Derecho and Straight Line Storms by KI5LNM

I think that all would find it unreal if I didn't somehow talk about weather tonight. It is one thing that I can relatively understand in all that we do and talk about. Tonight I am going to talk about derechos. This will be short, and I recommend looking up more on this rare but it can happen weather event.

I first learned of derechos in August 2020 when the Midwest derecho ran from Nebraska, Iowa, Illinois, Wisconsin, and Indiana. It spawned some weak tornadoes as well as torrential rains and hail. Some crazy video to watch of it happening.

Now to this week. Thursday late afternoon/evening we had a storm blow through with some pretty high wind speeds. It began around the Austin area and was finished blowing when it reached the Atlantic Ocean in Florida. Just over a path of 1,000 miles with damage along its length.

Derecho (deh-REY-cho) is a Spanish word that means straight ahead. The official NOAA definition is: A widespread, long-lived windstorm associated with a band of rapidly moving showers or thunderstorms. Its wind damage extends more than 240 miles and includes wind gusts of at least 58 mph or greater along most of the length. Thankfully, when I checked our weather station Thursday, the wind was gusting here was only in the 30s.

The National Weather Service website has a page with good descriptions of how these storms happen. If you are interested in how they form, you can check them out. There are pictures and diagrams that help in understanding. Their picture of a gust front "arcus" cloud on the leading edge of a derecho producing storm is quite amazing. A second picture is awe-inspiring as well. It would be something interesting to see for real, but I really do not have any desire to be where it is passing over in so much fierce-fulness.

There are two types of derechos.

First is Progressive derecho. It must have a very unstable (hot and moist) environment with strong winds aloft. A problem with these is that they are quite hard to forecast. What is needed for it to come to life is quite subtle and as a result hard to predict. Weather balloons are the only thing that can see what is happening at the altitudes that these storms form. Few of these are launched each day by the NWS. Hence, these storms blow up with little or no warning for the people caught in them.

Second is Serial derechos. These come out of large scale systems which make them easier to predict.

In the US, derechos occur mainly along two axes. One is along the "corn belt" from Minnesota and Iowa into western Pennsylvania. The other is in the southern Plains into the lower Mississippi Valley. Interestingly, they do occur from East Texas into the southern states. 70% of all derechos occur between May and August. But 30% can occur in the cooler seasons as well.

There have been studies on the frequency of these storms across the US but there is a problem with the information being as accurate as possible. These storms are dependent of observation. At the same time they often can travel in areas that have low population numbers or fewer people that make weather reports. So it is believed that there is possibility of there being many more occurring in places like the northern Plains.

Derechos are fairly rare but they have visited Texas before. In May 1989 a large one drove through Tarrant County and is called the "The Great Storm of 1989". Another one in May 2007 hit the Dallas metropolitan area. These of course ran to more open areas as well.

We have a lively picture now as to how these storms can play out with our storm last Thursday. We live near the beginning of its formation. Many of us can readily attest to there being high winds and crazy rain along with some thunder and lightening. But where do we hear of the major damage of this storm that ran quickly from basically Austin all the way through Florida? - Houston. The damage there is incredible. i believe we have all seen pictures of the power lines that are down. The large pylons crumpled like tinfoil. The pictures of downtown buildings and there windows down on the street now. Mark's brother works in one of those buildings and his building has a hundred windows completely blown out, with 200 that are cracked, broken,

and/or leaking water. But beyond the damage to things, the Houston area has 7 confirmed deaths from the storm.

The winds were recorded in Baytown at 78 mph but upon inspection of damage in the downtown area it is believed the winds made it to 100 mph. This would equal a EF1 tornado or a category 2 hurricane.

This storm hit quickly with little warning or knowledge that it would create the chaos that it did. I have a friend in Deer Park that her comment afterwards on Facebook was that their hurricane supplies are vastly lacking and must be brought up to snuff before actual hurricanes start seriously thinking about coming in. They have lost power and are finding the library a good place to cool off. Thankfully, not far from their house.

So maybe the big lesson here is to be ready at any time for anything to happen. We should at this time make sure our emergency supplies are in good order and we have what we could need when the weather goes south in a heartbeat.