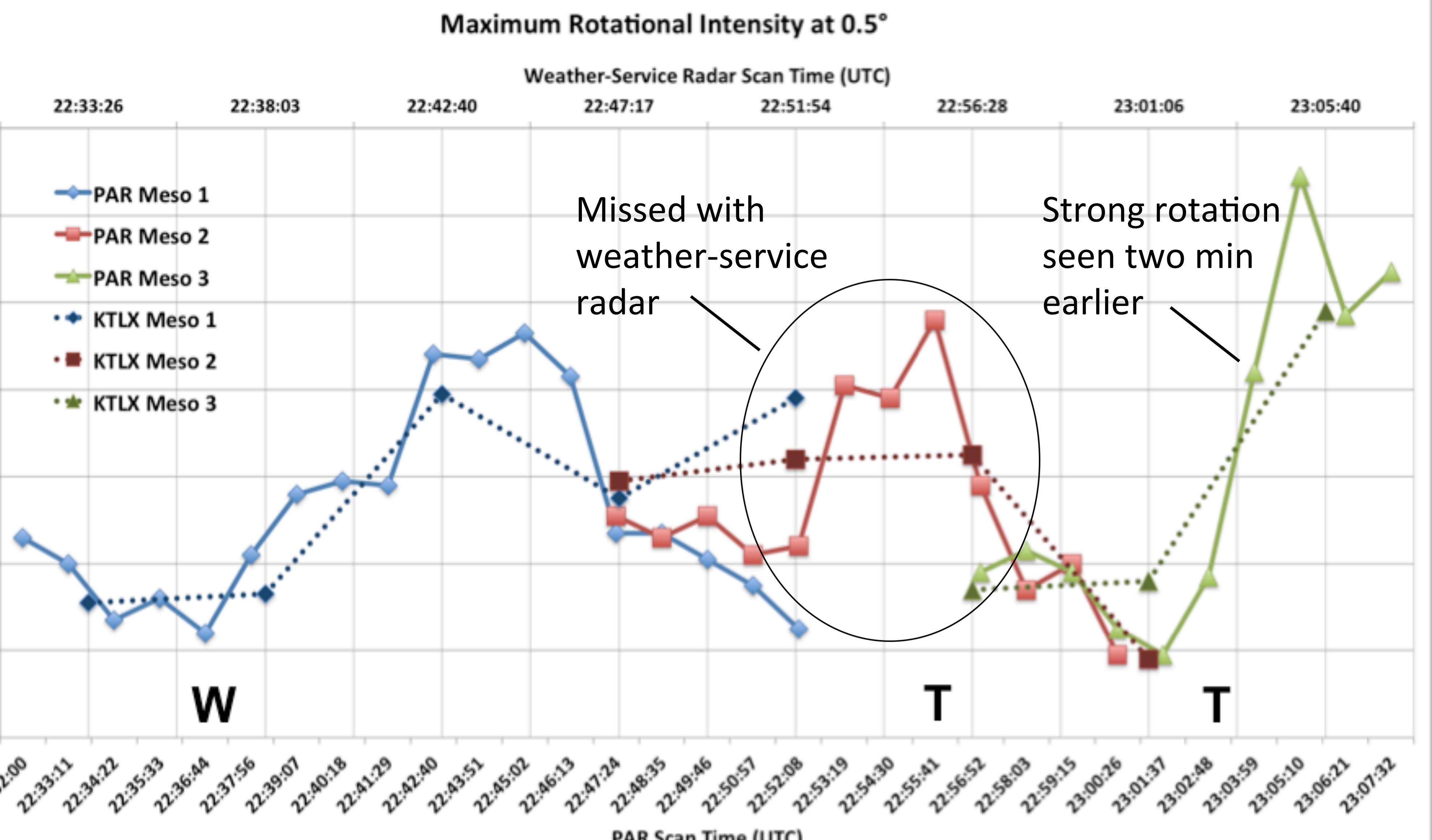


Warning forecaste examined rapid-u PAR data and conventional WSR	70.0
data	60.0
 Compare significant scale features and e 	- 50.0
 Quantitative analysis important features 	s m) kisua
 Goal: Determine imp radar update time or 	tional Inte
decisions in an envir clearly favorable for	20.0
Radar	10.0
velocities:	0.0
EVERE STORMS	

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PAR Scan Time (UTC)