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The Pantex Lightning Mapping Array (LMA)

Pantex is one of three entities in the state of Texas to own and operate a lightning mapping array (LMA). The other two are Texas Tech (research purposes) and the City of Houston/Texas A&M (research and public safety in parks).

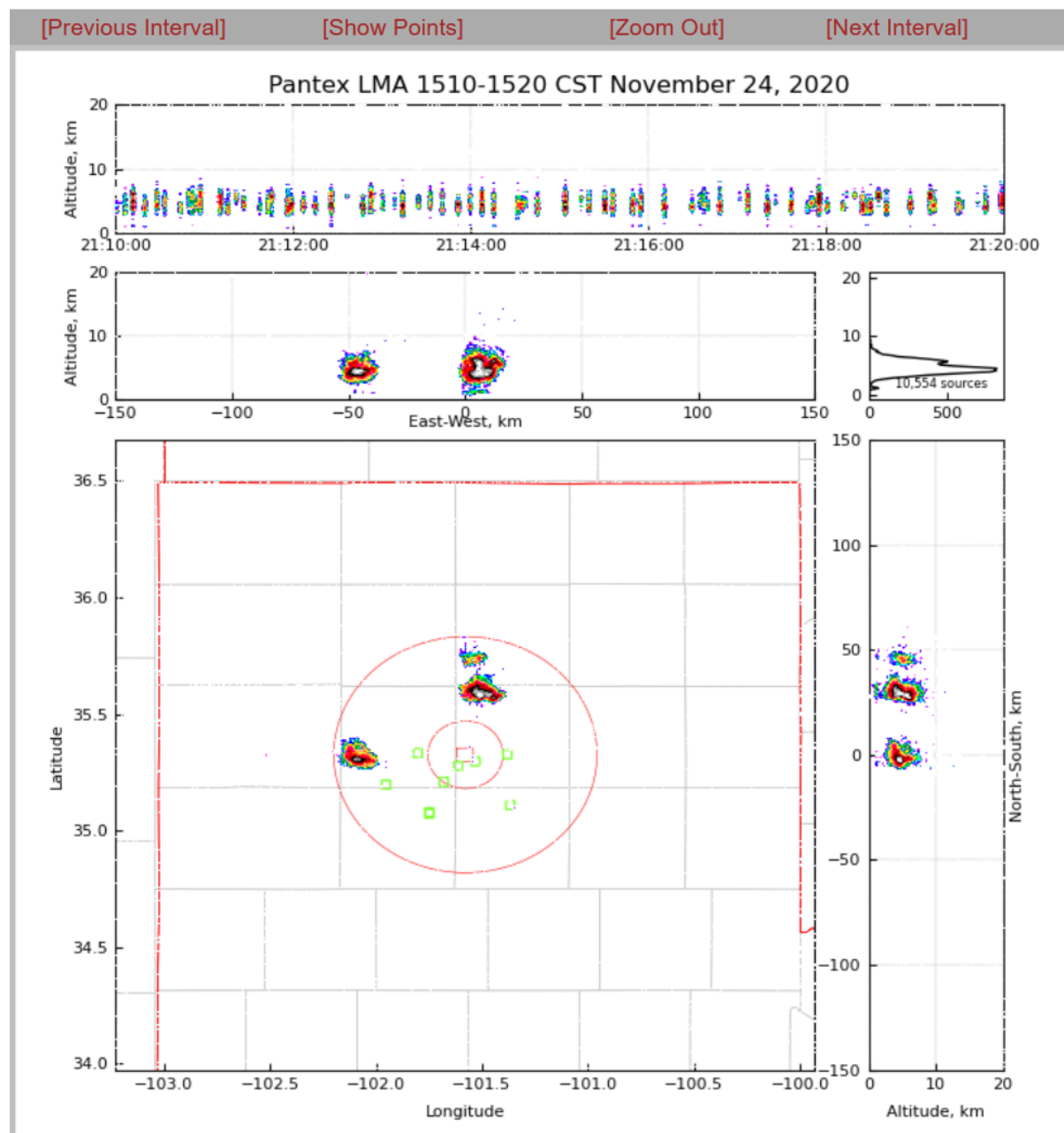
An LMA detects static discharges inside a cloud, which in some cases, could be a precursor to an actual lightning strike. The way the LMA detects these static discharges by using an antenna tuned to the 60-66 Mhz frequency range that “listens” for static discharges coming from the clouds. We likely all remember listening to AM radio stations when storms were in the area. We would hear “static” on the radio when a lightning strike would occur. That was obviously due to the actual lightning strike. Sometimes, we would hear “static” on the AM radio, but NOT see an actual lightning strike. That static that we heard was due to a static discharge inside the cloud, but just not an actual lightning strike.

Research done in 2020 at Pantex showed that on average, the LMA gave Pantex an average of 15 minutes of lead time between the first static discharge that occurred inside a developing thunderstorm, to the first actual cloud-to-cloud or cloud-to-ground lightning strike.

The Pantex LMA consists of 18 stations scattered inside a 35 mile radius of Pantex. Each “dot” that you see on the attached image is a static discharge. In this case, there were 10,554 static discharges over this 10 minute period. This weather information is helpful for Pantex because it helps keep us safe when storms are within 35 miles, or less, of the plant.

Anyone can see the Pantex LMA at <http://pntx.lmatech.net/pntxlma>

10 Minute Plot



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