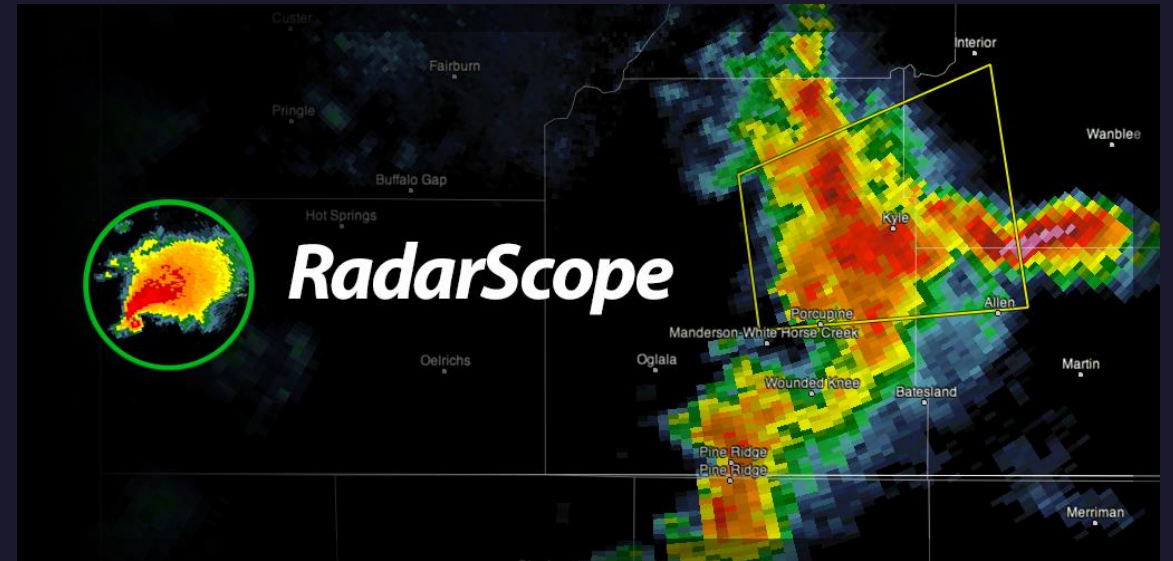


Introduction to RadarScope

By: Anthony Yattoni



How do Radars Work? (Dual-Pol)

- Sends out a signal in both horizontal and vertical directions
 - Understanding of the targets detected
- Different Types of radars can “see through” storms more effectively
- WIU radar is an X-Band
- EXPENSIVE



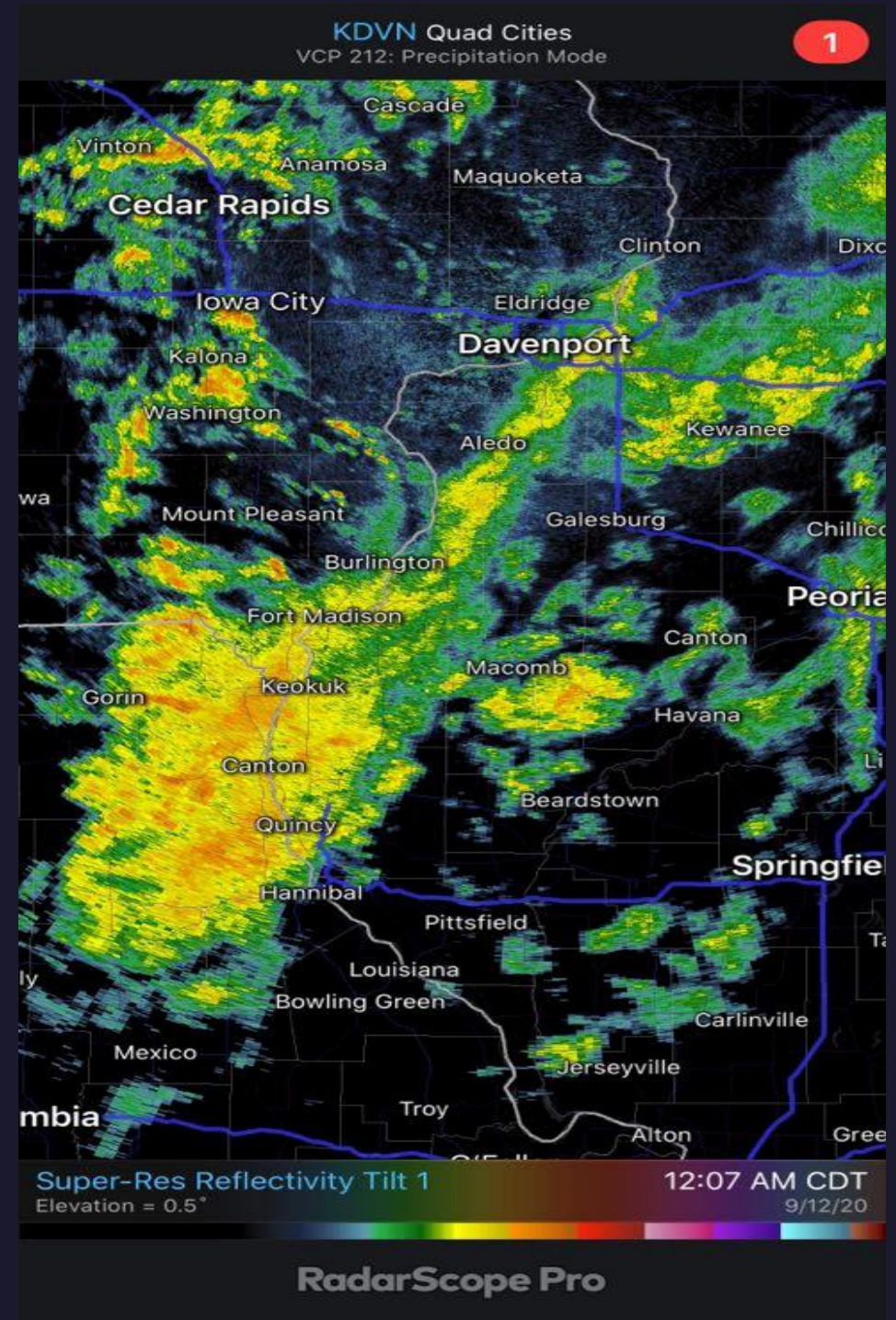
What is RadarScope

- The best radar app (for most people)
- Reliable, up to date SUPER RES data directly from NWS radars
- \$9.99 one-time purchase (mobile)
- \$29.99 one-time purchase (pc)
 - Subscriptions available \$9.99/year (Tier 1)
 - \$99.99/year (Tier 2)



