looking at severe weather event after severe weather event we found it to be important to study cloud tops using this latest generation satellite technology we have found these clouds that are a bit odd and looked a bit unusual it looks a bit like smoke and it also has a very warm appearance when you look at storms that produce the really damaging tornadoes and in large hail you're taking very unstable air hot and humid air near to the ground and raising it up into the upper atmosphere very very fast and then it hits the layer of the
atmosphere above called the stratosphere

clouds that are especially strong eject
to the stratosphere it's like a smoke

plume emerging from those bubbling up
drifts and because the stratosphere is
warmer you can see this pattern one of
the most exciting things that we found
in this research is that over 85 percent
of the really damaging storms produced
this kind of smoke like plume and also
this plume pattern tends to occur from
about 30 minutes prior to when these
severe weather events are happening and
so this is especially valuable for the
public at large a forecaster can instantly see this pattern when it emerges in a cloud and they're going to be able to issue warnings faster and tell people to take cover or get their belongings inside satellites observe everywhere all the time still being able to do something that helps warning just from a satellite perspective can really offer benefits around the world and save lives