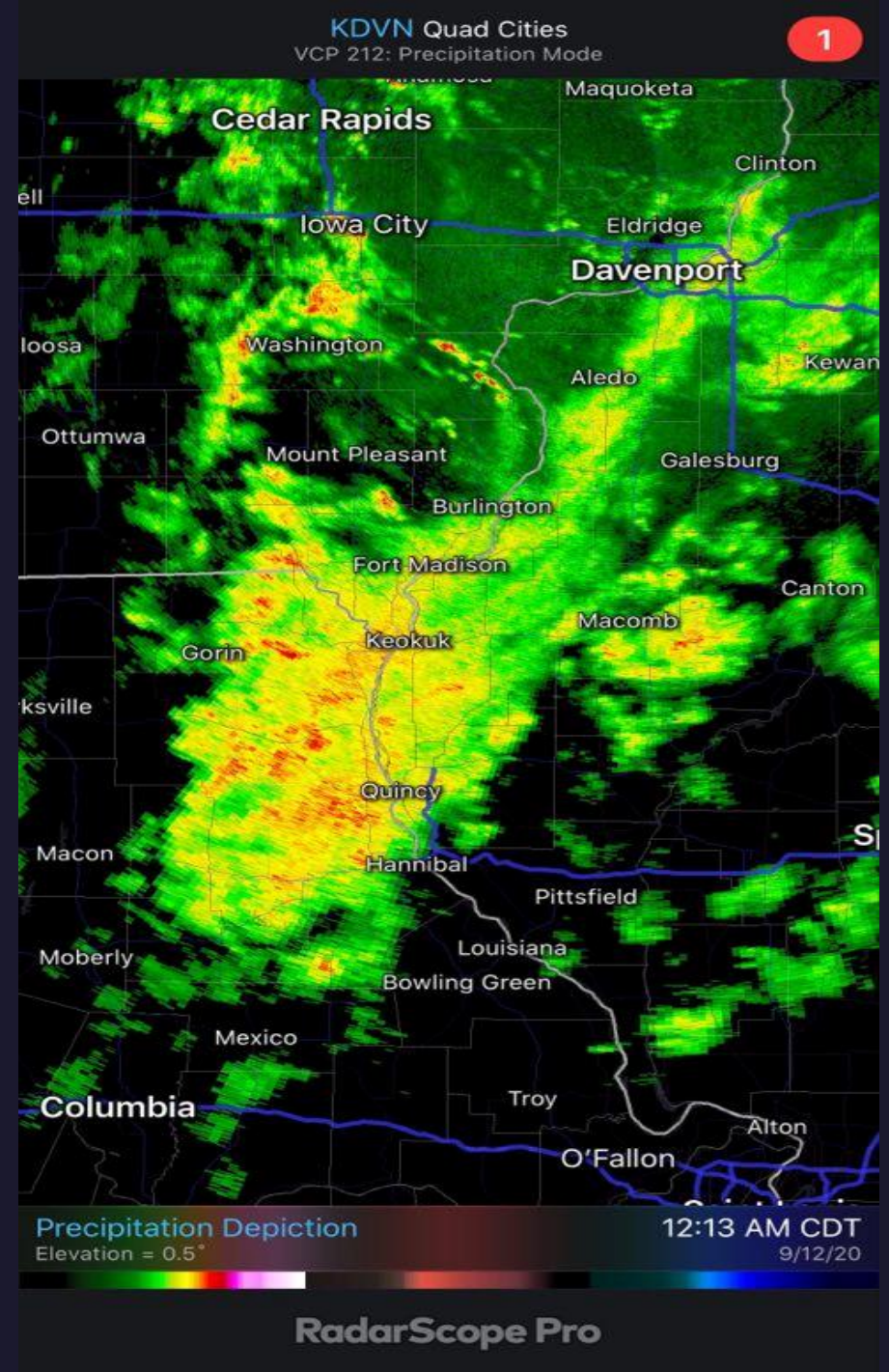
Super-Res Reflectivity

- Highest Reflectivity offered
- dBZ
- Different tilts
 - 0.5
 - 0.8
 - 1.2
 - 1.7



Precipitation Depiction

- Differentiate between rain, snow, sleet
- Useful in winter
- See snow/rain line



Super-Res Velocity

- Highest resolution velocity product available
- Sees directions of the wind
- Green = toward radar
- Red = away from radar
- Tight couplet typically means tornado

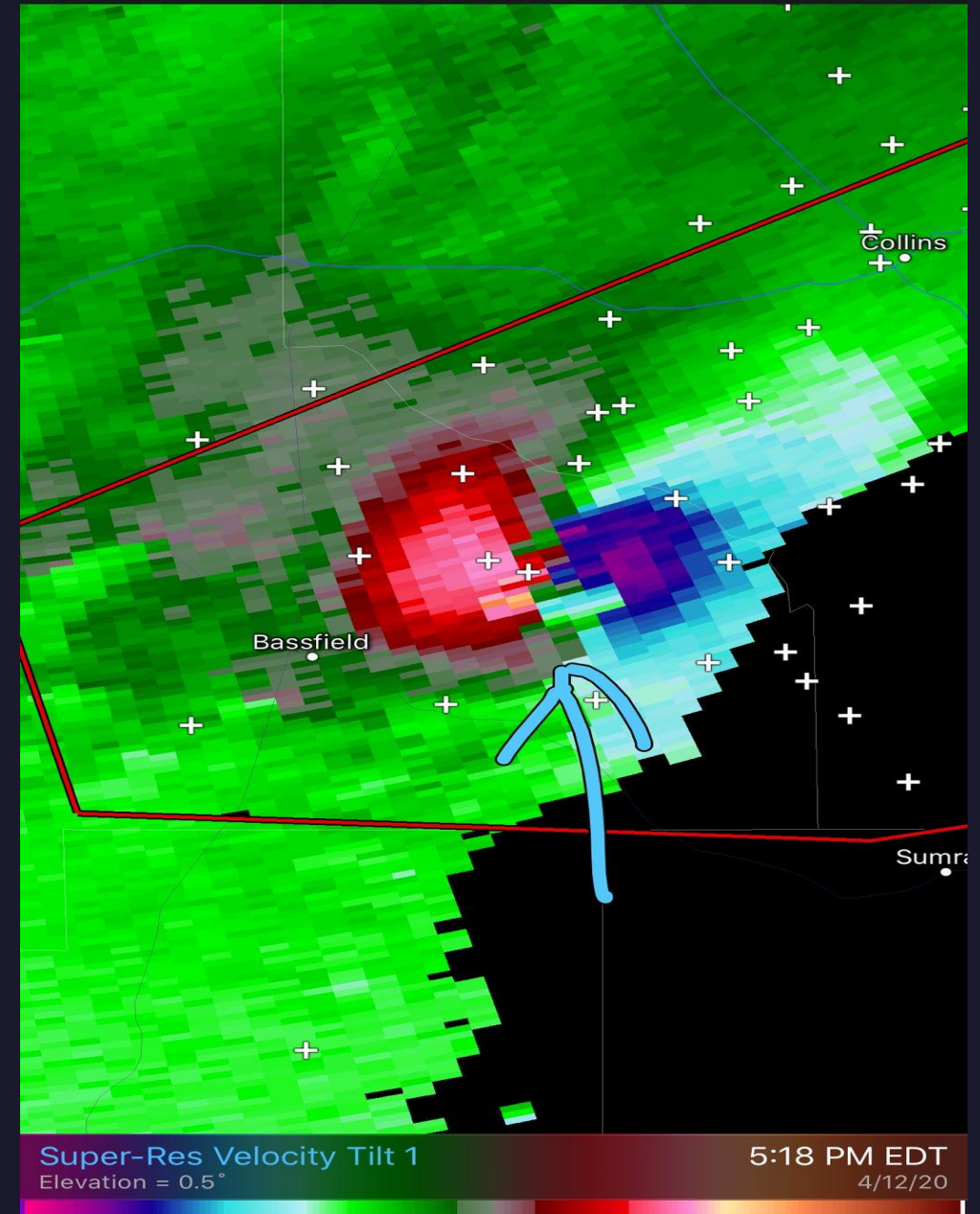
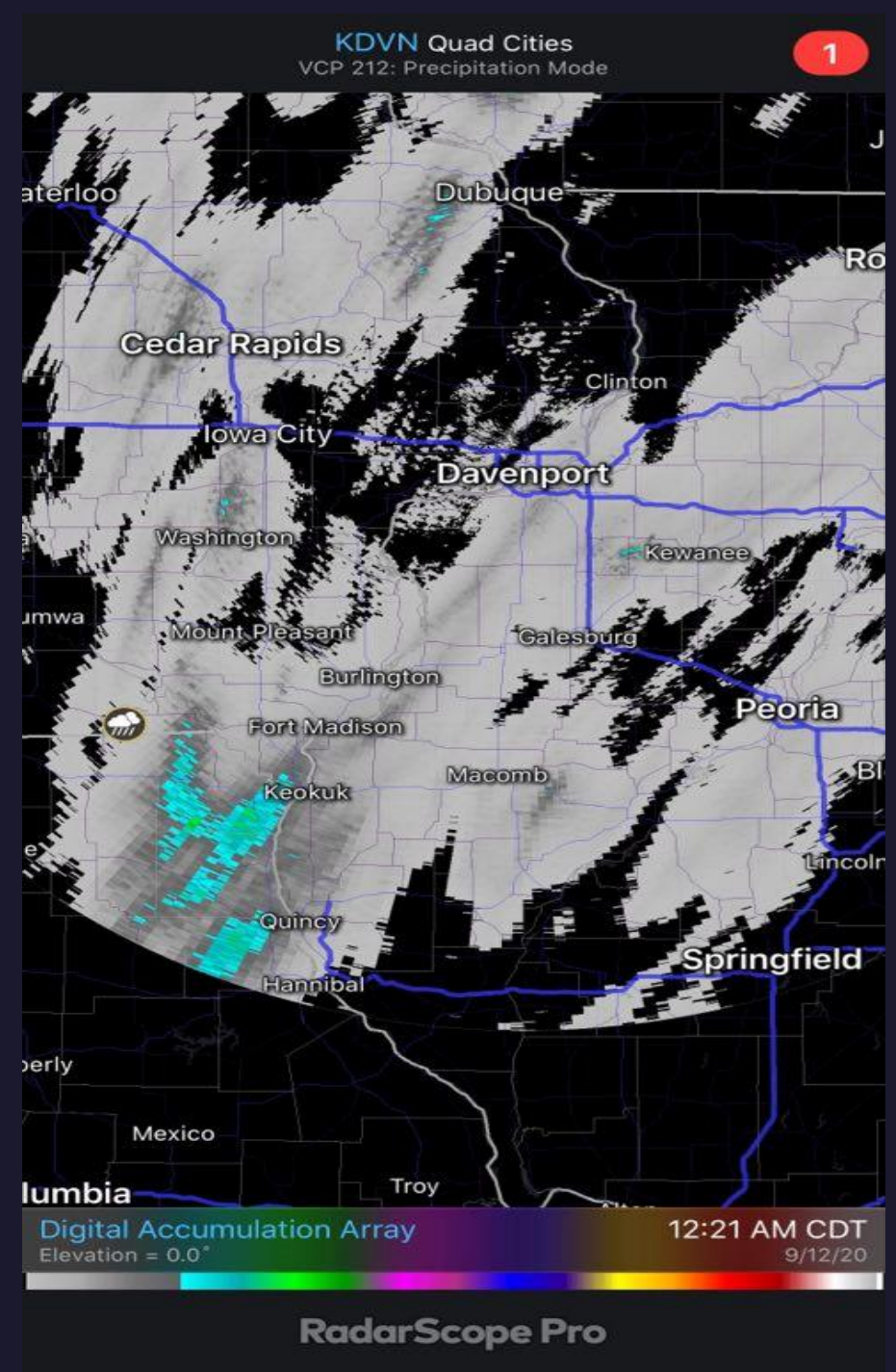


Photo by: Marc Weinberg

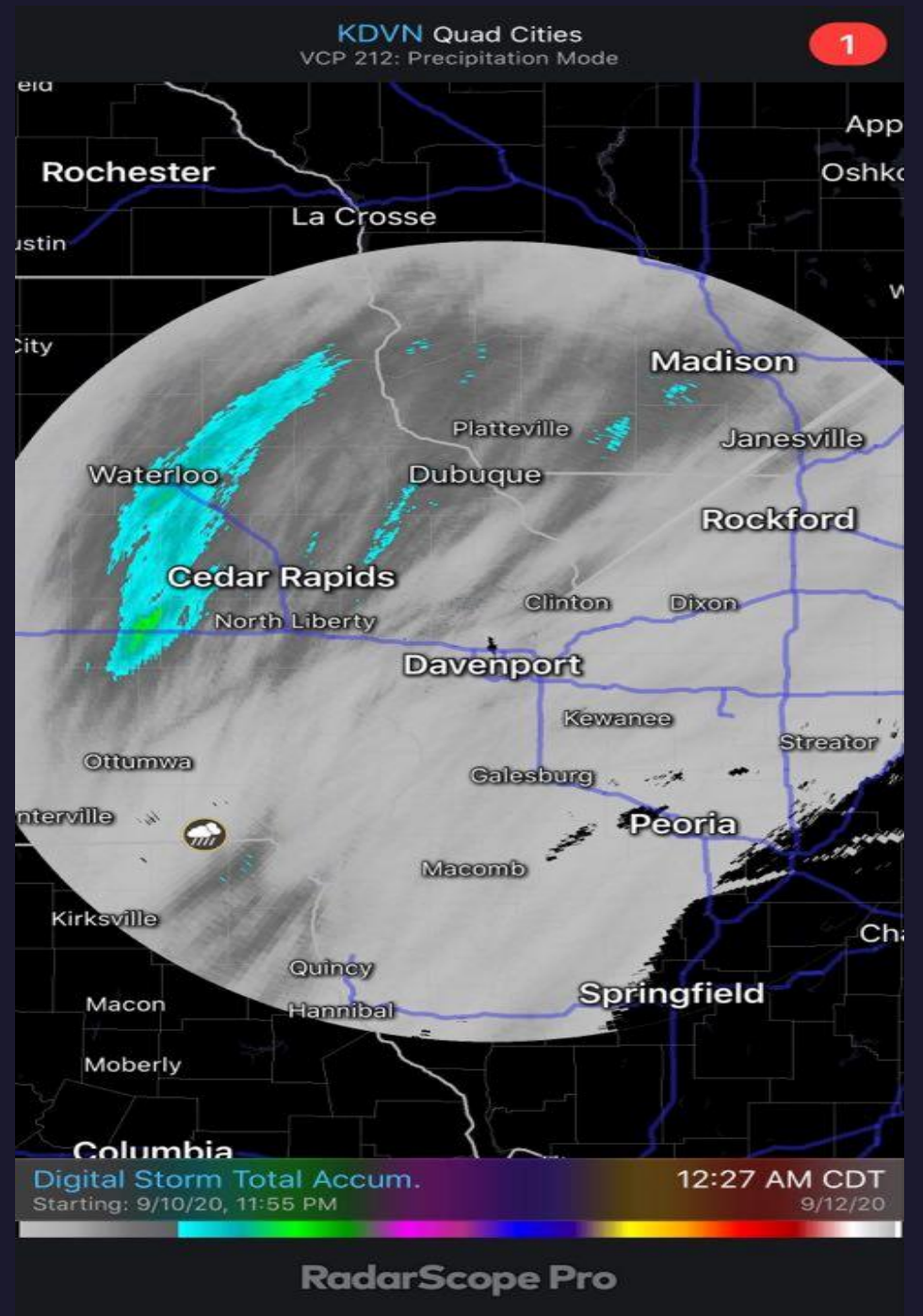
Digital Accumulation Array

- One-hour storm difference
- Dual polar product
- Updated once per scan



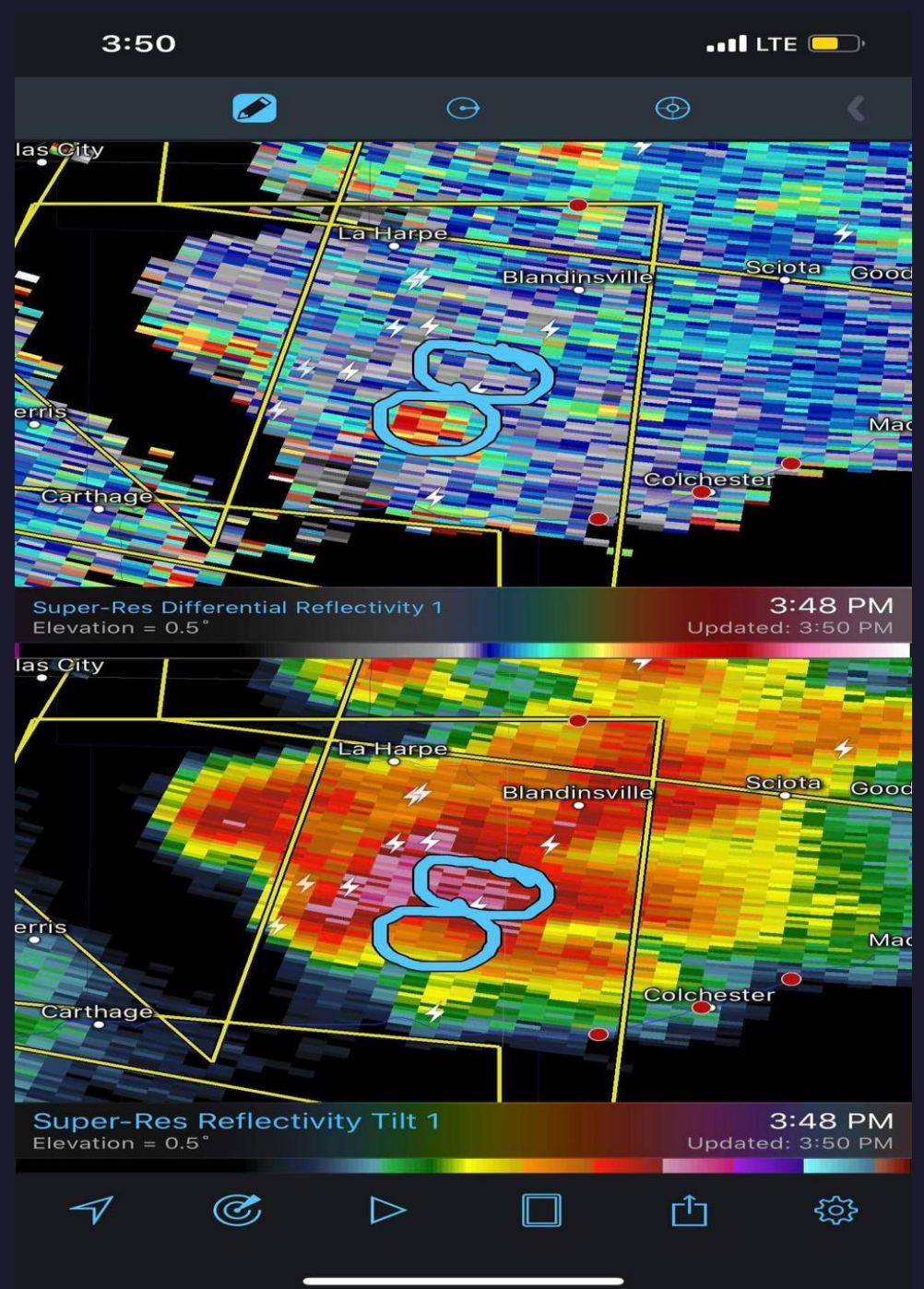
Digital Storm Total Accumulation

- Shows precip values per the event
- Does not update every scan
 - Typically 10-minute updates



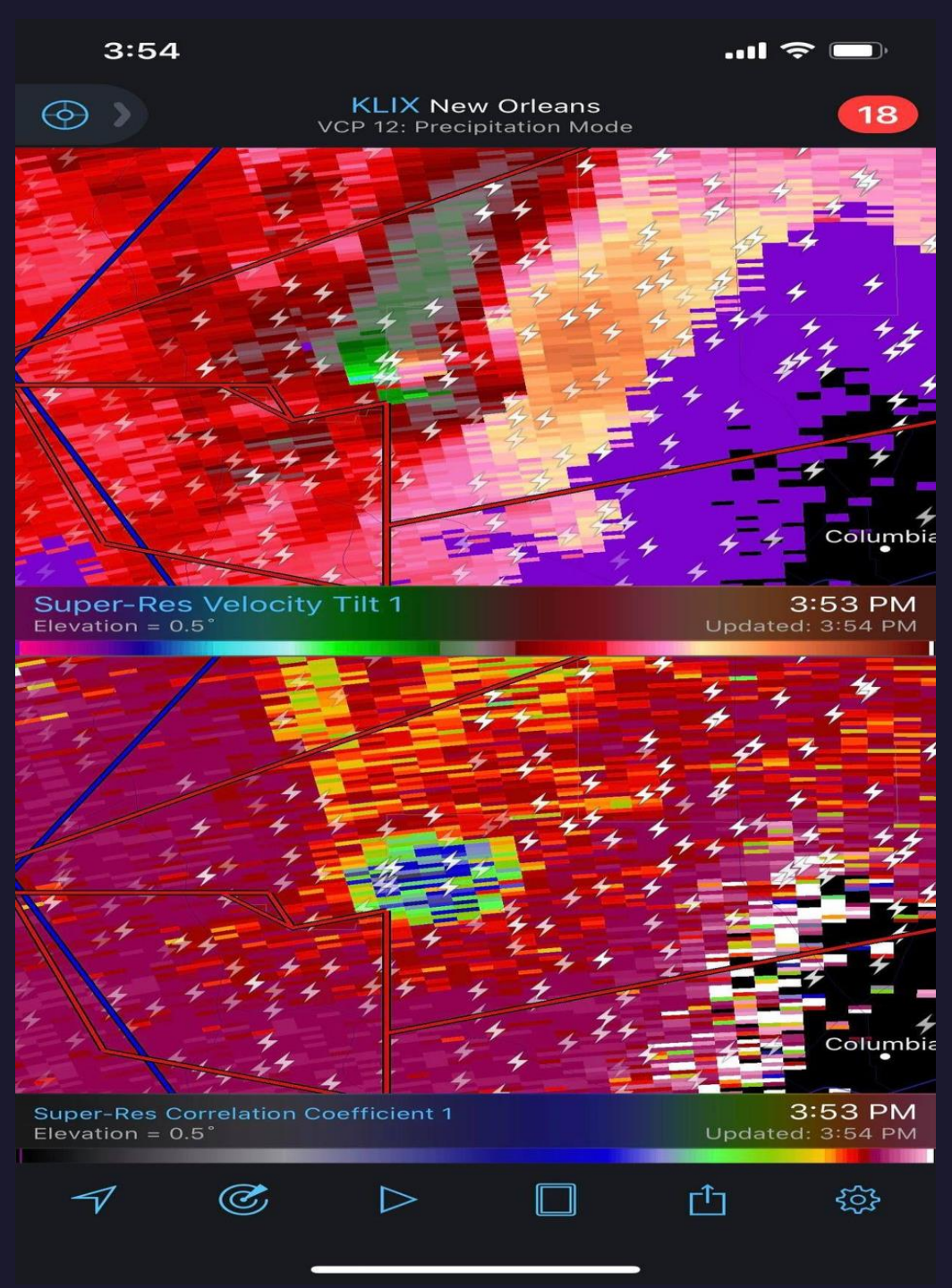
Super-Res Differential Reflectivity

- Uses the dual pol technology to differentiate between vertical and horizontal particles
- Hail and inflow are the most useful properties



Super-Res Correlation Coefficient

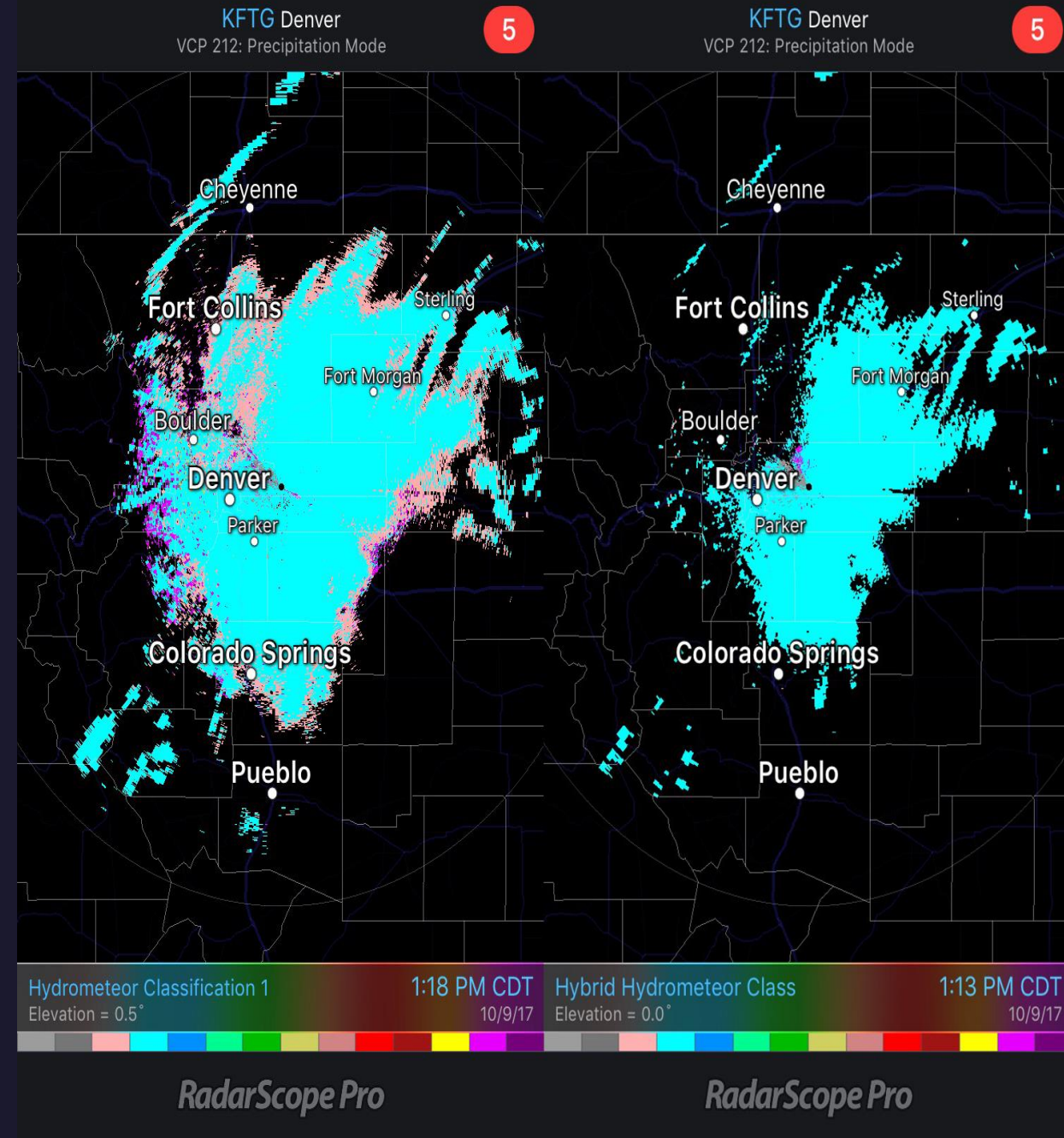
- Can detect different sizes of particles being reflected to the radar site
- Most common is the tornadic debris signature
- This will give a "radar confirmed tornado"



Hydrometer Classification

- Can determine possible precip type
- 11 possible choices (but more)
 - Clutter, ice crystals, dry snow, wet snow, light rain, heavy rain, big drops, graupel, hail/rain, large hail, giant hail

Photo By: David Moran

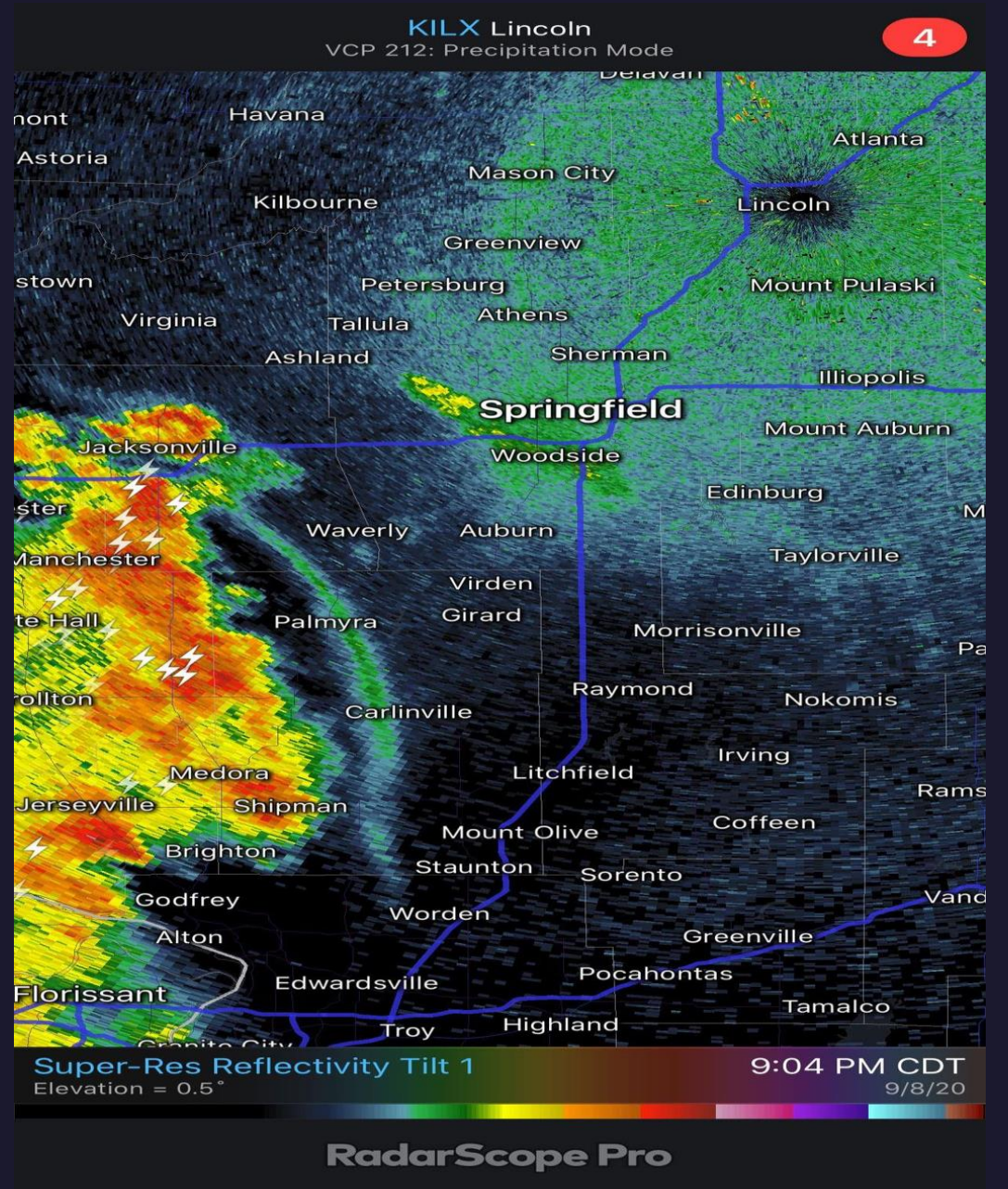


Enhanced Echo Tops

- Gives values of the tops of clouds
- Useful to see how strong a storm can be
- >50kft typically means good things are going to happen
- Know your beam height!!

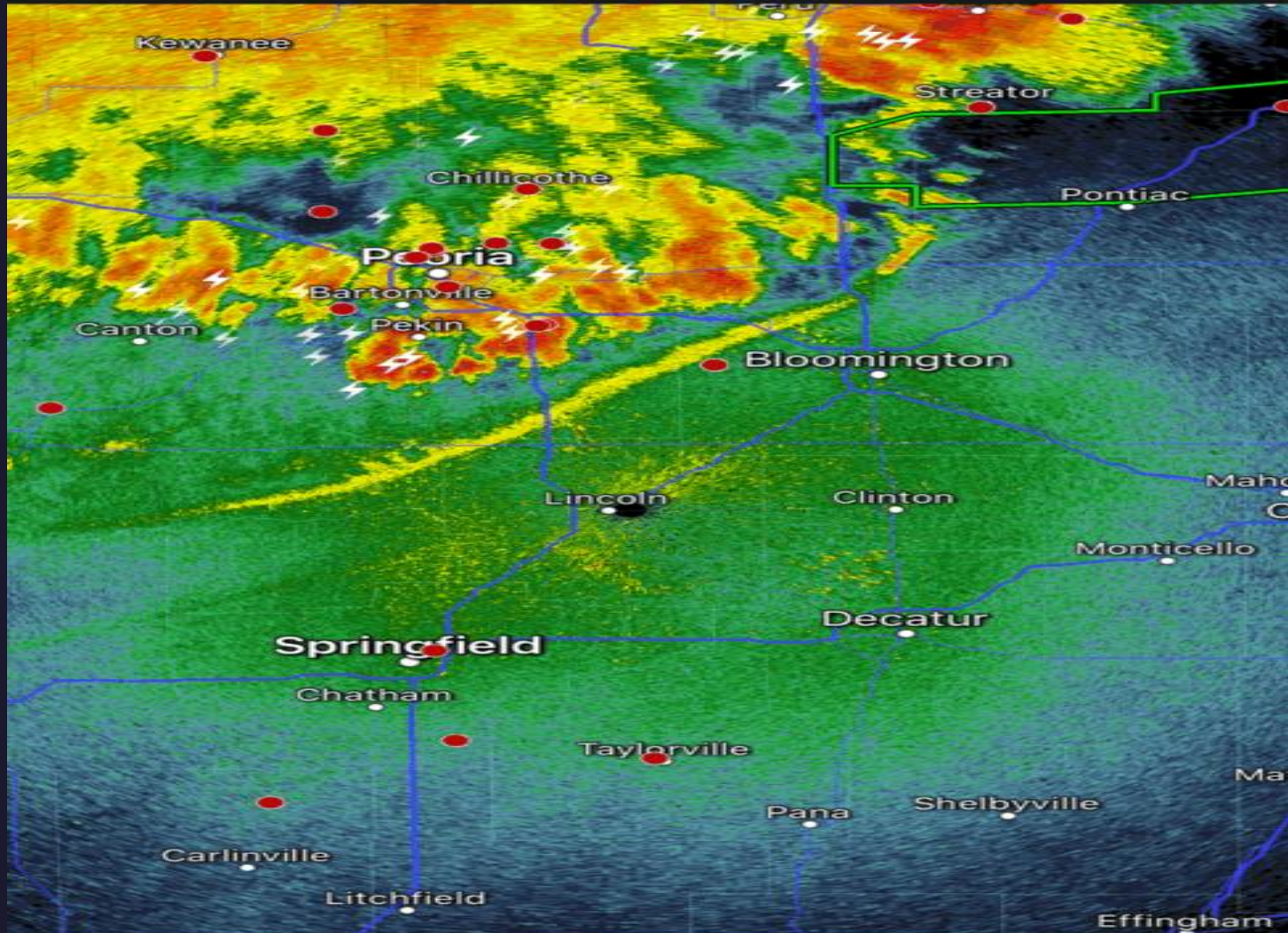


"Gust fronts" or "Outflow Boundaries"



KILX Lincoln
VCP 212: Precipitation Mode

26



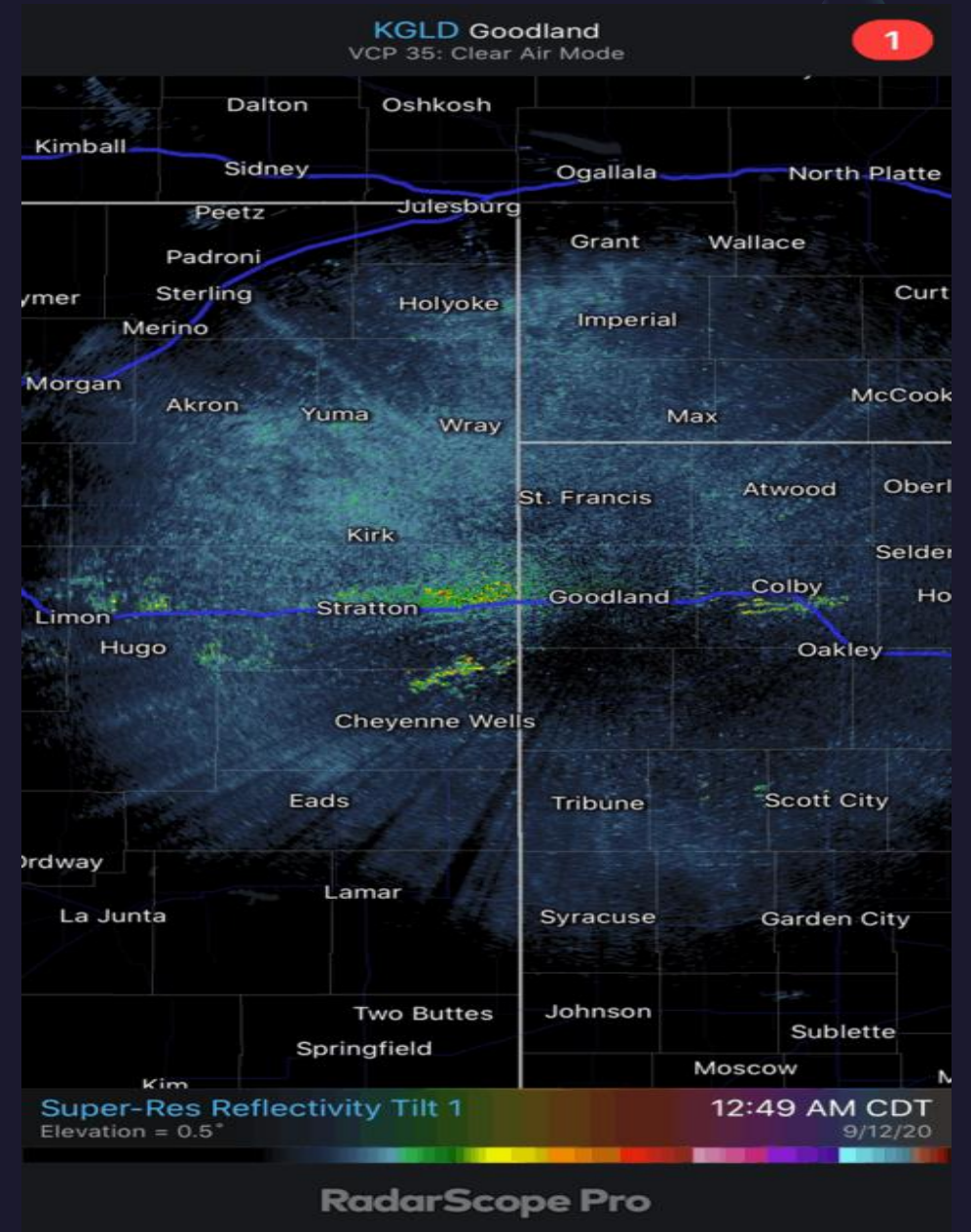
Super-Res Reflectivity Tilt 1
Elevation = 0.5°

12:08 AM CDT
5/15/20

RadarScope Pro

Wind Farm Effect

- Stationary objects (wind turbines)
- Create their own weather
- Nothing we can do
- NWS not happy



Sources

- Intro Picture: <https://www.amazon.com/Weather-Decision-Technologies-Inc-RadarScope/dp/B0094IHG8S>
- Velocity: <https://twitter.com/MarcWeinbergWX/status/1249448299301679107/photo/2>
- Hydrometer: <https://blog.radarscope.app/radarscope-difference-between-hydrometeor-classification-and-hybrid-hydrometeor-classification>

